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**17th** International  
Congress of Dietetics

GRANADA  
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2016

7, 8, 9 and 10 September



**CONFERENCE  
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# 17th International Congress of Dietetics

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## CONFERENCE PROCEEDINGS

7 September 2016 | INTERVENTION AREA: THE POWER OF DIETITIANS  
NUTRITIONISTS TO MAKE A DIFFERENCE IN SOCIETY

PLENARY SESSION

Opening Lecture



### The Evolving Profession of the Dietitian-Nutritionist

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The International Confederation of Dietetic Associations (ICDA) is the largest world-wide body of dietetic-nutrition professionals. It supports national dietetic associations and their members, beyond national and regional boundaries, by providing:

- Guidance, development and increased awareness of the standards of education and training that underpin the profession.
- Leadership in dietetics in various contexts, with a focus on evidence based nutrition and dietetics practice.
- An integrated communications system for members.
- Networking and professional development opportunities.
- Promotion of the role of nutrition and dietetics professionals in enhancing health, supporting human development, and reducing disease (1).

The role and scope of practice of the dietitian-nutritionist is constantly evolving to meet the needs and expectations of clients and employers; to cope with the demands on the service being provided in a changing environment; and to seize opportunities as they arise. The rate of evolution will vary across the world as it is influenced by the differing environments in which the profession is practiced and the stage of development of the profession in each country.

To prepare dietitian-nutritionists for their role, education and training also needs to evolve at both undergraduate and postgraduate level. The setting of standards (2) provides National Dietetic Associations (NDA) and Higher Education Institutes (HEI) with a benchmark against which they can be monitored and has been instrumental in raising educational standards in some countries.

The ability to work in other parts of the world is an aspiration for many dietitian-nutritionists and is more likely to become a reality as standards are equalised.

Similarly the development of a professional body for dietitian-nutritionists varies considerably across the world. In some countries there has been a NDA for nearly one hundred years in other countries the profession is very young and an association is only just becoming established.

To achieve the aim and mission ICDA needs an understanding of the status of dietetics and the NDA in its member countries. Every four years a survey of the education and work of dietitian-nutritionists in the member countries is undertaken. Information on professional issues such as registration, protection of title, adoption of the International Code of Ethics and Code of Good Practice (3), basic education, continuing professional development and areas of work is reported at the International Congress of Dietetics (ICD) and a report published

on the ICDA website. The 2016 survey will allow some trends and insights into the changing profession to be presented at ICD2016. Results from the survey and feedback from NDAs and participants at ICD underpins the strategic plan and work of the ICDA Board.

The profession of dietitian-nutritionist has changed dramatically and will continue to do so as nutrition becomes embedded in the global agenda. To enable promotion of the dietetic-nutrition professional in the global arena a greater understanding of what they can and are doing is required.

## COMPETING INTERESTS

The author states that there are no conflicts of interest in preparing the manuscript.

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7 September 2016 | INTERVENTION AREA: WORLDWIDE IMPACT OF DIETETIC PRACTICING. DIETITIAN-NUTRITIONIST IS KEY

ROUND TABLE: INTERNATIONAL COLLABORATION TO DEVELOP AND TRANSLATE GUIDELINES FOR NUTRITION MANAGEMENT OF CHRONIC OBSTRUCTIVE PULMONARY DISEASE (COPD)

Lecture Sequence: 1



### The evidence demonstrating the clinical effectiveness of nutrition support in the management of COPD

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**Nutritional support in COPD: a journey through the evidence:** Malnutrition is a common clinical problem in chronic obstructive pulmonary disease (COPD) and is associated with increased morbidity and mortality. It is also an independent predictor of increased healthcare use and elevated healthcare costs. What is more challenging is establishing the exact causal relationship between malnutrition and COPD; for sometime malnutrition in COPD was viewed as an inevitable part of the progressive disease process with more severe respiratory disease associated with a higher prevalence of malnutrition. Malnutrition observed in COPD was seen as irreversible with nutritional support being ineffective and this was reinforced for almost a decade through published systematic reviews and meta-analyses (1,2). These reviews concluded that nutritional support had no significant effect on improving anthropometric measures or in functional outcomes. However, several randomized trials challenged this and two systematic reviews and meta-analyses have since confirmed that not only does nutritional support result in significant improvements in energy and protein intake and subsequently body weight (3), a casual pathway exists where these improvements translate to

functional improvements such as respiratory muscle strength and quality of life (4). These reviews highlight that contrary to previously held beliefs, nutritional support is effective at treating malnutrition seen in COPD; however, the evidence base is almost entirely based on stable (non-exacerbating) outpatients with the disease. In addition, the nutritional support provided nearly always involved liquid ready-made oral nutritional supplements (ONS) with one study exploring the effectiveness of individualized dietary counseling in addition to milk powder and another nocturnal nasogastric feeding. No studies explored multi-modal nutritional intervention strategies, which is often what occurs in routine clinical practice. There is also uncertainty around how best to nutritionally manage COPD patients that are identified as at nutritional risk and who are hospitalized for an infective exacerbation of the disease.

It has been highlighted that recent work in the area of nutrition in COPD has led to a paradigm shift in individualized nutritional therapy in COPD from initial ignorance and then on to the overly focused area of lipid and carbohydrate composition of nutritional therapy. Today there is an increasingly holistic

approach to the management of COPD and nutrition has an integral role in having a positive impact on body composition and physical functioning (4). However despite this large shift in the evidence supporting the clinical utility of nutritional support in COPD, a number of clinical questions remain around how best to translate this evidence into practice. Clinicians tasked with the nutritional management of COPD patients will be faced with questions relating to when and how to treat nutritionally. An international team of dietitians (Australia, Canada and the United Kingdom) involved in the area of nutritional support in COPD defined a number of questions using the GRADE approach (Grading of Recommendations, Assessment, Development and Evaluation):

- Should malnourished, or at risk patients with stable COPD receive nutritional support?
- Should malnourished, or at risk patients hospitalized with an infective exacerbation of COPD receive nutritional support?
- Is individualized dietary counseling delivered by a dietitian effective in the treatment of malnutrition in COPD?
- Should multi-modal nutritional therapies (DA, ONS, Enteral Feeding) be utilized in patients struggling to achieve their requirements orally during an infective exacerbation of COPD?
- Should patients with COPD be recommended nutritional support with altered macronutrient profiles (e.g. high fat, low carbohydrate)?

- Should patients with COPD be recommended nutritional support with anti-inflammatory properties during an infective exacerbation of COPD?

The results of the evidence reviews and syntheses using GRADE will be briefly presented by Dr Peter Collins. This presentation will inform and support clinicians in making judgements about how to best nutritionally manage their patients using the best available evidence to date.

## COMPETING INTERESTS

The authors state that there are no conflicts of interest in preparing the manuscript.

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ROUND TABLE: INTERNATIONAL COLLABORATION TO DEVELOP AND TRANSLATE GUIDELINES FOR NUTRITION MANAGEMENT OF CHRONIC OBSTRUCTIVE PULMONARY DISEASE (COPD)

Lecture Sequence: 2



### The evidence around the obesity paradox in COPD and the energy needs of stable and acute patients

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The association between body mass index (BMI) and outcome in COPD has been an area of interest for many years (1,2). When compared with a healthy BMI (20–25kg/m<sup>2</sup>) a low BMI in patients with COPD is associated with increased mortality whereas a BMI in the overweight or obese category is associated with lower mortality (3,4). It is currently less clear if BMI has an impact on other, patient-centred outcomes such as clinical condition (e.g. number and severity of acute exacerbations), quality of life, mobility, functional status or use of healthcare resources (e.g. hospital admissions, visits to general practitioner, health and social care costs).

Weight loss is associated with poor outcomes in patients with COPD (3) but is currently unclear if this only applies to unintentional weight loss (such as occurs during illness), or if it also applies to intentional weight loss (such as when overweight or obese patients follow a weight reducing diet).

In contrast to observations of the healthy population, a recent systematic review shows that survival in COPD appears improved in overweight or obesity (4). This possibly protective effect is frequently termed the 'obesity paradox'. In clinical practice the 'obesity paradox' poses a difficult question for

dietitians and other health care professionals i.e. should overweight or obese patients with COPD be advised and supported to lose weight?

Using the GRADE approach (Grading of Recommendations, Assessment, Development and Evaluation) an international collaboration of experts from Australia, Canada and the United Kingdom defined a number of questions to address the issues described above.

- Are underweight patients with COPD (BMI <20kg/m<sup>2</sup>) more likely to suffer poor outcomes (mortality, morbidity, quality of life, mobility, function) than those with a BMI in the healthy category (20–25kg/m<sup>2</sup>)?
- Are overweight (BMI 25–30kg/m<sup>2</sup>) or obese (BMI >30kg/m<sup>2</sup>) patients with COPD more likely to suffer poor outcomes (mortality, morbidity, quality of life, mobility, function) than those with a BMI in the healthy category (20–25kg/m<sup>2</sup>)?
- Should overweight or obese patients with COPD be recommended to lose weight?

When designing a nutritional care plan for patients requiring nutritional intervention dietitians consider both the dietary intake and the energy requirements of their patients. Two questions were defined by the expert committee to guide the evidence review around this topic.

- What are the energy needs of individuals with stable COPD?
- What are the energy needs of individuals during an acute exacerbation of COPD?

The results of the evidence reviews and syntheses, and any resulting guidelines statements, will be presented.

### COMPETING INTERESTS

The authors state that there are no conflicts of interest in preparing the manuscript.

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ROUND TABLE: INTERNATIONAL COLLABORATION TO DEVELOP AND TRANSLATE GUIDELINES FOR NUTRITION MANAGEMENT OF CHRONIC OBSTRUCTIVE PULMONARY DISEASE (COPD)

Lecture Sequence: 3



### Practice-based Evidence in Nutrition (PEN®) knowledge to optimize therapy for clients with COPD

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An international collaboration of experts from Australia, Canada and the United Kingdom has developed evidence-based guidelines for nutritional management of chronic obstructive pulmonary disease (COPD). In particular, the group implemented the GRADE approach (Grading of Recommendations, Assessment, Development and Evaluation) that uses a common evidence grading system that is credible, reproducible and understandable by users (1-15). The presentation will guide dietitians through the evidence-based process used by Practice-based Evidence in Nutrition (PEN®), a knowledge translation database, in developing the COPD knowledge pathway. In particular, the presentation will discuss the process of developing searchable practice questions and outcomes of interest, acquiring the best evidence, critically appraising research and guidelines, and providing recommendations. The presentation will also show how the practice guidance toolkit and client handouts and resources available in PEN® can be used by practitioners to optimize nutrition therapy for clients with COPD.

### COMPETING INTERESTS

The authors state that there are no conflicts of interest in preparing the manuscript.

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7 September 2016 | INTERVENTION AREA: WORLDWIDE IMPACT OF DIETETIC PRACTICING. DIETITIAN-NUTRITIONIST IS KEY

ROUND TABLE: DIETETIC PRACTICE BASED ON EVIDENCE

Lecture Sequence: 1



### Evidence-based practice and knowledge translation: the dietitians' perspectives

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Evidence-based practice (EBP) has been extensively recommended in healthcare to improve quality of care. In the field of dietetics, the International Confederation of Dietetic Associations has developed a definition of "evidence-based dietetics practice" in 2010 and recommends its implementation in all contexts of dietetics practice worldwide (1).

Despite the promotion of EBP, the gap between scientific recommendations and clinical practice is important (2) and widely discussed. In nutrition and dietetics, several areas of improvement have been identified, for example: lack of implementation of evidence-based guidelines (3), variation in practices (4) and small proportion of patients needing nutritional counselling actually referred to dietetics services (5).

Two existing models especially support dietitians in the adoption of EBP: the Nutrition Care Process and its Terminology (NCPT) developed by the Academy of Nutrition and Dietetics in 2003 (6,7) and the knowledge-to-action model developed by Graham and colleagues in 2006 (8). The NCP model has been "designed to incorporate a scientific base that moves food and nutrition professionals beyond experience-based practice to evidence-based practice" (6) and is therefore a unique tool to promote evidence-based dietetics practice. Moreover, the knowledge-to-action model is meant to promote knowledge translation (KT) that is defined by the Canadian Institutes of Health Research as "a dynamic and iterative process that includes synthesis, dissemination, exchange and ethically-sound application of knowledge to improve (...) health (...),

provide more effective health services and products and strengthen the health care system"(9).

Even though the implementation of these two models is promoted, few studies have evaluated the perception, attitude and practices of dietitians concerning EBP (10) and the development of research in KT is still in the early stages. In the present context of pressure on the healthcare system to provide high quality and efficient services, it is important to learn more about how dietitians perceive EBP and KT and what are current practices.

In this session, we propose to present and discuss dietitians' perspectives about EBP and KT in the literature and to illustrate it with the results of an exploratory study aimed at evaluating perception and practices of dietitians about EBP in Switzerland.

### COMPETING INTERESTS

The author states that there are no conflicts of interest in preparing the manuscript.

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ROUND TABLE: DIETETIC PRACTICE BASED ON EVIDENCE

Lecture Sequence: 2



### Scientific evidence considered in the formulation of nutrition policies aimed at health promotion and disease prevention. A look beyond the methodological tradition

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The efficiency of a system is defined by obtaining maximum efficacy at the lowest possible cost and the use of available resources. Much more promotion and disease prevention as the focus of optimization to ensure sustainability should be taken into account by a health system that seeks efficiency. The use of evidence as indisputable and inescapable requirement should always be considered by those who are responsible for generating decision making in nutrition and dietetics. While the definition (1) of the levels of evidence and development of evidence-based guidelines in clinical settings are well established for many years (2-4), efforts for development methodologies for formulating policies aimed at health promotion and disease prevention based on scientific evidence are much more current (5).

Formulation of nutrition policies based on evidence requires professional experience which recognizes the technical need for the application of the best evidence in different scenarios. On the one hand, it also involves the strong belief that this information complements the knowledge and professional experience; and on the other hand, it needs training in the generation and interpretation of the studies that

simultaneously consider the preferences of end users.

Randomized clinical trials (RCTs), meta-analysis and systematic reviews of RCT are considered the best evidence to assess the effectiveness of interventions for clinical decision-making. However, is RCT the best study design to answer disease prevention and health promotion questions? These are, ultimately, the kind of questions required for the efficient development of nutrition policies. In 2003, a known article was published in the British Medical Journal: "Parachute use to Prevent death and major trauma related to gravitational challenge: systematic review of randomized controlled trials" (6). This paper tried to put on the table this issue and its conclusions are very illustrative. "As with many interventions intended to prevent ill health, the effectiveness of parachutes has not been subjected to rigorous evaluation by using randomised controlled trials. Advocates of evidence based medicine have criticised the adoption of interventions evaluated by using only observational data. We think that everyone might benefit if the most radical protagonists of evidence based medicine organised and participated in a double blind, randomised, placebo controlled, crossover trial of the parachute" (6).

We work with protective factors of health and disease risk factors affecting long term (decades) at the primary level of health prevention (health promotion and disease prevention). At this level, RCT is not necessarily the best study design to identify or evaluate them (7). In addition, how can we safeguard the ethical testing of interventions that we believe are harmful? (8) In this regard, there are a wide range of methodological resources that can support adequate nutrition policies and even offer a causal relationship in which we can trust enough to make an intervention at community level. In this respect, in 2009 was published "The evolution of evidence hierarchies: what can Bradford Hill's' guidelines for causation 'contribute'?" (9) by experts from the Centre for Evidence-Based Medicine of University of Oxford. This article invites to promote an evolution of the hierarchies of evidence, taking in particular account evidence from observational studies to answer disease prevention and health promotion questions when RCT are not available.

There is a need to review the role to be taken by each type of study design in the formulation of nutrition policies. Quasi-experimental studies, case-control studies, and, especially, prospective cohort studies and their corresponding meta-analysis are non-experimental studies with a high probability of being able to complement the generation and assessment of nutrition policies. In some cases, they will be the only source of scientific evidence for this purpose. Likewise, the qualitative research paradigm could provide ample resources to identify barriers of implementation through understanding the construction of the reality of people from their own perspective. Finally, the community-based health intervention trials or cluster randomized controlled trials are a trusty, growing and highly interesting type of experimental design for the formulation and assessment of nutrition policies (10).

## COMPETING INTERESTS

The authors state that there are no conflicts of interest in preparing the manuscript.

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### CONFERENCE PROCEEDINGS

7 September 2016 | INTERVENTION AREA: WORLDWIDE IMPACT OF DIETETIC PRACTISING. DIETITIAN-NUTRITIONIST IS KEY

ROUND TABLE: DIETETIC PRACTICE BASED ON EVIDENCE

Lecture Sequence: 3



#### Evaluation of Practice: a practical model to establish and evaluate core data sets of outcome measures to enhance Evidence Based Practice

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As health professionals we aim to provide high quality care and apply an evidence based approach to our practice. We have many tools to support us, including journal research papers, systematic reviews, practice standards and guidelines. While few practising dietitians actively engage in research, citing lack of time and poor research skills as key barriers (1), we do have direct access to a rich source of data to better inform practice: our own day-to-day activities. Yes, the work we do on a day-to-day basis. All nutrition and dietetic standards of proficiency require us to monitor and evaluate our activity, therefore evaluation of outcomes measures is a key requirement of the Dietetic Care Process, universally (2,3). However, there is little guidance on how to do this beyond the application of outcome measures at an individual level, or local audit. There is evidence that outcome measures are poorly recorded and highly variable both within specialities and between our different scopes of practice (4). Dietitians are not alone in their reluctance to evaluate outcome measures. It is now recognised as a common dilemma for health professionals everywhere (5). In this joint presentation delivered by an academic Dietitian and a Life Assurance Actuary we will draw on the first speakers experience of supporting Master students to undertake service evaluation both within and outside the UK, with lessons learned, including a consideration of ethical issues. We will review current literature on the setting and evaluation of outcome measures across the spectrum of health professions and drawing on best practice, propose a model of service evaluation based on establishing core data sets for both generic and specialist

fields of care (6). The scope and scale of service evaluation can vary, from a consideration of a personal data set to the sharing and analysis of data across dietetic specialities. However, there are common considerations that can make sharing and comparing data sets more effective. Many of us find statistics intimidating and these considerations are often not at the forefront of our minds. Perhaps this is one reason why service evaluations are so often poorly performed. To this end, we will draw on the advice of our second speaker who is a qualified actuary with extensive experience in the practical application of statistical analysis to health data sets. In practice, by taking simple measures when defining our model we can make our lives much simpler and greatly improve our ability to share data and insights.

#### COMPETING INTERESTS

The authors state that there are no conflicts of interest in preparing the manuscript.

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7 September 2016 | INTERVENTION AREA: WORLDWIDE IMPACT OF DIETETIC PRACTICING. DIETITIAN-NUTRITIONIST IS KEY

ROUND TABLE: DIETETIC PRACTICE BASED ON EVIDENCE

Lecture Sequence: 4



### International Dysphagia Diet Standardisation Initiative What's on the menu in the Global Village?

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Conservative estimates suggest that over 560 million people worldwide are living with dysphagia (swallowing disorder). In recent years, a number of countries have developed standardised terminology for texture modified foods and thickened liquids to improve care and safety. However, the national standards published have only added to the confusion on a global basis because of the use of diverse terminology, labels, number and levels of food texture and liquid thickness. Patient safety is greatly affected as a result.

The International Dysphagia Diet Standardisation Initiative (www.iddsi.org) was launched in 2012 to develop a global language for international standardised terminology for texture modified foods and thickened liquids. The primary goal of IDDSI is to improve patient safety with global standardised terminology and definitions for texture modified foods and thickened liquids for individuals with dysphagia of all ages, in all care settings, and all cultures.

A review of the published literature and existing national

standards was completed and published in 2013 (1). A systematic review of texture modified foods and liquids was conducted and published in 2014 (2). International surveys of four stakeholder groups (health professionals, patients&carers, industry and researchers) were conducted in 2014 and 2015. Over 5000 responses were received with overwhelmingly positive support for the initiative and a standardised international framework. All elements were considered by an expert multidisciplinary international panel in 2015 to develop an international standardised framework and terminology.

The international framework for standardised classification of texture modified foods and liquids consists of 8 levels (0 to 7) and includes both foods and liquids on a single continuum. Levels are identified by text labels (translated into 16 different languages to date), numbers and colour codes. Detailed descriptions and practical objective tests of consistency/thickness are used to distinguish between levels.



In this presentation, the IDDSI framework, terminology and objective testing will be discussed along with the IDDSI global implementation plan.

### COMPETING INTERESTS

The International Dysphagia Diet Standardisation Initiative Inc. (IDDSI) is an independent, not-for-profit entity. IDDSI is grateful to a large number of agencies, organizations and industry partners for financial and other support. Sponsors have not been involved with the design or development of the IDDSI framework.

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7 September 2016 | INTERVENTION AREA: EQUITY AND PROFESSIONAL ETHICS  
WITHIN THE DIETETIC PROFESSIONAL

ROUND TABLE: FOOD SECURITY. COOPERATION

Lecture Sequence: 1



### Role of a Dietitian in International Food Security: Haiti case

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As the poorest country in Latin America, Haiti ranked 168<sup>th</sup> out of 187 on the Human Development Index of the United Nations Development Program in 2014 (1). In Haiti, hunger and malnutrition are major issues and the earthquake on January 2010 exacerbated the situation (2). Haiti has made significant progress in recovering from that tragedy, however critical needs and vulnerabilities remain for an estimated 3 million people. Food insecurity remains one of the major obstacles of health and economic prosperity in Haiti (3). The malnutrition is the main concern affecting the most vulnerable groups: children and women. Around 2.6 million live in food insecurity, of which 200,000 are severely affected (4). Addressing food security requires multisectoral and multidisciplinary approaches. Dietitian is qualified professional for contribute in multidisciplinary team. Dietitian experience of various Haiti projects will be presented.

**Partnership Acadie-Haiti (PAH): Strategy for building Food Security in Haiti** was a five years program intervention (1996-2001) based on a food diagnostic, environmental situation and community organisation. The aim of intervention was to improve the living conditions in 22 villages of northern and north-eastern Haiti in sustainable manners, with a food security strategy partnership. Design included activities in three areas: nutrition and food conservation; fishery and agriculture. The end of project survey showed better nutrition was reached. There was a higher availability of food, especially those high in protein and vitamins. This variety was partly achieved by specific interventions in food-gardens, fishing, and food

conservation. The PAH intervention increased consumption of high energy and grain products, vegetables, fruits and foods rich in protein (particularly through the fisheries and peanut components). Respondents of the survey reported they consumed foods from the four food groups of the Canadian Food Guide which translates into a balanced diet, and was inculcated in all villages. PAH generated income from the sale of local food products that allows the purchase of other foods not available in the village (5).

**Solidarity Acadie-Haiti** was a three year intervention (2002-2005) in Camp Louise. The main goal was to improve the quality of life and food situation of its habitants. The project focused on three areas: fishing, nutrition and providing running water services. Nutrition, gardening, fish conservation and financial management activities were conducted with 60 couples. These couples were mentored under supervision with gardening and fishing simulations of potential problems. As well, a Food Bank was created with foods not available so that women who managed their gardens could have a loan of food with the obligation of returning the same amount of food once harvested. This immediately improved the availability of food and by the end of the project; improved their quality of life.

**Summer University on Agriculture Public Health and Community Nutrition (2012).** The academic training-program was a collaborative project between the universities of Laval, Moncton and the State University of Haiti (SUH). It focused on strengthening the capability of professors in the Agriculture and Veterinary Medicine Faculty (AVMF) to provide quality

education for the fight against food insecurity. The training brought together 135 participants who completed 33 courses in 10 days. The participants were mostly students of the AVMF, called to contribute to the development and delivery of a continuous training module for the Agriculture Public Health, professors of different Haiti universities and NGOs working in the nutrition-food sector. The results were beyond the expectations of participants and trainers (6).

**Summer University on Nutritional Health (2013):** Three Canadian universities (Laval, Ottawa and Moncton) planned with the SUH an academic program based on the nutritional health training needs and skills of Haitians. The goals were: 1-Strengthen the capability of Haitian trainers [professors of the Medicine and Pharmacy Faculty (MPF) and AVMF] on Nutritional Health, and, 2-Develop the skills of students of the MPF and AVMF to plan and conduct operations on the same field. The project focuses on the acquisition of targeted knowledge for the development of practical skills. The results enabled the Canadian universities and SUH to develop training programs that meet the priority needs of the population (malnutrition) by upgrading practical and teaching modules as per the SUHs' Strategic Plan 2011-2020 (7).

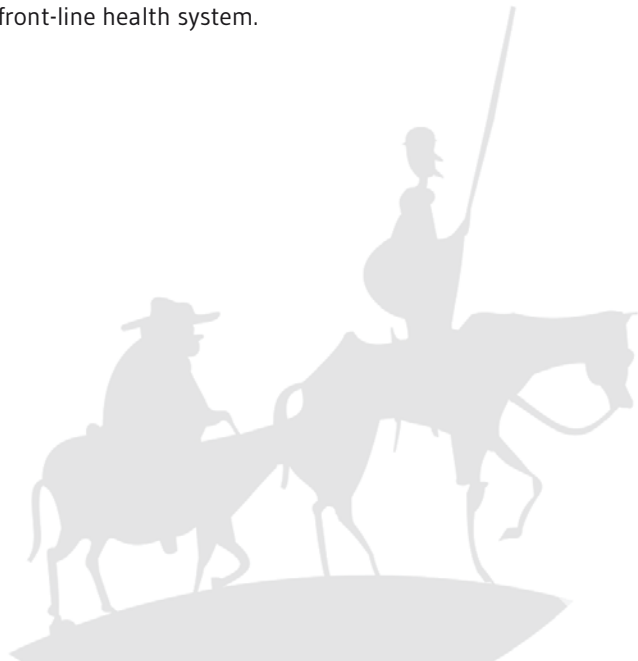
**Upgrading the capacity to increase Food Security in St-Marc (2013-2018).** The goal is to strengthen food security in Saint-Marc and improve professional training through the introduction of an active partnership between communities, social organizations and universities. Using interdisciplinary activities to ensure food security, specific objectives are oriented to support the Haitian partners in their efforts to: 1-Have appropriate training of students of the SUH; 2-Empowering people, generating social and economic progress of those living in poverty; 3-Agricultural intensification, sustainable agro-ecosystem management and the improvement of the nutritional well-being and health of populations, especially mothers and children. This project adopts a participatory approach to promoting and improving food: availability, social and economic access, and nutritional health while supporting the capacity of a front-line health system.

## COMPETING INTERESTS

The author states that there are no conflicts of interest in preparing the manuscript.

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7 September 2016 | INTERVENTION AREA: EQUITY AND PROFESSIONAL ETHICS  
WITHIN THE DIETETIC PROFESSIONAL

ROUND TABLE: FOOD SECURITY. COOPERATION

Lecture Sequence: 2



### Food insecurity: Process and outcomes while developing position papers on income-related household food insecurity and the role of the dietitian in food insecurity responses

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Food insecurity is a serious public health issue in Canada, affecting more than 4 million Canadians at a rate of one in eight households (1). Rates of household food insecurity vary widely however, depending on the living circumstances of population groups and so it is a challenge to fairly address the populations with high risk for food insecurity, while also reaching out to households who comprise the major proportion of food insecure households. Dietitian understanding of these diverse circumstances is important – awareness can be raised through the process of developing positions and disseminating information through one's professional association.

Since the late 1980s, Dietitians of Canada (DC) has actively positioned food insecurity as an important issue impacting too many Canadians. We released a position statement in 2016 [in publication] replacing the former positions published in 2005 and 1991 (2).

Member engagement and review is part of the process applied in developing DC's positions including oversight from a volunteer member committee. Authors are generally academics with expertise in the topic. The most ethical and responsible recommendations to improve household food environments in Canada is to use evidence-based approaches to reduce food insecurity, since not all poverty reduction initiatives have been shown to be effective in this regard (3,4,5).

This session will provide an overview of the process and outcomes while developing position papers on income-related

household food insecurity and, more recently, the role of the dietitian in food insecurity response.

The session will conclude with highlights and rationale for the content of the position and role statements and an opportunity for audience Q&A to facilitate application of these learnings in other countries and to compare positioning. As food insecurity continues to be addressed in the context of a human right to food (6), there is potential for dietitians to join globally in their advocacy to ensure that all people have enough resources and access to healthy food, with dignity.

### COMPETING INTERESTS

The author states that there are no conflicts of interest in preparing the manuscript.

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7 September 2016 | INTERVENTION AREA: EQUITY AND PROFESSIONAL ETHICS  
WITHIN THE DIETETIC PROFESSIONAL

ROUND TABLE: FOOD SECURITY. COOPERATION

Lecture Sequence: 3



#### Ten principles for measuring the Food and Nutrition Security in the scope of the Mercosur Committee Nutritionists

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Food Security was defined by the FAO since 1974, as “[...] the right of all people to be culturally and nutritionally adequate and sufficient food” and the World Food Summit in 1996[...]. There is safety food when all people, at all times, have physical and economic access to sufficient, safe and nutritious food to meet their dietary needs and food preferences for food to lead active and healthy life “food. The latter definition, identifies the following dimensions of food security: a) Sufficiency in food supply; b) Stability or minor variations in food availability from year to year and throughout the year; c) Sustainability or ability to ensure the achievement of the above measures in the short term, does not cause a deterioration of productive resources, which makes it impossible to support in the long term; d) Autonomy or reduction of external dependence with regard to basic food; e) Equity essential to allow access and adequate food intake for the whole family, even the lowest income (1). It is well recognized that although the availability of food is an essential component of food security and nutrition, the actual access to food is all the more relevant. Poverty, by limiting the purchasing power of households, is the most important determinant of access to food. It should be noted that food and nutrition security is a right of peoples, closely linked to the right to food. Therefore, it should be considered nutritionally considering the food quality and respect for the food culture of each community (2).

Food and nutritional security and the right to adequate food are having a remarkable development in the region, driven by civil society and also, governments have placed greater emphasis on the issue.

That is why professional nutritionists entities that make up the Mercosur Committee nutritionists (CONUMER), currently made up of Argentina, Brazil, Paraguay, Uruguay, Venezuela and Chile as associate state, developed the proposal presented Ten Principles of Food and Nutritional Security (3) in order to have a tool that allows professionals from different areas have available a useful measurement instrument, also applies to different public and private sectors engaged in food nutrition and population.

The Ten Principles of Food and Nutricional Security are organized as follows: a) Names of the Principles of Food Security and Nutrition, with their respective definitions; b) Indicators proposed for measuring the same; c) Criteria used to weight each indicator.

The objectives pursued in the selection of principles and indicators were: a) Framing the proposed approach from a perspective of rights instrument; b) Consider the importance of access to safe water and sewage network; c) Measure the availability of food and nutrients in the countries, identifying its source of food (own production or import requirements); d) Weigh the importance of economic access to food through indicators measuring employment, income and prices, also considering the safety and quality of food; e) Consider education and health as human rights directly linked to food and nutrition security; f) Consider the role of the State in relation to social protection policies with food component; g) Consider the role of the nutritionist as a cornerstone in achieving food and nutrition security, either through their

participation in planning, implementation and/or monitoring of policies and food programs and through professional care community.

### COMPETING INTERESTS

The author states that there are no conflicts of interest in preparing the manuscript.

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7 September 2016 | INTERVENTION AREA: EQUITY AND PROFESSIONAL ETHICS  
WITHIN THE DIETETIC PROFESSIONAL

ROUND TABLE: FOOD SECURITY. COOPERATION

Lecture Sequence: 4



### He has never eaten that before' – a child nutrition intervention for disadvantaged families attending playgroups in Australia

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**Introduction:** All children have the right to a healthy start in life, but for many Australian children a social gradient places them at risk of poor health outcomes (1). Health inequalities are more common among in families from culturally and linguistically diverse (CALD) backgrounds, new migrants, refugees and Indigenous Australians (2). More than 600,000 Australian children (or 17%) live below the poverty line; placing them in the greater risk category (3). Furthermore, these families experience difficulty accessing, understanding and applying child health and nutrition advice (4,5). Vulnerable families are less able to access and engage with health services thus increasing the gap of social and health inequities (5).

Early childhood nutrition practices promote healthy child growth and development, prevent obesity and chronic illness later in life (6). Australian social inclusion policies highlight the critical role of community services such as playgroups in overcoming the cumulative impacts of disadvantage. Playgroups are community-based regular gatherings providing social opportunities and interactions for young children and their parents (7). Supported Playgroups (SP) are facilitated by a dedicated worker to engage with vulnerable groups providing a 'soft entry point' in to mainstream health and educational services. Targeted groups include families from culturally and linguistically diverse (CALD), Indigenous, socially isolated, vulnerable or disadvantaged backgrounds, families with mental health or disability issues (either the parent or child), teenage and young parent families, and grandparent carers.

**Previous Investigations:** We previously found that children attending Supported Playgroups were over-represented with poor nutrition practices such as consuming sweet drinks and 'packaged' foods, and viewing excessive hours of television. Supported Playgroup parents also described greater difficulties accessing, understanding, and applying health information than other families in the same locations of social disadvantage (8). Although key messages in child nutrition have been successfully used in early childhood interventions in Australia (9-11), culturally diverse and significantly disadvantaged families have not participated. Innovation in sustainable and effective delivery of child nutrition and active play messages is urgently required for disadvantaged families.

**Investigation:** We have developed a novel strategy aiming to prevent childhood obesity and reduce health inequity among highly disadvantaged families. The strategy promotes child nutrition advice using existing resources and a sustainable approach in an early childhood setting. We are currently undertaking a 'complex intervention' that by definition, involves large variability in a target population and takes place in existing community settings for highly vulnerable families (12). Consistent with the socio-ecological model of health encompassing the social determinants of health (13), the program is informed by theories of cultural competence, social learning, health belief and health literacy to build on existing strengths of parents to increase their confidence and self-efficacy.



We hypothesise that 1) Increased parental knowledge and self-efficacy about child nutrition will promote improved child health-related behaviors; and 2) Supported Playgroups are an effective setting to convey child nutrition information to disadvantaged families.

**Discussion and Conclusion:** We recently tested the feasibility of the child nutrition intervention within Supported Playgroups. We trained Supported Playgroup facilitators to discuss six key messages (selected from ten) about child nutrition issues. Building on established relationships between facilitators and their families, the program took place in existing Supported Playgroups using existing resources, during one school term. There were three key findings: The first was that highly vulnerable families could be engaged in an intervention addressing key nutrition messages. The second was that the Supported Playgroup setting provided high acceptance of the training, implementation and evaluation of the intervention. The third was the strength of the approach to engage facilitators and parents that welcomed cultural adaptation.

An innovative strength of the current study was that child nutrition messages were integrated into an existing early childhood educational setting for disadvantaged families. Families received and understood key information, otherwise inaccessible to them and all families changed 'something'. Parents changed practices most relevant to them; while some families changed drinks, or snacks, or routines around sleep, others re-prioritized the value of outdoor play, or began to set some limits to electronic screen access. Supported Playgroup Facilitators gained knowledge and confidence that they were enthusiastic about pursuing beyond the project duration. Despite perceptions that vulnerable groups may not prioritize health and nutrition, we confirmed that parents responded positively when information exchange was culturally and sensitively provided. Feasibility and fidelity of ongoing sustainability will be enhanced through leadership of the Dietitian embedding the nutrition intervention into a nearly childhood setting.

## COMPETING INTERESTS

The authors state that there are no conflicts of interest in preparing the manuscript.

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7 September 2016 | INTERVENTION AREA: RESEARCH, DEVELOPMENT AND INNOVATION IN DIETETICS

ROUND TABLE: RESEARCH, DEVELOPMENT AND INNOVATION IN DIETETICS.  
BIOTECHNOLOGY IN FOOD DEVELOPMENT AND COMMERCIALISATION

Lecture Sequence: 1



### Role of Dietitian-nutritionist in food industry. Development of specialised products, research and development and quality information for consumers

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Until relatively recently the food industry has lacked nutrition professionals, and product development has been driven more by economic or social interests than by health. However, the role of the dietitian-nutritionist is becoming increasingly important in today's society, and for this reason should be involved in producing the principal components of the diets they prescribe, in much the same way that pharmacists are in the production of medicines.

The key areas in which the dietitian-nutritionist can influence the food industry are:

1. Development of specialized products: Health is currently in fashion. Since the introduction of the 'fast food' concept, standards of quality have dropped significantly and in response, demand for enriched and fortified products has risen to redress the balance. Scientific knowledge of this subject applied during the production process is vital to the provision of accurate nutritional information, the lack of which can generate mistrust among consumers.

In addition, rising levels of food allergies (1) and intolerances create the necessity for professionals who can offer viable alternatives to conventional products, but that do not compromise on flavour, price or nutritional content.

2. Participation in research and development: We are now in an

age where it is not only drugs that are studied *in vivo* and *in vitro* before being launched on the market. Food companies are undertaking ever more studies to demonstrate the efficacy of their products. Scientific rigour is required to guarantee the accuracy of health claims made about a product, not only when using nutritional information, but also in the recommendation of said products. For example, the bioavailability of nutrients changes from product to product, and individual to individual. As a result, it is essential to make careful studies and recommendations in order to guarantee the efficacy of such nutrients in the human body.

The regulations governing nutritional information, and that thus allow companies to make health claims for their products (2), are in constant flux. By involving a professional nutritionist in this process, manufacturers can significantly benefit the positioning of their products in relation to those of their competitors.

3. Adaptation to the modern consumer and value of information: With the dramatic changes in human food consumption that have occurred in recent times, manufacturers have been quicker in offering "fast food" solutions than healthy ones. Packaging formats have been adapted to the idea of consuming the maximum possible

calories in the minimum possible time and volume. Now, as cases of obesity and its associated diseases (3) become more numerous, public awareness of nutrition and healthy eating is increasing in response. Consequently, nutrition professionals and the food industry must collaborate to offer healthy solutions that are adapted to today's rapid pace of life.

The ubiquitous '5-a-day' slogan –used to promote fruit and vegetable consumption– has resulted in the development of packaged products that allow consumers to fulfill their daily intake quickly and easily. However, in order to make best use of these recommendations, the availability of certain important information is fundamental. For example, the boom in drinking fruit juice as an alternative to eating the fruit itself considerably raises sugar consumption among consumers, and in particular among children – something that is a major factor in the onset of childhood obesity (4).

To conclude, some useful strategies for use by dietician-nutritionists involved –or who plan to become involved– in the food industry. Focused on the more health-conscious consumer:

- Promote the design and consumption of vegetable juice – or fruit and vegetable juice– as an alternative the excessive consumption of pure fruit juice. Information on sugar content.
- Comprehensive, easy-to-read nutritional information panels. Analysis of different national and international nutritional information panels.

- Inclusion of organic products in menus and packaged items, a social and environmental tendency that positively contributes to human health. Analysis by businesses of organic products.

In short, there are many important fields of food production in which the dietician-nutritionist can and should become involved.

## COMPETING INTERESTS

Ana Molina is working in Biosabor, a food industry who sells organic food. The funding sources have not taken part in the preparation of the conference proceeding or in the decision to submit the manuscript for publication.

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7 September 2016 | INTERVENTION AREA: RESEARCH, DEVELOPMENT AND INNOVATION IN DIETETICS

ROUND TABLE: RESEARCH, DEVELOPMENT AND INNOVATION IN DIETETICS. BIOTECHNOLOGY IN FOOD DEVELOPMENT AND COMMERCIALISATION

Lecture Sequence: 2



### Using Motivational Techniques over the Phone: An innovative Nutrition Contact Centre, “EatRight Ontario” helps to promote healthy behaviour change in their callers and website users

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Dietitians appreciate that principles of motivational interviewing and other behaviour change theories in one-to-one counselling helps clients move towards behaviour change (1-3). This approach is also being used at EatRight Ontario (ERO), a nutrition call and contact centre. This presentation shares ERO’s innovative approach to tailor behaviour change techniques in a call centre environment and present preliminary data supporting its use.

At ERO, Ontarians can call to speak with a Registered Dietitian for free and get practical reliable nutrition advice. ERO is a dietitian contact centre funded by the government of the province of Ontario, Canada and operated by Dietitians of Canada. Our evidence-based practice is supported by the PEN (Practice-based Evidence in Nutrition®) database adapted for a call centre environment. Clients are offered free educational materials on many nutrition topics and the service is available in over 100 languages. Many of these resources have been culturally adapted to reflect Ontario’s multi-cultural population. ERO serves over 13 million residents, and fields’ questions from both consumers and health service providers.

The ERO website ([www.eatrightontario.ca](http://www.eatrightontario.ca)) offers interactive tools that support self-management, recipes, menu plans, videos, and articles on a wide breadth of nutrition topics, as well as an “Email-A-Dietitian” service.

Evaluation of the service demonstrates that ERO continually

achieves its program goal to improve access to credible healthy eating advice from dietitians, regardless of geography, language, age or culture.

Call centres and telephone support have been accepted in a number of settings around the world, to help address health care service gaps in remote and rural areas (4,5). The literature supports the effectiveness of telephone nutrition counselling by dietitians (4,5). Specifically, teledietetics has improved healthy eating behaviours and clinical outcomes in both healthy adult populations and those with chronic disease, compared to usual care (6). The literature also supports the importance of having telephone counsellors trained in the theoretical basis of dietary behaviour change (6). Many of these behaviour change interventions are based on a variety theories, such as Social Cognitive Theory, Transtheoretical Model and motivational interviewing (6). The literature has also shown that perceived benefits and risk (Health Belief Model) and efficacy (Self-Efficacy Model) are good predictors of motivation for change in many lifestyle areas, including diet (7). Additionally, teledietetics combined with internet-based interventions, has proved to be an important adjunct to care in areas such as obesity treatment (8) and positive dietary behaviour change (6).

ERO has taken an innovative approach with these theories, traditionally seen in an on-going one-on-one counselling relationship, and adapted them to suit this unique contact

centre environment. With this new approach coined “Motivation Over the Phone” or “MOP”, ERO dietitians have received training in behaviour change theories and developed unique tools and communication approaches to integrate into their calls, with the intention to better support a client’s readiness to change and move towards goal setting.

These same principles have also been embedded into Dietitians of Canada’s free online tool, eaTracker ([www.eatracker.ca](http://www.eatracker.ca)), where users assess and track their food and activity choices. Users can choose from a list of ready-made SMART goals written by ERO dietitians, or create a custom SMART goal for themselves. These goals address healthy eating and physical activity. ERO enhanced the tool so that Ontario users can register to receive weekly motivational emails from ERO dietitians to help them stay on track. They are also encouraged to call ERO’s toll-free phone number.

This presentation provides:

- An overview of this unique, technologically advanced dietitian contact centre practice setting and a description of the service’s users and their needs.
- The advantages and challenges of tele and web-based dietetics.
- Background information on the investigations, evolution and staff training involved in developing and adapting the MOP approach.
- An explanation and illustration of the different motivational and cognitive behaviour techniques used at ERO, to build rapport and initiate change such as: reflective listening, empathy, open-ended questions, asking permission, agenda setting, refocusing, checking in, change talk, measuring stage of change, assessing confidence and conviction levels and SMART goal setting.
- A review of the training and on-going support offered to ERO dietitians, including: a tool kit that prompts the use of key techniques to use with callers, monthly email tips, workshops and presentations, call reviews with principles of self-reflective practice, a call library helping to train new staff and current staff to maintain these skills
- The tools available to ERO clients to support behaviour changes (handouts, web articles and interactive computer-tailored interventions).

- Data about the parameters and outcomes of using the MOP techniques.

ERO is a new face in the health service landscape, using a contact centre environment to fill the need for accessible, free, evidence-based nutrition advice from dietitians through innovation, collaboration and knowledge translation. By providing access to practical, evidence-based nutrition advice and using motivational techniques, ERO is working to build and sustain a healthier future for all Ontarians.

## COMPETING INTERESTS

The authors state that there are no conflicts of interest in preparing the manuscript.

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7 September 2016 | INTERVENTION AREA: RESEARCH, DEVELOPMENT AND INNOVATION IN DIETETICS

ROUND TABLE: RESEARCH, DEVELOPMENT AND INNOVATION IN DIETETICS. BIOTECHNOLOGY IN FOOD DEVELOPMENT AND COMMERCIALISATION

Lecture Sequence: 3



#### New sources of protein for human consumption: Edible Insects

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The growth forecast estimated that the world population in 2050 will be 9.000 million people; FAO considers that in order to supply the food needs of this population will require doubling current food production (1). Considering the arable land area, the search for alternatives in food production should be a priority for all those involved in this sector, therefore, it should be necessary reassessed both, current food sources and production and other alternative food sources (2).

In this scenario, the search for alternative sources of protein for both human consumption and for animal nutrition plays a crucial role (3).

Organizations such as the FAO and WHO raised the inclusion of insects in food and feed, because, despite that humans have a negative connotation, provide a high nutritional food content with a low environmental costs, also play a key role in nature, however, these benefits are not known to the general public (3).

Contrary to what people may think, insects are not only foods that are used in situations of famine or shortages of traditional foods, but in certain regions of the world, consumption of insects is between 5% and 10% of the protein consumed (3).

Entomophagy (the ἔντομος grígego éntomos, "bug" and φάγειν phagein, "eat") is influenced by cultural and religious practices, some insects are consumed normally in many regions of the world (4), however, in most Western countries society views entomophagy with distance, and associates eating insect with a primitive behavior.

Its use is not only interesting in human food, for animal feed the evidence suggests that based insects feed have a nutritional value comparable to fishmeal or soybeans flours derived (5). The growing demand for these products, along with the increased of aquaculture production, encourages the development of new research in the study of feed with a protein derived from insects, both for aquaculture and livestock (6).

The nutritional characteristics of edible insects are highly variable, not only by the large number of species, but because within the same species nutritional values may vary depending on the metamorphic insect state, particularly in species that undergo complete metamorphosis, known as holometabolous in insects such as ants, beetles and bees, but also by other factors such as habitat in which they develop and diet (7).

But there are other circumstances that can vary the nutritional composition of the insects, as in most foods, for example, using different cooking techniques before consumption can vary the final nutritional composition (8).

Researchers analyzed the nutritional composition of 236 edible insects in dry matter. Although significant changes were found in the data, some insects have important amounts of energy and protein; also appeared very interesting qualitatively results regarding lipid profile (high in monounsaturated and polyunsaturated fatty acids) and essential amino acids. Micronutrients analysis shown significant data for copper, iron,

magnesium, manganese, phosphorus, selenium and zinc, also as regards vitamins, with significant quantities of riboflavin, pantothenic acid, biotin and folic acid.

Any effort to unlock the enormous potential of insects allowing improve safety in the food supply and the development of alternatives to traditional forms of animal feed, must face various challenges that are key to achieve the planned objectives (6).

Further research is needed in understanding the nutritional value of insects in order to promote more efficient consumption of insects within a balanced diet. Furthermore, it should be further knowledge of the environmental impact of the production process and establish an objective comparison with traditional farming practices that can be more harmful to the environment. Moreover, it is a priority to clearly define the socio-economic benefits of collecting insects (9-11), particularly those to improve the food supply in poor countries. Finally, it must establish a clear legal framework at European level (12), essential for further progress in establishing a reliable food chain, both in production and trade of products dedicated to food and feed insects.

## COMPETING INTERESTS

The author states that there are no conflicts of interest in preparing the manuscript.

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7 September 2016 | INTERVENTION AREA: RESEARCH, DEVELOPMENT AND INNOVATION IN DIETETICS

ROUND TABLE: RESEARCH, DEVELOPMENT AND INNOVATION IN DIETETICS.  
BIOTECHNOLOGY IN FOOD DEVELOPMENT AND COMMERCIALISATION

Lecture Sequence: 4



#### The application of nutrigenomics to dietetic practice: case studies of genetic testing in a corporate setting

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DNA-based personalized nutrition recommendations are becoming widely available worldwide. The use of genetic testing in private practice is not common, but there is a great potential for this technology to become an essential part of the dietetic toolkit.

Recent findings from a randomized controlled trial showed that people who receive DNA-based personalized dietary advice have a greater understanding of their recommendations, greater motivation to change dietary behaviour, and make specific changes to their dietary intake that persist up to one year post consultation (1,2). There are several genetic variations that exist, that can influence the way they metabolize nutrients and ultimately their health outcome. However, there are relatively few dietitians who are actively utilizing this technology in their current practice.

The aim of this talk is to showcase to dietitians how genetic testing technology can be used in private practice.

Genetic testing for personalized nutrition recommendations was conducted in over 200 clients as part of a corporate wellness program. The genetic test utilized identifies variations in several genes that affect how people metabolize key nutrients such as vitamin C, and folate; and includes a comprehensive genetic test for gluten intolerance, which helps dietitians identify patients who need further testing for Celiac Disease (3,4).

This presentation will give a brief overview of the genetic variations in specific genes utilized to make the personalized recommendations; and will present a few case studies as examples of how dietitians can use this technology in the services that they currently provide. Case studies will include the DNA-based consult process, dietary intake discussion, explanation of the personalized results and the positive experiences and barriers to giving a DNA based consultation.

#### COMPETING INTERESTS

Flavia is the director of operations of Nutrigenomix Australia, a genetic testing company.

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7 September 2016 | INTERVENTION AREA: THE POWER OF DIETITIANS  
NUTRITIONISTS TO MAKE A DIFFERENCE IN SOCIETY

ROUND TABLE: REGULATION OF THE DIETITIAN-NUTRITIONIST'S PROFESSION.  
COMMUNICATE ABOUT THE PROFESSION

Lecture Sequence: 1



### Have the Confidence to be the Voice for Many

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As dietitians, our role has evolved from being scientifically-based in the area of vitamin discovery to feeding the military during war time. In Canada, we have now become the most publically trusted profession for nutritional advice (1). With this awareness comes responsibility. Our profession impacts many areas of health, which positions us to become a voice for the people we provide care for, who are unable to advocate for themselves.

In the Canadian province of Alberta, one aspect of our health system advocacy was launched through the formation of the Long Term Care Action Group (2). Our members live hundreds of miles apart, but we shared a common goal, to be the voice of a population we nourish, who do not have access to the healthcare funding decision-makers.

Once we developed our terms of reference and mission statement, we had our focus (3). Being a new group, we had many ideas, more questions than answers and shared over 100 years of nutritional expertise! Thanks to our strong leadership we were kept on track and focused, as we were determined to have a shared voice.

Our National association, Dietitians of Canada, supported our commitment as demonstrated by the development of an advocacy model (1), which views dietitians as the centre for change, who utilize a variety of components and skills to ultimately affect the health of Canadians. In partnership, they facilitated a national communication strategy to profile our learnings and share our issues.

You don't take the advocacy journey on your own. In this

presentation important elements of our success in advocacy will be profiled. The building of alliances with other organizations, creating a win-win situation and strong governmental relationships are key actions. We learned that obstacles can present learning opportunities and often become a defining moment. Communication finesse and thoughtfulness can lead to future collaboration, as we experienced following the release of our report entitled, "Food Costs in Continuing Care in Alberta". It became evident to all stakeholders, that we shared two common goals; the identification and prevention of malnutrition in long term care and the need for expansion of the dietitian's role in the provincial healthcare system. Next steps involve building on the recent success of the Action Group to further our impact and overall, improve the conditions for individuals living in care.

### COMPETING INTERESTS

The author states that there are no conflicts of interest in preparing the manuscript.

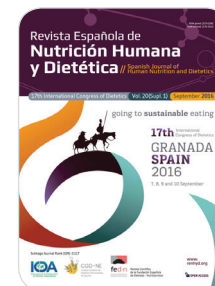
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7 September 2016 | INTERVENTION AREA: THE POWER OF DIETITIANS  
NUTRITIONISTS TO MAKE A DIFFERENCE IN SOCIETY

ROUND TABLE: REGULATION OF THE DIETITIAN-NUTRITIONIST'S PROFESSION.  
COMMUNICATE ABOUT THE PROFESSION.

Lecture Sequence: 2



### World Day of Dietitian-Nutritionist: The profession on the stage

Alma María Palau Ferré<sup>1\*</sup>, Giuseppe Russolillo<sup>2</sup>, Ingortze Zubieta<sup>2</sup>

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**Introduction:** The Dietitians-Nutritionists and their professional skills are not well known among both the general population and the health sector. Therefore, it is essential to put an effort into raising awareness of this health professional through institutional activity.

Holding a global day of dietitian-nutritionist (GDDN) has a twofold objective for the both the population and these health professionals themselves, which is to increase the value of the nutrition professional as well as provide knowledge in Human Nutrition based on scientific evidence.

**Methodology:** We performed a prospective cross-sectional study on the subjective assessment of the DN as well as their "use" of the General Council of DN and the Spanish Foundation DN. Also, we assessed whether the materials and resources provided for the staging of DMDN (24 November 2015) were useful and the results of such participation.

The survey data collection designed by the authors was not previously validated. It was sent to 2467 people and a 3.12% fully replied, that is to say that a total of 77 surveys were filled. Although, there were answers of the 14 autonomous regions of Spain.

The subjective evaluation has been on campaign materials, i.e., scientific content, website, slogan, conference framework, documentary, member handbook, poster, press kit, free consultation, publication of events, participation in social

networks, use of co-official languages, participation certificate and finally, the overall assessment.

However, the objective evaluation has been on the active participation of the DN and the outcomes of the initiative.

**Results:** 90.9% of respondents knew the survey, however, only 45.4% were actively involved.

Most respondents believed that the materials are of great value and of great interest to citizens but latecomers to the registered DN, making it difficult to actively participate. Also they believed that the materials had little diffusion, not achieving the desired social impact.

What was best rated (with an "I really liked") by the respondents (36.3%) was the idea that the DN can participate in RRSS with DMDN messages. Followed by the possibility of organizing events and posting them on the web (29.8%).

The assessment of the campaign and its theoretical content has obtained the highest rating in the response "I liked" (42.8% and 41.5% respectively).

However, the same happened with the Guide members and the "I have not liked much" response (20.7%) and the highest rating for "did not like anything" was for the idea that a 1<sup>st</sup> free visit could be offered for 3 months (9%). Some DN believed that this does not increase the options to reach more patients but underestimates their work.

There has been a significant number of DN who did not know some services, materials or campaign resources. For example, the most unknown material has been the Ambassador Certificate Nutrition (53.2%), followed by the press release (40.2%) and free visit (40.2%).

Regarding the active participation, what has been used the most to spread the DMDN was Facebook (70.1%), followed by the use of banners and headers on twitter and Facebook (54.5%).

By contrast, the least active participation has been to undertake the free visit (only 18.2%), followed by taking a "selfie" to share in RRSS (25.9%) and distribute posters (29.8%). There has also been little involvement in posting events on the web (20.7%) and spreading the DMDN on twitter (41.5%).

**Conclusions:** If all countries dedicate an important part of our work to the dissemination of the work of DN as well as nutrition based on scientific evidence, we will achieve the goal that is to counteract pseudoscience or lack of rigor with correct and accurate information while we get more recognition in the professional field.

## COMPETING INTERESTS

The celebration of World Day Dietitian-Nutritionist has not received financial support from any institution outside the General Council and the Spanish Foundation.

None of the authors has received financial remuneration for their support to the campaign and the final survey.

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7 September 2016 | INTERVENTION AREA: THE POWER OF DIETITIANS  
NUTRITIONISTS TO MAKE A DIFFERENCE IN SOCIETY

**ROUND TABLE: REGULATION OF THE DIETITIAN-NUTRITIONIST'S PROFESSION.  
COMMUNICATE ABOUT THE PROFESSION**

**Lecture Sequence: 3**



### Implementing the European Dietetic Action Plan 2015-2020 (EuDAP): a model for good dietetic practice

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The impact on health through dietary advice and improvement in nutrition has been well documented from cancer patients in dietetic-led clinics (1) to the older person suffering from malnutrition in multidisciplinary teams (2). But Sahyoun, writing in 2011 (3), asks dietitians to become more involved in policy, to reach out across healthcare and community divides and find ways to reduce health care spending. She goes on to say that dietitians should take proactive steps "in incorporating nutrition services as core programs within an integrated health care delivery system". These exhortations are reflected in European policies such as, the White paper "Strategy for Europe on nutrition, overweight and obesity" (4) and the WHO European Food and Nutrition Action Plan 2015-2020 (FNAP) (5), which stress policies and approaches which are integrated, cost-effective and preventative. How can dietitians demonstrate their responsiveness?

The European Federation of the Associations of Dietitians (EFAD) represents 34 Dietetic Associations in 26 European countries (approximately 35,000 dietitians or over half European dietitians). We are taking this opportunity to state the commitment of dietitians to action for health improvement through nutrition at all societal levels. Whether it is in healthcare, food provision/service (restaurants), research, industry, public health or in the homes of individual citizens, dietitians are prepared to make a difference. In 2015, EFAD together with its 30 Associated Higher Education Institutes launched the

European Dietetic Action Plan 2015-2020 (EuDAP) (6).

Dietitians in Europe make significant contributions to local, regional and national action plans regarding nutrition and food in some parts of Europe. The expertise of dietitians is used when drafting or implementing policy but dietitians need to be more widely recognised and used by Ministries of Health and local governments across Europe if their plans, e.g. FNAP 2015-2020, are to be fully successful.

EuDAP sets out the commitment that dietitians and their NDAs are making to enhance and coordinate dietetic activities across Europe, to make explicit the impact dietitians are having on European nutritional health over the next five years.

The five objectives of EuDAP are:

Objective 1 – Ensure that healthy food and nutrition is accessible, affordable and attractive

Objective 2 – Promote the gains of a healthy diet throughout the life course, especially for the most vulnerable groups in the community and in clinical settings

Objective 3 – Promote the role of dietitians as experts in food and nutrition in community and clinical settings to the general population, to other health professions and to authorities

Objective 4 – Invest in establishing the (cost) effectiveness of dietitians in the delivery of better health through improved nutrition

Objective 5 – Strengthen governance, alliances and networks for a Health-in-all-policies approach

National Dietetic Associations (NDAs) will use EuDAP to direct their strategic commitment to national and European health improvement priorities in lifestyle, nutrition and physical activity habits. Dietitians will communicate their intentions to employers, other key stakeholders and EFAD, which has undertaken to produce a report of dietetic activities in Europe.

Therefore NDAs will use EuDAP to:

- Identify priority objectives/actions guided by their own national food, nutrition and health strategic plans
- Make commitments to action based on EuDAP, national and European policies and communicate this to relevant stakeholders
- Monitor and communicate achievement of their commitments to key stakeholders

For example, The Dutch Dietetic Association is meeting EuDAP Objective 4 by monitoring cost-effectiveness of dietitians (7,8). The Austrian Association of Dietitians with health insurance company support is meeting objective 2 by offering healthy vacations combining nutritious food with exercise (9). In Norway, Administrative Dietitians have exposed problems with meals at care homes and brought this to the attention of local politicians through a planned media campaign, meeting objective 1 (10). Additional case studies will be presented to demonstrate how dietitians are meeting the EuDAP objectives and evaluating its effectiveness to promote the dietetic profession in Europe.

## COMPETING INTERESTS

The author states that there are no conflicts of interest in preparing the manuscript.

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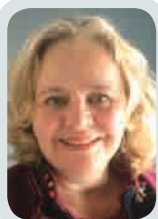


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ROUND TABLE: REGULATION OF THE DIETITIAN-NUTRITIONIST'S PROFESSION.  
COMMUNICATE ABOUT THE PROFESSION

Lecture Sequence: 4



#### Sustainability of a Dietitian Workforce in Northern Ontario, Canada

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Ontario, there had been limited data to support policy planning for the training and employment of Registered Dietitians (RDs) (1). The ability to attract and retain professional healthcare staff in Northern Ontario (NO) had been a persistent challenge. Human resource literature has shown improved recruitment and retention of healthcare professionals if they were educated and trained in the North. "If they train in the North, they will work in the North" (2,3)

Dietitians of Canada conducted an electronic workforce survey (1) to identify practice-settings, demographics, work-life satisfaction, recruitment, and retention issues facing nutrition and dietetic practice in Northern Ontario. Capacity and interest in establishing a NO Dietetic Internship Program (DIP) was also determined. The survey was emailed to 167 RDs in the Northeast and Northwest regions of Ontario. 102 RDs completed the survey (61% response), with 70 and 30% working in urban (pop>10,000) and rural areas (not within commuting distance to an urban area), respectively.

At the time of the survey, there was a shortage of RDs in NO with an estimated 45 positions vacant, the majority of which have remained unfilled for more than 1 year. This problem is expected to worsen with 24% of RDs considering leaving NO within the next 2-5 years and 58% expecting to retire in 10-15 years. Further, 79% of RDs reported that their work is not replaced during absences. Causes of work dissatisfaction

included: limited access to professional development and lack of opportunity for growth and promotion. Literature has shown that engagement in student training or mentorship increases work satisfaction. Capacity to support a DIP does exist, with 82% of respondents indicating they would accept interns and 89% indicating their employer would participate in a DIP.

After the workforce analysis was complete, a pilot project with funding from Health Canada allowed a trial internship program. This was followed by another trial with a partnering of the Manitoba Partnership Program. Then, together with successful collaborations among local and regional partners, this resulted in funding by the Ministry of Health and Long Term Care (MoHLTC) for the Northern Ontario Dietetic Internship Program (NODIP), hosted by the Northern Ontario School of Medicine. NODIP has been in operation since 2007.

Having NODIP has assisted in filling vacancies in the north, and has provided job satisfaction for those working in the north.

Cathy will speak to the workforce analysis and development of NODIP, including her experiences as Chair of the NODIP Advisory Board, and as a Preceptor. Julie will speak to her experiences as an intern in the program and subsequent role as preceptor. Together they will also highlight other recruitment and retention strategies in the field of dietetics.

## COMPETING INTERESTS

The authors state that there are no conflicts of interest in preparing the manuscript.

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# 17th International Congress of Dietetics

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7 September 2016 | INTERVENTION AREA: MULTICULTURALISM OF A GLOBAL SOCIETY

ROUND TABLE: NUTRITION LITERACY AS CATALYST OF THE EATING CHANGES

Lecture Sequence: 1



### Going To Sustainable Eating: A Venue For Nutrition Education

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**Introduction:** Is going to sustainable eating the “KEY” to open our hearts and mind and a venue for nutrition education? Can we finally realize that it is the Dietitian-Nutritionist moral obligation to initiate this if we have not done so already?

It is the scope of this paper to refresh colleagues, participants, and other interested parties on how a simple one-day sample meal plan can be a head start to going to sustainable eating and start our nutrition education. And hopefully initiate the process and met our goals.

Dietitians-Nutritionists need to provide nutrition education to our clients, to collaborate (1), if needed with our colleagues and to believe that we can save the planet earth (2,3).

Going to sustainable eating through nutrition education is one that provides healthy food to meet current needs while maintaining healthy ecosystems with minimal negative impact to the environment without jeopardizing the potential for people in the future to meet their needs.

Are we sending the world a “scare”?

What can we lose? But to share our knowledge and expertise - use “going to sustainable eating” as a venue for nutrition education.

**Brief Description of the Previous Investigation:** Two completed ICD presentation papers were reviewed titled “Role of Dietitians As Nutrition Educators For The Public” and “Usual Weight As An Alternative Nutrition Assessment Standard To

Enhance Long Term Care Facility Residents’ Quality of Life”.

The first paper showed dietitians have “inherent qualities” unique to do nutrition education that will result in behavior change. Moreover, nutrition education cannot be “left to chance”.

The second paper specified that dietitians need to strategize - individualize (4), their approach especially for the elderly population and their families.

Detailed methodologies including the selection criteria and the use of validated measurement tools were specified in each of the studies.

A third unpublished presentation paper titled “Nutritional Health and Wellness: A 21<sup>st</sup> Century Legacy or Paradox”. This was added to the review as a highlight of how nutrition education can have an impact on our health care delivery.

**What have I done - what do I know about the subject?** Although we are aware (and very much anticipate) the factors like the 4P’s (personal, politics, poverty and profession), this does not mean we should and will be intimidated to do anything.

I ask myself million times. Do we have the power to make a difference in society, or better yet, the world?

Dietitians-Nutritionists both going to sustainable eating and nutrition education are classic intervention areas and not hard to put into action. But artists, business professionals,



educators, philanthropists, politicians, scientists, students, religious communities need to see, use and adapt when given nutrition education-information if and when going to sustainable eating. Granted that access to food is a basic human need and a fundamental right, this alone is adequate and appropriate reason, without hesitation to do this follow-up paper.

This is a “challenge” in itself. Because I believe any human relationship-encounter always involves “education” in whatever color, form or shape.

**Discussion and Conclusion:** As I reviewed and looked through the topics of previous ICDs, the reality struck me.

Is this the moment of truth that we have been waiting for to be serious on going to sustainable eating as a venue for nutrition education?

Both reviewed studies showed that our “own concept of nutrition education” (5,6,7,8) can play an important role in the maintenance of optimal health and prevention of disease. And for the institutionalized population the dietitians-nutritionists need to articulate or strategize their approach.

The unpublished - Beijing paper showed a lot of insight on nutritional health, wellness and healthful eating/lifestyle changes - which going to sustainable eating is an example.

Hope against hope - with a body of zealous young and old dietitians-nutritionists worldwide, whatever language they speak, or color of skin, number of Masters and PhD degrees, we have men and women, and every cultural background, we can make this happen. Or it could be already an initiative in certain part of the world.

Going to sustainable eating starting with a simple meal plan out from produce picked from our backyard garden or meat and dairy from a neighbor/nearby protein source is a head start.

In the process, step by step through “show and tell” a basic nutrition education (9) lesson plan is developed. Then we look on our food sources as we continue on our daily living.

Education is in itself a “journey”. We have at our disposal a powerful weapon - an instrument to make a difference in society. Dietitians-Nutritionists need to become leaders in providing nutrition information (10) and must respond aggressively in a way to provide options for the public.

Everyone is on the bandwagon - climate change; disease/hunger eradication, food/nutrition security/sustainability. Notwithstanding, malnutrition, poverty and terrorism.

Do we take the challenge? If not us who?

## COMPETING INTERESTS

The author states that there are no conflicts of interest in preparing the manuscript.

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# 17th International Congress of Dietetics

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## CONFERENCE PROCEEDINGS

7 September 2016 | INTERVENTION AREA: MULTICULTURALISM OF A GLOBAL SOCIETY

ROUND TABLE: NUTRITION LITERACY AS CATALYST OF THE EATING CHANGES

Lecture Sequence: 2



### Culture and history as determinants of eating choices: Lessons from teaching a program in “why” people eat the way they do across Canada’s multicultural communities

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As experts in the psychology of eating, registered dietitian Wendy Shah and clinical psychologist Dr. Colleen Cannon help people understand “why” they eat the way they do. Their program, Craving Change™, teaches clinicians and clients to understand the powerful influence that environmental, cognitive, and emotional factors have on eating habits (1-5)\*. The program also provides strategies for changing problematic eating behaviours. This approach is consistent with recommendations from several Clinical Practice Guidelines from around the world (6-9). A critical step towards fostering this understanding is by increasing both the client and the clinician’s awareness of the client’s personal influences on their eating behaviours. This could include how culture and history may have had an impact on their thoughts, assumptions, values, and expectations.

Canada is known for its multicultural composition. Ms. Shah and Dr. Cannon have been privileged to work with groups and individuals representing every province and territory across Canada, offering dozens of workshops examining people’s relationship with food and how they use food. Discussing culture and history has been a fascinating and fruitful way to help people begin to understand their relationship with food.

We intend for this presentation to be interactive, taking advantage of the unique opportunity to discuss these concepts with attendees from around the world. A simple tool with five favourite questions to engage in a discussion on culture,

history, and the psychology of eating will be shared with attendees to use in their own practice.

Planned topics for review include a discussion on the remarkable similarities and variations in people’s descriptions of how culture, heritage, and history play a role in food choices and eating behaviours. Special attention will be focused on the experience of working directly with First Nations (Aboriginal) community members to customize the Craving Change™ program to better meet their needs. Direct influences on this culture’s eating pattern include the transition from traditional diets to European foods, geographical influences including the limited availability and high costs of fresh and healthy foods in northern communities, and other factors that are related to tragic childhood events of enforced social, cultural and relationship adjustments as part of the Aboriginal Residential School program.

\*Craving Change™ is the gold standard, cognitive-behavioural program for problematic eating across Canada. There are more than ten large health care organizations and 2500 health care providers licensed to use the program in a variety of settings. Professional training and certification for the program is available online. Craving Change™ is recommended as a professional tool and resource by PEN (Practice-based Evidence in Nutrition), a global resource for nutrition practice.

## COMPETING INTERESTS

The authors state that there are no conflicts of interest in preparing the manuscript.

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7 September 2016 | INTERVENTION AREA: MULTICULTURALISM OF A GLOBAL SOCIETY

ROUND TABLE: NUTRITION LITERACY AS CATALYST OF THE EATING CHANGES

Lecture Sequence: 3



### Exploring Food, Nutrition and Health Literacy and the Role of the Dietitian

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Changing dietary patterns across the globe have given rise to new challenges for dietitians when facilitating client learning to adopt healthy eating habits. The wide-spread uptake of the Western diet pattern continues to grow in developed countries (and even developing countries) and parallels rising rates in food-related chronic diseases such as cancer, heart disease and obesity. This dietary pattern is dominated by ultra-processed, convenient foods (high in fat, salt and sugar) and is low in vegetables and fruits. Many individuals and families in developed countries struggle with balancing work/life issues that often result in a perception of time scarcity. This can create barriers for routine meal planning and preparation, leading to an increase in demand for and further reliance on pre-prepared food items. Furthermore, global trends suggest that the environment is not able to sustain this pattern of food consumption, heavy in meat intake, added fat and sugars and refined grains, as current methods of food production have a negative impact on the environment (1).

While it is widely recognized that understanding nutrition knowledge is important to help people to make informed decisions about the food they eat, the current "nutritionism" approach to nutrition communication needs reconsideration (2). This approach places a focus on reducing nutrients such as sugar, salt and saturated fat rather than focusing on promoting foods within the context of a healthy diet pattern

such as the Mediterranean Diet. The food industry has reinforced the "nutritionism" approach by increasing the availability of "nutrient enriched or altered" processed food products. As a result of the increased supply and reliance on pre-prepared foods, many people lack the skills, attitudes and values to help them make changes needed to foster an overall healthy relationship with food.

Food literacy and nutrition literacy are emerging concepts, that may help to identify the complexities and challenges that both individuals and societies face to make healthy sustainable food choices (3). These definitions highlight the connections between food, society and health in a world where our relationship with food has never been so disconnected. They also define basic food and nutrition competencies and identify the challenges in these areas that arise in a complex food environment. Food and nutrition literacy are distinct forms of health literacy. When individuals are health literate they are better able to use information to manage their health and healthcare needs. Enhanced food literacy or nutrition literacy has the potential to also improve health outcomes (4-6).

However, there are presently many evolving, different and overlapping definitions of food literacy and nutrition literacy causing a lack of shared meaning. A move toward one accepted definition will help to expand dietitians' awareness and understanding of the complexities and interrelationships

of eating in the modern world. A broadened perspective will enable dietitians to appreciate the connections between food and the environment, move away from the predominant “nutritionism” paradigm and focus on helping individuals to become food or nutrition literate. As dietitians are a trusted source of information and are uniquely trained to meet the challenges to improve low food and nutrition literacy, they must be part of a new multi-modal approach to food and eating that fosters healthy food relationships.

During this session the attendees will:

- Learn about the commonalities and differences in food and nutrition literacy definitions (across the globe), their connection with health literacy and relevance to dietetic practice.
- Explore strategies to promote food and nutrition literacy, and their practical application and integration into practice tools, such as the PEN: Practice-based Evidence in Nutrition® database that help to broaden dietitians’ perspectives and better equip them to help improve clients’ knowledge, skills and attitudes about the food they eat in meaningful ways.

## COMPETING INTERESTS

Jane works for Dietitians of Canada on the PEN® service and is responsible for contributing content to the PEN database and Tracy practices in the healthcare field and writes and reviews content in PEN.

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### CONFERENCE PROCEEDINGS

7 September 2016 | INTERVENTION AREA: MULTICULTURALISM OF A GLOBAL SOCIETY

ROUND TABLE: NUTRITION LITERACY AS CATALYST OF THE EATING CHANGES

Lecture Sequence: 4



#### Enhancing Food Literacy in Immigrant and Aboriginal Populations in Ontario, Canada

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This presentation provides an overview of the best practices, challenges, barriers and outcome measures used in community food literacy initiatives. A food skills program survey was conducted to collect data on the community food skills programs offered by public health in Ontario. The survey identified 48 food skill programs targeted to a variety of audiences including adults, school-aged children, pregnant women and mothers with young children. There were few programs targeted to aboriginal people, newcomers and seniors. Learnings from the literature review, survey and additional research have been used to develop best practice guidelines for implementing community food literacy programs in Ontario, including those targeted to two key groups - newcomers to Canada and Aboriginal populations. The desired outcome was to develop a best practice framework to improve the food skills of higher risk populations that could be rolled out across the province and tailored to the specific needs of communities. The target group for this best practice framework was public health nutritionists, community dietitians and other health intermediaries who implement community food literacy programs in their communities.

Research indicates food skills are lacking in Canadians and the loss of food skills, often termed “deskilling”, has become a growing concern for public health (1). Poor nutrition and access to healthy food are important risk factors in the alarming health, economic and social burden of chronic disease in Ontario. Food literacy is an important conduit to healthy

eating. As more citizens acquire food literacy, knowledge of where foods come from and how to access, prepare and store healthy and local foods, then a healthy food system in Ontario evolves and helps promote a healthier population.

A review by Cullerton *et al* (2) suggest that food literacy interventions are effective in improving some of the mediators and mechanisms of food literacy, in particular a change in values, increased pleasure and increased food choice. This can translate into positive outcomes such as increased cooking knowledge, skills and confidence, increased fruit and vegetable intake and reported general dietary change (2). Improvements in increased food security and food supply were identified in very few of the studies as food literacy interventions don’t often measure these outcomes as they are difficult to change and are affected by factors beyond the control of the individual (2).

Food literacy interventions found to be most successful included: a gardening component; a supermarket tour; guidance in managing a food budget; and use of the pantry method of cooking vs. recipes (2). Levy and Auld (2004) found (cited by 2, pg 27), that those who attended cooking classes had better gains in cooking knowledge, attitude and behaviour compared to those who attended cooking demonstrations.

The report “Making Something out of Nothing” looked at food literacy among youth, young pregnant women and young parents in Ontario who are at risk for poor health (1).

Key learnings were as follows: community cooking programs were considered very helpful, especially for people who were more motivated to learn food skills when they were living independently or entering parenthood; culinary programs leading to job opportunities were welcomed by those who had access to them; the internet was not a useful substitute for interpersonal teaching of food preparation skills; and recipes were not a helpful learning method for novices in the kitchen (1).

For aboriginal people in Canada, Mundel and Chapman (2010) reported that their community kitchen program increased participants' empowerment and capacities (3). Benefits included sharing of skills, improving cooking and food growing skills, learning cooking skills for healthy meals in a limited budget, building up a social network and accessing resources (3).

The Canadian Diabetes Association and the B.C. Healthy Living Alliance targets low-income, Aboriginal, Punjabi and new immigrant families in British Columbia communities with cooking programs (4). Participants cook and share meals together and learn about nutrition, safe food handling, meal planning and healthy snacks. The program also builds social support networks within groups. Evaluation results indicate that participants practice what they have learned, modifying their cooking and eating patterns after completing of the program. The participants also claimed to have greater confidence reading nutrition labels and trying new recipes (4).

The Community Food Advisor Program (CFA) has been a long standing promising practice for food literacy programs in Ontario since 1991 (5). This model program is offered in many health units in Ontario and has been adapted to particular needs of their communities in many jurisdictions across Canada and with First Nation Communities in Ontario (6).

Insights from this research and programs such as those mentioned above were used to develop the best practice framework for community food literacy programs.

## COMPETING INTERESTS

The authors state that there are no conflicts of interest in preparing the manuscript.

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7 September 2016 | INTERVENTION AREA: MULTICULTURALISM OF A GLOBAL SOCIETY

ROUND TABLE: FROM GLOBAL TO LOCAL

Lecture Sequence: 1



### Understanding the Meaning of food in the Transition to Sustainable Diets: An Indigenous perspective

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Food insecurity levels within Canadians Aboriginal population are unacceptably high. This fact is especially relevant in terms of sustainable food as being food secure is a necessary component of sustainability. Food security, from an Aboriginal perspective is known to be influenced by two distinct food systems, the conventional food system and the traditional food system. As Aboriginal food security is greatly influenced by cultural understandings of the role of traditional foods, food security and the ability to express and proliferate culture are intimately linked. As more Aboriginal Canadians transition to off-reserve lifestyles, less is known about how the cultural importance of food also transitions. In this presentation, we will present results from a 2015 study led by the presenter which explored the importance of traditional food for Aboriginal Canadians living on and off-reserve, and the facilitators and barriers in accessing traditional food. We will relate the findings back to how dietitians can support nutritional and social health through cultural foods, how that role changes in today's globalized and mobile society, and what the implications are for a sustainable food future.

**Summary of the Issue:** With respect to the meaning of food, a traditional Aboriginal worldview differs from a contemporary Canadian worldview. Aboriginal cultures recognize and respect the spirit of each plant and animal, as well as the land that is used in order to support life leading to hunting

and gathering activities which in support sustainable ways of food procurement; much different from a Western perspective, which arguably is grounded in production and overall detachment from food sources (1,2). Decades of colonization, and an inability to participate in cultural activities, including traditional food gathering, have affected the ability of Aboriginal Canadians to express their culture, including their unique food ways. This has left Aboriginal people less well-off on all standards of quality of life and have left many dealing with the challenges of food insecurity and the ill-health effects that come with poor nourishment (3-5).

Aboriginal people experience food insecurity rates that are much higher compared to the rates experienced by non-Aboriginal Canadians (6). Nationally, the state of Aboriginal affairs in Canada has received limited political attention, but in the international fora it has not gone unnoticed; Canada was recently reprimanded for its improper treatment and current state of ill-health experienced by its growing Aboriginal population which De Schutter identifies as violations of the Human Right to Food (7). Such violations have no place in the movement to sustainable eating and food systems.

In addition to the greater occurrence of food insecurity, food security measures in Canada, developed in non-Aboriginal contexts, fail to take into consideration food practices and Aboriginal perspectives of food security. Current measures



do not capture many factors which can adversely affect the level of food security specific to Aboriginal populations. These include environmental pollution, limited access to land and watersheds for traditional food gathering and hunting, and an inability to acquire the necessary equipment for food gathering (3,6). These differences have led to a call for the inclusion of Aboriginal worldviews in the conceptualization of food security, including cultural food security, to better reflect the experiences of Aboriginal Canadians (6).

Furthermore, as Aboriginal Canadians are increasingly moving from their home communities to urban areas, it is known that a general decrease in health is experienced (5,8). However, comparably more is known about isolated Aboriginal communities than Aboriginals living off-reserve (9). Although there is a decrease in access to traditional food, not much is known about the food transition that takes place after relocating outside of a community, or the facilitators and barriers that exist in accessing traditional foods and participating in activities of traditional food gathering.

**The Research:** This presentation will share results from a 2015 study led by the presenters which began to investigate the importance of traditional food for Aboriginal Canadians living on-reserve and those living off-reserve in Nova Scotia, Canada, and the facilitators and barriers in accessing traditional food, the importance and meaning of maintaining a traditional diet and its links to expression of culture for Aboriginal Canadians, the differences and similarities between the facilitators and barriers to participating in traditional food gathering practices of Aboriginal Canadians living on-reserve and off-reserve will be highlighted.

**Relevance to International Nutrition:** The presentation will discuss the importance of considering food, not just from a nutritional perspective, but from both the linked perspectives of culture and sustainability, and how a better understanding of the importance of the role of culture in informing sustainable food practices can be used by health professionals to make informed decisions in regards to health and nutrition services that respect and promote an individual's cultural worldview.

How this view can be used more broadly to inform policy not only within the health context, but beyond it will also be explored.

## COMPETING INTERESTS

The authors state that there are no conflicts of interest in preparing the manuscript.

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7 September 2016 | INTERVENTION AREA: MULTICULTURALISM OF A GLOBAL SOCIETY

ROUND TABLE: FROM GLOBAL TO LOCAL

Lecture Sequence: 2



### Religious perspectives on sustainable eating

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Millions of people throughout the world claim a religious identity that shapes the way they think about and act in the world, and religious lore/law is an important source of food rules, wisdom and praxis (1).

This presentation sets out to accomplish three things:

- Firstly to briefly establish the plural nature of food as a biological, cultural and spiritual substance
- Secondly to illustrate key religious themes relevant to sustainable eating
- Thirdly to provide practical examples of sustainable food practices rooted in faith communities

In so doing it will invite dietitians and other nutrition practitioners to challenge their own thinking and assumptions about what is 'good food'.

All people need food to live but, for a variety of reasons, not just any food will do. Throughout history human groups have invested food and food practices with social and spiritual significance. More than simply a means to survival, food is a vehicle for expressing meanings and values concerning the place of humans in the world, the association between nature and culture, and the relationship between the human and the divine (2). Over the course of thousands of years the world's religions have had plenty to say about food and eating. Many of these ideas can be looked at through the lens of sustainability:

- They all have something to say about *sustaining the body* by being discriminating in what one eats, being moderate, and maintaining physical health. They provide guidance on what, how much, and when one should or shouldn't eat, (a role assumed, not altogether successfully in the modern world by food guides and nutrition educators). And they insist on a strong connection between dietetic body-discipline and spiritual wellbeing (3,4).
- They all have something to say about *sustaining community*, through ritual acts of eating, by producing a sense of belonging or identity amongst coreligionists, and by acts of charity such as feeding the poor (5).
- They all have something to say about *sustaining the natural world* that produces the food we eat, through stewardship of the land and through compassion toward animals including –in many cases– not eating them (6).
- And they all have something to say about *sustaining relationships*, human and divine, through hospitality, sacrifice, ethical conduct and social justice (7,8).

The presentation will explore each of these themes, using comparative examples from across major faith traditions and drawing on the author's own research on food and justice in the Baha'i Faith (9). It will ask how the attitudes and practices of intentional faith communities might inform contemporary discussions of sustainable eating.

## COMPETING INTERESTS

The author states that there are no conflicts of interest in preparing the manuscript.

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### CONFERENCE PROCEEDINGS

7 September 2016 | INTERVENTION AREA: MULTICULTURALISM OF A GLOBAL SOCIETY

ROUND TABLE: FROM GLOBAL TO LOCAL

Lecture Sequence: 3



### Visionary Progress: Tools for Strategic Action towards Sustainable Food

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This research presentation will share a global vision for sustainable food and indicators which track progress toward sustainable and secure global food systems. The common vision, metrics, and process are the result of interdisciplinary, multiregional expert panel work that aims to guide strategic progress towards sustainable food. This presentation will describe a process and tools that can inform dietitians' work as leaders in sustainable food and the Sustainable Development Goals (SDGs).

**The Issue:** Sustainable diets are those diets with low environmental impacts, which contribute to food and nutrition security and to healthy life for present and future generations. Sustainable diets are protective and respectful of biodiversity and ecosystems, culturally acceptable, accessible, economically fair and affordable; nutritionally adequate, safe, and healthy; while optimizing natural and human resources (1). Sustainable diets and the food systems that support them have common goals to provide foods that maximize human and ecological health. Sustainable diets and food systems are rising in global importance in the geopolitical landscape (2-4). This is a response to profound weaknesses in our food systems that have resulted in inequities in access to nourishing food (2,3), ecological devastation and contributions to climate

change (5). In the transition from the Millennium Development Goals to the SDGs climate scientists agree we don't have time to lose, and the international nutrition community is vying for a more specific focus on indicators to track these weaknesses and the challenges they perpetuate. However, we do not have comprehensive tools that will measure progress towards sustainable food, or help set priorities for greatest-impact.

Some research has been done to understand sustainable diets and food systems (6,7) measure them, and influence consumers and policy to support them (8). Initiatives across the world, from grassroots to global, are springing up to respond to the critical need to put sustainability at the core of our food systems. Our efforts, while admirable, appear somewhat *ad hoc* and we are only beginning to see alignment in our work and a concerted approach to achieving that success (4).

The process of coming to agreement across worldviews, cultures and fields of employment defining and measuring sustainable food systems and diets is riddled with dissenting views. Complex communication barriers and cultural foodways challenge efforts progress (3). However, at this time when food systems are global in scope and where decisions made in one region have unpredictable effects in other remote regions, alignment at a worldwide level is critical.

These complexities reflect the day-to-day realities of the work of dietitians and nutritionists. Around the world, we are working to shepherd eaters to make healthy, sustainable decisions in their food choices, to create communities and institutions that support this behaviour, and to influence policy to embed sustainable food in the path forward.

What is desperately needed is strategic leadership that will allow for diversity in foodways, while guiding us towards a sustainable food future, supported by communication tools that are universally meaningful across this diversity. The international nutrition community is well positioned to act in this leadership capacity, to advocate for strategic action to guide progress towards sustainable food and diets that will make significant contributions towards achieving the Sustainable Development Goals (9).

**The research question:** We sought to answer “*What indicators must be tracked in order to measure progress toward a common vision for a sustainable and secure food system?*”

**The Approach:** We engaged a global panel of experts in the field of sustainable food systems and diets, including dietitians and nutritionists. Using an iterative process of building consensus, we applied an ABCD approach used in the Framework for Strategic Sustainable Development (10) to come up with a *common vision of success for a sustainable food system* (A), and a description of the *current state of affairs* (B). We then developed a *system of indicators* to track and measure progress (C) and prioritize actions (D) from today’s reality towards our vision of success (B to A, so to speak).

**The results:** This work has resulted in the development of a community of practitioners with remarkable depth of knowledge due to their diverse geographic and vocational backgrounds, and a methodology is in itself a tool for strategic action.

The outcomes of this sustainable food research are:

- 1) a globally relevant vision of success; and
- 2) policy tools and processes that can be used by dietitians and nutritionists to:
  - assess and monitor a community’s food systems;
  - identify actions that will be most strategic to close the gap between today’s reality and tomorrow’s vision; and
  - advocate for policy and funding priorities based on the needs assessment.

While focussed on a community-level, the process and tools we are presenting also evaluate regional, national and international contexts. We invite nutrition professionals at this conference to engage with the work of this research community to become strategic leaders in sustainable food.

## COMPETING INTERESTS

The authors state that there are no conflicts of interest in preparing the manuscript.

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7 September 2016 | INTERVENTION AREA: MULTICULTURALISM OF A GLOBAL SOCIETY

ROUND TABLE: FROM GLOBAL TO LOCAL

Lecture Sequence: 4



### Linseed Oil in Europe

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Flax is an ancient crop. Since thousands of years well known in Iran, this crop spread from Egypt to Europe. Flax is used as fibrous plant as well as oil plant. Dependent on the designated use several species have been cultivated.

For the aim to produce oil species with closed seed capsules were selected. These plants keep their capsules closed during maturation and the earning of linseed is higher than in species planted for production of flax fibre (1).

During the middle age some regions in central Europe were well known for weaving clothes made from flax fibres, linseed oil was used as a side-product. Planting and production of flax nearly disappeared in Europe when cotton became available (2).

Now the meaning of linseed oil in nutrition is low.

The worldwide production of linseed oil in 2012 was 543,977t; in the European Union 178,302t were produced. The production in Austria was 2,108t (3).

The predominant part is used for technical purposes.

Linseed for oil production passes through a technological process. For nutrition purposes linseed is treated with extruders by low temperatures (4).

Linseed is distinguished by the high amount of linolenic acid. This fatty acid plays an important role in the prevention of heart diseases. Especially the ratio from linolenic acid to linoleic acid is relevant.

In the present paper traditional recipes out of European growing areas were analysed (5) and assessed. Only in very few and very small geographic areas in Europe linseed oil is used in recipes. All in all 21 recipes from Austria, Germany, Switzerland and France were generated.

All of them are characterized by the excellent ratio from these two fatty acids.

Linolenic acid is instable in face of high temperatures. Anyway about one third of the recipes charge to heat linseed oil.

The recipes also have been compared to reference values in communal feeding (6) and they have been explored for the ability in establishments due to care and catering.

There are barriers and chances that effect the dispersal of linseed oil. Recipe composition and cooperation between local manufacturers and scientists may help delivering innovative and healthy products containing linseed oil.

Concluding chances and barriers were searched that might affect the dispersal of linseed oil. New tools in recipe composition like food pairing could help delivering innovative and healthy products containing linseed on consumer markets.

Besides linseed oil is an example how active recovery of traditional dishes may contribute to consumers health and to sustainability in food production too. As olive oil is well known in the southern part of Europe because of its taste and fatty acid composition, linseed oil could play a more important role in colder climate regions in Europe.

## COMPETING INTERESTS

The author states that there are no conflicts of interest in preparing the manuscript.

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7 September 2016 | INTERVENTION AREA: MULTICULTURALISM OF A GLOBAL SOCIETY

ROUND TABLE: SUSTAINABILITY IN THE CATERING SECTOR

Lecture Sequence: 1



### Sustainability in foodservice. Why greening commercial kitchens and restaurants is the future of foodservice industry

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Restaurants have a cumulative impact on the environment, economy, and society. Most of the foodservice industry worldwide today is not sustainable given their intense resource use in food production, energy consumption, food waste production and its significant greenhouse gas emissions.

As consequence of the debate of climate change, food quality, and 'green' practices, consumers are beginning to demand a higher standard of products, transparency and traceability. Nowadays, society is evolving into being a much more aware subject; it is not only concerned about price, but also about quality, health, environment, and are desirous for eco-friendly restaurants. This has created an additional incentive for food industry to acquire sustainable practices, certification or labelling through auditing and improve their management of resources (1-4).

### COMPETING INTERESTS

The author states that there are no conflicts of interest in preparing the manuscript.

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7 September 2016 | INTERVENTION AREA: MULTICULTURALISM OF A GLOBAL SOCIETY

ROUND TABLE: SUSTAINABILITY IN THE CATERING SECTOR

Lecture Sequence: 2



#### How project and design facilities of various food services to be sustainable and high performance

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Cuisine [la cocina] is our human food strategy, which differentiates from that of all other living beings due to our technological capacity to voluntarily make new foods from materials obtained from our more or less immediate surroundings. The setting and instruments used in producing these foods have changed considerably from the first stone tools and prehistoric homes. We have developed the capacity to control cuts, grinds, beaten blends, temperatures, times and other variables with unimaginable accuracy. Materials are also evolving at an accelerated pace. Furthermore, knowledge of our physiology and nutritional needs, microbiology and other aspects of food safety has also increased exponentially, especially over Gastronomy is a science-art in continual evolution which is influenced in an outstanding way by any oscillation within our society.

It is a "science" because it is based on the manipulation and use of the available food supply, vital to individuals' food and nutrition needs. Food and nutrition are in fact the realms in which we can best appreciate the close relationship that exists between biological, psychological, social and cultural factors throughout the life of human beings.

Gastronomy is an "art" because the palate, senses and emotions make it possible to appreciate culinary excellence, which allows chefs to develop their creativity. Today's society is particularly concerned with health and the environment. Restaurants and other food services are part and parcel of this

movement. We not only expect them to provide the delights of gourmet cuisine, but also, at the same time, the act of eating itself must be an opportunity to take care of our bodies. This is all part of a lifestyle that includes healthy eating, daily physical activity and in which there is a stable relationship between our physical and Dietitians and nutritionists offer guidance about foods and can help culinary professionals select environmentally sustainable products by promoting local food sources. By sourcing local products, food managers can help create stable markets for local producers, can offer these foods to customers and can also help educate community members about the attributes of the foods available to them. Selecting local products is a means to protect the agricultural landscape, to indirectly conserve water and energy and to avoid increased food costs resulting from increased energy costs. By choosing foods that are more respectful with the environment, health and the local economy, food service professionals should also begin the process of re-professionalizing all participants involved and of learning to work together once again. This is a major challenge for the entire sector. Architects specialized in food service should form part of the team. They should bring the different facets of the project together, including civil works as well as aspects related to the installations and equipment. Their role is essential in transforming all of the input from the definition phase of the food service project into a physical reality. They must translate the language of the restaurant world into the language of the contract documents that make

up an overall project, such as reports, plans, measurements, specifications, etc. As a result, the predefined management, production and distribution systems will be implemented from the beginning, as will the quality control programs and the food safety and air quality studies. This makes it possible to obtain a reasonable master plan adapted to the predetermined needs of the project.

Designing a food service project is a logical process with specific characteristics that need to be analyzed and summarized.

## COMPETING INTERESTS

The authors state that there are no conflicts of interest in preparing the manuscript.

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7 September 2016 | INTERVENTION AREA: MULTICULTURALISM OF A GLOBAL SOCIETY

ROUND TABLE: SUSTAINABILITY IN THE CATERING SECTOR

Lecture Sequence: 3



#### Organic and proximity products in restaurants

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The restaurant's philosophy is inspired by the Slow Food Movement, created by Carlo Petrini and following the principles of "Good, Clean and Fair".

We use Good, fresh and local produce and focus a lot on recovering vanishing varieties. Good also means good for the planet, for people and our health. Clean means that the products are grown ecologically, without pesticides and of course non-GMO. Fair means that the price is fair to both the producer and the consumer, reinforcing local economic structures.

Our work goes beyond profit, nutrition and pleasure at the table. Our work is political, we take action against multinational companies that control and manipulate our food.

Carlo Petrini says "I'm a gastronomer, and if that makes you smile, be aware that it is not simple to be one. Gastronomy is complex, considered somewhat a lesser science of knowledge but it in fact is real science." We are fighting to maintain the wellbeing of our ecosystems and ourselves, therefore we must fight to protect our producers and their products.

The future business of food depends on the conscience of business owners and consumers. At Slow Food, we help create a network of conscious consumers and producers. We spread the message through our dishes, our drinks and the direct communication with all three sectors: producers, vendors and buyers.

The movement is global and goes beyond people directly involved in the value chain of food production – we are doctors, teachers, architects and all kinds of people that want to change the world. Here in Catalunya (Spain), we created a movement called Km0, a professional network that works with and for producers and consumers. To be part of Km0, you need to follow strict rules concerning product, sustainability and community.

As responsible chefs we are on a mission to educate our clients and our workforce and explain them what we are serving, why we are serving it and where it comes from. Our task is to spread the work beyond our restaurant, thus we attend food fairs, conferences and other activities to explain the movement and help it thrive.

As Carlo Petrini and Michel Pollan say in their book "The Omnivore's Dilemma", cooking is a revolution and consequently political. We have the obligation to work for a better future, a better society from the bottom up. We need to become political, advise governments about how to plant, sell and cook food. We need to return to our cultural origins and roots without leaving technological advances and cultural relationships behind.

A better food system is possible. But the change has to come from the base. Consumers need to claim their right to eat fresh, local and sustainably produced food. Cultural education about gastronomy and healthy eating habits has to be a top priority on the agenda of our administration to prevent diet

related diseases like the obesity epidemic among children and adults. We need to foster traditional occupation and agriculture to maintain control of our food. James Lovelock reflects in his book "the Great Extinction", written more than 40 years ago, on the delicate character of the Earth's ecosystem when the astronauts of Apolo 8 were orbiting the planet and capturing the Earth from space in photography. They photographed the contrast between the biosphere of the Earth and the arid lunar landscape where they had left their footprints. As Enric Aulí

says in his letter to a young ecologist, the new ecologism is born out of a change in values and consciousness originated from climate change and its effects, and our food system, as we know if today, will be redefined as well.

### COMPETING INTERESTS

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7 September 2016 | INTERVENTION AREA: MULTICULTURALISM OF A GLOBAL SOCIETY

ROUND TABLE: SUSTAINABILITY IN THE CATERING SECTOR

Lecture Sequence: 4



### The dietitian project manager: save food and sustainable food What's to be done?

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The sustainable food production and agriculture are integrated into the concepts of food and nutritional security. These concepts include the right to safe food, water conservation, natural resources, responsible consumption based on a healthy diet and a minimum carbon footprint (1). The food's footprint refers to a loss and food waste without cause. In the world, this activity sheds discouraging levels, especially given the statistics in poverty, malnutrition and hunger. Practically these are contradictory situations, which it could improve if the government, public and private institutions, industry and the community in general work together in order to reduce it.

The sustainable food and food's footprint have become an ongoing priority for some of the government agendas and those organizations interested in the fight against hunger as well as to increase the income of the poorest countries in the world. Today, food's footprint represents a high risk to the economic development, the environment, as well as food and nutrition security of vulnerable populations. These causes are diverse and according to the local conditions in each country. Usually these causes are influenced by domestic economic capacity, the developing of an appropriate production chain, and the coordination between food systems. Also, it includes the consumer infrastructure (the producer or the manufacturer), the distribution and marketing channels used for making available products on the market (2). It's important to know the pattern of purchases and use of food that the consumer and their families have. At this time, the

global picture shows that the food waste generated in Latin America is 6% of the global waste, which is approximately 78 million of tones. Probably, the implementation of this initiative demonstrated the progress toward to meeting the goal set in the Millennium Development Goals (MDGs) to reduce the hunger in a half. Nevertheless, the single application of technological innovations in food production is not enough to find a definitive solution to the problem of hunger in the world. But must also be accompanied by behaviors that allow a better use of what is produced. In 2011, the Swedish Institute for Food and Biotechnology - SIK, made the first relevant studies on this subject. Then, a sensitization about the impact on poverty and world hunger started, on the same way of the climate change and the use of natural resources.

The results presented showed that if the current trend continues, the global food production must increase by 70% in 2050. In the industrialized countries with high and middle incomes, the waste occur significantly on the last stage of the food production chain, therefore, at consumption time the food is wasted, when is totally unfit for consumption. In low income countries, the greatest loss of food occurs during early and intermediate stages of the food supply chain, and in the consumption much less is wasted. In developing countries it is common that consumers buy small amounts of food, often just enough for meals. In contrast the population in developed countries where they can afford to waste food, because the amount of food available per person in shops and restaurants

has increased in recent decades, both the United States and also the European Union (3). Little is known about this topic, and the current national and international researches are independent and unrelated to each other, therefore, it does not permit a management on approach of losses in each of the phases of the food production chain so far. Is imperative to develop a regulatory framework that promotes the consolidation of laws regulating food loss, in order to join global efforts on the same current way that is operated (4). Then, the dietitian should be linked to the consolidation of institutional networks on behalf of "Save Food" public policy, projects food and nutrition education in community settings, on the optimization of food resources within institutional food production and commercial processes, on training local leaders in schools, and on empowering consumer contexts and sale of public and private food (5). In Latin-American, the first step is to integrate this initiative in the plans of Food and Nutrition Security.

### COMPETING INTERESTS

The author states that there are no conflicts of interest in preparing the manuscript.

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7 September 2016 | INTERVENTION AREA: EQUITY AND PROFESSIONAL ETHICS  
WITHIN THE DIETETIC PROFESSIONAL

ROUND TABLE: FOOD PRODUCTION AND GLOBAL HEALTH

Lecture Sequence: 1



### Food industry conflicts of interest: Strategies of the Spanish food and drink industries to undermine public health

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Ultra-processed food and drink industries are one of the major drivers of the world epidemic of obesity and non-communicable diseases (NCDs), through the production, intensive marketing, and wide availability of energy dense nutritionally poor (EDNP) food and drinks (1). While fresh and perishable whole or minimally processed foods are healthier, most of the food and drink industries profits come from increasing consumption of EDNP products, making their interest irreconcilable with public health objectives (2). It is not surprising, then, that those industries deploy strategies to undermine public health policies and interventions aimed to reduce the consumption of EDNP products. I am going to outline the main strategies used, as described in the literature, and show how they are undermining the public health efforts to tackle the epidemic of obesity and NCDs in Spain.

The first strategy consist is to bias research findings. Although there is ample evidence of the association between sugar-sweetened beverages and obesity, the studies declaring conflicts of interest with the food industry are up to five times more likely to present a conclusion of no association (3). A complementary strategy is to divert the attention from the health effect of their products, emphasizing physical activity over diet and stating that there are no good or bad foods (4). A recent example in Spain is the consensus document about obesity and sedentarism in the 21st century, endorsed by national experts on nutrition, the executive director of the Spanish Food Security and Nutrition Agency, and representatives

of Coca-Cola Iberia, being the outcome of a workshop funded by that company in a luxurious environment (5).

The second strategy consist of influencing civil society thinking by questioning the legitimacy of government intervention, developing customers as soon as possible, and promoting a positive image of their companies. Noteworthy is the food and drink industries appeal to individual freedom and responsibility, claiming that legal restrictions regarding what one eats or sees on television are a sort of unjustifiable paternalism typical of the nanny state (6). Such kind of arguments have been used in Spain to avoid statutory regulations regarding food marketing of EDNP products directed to children and the presence of vending machines in schools, both aimed to develop customers since early childhood, a crucial period of personality development and acquisition of habits (7).

The third strategy is to co-opt public health professionals, trough financial support in many ways (funding professional organizations and foundations, sponsorship university full professorship positions, and so on), and to lobby public health officials and politicians to oppose statutory regulations (8). This undue influence is especially noteworthy in Spain, where the health authorities who implemented the Spanish strategy of Nutrition, Physical Activity and Obesity Prevention (NAOS) endorsed in 2005 some of the arguments commonly put forward by these private corporations ("it is not about good or bad food") to justify and promote voluntary agreements with the food industry and self-regulation of food advertising targeted

at children and vending machines in schools (7). Some years later, the opinions of stakeholders regarding the impact of food marketing and its regulation policies on childhood obesity in Spain were analyzed (9). Whereas consumer, public health, and child and family advocates believed that there is a clear association between food marketing and childhood obesity, and that regulations are ineffective; advertising advocates, food manufactures and government representatives believed just the opposite. In spite of the scientific evidence supporting public health advocates views (10), it is noteworthy the government's alignment with advertising advocates and food manufactures. This is a clear indication that the food industry is still in the driver's seat of the country's food policy. Not surprising, bearing in mind that, at the time, the executive director of the Spanish Food Security and Nutrition Agency was the former Coca-Cola Iberia manager of scientific and normative affairs (11). As a consequence, the new Spanish code of co-regulation of food marketing to children, in breach of the WHO recommendations (12), ignores the frequency of exposure to or the nutritional quality of the products advertised, so that it is powerless to reduce children's exposure to EDNPs food and beverages. Furthermore, on restricting its application in audiovisual and printed media to children under the age of 12, it contravenes the provisions of the Food Safety & Nutrition Act which lays down that advertising directed to children up to 15 years of age should be regulated, by permitting, for example, that television food advertising targeted at children over the age of 12 may make use of well-known public celebrities who enjoy a high degree of popularity among the child audience (11).

In the opening address at the 8<sup>th</sup> Global Conference on Health Promotion, Margaret Chan, Director-General of the World Health Organization, reminded us that "efforts to prevent NCDs go against the business interests of powerful economic operators, including Big Food and Big Soda" (13). In view of WHO, as stated by Dr Chan, "the formulation of health policies must be protected from distortion by commercial or vested interests". If the states followed this advice from now on, it will be a giant step in the prevention and management of obesity and NCDs.

## COMPETING INTERESTS

The author states that there are no conflicts of interest in preparing the manuscript.

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7 September 2016 | INTERVENTION AREA: EQUITY AND PROFESSIONAL ETHICS  
WITHIN THE DIETETIC PROFESSIONAL

ROUND TABLE: FOOD PRODUCTION AND GLOBAL HEALTH

Lecture Sequence: 2



### What should be the food industry doing on nutrition problems

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Concerned about rising rates of obesity, diabetes and other diet-related diseases, public health advocates are therefore demanding change (1). Because the problem is multidimensional, the solution has required an interdisciplinary approach involving the cooperation of the food and beverage industry with all stakeholders, such as the government, academia, and health care providers (2). The consumer is an important player in the solution to the diet-related diseases, namely obesity, diabetes, cardiovascular disorders, hypertension, because the consumer should make healthy lifestyle choices at the individual level (3).

Healthy eating and good nutrition have many aspects, and food choices and eating are much more than health. It is culture, price, taste, ecology, agriculture, and broader lifestyle. Although consumers indicate that healthy eating and good nutrition are increasingly important to them, they are more concerned with taste, quality, convenience and price (4). In the same time consumers are totally confused with the conflicting messages regarding nutrition information given by the food and beverage industry as well as non-nutrition experts. Consumers need clarity and reliable nutrition information to make responsible dietary decisions. The food and beverage industry therefore must be/is responding to provide the consumer with healthy food options and reliable nutrition information (5).

The food and beverage companies also promise to limit advertising to children and improve the nutritional quality of their products (6). Food and beverage industry should be sensitive to consumer expectations about their food and beverage choices. Most importantly, the industry should be committed to giving clear, consistent, and honest product claims as well as working with retailers and restaurants to offer consumers relevant nutrition information about the products they purchase. In addition, industry is also responsible to promote nutrition education at all levels, from public schools to university classes, and, enhance nutrition awareness at consumer levels. Industry should be creating new products that meet individual nutritional needs, reformulate existing products to be healthier, and also controlled portion sizes. In doing so, it should be noted that the importance of a close harmony between the food and beverage industry and other important stakeholders within the diet-related disorders, such as mainly government but also with academia and health providers. The government can also help educate consumers, school children to make healthier choices through food labeling, physical activity endorsement, and support of community-based programs. This can be achieved by providing incentives to industry and also stimulating media participation in the prevention of non-communicable diet-related diseases. In the same time there is a need to develop and support new food technology.

## COMPETING INTERESTS

The authors state that there are no conflicts of interest in preparing the manuscript.

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7 September 2016 | INTERVENTION AREA: EQUITY AND PROFESSIONAL ETHICS  
WITHIN THE DIETETIC PROFESSIONAL

ROUND TABLE: FOOD PRODUCTION AND GLOBAL HEALTH

Lecture Sequence: 3



### Strategies of FEDN regarding Conflicts of interest

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The Spanish Foundation of Dietitians and Nutritionists (FEDN) currently has agreements established with the food and agriculture, and pharmaceutical industries. It also maintains collaboration agreements with other non-profit organizations and associations.

The type of actions that the collaboration agreements cover tend to be:

- Sending of documentation and/or product to dietitians and nutritionists
- Materials review
- Content creation
- Creating reports on positioning, bibliographical review, etc.
- Granting the use of the FEDN logo on materials
- Conferences and professional seminars
- Actions aimed at the general public
- Exchange of logos on the website

The process by which a collaboration agreement is negotiated and signed is the same whether the applicant organization is public or private. The only difference lies in that agreements with private organizations generally have financial remuneration as compensation.

Before signing the agreement, the Department of Experts in the Scientific Knowledge Area of the FEDN issues a report

in which it evaluates the signing of the agreement for the professionals and the FEDN. In this way, under its internal protocol on collaborations with industry, the following are evaluated: the category of products to be worked with during the collaboration, communications regarding such products, the ethics of the company and also the type of actions that the agreement will cover, among other factors.

This report is sent to the members of the FEDN's Technical Consultation Committee (made up of 44 members chosen by the Board) and the agreement is submitted to a vote with no knowledge of the financial remuneration. The agreement is approved if the majority votes in favour of the relationship between the organization and the FEDN with the actions presented. When the voting result is notified (approved or rejected), the amount is declared.

While the agreement is in operation, the FEDN's Scientific Knowledge Area monitors and oversees all content, communications and materials linked to the collaboration, and ensures that the agreement complies with the scientific and technical quality standards that we self-impose. In this way, for example, we ensure that all notifications made to dietitians and nutritionists with product presentations comply with the following minimum guidelines:

- The information must comply with current regulations, especially EU Regulations 1169/2011 and 1924/2006 (1,2)

- Nutrition and health claims must be approved by the EFSA (3)
- List of ingredients and nutritional information
- Useful information for professionals on applying the product to their practice
- Coherent information with a bibliography, reviewed, containing citations
- Coherence between the nutritional profile and product declarations
- Consumer context
- Target market
- Contextualize the product with times for consumption or specific physiopathological situations

Furthermore, we encourage all communications also to include the following points:

- Statistics on health and consumption by the Spanish population or the groups at which the product is aimed
- Bibliographical references on key institutions such as the WHO, EFSA, FDA, FAO, IOM, etc.
- Promoting exclusive breast feeding up to six months and complementary up to two years of age, on products aimed at children under two
- Access to articles related to the targeted product, nutrient or substance
- Avoid messages or images that are purely advertising or in an exaggerated commercial style
- Offer information on the people who should not take the product, as well as recommendations for maximum daily intake (if this exists)

Regarding the use of the FEDN logo on materials, product packs, audiovisual materials, etc., we do not authorize the use of our logo until we have verified that our suggestions have been applied correctly.

If we collaborate in a television advert, we also commission an experts report from the *Asociación de los Usuarios de la*

*Comunicación* (Spanish Association of Communications Users).

It should be stressed that to date we have never received a complaint or claim by any consumers' association or similar body.

In recent years we have signed collaboration agreements with organisations, companies and brands such as Fundación Mapfre, 5 al Día, Aquabona, Nestlé, Unilever, Bicentury, DHU Ibérica and Laboratorios Ordesa, among many others.

The main reasons we reject collaboration agreements are due to a lack of coherence between a product's nutritional profile and its declarations, a lack of rigour in communications campaigns and/or the public objective which they aim to achieve.

## COMPETING INTERESTS

Working in Fundación Española de Dietistas-Nutricionistas (FEDN).

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# 17th International Congress of Dietetics

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### CONFERENCE PROCEEDINGS

7 September 2016 | INTERVENTION AREA: EQUITY AND PROFESSIONAL ETHICS  
WITHIN THE DIETETIC PROFESSIONAL

ROUND TABLE: FOOD PRODUCTION AND GLOBAL HEALTH

Lecture Sequence: 4



#### Manual of good practices and relationships of dietitians-nutritionist with the food industry

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As the profession of dietetics and nutrition has consolidated its position in the Spanish labour market, the food industry has become one of the main areas of activity for professionals. However, although there is a clear need for dietitians and nutritionists (DNs) in this sector, this also raises serious questions, because the relationship should be governed by the parameters of professional conduct. In Spain, all DN's without exception must abide by and observe the Professional Code of Conduct for the profession of dietetics and nutrition, which is mandatory for all DN's in the exercise of their profession and entails responsibilities to society, clients/patients and the profession, and respect for colleagues and other professionals (1). However, the Professional Code of Conduct is a general guide for professional practice and as such, is unable to offer detailed guidance on situations that require specific actions. Consequently, the Professional Conduct Commission of the Spanish General Council of Dietitians and Nutritionists (CGDNE) is developing a "Manual of best practices with the industry", which will address the ethics of questions as diverse as different types of funding, scientific support for products, grants and/or research projects, types or sectors of the industry with which to collaborate, relations of a private DN and institutions representing the profession before the industry.

The aim of this paper is to present and publicise this "Manual of best practices with the industry".

For now, given the paucity of legislation or regulation in this respect, the guidelines issued by the European Federation of the Associations of Dietitians (EFAD) (2) should be taken as an example when establishing relationships with the industry. These propose not working with organisations primarily involved in the production or sale of tobacco and/or alcoholic beverages, nor with those characterised mainly by the sale and/or production of foods that are incompatible with leading a healthy life, or with those described in Law 17/2011, of 5 July, on food safety and nutrition (Chapter VIII, Article 44). According to the model proposed by the Academy of Nutrition and Dietetics, the DN's role in food advertising (3) is not to advertise the promoter's products or services, but rather to create nutritional messages aimed at improving health (4).

None of the above will be possible without healthy dialogue between DN's themselves, despite the existence of different points of view, and between DN's and the industry to define goals and establish strategies that benefit and help improve the health of the population.

#### COMPETING INTERESTS

The authors state that there are no conflicts of interest in preparing the manuscript.

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7 September 2016 | INTERVENTION AREA: RESEARCH, DEVELOPMENT AND INNOVATION IN DIETETICS

ROUND TABLE: DIETETICS AND 3.0 TECHNOLOGY. ICTS. SUSTAINABILITY IN THE RELATIONSHIP WITH THE PATIENT. IMPROVEMENT OF TREATMENT AND HEALTHY HABITS

Lecture Sequence: 1



### Mobile apps and websites for nutrition behaviour change: a qualitative investigation of real-world adult user experiences

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Over the past few years, websites and mobile apps have increased in popularity and revolutionized how many routine tasks are conducted. Worldwide in 2015, 3.174 billion individuals will use the Internet (up from 1.024 billion in 2005) and there will be 3.459 billion active mobile broadband subscriptions (up from 268 million in 2007) (1). For dietetic practice, the increasing popularity of websites and mobile apps has the potential to enhance service delivery for individuals who need to make nutrition behaviour change.

Although several research trials testing the effectiveness of nutrition behaviour change interventions delivered using websites and mobile apps have found promising results (2,3), intervention non-use is common (e.g., (4)), and consequently, is a significant threat as higher engagement can be associated with better outcomes (5). In addition, most research in this area has focused on quantitative outcomes (e.g., weight loss amounts) rather than qualitatively understanding user experiences with these interventions which could provide key practical data on what works, what does not work, and why (including insight into non-use). Importantly, qualitative data on user experiences with nutrition behaviour change websites and mobile apps used freely in real-world settings is very scarce and may differ from research trial qualitative data; this information is crucial to optimize future use.

With the growing popularity and interest in websites and mobile apps for nutrition behaviour change (e.g., publically available dietary tracking mobile apps have reached millions of downloads), it is timely for dietitians to increase their knowledge in this emerging area to improve their ability to provide needed expertise to various groups (e.g., patients, mobile app and website developers). Importantly, we found in a 2012 survey study that Canadian dietitians in their practice often encountered clients asking about or using mobile apps and that continuing education for dietitians on mobile apps was frequently desired (6).

**This lecture will present qualitative research findings from studies that examined real-world adult experiences with websites and mobile apps for nutrition behaviour change.**

eaTracker (<http://www.eaTracker.ca/>) is Dietitians of Canada's popular and free publicly available website that allows individuals to track their nutrition and activity behaviours and compare them to guidelines for healthy people. In 2011, a goal setting and tracking tool ("My Goals") was added to eaTracker and in 2014 an eaTracker mobile app was publically released for iOS and Android. We conducted two separate eaTracker evaluation projects (Project 1: Evaluation of the eaTracker "My Goals" website; Project 2: Evaluation of the eaTracker mobile app) in collaboration with Dietitians of Canada, and their Information Technology team. One-on-one semi-structured

interviews were carried out with adults who had used these tools freely in their real-world environment. We worked closely with Dietitians of Canada to successfully recruit participants (via website pop-up boxes, and email messages), and to ensure that we obtained useful feedback to help improve their tools. Recruitment continued until data saturation was reached; data analysis is currently ongoing. In addition, we are currently conducting a third qualitative study to obtain broader perspectives, also using one-on-one semi-structured interviews, with adults who have freely used various publicly available mobile apps (e.g., MyFitnessPal®) to support diet behaviour change for weight management. Presented results from these studies will include information on real-world user experiences with these tools as well as suggestions to enhance future tools and supports.

Our experiences conducting these studies and findings will provide relevant and timely practical information for dietitians interested in development, evaluation and/or use of mobile apps and websites in their practice. Challenges, limitations and future research directions will also be addressed.

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## COMPETING INTERESTS

The authors state that there are no conflicts of interest in preparing the manuscript.

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7 September 2016 | INTERVENTION AREA: RESEARCH, DEVELOPMENT AND INNOVATION IN DIETETICS

ROUND TABLE: DIETETICS AND 3.0 TECHNOLOGY. ICTS. SUSTAINABILITY IN THE RELATIONSHIP WITH THE PATIENT. IMPROVEMENT OF TREATMENT AND HEALTHY HABITS

Lecture Sequence: 2



#### Promoting self-management and prevention of chronic disease in older adults with technology

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This presentation will provide a review of recent technological advances that support self-management and prevention of chronic disease in older adults, such as electronic dietary assessment tools (1). Prior research indicates that health promotion efforts for older adults are lacking (2). Diet resilience (i.e. the ability to attain a high quality diet despite the presence of risk factors that can impair food intake) is achievable in older adults living in the community (3). Development of nutrition education and self-management platforms are needed for this specific segment of the population and the capacity to promote resilience needs to be determined. Internet resources will be specifically discussed, and the Nutri-eSCREEN site (<http://www.nutritionscreen.ca/escreen/>) will be highlighted and used as an example for discussion of better practices with respect to design. Nutri-eSCREEN is based on SCREENII (4) a valid and reliable nutrition risk tool designed to be self-administered. Based on prior research, it was identified that older adults desired an educational platform such as Nutri-eSCREEN to raise their awareness of eating habits and provide credible advice and education on behaviour change (5). Key was the understanding of how to present the issue of 'risk' (6). Benefits and challenges to the use of this technology in older adults will also be discussed as well as results of evaluation of internet based nutrition education platforms. Potential ways forward for expanding the development and use of these technologies, as well as how they can be integrated into primary care practice will be discussed as well as key principles in their evaluation.

#### COMPETING INTERESTS

The authors state that there are no conflicts of interest in preparing the manuscript.

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7 September 2016 | INTERVENTION AREA: RESEARCH, DEVELOPMENT AND INNOVATION IN DIETETICS

ROUND TABLE: DIETETICS AND 3.0 TECHNOLOGY. ICTS. SUSTAINABILITY IN THE RELATIONSHIP WITH THE PATIENT. IMPROVEMENT OF TREATMENT AND HEALTHY HABITS

Lecture Sequence: 3



### An innovative software to design and evaluate gluten free diet and eating habits of celiac people

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Celiac disease is a permanent intolerance to gluten, a protein found in some cereals (wheat, rye, barley and, probably, oats), with an estimated prevalence of 1-2%. The only treatment for this disease consists on the total elimination of gluten from the diet during the whole life, which leads to a complete remission of symptoms. Apart from the celiac disease, in last years other pathologies that require a gluten free diet (GFD) have appeared, such as, non-celiac gluten sensitivity (1).

Following-up a gluten free diet (GFD) can involve an excessive restriction of cereal consumption as a solution to avoid gluten intake. This fact, could lead to a low carbohydrate intake with an excess of fat and protein (2-5). Indeed, some studies underline an excessive amount of saturated fats in GF products (4,6). Regarding to the micronutrient intake, it has been shown that following-up a GFD could also result in a low intake of fiber and some micronutrients such as iron, folate, niacin, zinc, calcium, B group vitamins and D vitamin (7).

This fact makes necessary a tool to assess the dietary habits of people following a GFD and to correct any deviation from it. Nevertheless, programs for diet-design in the current market are not useful to evaluate GFD because they not include, in any case, nutritional composition of specific GF foods for celiac people. It is important to point out that this kind of products have a different nutritional composition than their equivalent foods containing gluten, as we have previously described (8).

In view of the above, there is a strong requirement of specific

tools useful for GFD diet evaluation and design among professionals, as dietitians, working with celiac people. Thus, we present a new software for the design, monitoring and evaluation of gluten-free diet and eating habits of celiac and/or people with non-celiac gluten sensitivity.

This software has an important added value based on: A) The software includes an extensive and complete database with the nutritional composition (energy, macronutrients, micronutrients and dietary fiber) of specific foods for celiac people. With this software a GFD can be evaluated (such as a 24h recall) or a new GFD can be designed using the specific gluten free foodstuffs and not with generic foods, which, as mentioned above, differ significantly in the nutritional composition; B) Moreover, the software could be useful to detect possible encroachments in the diet (gluten consumption) which can be due to the consumption of potentially contaminated food; C) The software will also give nutritional education to celiac people with warning messages or specific recommendations that will be helpful in order to reach a balanced diet.

The software has been designed for celiac people (or people following a GFD) and health professionals working with them (dietitians mainly). The evaluation of eating habits and the design of a new GFD will improve accuracy and precision. In this line, important outcomes will be reached, the nutritional status of people following a GFD will ameliorate as well as their health and life quality.

## COMPETING INTERESTS

The author states that there are no conflicts of interest in preparing the manuscript.

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7 September 2016 | INTERVENTION AREA: RESEARCH, DEVELOPMENT AND INNOVATION IN DIETETICS

ROUND TABLE: DIETETICS AND 3.0 TECHNOLOGY. ICTS. SUSTAINABILITY IN THE RELATIONSHIP WITH THE PATIENT. IMPROVEMENT OF TREATMENT AND HEALTHY HABITS

Lecture Sequence: 4



### Benefits and risks of new digital technologies for weight management in dietary counselling

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The current health statistics (2013) show that in Switzerland, as in other European countries, the prevalence of overweight and obesity (men 51%, women 32%) has increased. Overweight and obesity lead to adverse metabolic effects on blood pressure, cholesterol, triglycerides and insulin resistance and increase the risk of obesity-associated diseases such as type 2 diabetes mellitus, coronary heart disease, and ischaemic stroke (1). These represent a major burden for the people concerned, society as a whole and the healthcare system in Switzerland. Therefore effective and innovative interventions are urgently needed and should initially be aimed at a long-term lifestyle modification. Dietitians have an important role to play by supporting clients to make the necessary dietary changes. Over a longer period personal contact (face-to-face counselling) is not always possible or even unwelcome. The objective of this presentation is to compare the benefits and risks of Health for weight management in dietary counselling.

New digital technologies provide innovative counselling possibilities and more flexibility for overweight/obese clients who are unable and/or unwilling to engage in face-to-face counselling and dietitians. Studies show that both face-to-face and remote counselling are effective methods to lose and maintain weight (2,3). Smartphone applications and text messaging offer effective intervention strategies in this context. For example text messaging is a cheap, portable, convenient and

innovative medium facilitating goal setting, self-monitoring and information exchange (4) and allows personalization, which are important components of behaviour change. For obese or overweight adults personalization such as individual counselling, individualized feedback, as well as social support and system self-monitoring appear to be important when using mobile phones for weight loss for behaviour change (5). Small successes can be visualized with these tools facilitating patient self-efficacy which in turn may support further changes in behaviour and lead to long-term successful weight management (6). Meta-analysis of randomized controlled trials provides positive results in this context, suggesting that mobile phone intervention may be a useful tool for promoting weight loss among overweight and obese adults, although the overall pooled estimates of effect were associated with a large degree of heterogeneity including study duration, sample size (7,8).

Although these tools provide new potential for dietitians, their use is currently limited in Switzerland. One explanation for this, is that they see risks for their clients (e.g. impersonality, loss of conversation) and themselves (e.g. competencies will be lost, lack of knowledge, overwork). However they also recognize the benefits for their clients (e.g. self-control, suitability for daily use) and themselves (e.g. feasibility, cost savings, time-saving) (9).

Digital technologies can support dietitians and their clients during the behavioural therapy process to achieve long-term lifestyle modification. To ensure that such tools are used by dietitians, high-quality studies investigating their effectiveness as well as training opportunities for dietitians, to assist them in integrating these tools in the counselling process are required.

## COMPETING INTERESTS

The author states that there are no conflicts of interest in preparing the manuscript.

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## CONFERENCE PROCEEDINGS

7 September 2016 | INTERVENTION AREA: THE POWER OF DIETITIANS  
NUTRITIONISTS TO MAKE A DIFFERENCE IN SOCIETY

ROUND TABLE: WHY HISTORY MATTERS FOR DIETETICS EDUCATION, PRACTICE & RESEARCH

Lecture Sequence: 1



### History of Dietetic Practice: Everything Old is New Again!

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Why does dietetic history matter? What do students, clinical practitioners, and dietitian-researchers have to gain from knowledge of the history of dietetics in Canada and internationally? What implications does teaching and learning about our history have for the culture of dietetics as a profession? These are some of the questions that inspire our work and that the panel will address. We contend that, for practitioners and students, knowing about dietetic history informs dietitians' identity development, inspires ongoing evolution of innovations in practice, and is key to dietitians' leadership roles in the societal changes that are necessary to move toward sustainable eating. Each of the four panelists included in this presentation will speak on an aspect of the history of dietetics as it relates to the culture of and the practice, research, and education within dietetics.

**Laurie A. Wadsworth – panel presentation section:** This presentation will discuss origins of current dietetic practice found in the mid-19<sup>th</sup> Century, including. The evolution of many key components of diet orders for recovery, hospital kitchen design, and food service systems occurred during the Crimean and US Civil wars. The presentation will show how current controversies surrounding centralized vs. decentralized food service operations, food procurement challenges, and protein

needs during illness find their roots in the early work during these two conflicts (1-3). It will form the understanding that historical concept development can inform current discourses, improving decision-making through considering an issue holistically and elevating the solution beyond former thought (4).

### COMPETING INTERESTS

The authors state that there are no conflicts of interest in preparing the manuscript.

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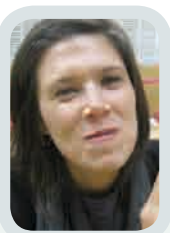


## CONFERENCE PROCEEDINGS

7 September 2016 | INTERVENTION AREA: THE POWER OF DIETITIANS  
NUTRITIONISTS TO MAKE A DIFFERENCE IN SOCIETY

ROUND TABLE: WHY HISTORY MATTERS FOR DIETETICS EDUCATION, PRACTICE & RESEARCH

Lecture Sequence: 2



### A shared past with future implications

Laurie A. Wadsworth<sup>1</sup>, Jennifer Brady<sup>2\*</sup>, Daphne Lordly<sup>3</sup>

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Why does dietetic history matter? What do students, clinical practitioners, and dietitian-researchers have to gain from knowledge of the history of dietetics in Canada and internationally? What implications does teaching and learning about our history have for the culture of dietetics as a profession? These are some of the questions that inspire our work and that the panel will address. We contend that, for practitioners and students, knowing about dietetic history informs dietitians' identity development, inspires ongoing evolution of innovations in practice, and is key to dietitians' leadership roles in the societal changes that are necessary to move toward sustainable eating. Each of the four panelists included in this presentation will speak on an aspect of the history of dietetics as it relates to the culture of and the practice, research, and education within dietetics.

**Jenifer Brady – panel presentation section:** Jenifer Brady present findings from her dissertation research which explores the professionalization of dietetics in Canada throughout the late 19<sup>th</sup> century to present day. Unlike other health professions, the history of the dietetic profession in Canada has not been well documented (1-3). Particularlry, the history shared by home economics and dietetics has been largely overlooked within dietetic research, literature, and curriculum (4). However, this shared history has important implications for the current culture and future direction of dietetics.

Through the oral histories of long-serving Canadian dietitians, this presentation will focus on one facet of the development of dietetic in Canada - the relationship between home economics and dietetics (5,6). Specifically, this presentation will focus on participants' insights about the changing relationship between home economics and dietetics and what these changes have meant for the dietetic profession over the course of its professionalization since the late 19<sup>th</sup> century.

### COMPETING INTERESTS

The authors state that there are no conflicts of interest in preparing the manuscript.

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7 September 2016 | INTERVENTION AREA: THE POWER OF DIETITIANS  
NUTRITIONISTS TO MAKE A DIFFERENCE IN SOCIETY

ROUND TABLE: WHY HISTORY MATTERS FOR DIETETICS EDUCATION, PRACTICE & RESEARCH

Lecture Sequence: 3



### Dietetic knowledge: mapping the (con)texts

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Why does dietetic history matter? What do students, clinical practitioners, and dietitian-researchers have to gain from knowledge of the history of dietetics in Canada and internationally? What implications does teaching and learning about our history have for the culture of dietetics as a profession? These are some of the questions that inspire our work and that the panel will address. We contend that, for practitioners and students, knowing about dietetic history informs dietitians' identity development, inspires on going evolution of innovations in practice, and is key to dietitians' leadership roles in the societal changes that are necessary to move toward sustainable eating. Each of the four panelists will speak on an aspect of the history of dietetics as this relates to the culture of the dietetics profession, practice, research, and education.

**Daphne Lordly – panel presentation section:** This presentation discusses the conditions under which conversations about dietetic knowledge are enacted and identifies various structures that organize what comes to be known and valued as dietetic knowledge (1-3). The contemporary positioning of dietetic knowledge as well the historical influences that have come to bear and shape current knowledge conceptions are considered (4-9). Dietetic knowledge is situated within a broader discussion of knowledge production developing five themes that elucidate how knowledge is constituted (1). From

those themes prominent organizing structures emerge and are discussed. Selected textual excerpts from various dietetic texts are used to show how dietetic knowledge is organized through dominant gender processes including professionalization such that objective, abstract, scientific disembodied knowledge is valued while embodied, subjective, knowledge carries less value (1). Participants are challenged to consider how texts are implicated in the standardization, regulation and communication of official dietetic knowledge.

### COMPETING INTERESTS

The authors state that there are no conflicts of interest in preparing the manuscript.

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## CONFERENCE PROCEEDINGS

7 September 2016 | INTERVENTION AREA: MULTICULTURALISM OF A GLOBAL SOCIETY

ROUND TABLE: FOOD TRANSITION

Lecture Sequence: 1



### Consumer attitudes toward purchasing vegetables grown in a commercial rooftop greenhouse in Montreal and toward promoting local food

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In Canada, 39% of Quebec adults do not consume the minimum five portions of fruit and vegetables recommended by Canada's Food Guide. These figures are worrisome from a nutrition and public health standpoint, as correlation has been shown between eating fruits and vegetables and protection against chronic illness. While research has shown that consumption of fruits has improved, vegetable consumption has remained stable over the years.

Several intrinsic determinants, such as food preferences, nutritional knowledge, health, and a sense of self-efficacy intersect with socio-environmental determinants, such as geographic and economic accessibility, and can shed light on vegetable consumption. In Quebec, several trends have been observed, one of which involves facilitating vegetable consumption. An example of this is the urban agriculture programs that have yielded a large number of collective and community gardens. Another example is the sustainable agriculture programs promoted by Équiterre (1). Data was also recently published on Quebecers' barriers and motivations to buying fruits and vegetables from new supply chains, called short distribution channels, which face various logistical challenges to organizing food distribution and creating customer loyalty (2).

In 2011 in Montreal, Lufa Farms (3) was the world's first commercial rooftop greenhouse. This urban agriculture initiative stands out not only by its use of technology, but by allowing consumers to choose the contents of their vegetable baskets each week, cancel a basket when going out of town, and receive a basket year round. This successful formula in Quebec has inspired a study that will be addressed in this talk. The study looks at the fruit and vegetable purchasing practices of Lufa Farms customers in Montreal, the underlying determinants and barriers to purchasing vegetable baskets, and customer expectations.

An online survey on these factors was sent to all the customers in Lufa Farm's database. A total of 265 replies were received and used to carry out descriptive statistical analysis. The results to be presented at the conference primarily address the personalization of Lufa Farm baskets and the general practice of purchasing vegetables. More specifically, we will discuss the practices of substituting basket items and how this affects vegetable proportions in the customers' baskets. Data will also be presented on customers needing to complete their vegetable shopping somewhere else. The underlying reasons for purchasing a vegetable basket will also be presented, including concern for the environment, importance placed on buying local and organic produce, traceability, organoleptic

qualities of the produce, discovering new produce, and a more direct relationship between consumers and producers. Customers' social motivations were also documented, which included recommendations from their entourage and the desire to look good in front of them. Results on barriers will also be reported, specifically pertaining to the logistics of purchasing (schedule, drop-off locations, needing to finish shopping somewhere else), storing and preparing the vegetables, variety, food waste, and cost. The final results to be presented will address respondents' expectation of knowing Lufa Farm's conservation, cultivation, and production practices, and how to prepare and cook the vegetables.

Today, with Canadians ready and willing to support local economy, distribution methods, such as vegetable baskets, that give them access to local vegetables by minimizing transportation distance must be promoted to encourage consumers to eat more vegetables. Yet again, results suggest that users need tips on tried and true methods for reducing household waste and that they especially need to learn as much as possible about how to conserve and use vegetables at home. Further study would be required to expound upon certain food consumption determinants, such as the influence of social norms on individual choice. Complementary studies on users who have decided to stop purchasing vegetables this

way and on users of short distribution channel alternatives, particularly less expensive ones, are needed to further our understanding of the complexity of users' decision-making process in a context where sustainable development is the focus of discussion.

## COMPETING INTERESTS

The authors state that there are no conflicts of interest in preparing the manuscript. The results to be presented are part of a project approved by the Research Ethics Committee at the Université de Montréal's Faculty of Medicine.

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7 September 2016 | INTERVENTION AREA: MULTICULTURALISM OF A GLOBAL SOCIETY

ROUND TABLE: FOOD TRANSITION

Lecture Sequence: 2



### Reducing meat intake by 50% improves lipid profile in University students

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A reduction in global meat is urgently required due to its association to global warming. The livestock sector is identified as a key contributor to this problem as it accounts for 18% of greenhouse gas emissions and for 80% of total anthropogenic land use (1).

A reduction in meat consumption has been shown to be associated with multiple benefits (1): a reduced demand for grain, leading to lower greenhouse gas emissions, and a positive effect on health (2). Meat can make an important contribution to human nutrition by providing 20-40% protein, as well as minerals such as iron, zinc and selenium and vitamins B<sub>6</sub> and B<sub>12</sub>; however, an excess of animal products, particularly red and processed meat, is associated with several adverse health effects such as obesity, cardiovascular disease and certain cancers (3).

Considering the possible adverse effects of excessive meat consumption on the environment and on human health, monitoring the production and consumption of meat is important to promoting healthy eating policies. The current pilot study was proposed to identify the most appropriate strategies for an intervention study aimed at decreasing meat consumption by 50%. It was hypothesised that with appropriate support, free living subjects can reduce their meat intake by up to 50% without significant effects on health and well-being and without adversely affecting lifestyle or protein and micronutrient intake.

This study hypothesised that with support, subjects could reduce meat intake by 50% which would positively impact on plasma lipid risk factors for cardiovascular disease. Ethical approval was obtained in March 2013 to recruit twenty-five healthy subjects from a student population at the University of Nottingham, UK to undertake an intervention study, reducing their meat intake by 50% for a 4 week period. At baseline, subjects undertook a 7-day diet diary and questionnaire, anthropometric measurements including BMI and total body fat and determination of plasma lipids. The intervention included two information-based motivational events at the beginning. Subjects were provided with alternatives to replace approximately 50% of the energy previously obtained from meat. The vegetarian alternatives included a range of commercially available products, largely produced by Quorn® UK. Data collection was repeated post-intervention. The average age of subjects (10 male/15 female) was 21.2 years (SD 3.3). There was no significant effect of reducing meat intake on BMI or % Body Fat. Plasma lipid data was analysed by 2-way ANOVA with sex and dietary intervention as independent factors. Total plasma and LDL cholesterol were significantly reduced by 10% and triacylglycerol by approximately 23% approximately. No significant effect of intervention was seen on HDL cholesterol.

The results of the intervention demonstrated that a meat-eating population can successfully reduce meat for four weeks, while experiencing the benefits of low-meat diets such as a reduction in total plasma and LDL cholesterol.

As the lipid-lowering effects of the vegetarian diet have been previously identified for decades in small randomized trials (2), a meat-reduction study such as this is essential as it reveals the effects of a diet which includes plant-protein; however does not require a total elimination of meat to experience positive results.

The study showed a significant reduction of saturated fat consumed in the final week of the trial in comparison to baseline, which could be explained by the total fat comparison of Quorn versus Meat products. There was no significant change in the intake of polyunsaturated fatty acids; however, there was a significant decrease in monounsaturated fatty acids. A previous study designed to determine the effects of mycoprotein under free living conditions used experimental biscuits which contained mycoprotein. Two groups of subjects with slightly raised cholesterol concentrations participated in this 8-week study, which found that the intake of polyunsaturated fatty acids doubled in both groups, mainly due to an increase in linoleic acid. There was also an increase in other fats including monounsaturated fatty acids after four weeks and a slight reduction toward the end of the study in the mycoprotein group (3).

In conclusion the pilot study investigation determined that in a group of healthy individuals, reducing meat intake by 50% significantly reduced a range of plasma lipid risk factors for cardiovascular disease without impacting body weight or composition.

### COMPETING INTERESTS

The authors state that there are no conflicts of interest in preparing the manuscript.

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7 September 2016 | INTERVENTION AREA: MULTICULTURALISM OF A GLOBAL SOCIETY

ROUND TABLE: FOOD TRANSITION

Lecture Sequence: 3



### Mediterranean diet in North Europe

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Cardiovascular disease (CVD) is the second leading cause of death in the UK, resulting in 28% of all deaths (1), whereas the average prevalence of type 2 diabetes (T2D) is 6% (2). At the same time, 67.1% of men and 57.2% of women in England are overweight and/or obese (3), making the prevention of these conditions a public health priority. Unhealthy diets are a major CVD risk factor (1). The latest UK National Diet and Nutrition Survey showed that 70% of adults aged 19-64y and 59% of adults aged 65y+ did not meet the recommendation for fruit/vegetable consumption, only 19% met the recommended consumption for oily fish, whereas consumption of saturated fat was higher than recommended (4).

The Mediterranean diet, rich in olive oil, nuts, fruits and vegetables, whole grains and pulses, low-fat dairy, fish, moderate alcohol amounts and low quantities of red meat, has been the factor most frequently cited to explain the good health, low CVD incidence and mortality and high life expectancy observed in Mediterranean countries (5). This has been confirmed by meta-analyses of prospective cohort (6) and randomised controlled trials (7), which show the protective role of this dietary pattern in chronic disease incidence and mortality, as well as in risk factor improvement, albeit in Mediterranean populations. There is a strong need to show the transferability of the Mediterranean diet for chronic disease prevention to other settings, but there is lack of research examining interventions to promote this dietary pattern to non-Mediterranean populations and specifically in the UK, to a population with different characteristics and dietary

habits to those in the Mediterranean basin. Developing such interventions should be guided by appropriate frameworks, in order to identify the health problems and needs of the target population, while the incorporation of theoretical models of behaviour change will increase the likelihood of designing an effective dietary intervention (8).

This presentation will provide an overview of earlier research conducted by the author to promote the Mediterranean diet in healthy adults in Scotland, UK (9) and current formative research to inform the development of dietary interventions to promote the Mediterranean diet in the UK (10), as well as unpublished results. Overall, this research has shown that improvement in the consumption of several Mediterranean diet components is needed to increase adherence to this dietary pattern in UK adults. Lessons learnt with regards to preferred method and content of intervention delivery, as well as issues regarding the validation of dietary tools assessing adherence to the Mediterranean diet in the UK will be discussed. Recommendations will be made on how these findings can inform the development of interventions to promote the Mediterranean diet in the UK.

### COMPETING INTERESTS

The author states that there are no conflicts of interest in preparing the manuscript.

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7 September 2016 | INTERVENTION AREA: MULTICULTURALISM OF A GLOBAL SOCIETY

ROUND TABLE: FOOD TRANSITION

Lecture Sequence: 4



### Societies in transition: challenges for dietetic professionals

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Several countries in Asia are in the midst of a nutrition transition. The nutrition transition is accompanied by demographic and epidemiological transition associated with economic development and urbanization. In these countries, while the problems of hunger and undernourishment persist, there is an escalation of diet-related non-communicable diseases; making them face both problems of malnutrition, under and overnutrition. In addition to protein energy malnutrition, underweight and micronutrient deficiencies affect a high proportion of children and women. Conversely, changes in dietary habits and physical activity patterns have led to emergence of chronic diseases such as obesity, diabetes, hypertension, stroke, hyperlipidaemia, CHD and cancer (1). These types of health problems were in the past characteristic of rich societies.

Passing from a rural to an urban lifestyle is marked by changes in dietary habits and physical activity patterns. Dietary changes appear to be shifting universally toward a diet dominated by higher intakes of animal and partially hydrogenated fats and lower intakes of fiber. Activity patterns at work, at leisure, during travel, and in the home are equally shifting rapidly toward reduced energy expenditure (2). These changes have led to a rapid increase in the prevalence of overweight and obesity related to unhealthy diets and lifestyles even among the poor people in these countries. With these changes induced by the accompanied epidemiological transition there is a shift from nutrient deficiency and infectious diseases characterising poor populations to the problems of chronic diseases namely

obesity, diabetes, hypertension, stroke, hyperlipidaemia, CHD and cancer.

Urban and rural areas from sub-Saharan Africa and South Asia's poorest countries to the higher income ones are shown to have experienced rapid increases in overweight and obesity status. Concurrent rapid shifts in diet and activity are documented. Much of the literature on developmental origins of health and disease (DOHAD) focuses on chronic diseases. However, given the strong association of chronic diseases with obesity and in particular with central obesity, this evidence is highly relevant and provides a strong rationale for obesity prevention in populations that have experienced dramatic changes in the nutritional environment as a consequence of the nutrition transition (3).

The nutritional situation in the countries in transition generates profiles with different stages of declining undernutrition and increasing overnutrition or the coexistence of both under- and overnutrition even in the same household. This "dual burden" of undernutrition and obesity exists not only in countries and communities (4) but in households (5,6) and even in individuals, who may have excess adiposity along with micronutrient deficiencies, such as undergoing the nutrition transition (5,6) and may reflect gender or generation differences in food allocation related to social norms (3).

Diets have changed tremendously across the low- and medium-income world to converge on what is often termed the "Western diet." This is broadly defined by high intake of refined

carbohydrates, added sugars, fats, and animal-source foods. Data available for low- and middle-income countries document this trend in all urban areas and increasingly in rural areas. Diets rich in legumes, other vegetables, and coarse grains are disappearing in all regions and countries. Some major global developments in technology have been behind this shift (3).

A challenge for dietetic programs and policies is the need to address food insecurity and hunger without adding to the burden of overweight and obesity. This is particularly challenging given the relatively low cost and high availability of energy-dense but low-micronutrient-content foods. An array of large-scale programmatic and policy shifts are being explored in a few countries; however despite the major health challenges faced, few countries are serious in addressing prevention of the dietary challenges faced (3).

### COMPETING INTERESTS

The author states that there are no conflicts of interest in preparing the manuscript.

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7 September 2016 | INTERVENTION AREA: WORLDWIDE IMPACT OF DIETETIC PRACTICING. DIETITIAN-NUTRITIONIST IS KEY

ROUND TABLE: WORLDWIDE IMPACT OF DIETETIC PRACTICING. DIETITIAN-NUTRITIONIST IS KEY

Lecture Sequence: 1



### The New Roadmap: Rethinking and Transforming the Role of the Dietitian for the Future of Food

Kate Geagan\*

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What is healthy food? How do we, as individuals, as health professionals, and as global citizens in a hyperconnected world define “healthy food” in 2016?

The field of dietetics is poised to change rapidly in the decade ahead, as a robust body of evidence is clarifying the impact current food production and consumption patterns have on both human health, and on the brand new area of science known as “Planetary health”. Food systems are responsible for an estimated 32% of global emissions (more than from all land, sea, and air transport combined), and agriculture remains the world’s single largest consumer of freshwater (1).

Yet the food system represents important shared ground when it comes to well being for people and the planet. As dietitians, this emerging area of food and nutrition expertise offers us tremendous growth opportunities in our work and our influence. From national dietary guidelines and health care protocols, to foodservice and grocery retail sectors, to research and policy, sustainability is significantly reshaping the priorities and practices of businesses and organizations across the globe (2). Consumers, too, are undergoing profound shifts in their priorities and values when it comes to what to eat, which has resulted in a whole new landscape of marketing messages, 3<sup>rd</sup> party certifications and claims appearing on foods.

Understanding how to thrive in this dynamic, multilayered field will be an invaluable skill for dietitians in the decade

ahead. With our global reach and potential to influence eating patterns and food choices, dietitians-nutritionists have an immense opportunity to make a positive, powerful impact on society by bringing our unique voice and set of expertise to the dialogue.

This session will begin with a brief overview of the growing evidence base that has clarified the extensive food-climate connections between dietary patterns, food systems and resource use. Next, it will identify current resources available for dietitian nutritionists who wish to establish competency in this area (3,4). Third, it will highlight specific examples of innovative solutions already happening at local, regional and global levels to better align agriculture, health and nutrition policies for now and into the future.

Finally, it will offer a vision for a new Roadmap for RDs that ensures we maintain our vitality and relevance in the rapidly changing nutrition and health conversations, allowing us to continue to thrive in the future of food.

### COMPETING INTERESTS

Recent and Current Clients: Almond Board of California; Earth’s Best Organic Baby Food; Clif Bar; CamelBak; Florida Dept. of Citrus; SILK Non-Dairy Beverages

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ROUND TABLE: WORLDWIDE IMPACT OF DIETETIC PRACTICING. DIETITIAN-NUTRITIONIST IS KEY

Lecture Sequence: 2



### Helping our clients in the journey toward more sustainable food choices: the role of the dietitian-nutritionist

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The presentation will focus on 5 key points:

1. *Continuing education:* As dietitians, we need to be ensuring that we are staying up to date with advances in sustainable eating. This may be a new concept for us, and it is important that we, as nutrition professionals stay involved in discussions and policies ongoing in this area. Attending this conference is a great start! But, there are many other resources to investigate to inform our practice, including key documentaries, books, journal articles and reports (1-7). Ensuring that our practice is evidence-based in the area of sustainable eating means that we will stay relevant in this changing food and nutrition paradigm. We also need to acknowledge that the evidence is emerging in this field and there are gaps in the knowledge available. We can use our professional knowledge, skills and experience to help our clients understand and use the evidence as it builds.

2. *Inspiration and advocacy:* We are on our own personal and professional journey of learning and action in terms of sustainable eating. Although this journey is informed by guidance from our professional associations, it is also an individual journey. We need to discover what sustainable eating means to us and what it means in our communities. How can we integrate sustainable eating into practice. Are there local farmer's markets to support? Does your community have a meatless Monday campaign? We can use techniques to introduce sustainable eating for clients who may be new to

it, including multimedia, social media, writing for print, and sharing personal experience. Understanding that we are all on a journey of growth and that we are striving for progress, not perfection is key.

3. *Making sustainable eating accessible and appropriate:* Providing practical advice, tools and recipes that are healthy, budget-sensitive and culturally acceptable for our clients. Making sure that the choices we advise are healthy for our clients as well as for the environment. Sustainable eating can be very confusing and somewhat overwhelming.

4. *Setting achievable objectives:* Reconciling our passion with our client's reality. Small changes that add up; for example eating more local and in season produce. Using our professional judgement to help to simplify and guide our clients, and show how easily positive changes can grow, and start to make an impact is a crucial role that dietitian-nutritionists can play in helping our clients translate evidence to action. Remember that small changes add up, and that many moderate changes can be more effective than a few radical changes. For some of us, if we feel passionately about sustainable eating, this may be challenging! It is important to respect each other's interpretations of sustainable eating, and to engage in productive, open and evidence-based discussion. There are many interpretations of sustainable eating, and we are all at different stages of our journeys.

5. *Sustainable eating for the future*: Along with integrating sustainable eating into our practice now, we can also look at how to better build-in the sustainable eating paradigm for the future. Consider giving back by sharing your experience; speaking at schools, lecturing at universities, training dietetic interns etc. Sharing your personal and professional journey of understanding and applying sustainable eating in your life and in your practice is important. You may inspire someone else who will build on in the future from what you have learned.

## COMPETING INTERESTS

The author states that there are no conflicts of interest in preparing the manuscript.

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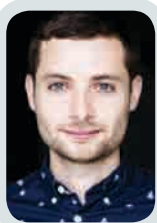


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ROUND TABLE: WORLDWIDE IMPACT OF DIETETIC PRACTICING. DIETITIAN-NUTRITIONIST IS KEY

Lecture Sequence: 3



### Saving the planet one bite at a time: The story of a book making a case for nutrition, food sustainability and communication

**Bernard Lavallée\***

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In 1986, Joan Dye Gussow and Katherine Clancy, both American dietitians wrote an important article, titled *Dietary guidelines for sustainability*, in the *Journal of nutrition education*. Gussow&Clancy coined the term “sustainable diet” and literally laid the foundation for a new field of activity in dietetics (1). However, 12 years later, in another article, Gussow admitted that dietitians-nutritionists integrating sustainability in their teachings were still rare. The situation has not changed much since (2).

In Québec (Canada), sustainable eating is not a part of the university curriculum in dietetics and nutrition, nor is the food production system. Indeed, the way food is produced, transformed and transported is not addressed in a manner that sheds light over the environmental and social consequences of the advices dietitians-nutritionists are trained to deliver. However, as food and health professionals, dietitians-nutritionists bear the responsibility of integrating sustainability in every aspect of their work.

At the end of 2013, I graduated from *Université de Montréal* with a Master’s in nutrition as well as with the strong conviction that I needed to fill this vacant space and promote sustainable eating, both to the public and my colleagues.

As any 20-something year-old would do, I started a blog, called *Le nutritionniste urbain* (The Urban Dietitian), so I could write the way and say the things I wanted to without

any external influence. With topics like food waste, urban gardening, overfishing and seasonal eating, and with the use of infographics, the blog quickly became popular and gathered via social media a fan base of thousands of 18-35 years old looking for tips and tricks on healthful eating and sustainability.

In 2015, after being offered by a publisher to transpose my advices on a printed media, I wrote and published a book in French. *Sauver la planète une bouchée à la fois* (Saving the planet one bite at a time) presents how the current food system cannot be considered sustainable. Divided in 12 chapters and widely illustrated, it tackles one by one some of the worst problems associated with the current way we produce, transform and transport food. The book also offers about a hundred tips and tricks to consumers to reduce their “foodprint”. In less than 3 months, the book became a best seller in Québec and received tremendous exposure in French-Canadian media.

Sustainability is undeniably a contemporary concern. More and more consumers are worried about the state of the environment, but at the same time are lost when it is time to act. We, as health and food professionals, need to take our place and suggest concrete evidence-based actions consumers can take to improve their health and to reduce their impact on the environment. This concern is of great importance among the younger generation. It is a good angle to attract a younger crowd to our nutritional advices.

For consumers to eat more sustainably, dietitians-nutritionists need to integrate basic concepts of sustainable eating into their practice and abstain from making recommendations that might increase human health but negatively influence the environment. However, we need not to completely change our practice to incorporate sustainability since many of our usual recommendations already unknowingly include this aspect. That is what the book is highlighting.

For example, encouraging to eat less meat and to discover new plant-based proteins can have a beneficial impact both on the individual health and the environment, provided that we teach our clients or patients how to prepare these new foods (3,4).

Even though Bluefin tuna and Atlantic salmon are great sources of DHA and EPA, the former is endangered and the aquaculture of the latter poses great risks on marine ecosystems. Thus, consciously removing problematic species from "recommended seafood" lists is another way to influence consumer's behaviours.

Suggesting eating local food is considered a good way to reduce the carbon footprint associated with transport. However, in Nordic countries, like Canada, it might sometimes be more beneficial to avoid greenhouse-grown produces, as their production requires a lot more energy than their field-grown counterparts (5). No matter in which country we work, it is up to us, dietitians-nutritionists, to promote local food in season. However, because of globalization, we, even as dietitians-nutritionists, especially the younger generations, often need to rediscover forgotten fruits and vegetables. We also have to craft or gather recipes, tips and tricks in order to help and support our clients or patients eating according to what is in season.

With this presentation, I intend to share insights on how dietitians-nutritionists can efficiently communicate on food sustainability, easily integrate these concepts in their teachings, and influence their peers to do the same. It will put the emphasis on the importance of translating our knowledge of food sustainability into practical advices and on alleviating the "all or nothing" mindset that emerges sometimes when clients or patients become familiar with this topic.

## COMPETING INTERESTS

The author states that there are no conflicts of interest in preparing the manuscript.

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ROUND TABLE: WORLDWIDE IMPACT OF DIETETIC PRACTICING. DIETITIAN-NUTRITIONIST IS KEY

Lecture Sequence: 4



### How to communicate about sustainability

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It is very difficult to communicate about sustainability. The concept is complex and has more than one definition. On the other hand it is urgent to let people realize that they have to change their behavior in the near future.

As an expert working in different information offices (Voedingscentrum, Vitamine Informatie Bureau) I have a lot of experience in communication about nutrition in the media. Online (websites, social media), newspapers, magazines, radio and TV.

In my presentation I will give different insights of using communication to change behavior. I will focus on the past, the present and the future. Showing innovations and striking examples of sustainable projects. I will link these with communication about sustainable food. That's how I will inspire dieticians and nutritionists to communicate more about sustainable food in their own practice.

### COMPETING INTERESTS

'De tafel van 3' works for different clients: both government and industry.



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7 September 2016 | INTERVENTION AREA: WORLDWIDE IMPACT OF DIETETIC PRACTICING. DIETITIAN-NUTRITIONIST IS KEY

ROUND TABLE: REGISTRY MODELS, PROFESSIONAL PRACTICE CODIFICATION, AND USE OF STANDARDIZED LANGUAGE WITHIN THE NUTRITION CARE PROCESS (NCP)

Lecture Sequence: 1



### Documenting dietetics - experiences of the NCP and standardized dietetic language implementation in Sweden

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The Nutrition Care Process (NCP) and its connected terminology (NCPT) were developed by the Academy of Nutrition and Dietetics as a framework facilitating critical thinking and decision-making among dietitians (1,2). During the last decade, this framework has been implemented among dietitians in several parts of the world. The NCPT was translated into Swedish in 2011, and since then the Swedish implementation process has been ongoing. In our studies Swedish experiences of the NCP and NCPT implementation were addressed, focusing at both quantitative audits of patient records and qualitative data from focus group discussions among dietitians.

A quantitative audit was performed as a baseline study to explore the content of dietetic notes before the NCP and NCPT implementation. It revealed several areas where improvement of the dietetic documentation was needed, for example regarding the documentation of the causes for nutritional problems, goals for the interventions and indicators for evaluation (3,4). The implementation of standardized processes and terminologies such as the NCP and NCPT has often been suggested to improve the documentation quality (5,6). Minor local audits at Swedish hospitals performed 3-4 years after the implementation start has also indicated such improvements.

A focus group study was performed 3-4 years after the start of the Swedish NCP and NCPT implementation process (7). Dietitians discussed their experiences of the NCP and NCPT in relation to the documentation quality, the dietitian-patient

relationship and the dietitian's professional role. While acknowledging many advantages with the NCP and NCPT, many dietitians also experienced difficulties to combine the structured and standardized process and terminology with a flexible and patient-centred approach in nutrition care. The discussions also addressed lessons learnt from the implementation process, such as what barriers and facilitators the dietitians have experienced during this process.

Based on the quantitative documentation audit and the focus group discussions, this presentation will address the perspective of dietetic professionalization, discussing how dietitians' experiences from the NCP and NCPT implementation can contribute to the further development of the dietetic profession.

### COMPETING INTERESTS

The authors state that there are no conflicts of interest in preparing the manuscript.

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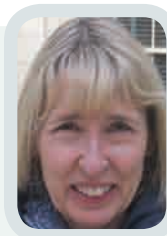
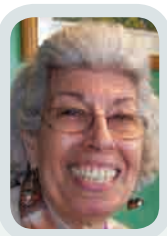


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7 September 2016 | INTERVENTION AREA: WORLDWIDE IMPACT OF DIETETIC PRACTICING. DIETITIAN-NUTRITIONIST IS KEY

ROUND TABLE: REGISTRY MODELS, PROFESSIONAL PRACTICE CODIFICATION, AND USE OF STANDARDIZED LANGUAGE WITHIN THE NUTRITION CARE PROCESS (NCP)

Lecture Sequence: 2



### Building a Global Practice with Nutrition Care Process Terminology: Uses and Application with Malnutrition

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In order to determine the effectiveness of dietetic practice within several practice settings we need to facilitate outcome measurements and practice evaluation utilizing a common nutrition language. This is essential to sustain effective quality dietetic practice (1).

Learn about why the Nutrition Care Process and Terminology is important to the practice of dietetics globally and why there is a need for an international standardized language (2). The challenges faced with implementing Nutrition Care Process Terminology (NCPT) globally; making the language fit with different cultures and health systems; and some of the strategies adopted including terminology translations into other languages will be discussed. The long term goal of the international work group is to strive to develop a common understanding of dietetic practice. Supporting development of practice across the world while celebrating our individual contributions and values. The problem of malnutrition, a major global public health concern, is used to showcase the application of Nutrition Care Process Terminology in practice settings around the world (3).

### COMPETING INTERESTS

The authors state that there are no conflicts of interest in preparing the manuscript.

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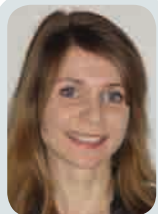


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Lecture Sequence: 3



### Nutrition Care Process NCP/IDNT in Switzerland: a corner stones for the definition of working standards

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The SVDE/ASDD is the professional association of all legally recognised nutritional advisers in Switzerland, irrespective of which professional field they work in. In recent years, it has unfortunately become clear that it is impossible to address all the different concerns alongside each other. The executive committee therefore recommends focussing the strategic objectives on the most urgent requirements and members' concerns. The executive committee recommends setting three main strategic objectives: income, awareness and networking. Developing working standards stems from these three main strategic objectives (1).

The SVDE/ASDD's "Strategy on working standards" contains the most important guidelines on the professional standards of dietitians SVDE/ASDD (rules of professional conduct, quality assessment and improvement, the code of professional ethics, nutritional advice and therapy processes as well as e-health tools). By formulating fundamentals for the working standards, the executive committee wants to promote a consistent understanding of the professional standards and the influence thereof on working as dietitians SVDE/ASDD. These fundamentals serve both the executive committee and SVDE/ASDD members as a guiding principle for all issues relating to professional standards.

The strategy on the working standards is based on the rules of professional conduct, the ongoing quality assessment and improvement process and the code of professional ethics.

The professional standards first stipulate the binding rules which serve as a benchmark in case of non-adherence to the professional standards or in case of any disputes. Secondly, a quality assessment is performed to determine compliance with the working standards, thus guaranteeing a continuous improvement of quality. Thirdly, the Code of Professional Ethics reflects the way in which the dietitians carries out their work.

The Nutrition Care Process and the associated standardised terminology make it possible to improve the standing of our profession as well as the quality of services (2). The Nutrition Care Process and Terminology defines the methods –both on an intellectual and on a practical level– with which the dietitians SVDE/ASDD offer nutritional advice and arrange therapies. This systematic process provides a practical framework and enables a methodical approach which encourages critical examination and problem-solving. The Nutrition Care Process and Terminology provides a standard definition of the most important terms used in this profession. This standardised terminology enables consistent documentation to be compiled in the field of nutritional advice and therapy and facilitates the exchange of ideas and experiences within the profession and between different professions (3,4).

Our goals for 2018 is that all dietitians SVDE/ASDD base their consultations, whether in hospital, during rehabilitation or in their practice on the Nutrition Care Process and Terminology. The Nutrition Care Process and Terminology will serve as a

basis for quality assessment. The Federal Law on Sickness Insurance states that medical services must meet the criteria of effectiveness, appropriateness and economicity. The SVDE/ASDD is in charge of the quality assurance for all independent dietitians and the Nutrition Care Process and Terminology offers relevant opportunities (2).

The SVDE/ASDD promotes consistent professional ethics and has a code of professional ethics. This basic document encourages people to think seriously about ethical issues relating to the standards and values in the areas of "professional expertise", "professional conduct", "co-operation within the profession and between different professions" and "further development of the profession".

We aim that all dietitians SVDE/ASDD in Switzerland carry out their work based on a consistent code of professional ethics. The SVDE/ASDD's role is here to create and continuously update a consistent understanding of professional ethics.

Finally, the rules of professional conduct stipulate the guidelines, obligations and attitude which dietitians SVDE/ASDD must take into consideration when carrying out their work, also where relations with their co-workers and patients are concerned. The rules of professional conduct both correspond to the relevant documentation of the SVDE/ASDD and meet the legal requirements. To do this, we have to revise the current rules of professional conduct and the procedures in case of disputes and to advice and support members in conjunction with their rights and obligations.

The goal is that the SVDE/ASDD has clearly defined rules of professional conduct which enable fair rulings to be made in case of complaints and legal action.

In conclusion, to improve the way of working throughout the definition of working standards allows us to promote our profession. Working standards encompass the professional ethics and the quality assessment and the rules of professional conduct are needed encompass all.

## COMPETING INTERESTS

The author states that there are no conflicts of interest in preparing the manuscript.

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Lecture Sequence: 4



### What Do Clinical Dietitians Want in Order to Use the Nutrition Care Process (NCP)?

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**Background:** Consistent practice of clinical dietitians within and across different countries is important. The Nutrition Care Process (NCP) was developed to provide a standardised framework for dietetic practice across the world (1,2). However, implementation of the NCP at the international level remains inconsistent and limited. National and international studies have used quantitative study designs to demonstrate that dietitians have limited knowledge about the NCP but believe that using the NCP framework in dietetic practice would be beneficial (3-6). Minimal qualitative study has been conducted to investigate dietitians' knowledge, attitudes, opinions and needs regarding the NCP. Moreover, there is a paucity of data specific to dietitians in the Asia Pacific region.

**Objective:** To identify the baseline knowledge, attitudes and needs of clinical dietitians in Asia about the NCP in order to inform the development of an online community website entitled the Dietitians Online Nutrition Care Process (DoNCP) [www.doncp.com.au](http://www.doncp.com.au). The site will deliver professional development for clinical dietitians and provide support, educational resources, and other tools in order to enhance implementation and adoption of the NCP internationally.

**Design:** Qualitative study using focus groups.

**Method:** The National Dietetic Associations in Hong Kong and Thailand expressed interest to participate in the NCP focus groups. Emails and flyer invitations were sent via the Association's listserv to 200 dietitians in Hong Kong and 900 dietitians in Thailand. Inclusion criteria included the use of English in medical record documentations, 42 participants were recruited. Seven formative focus groups were conducted face-to-face in Hong Kong (n=3) and in Thailand (n=4) by the same facilitator. All focus groups were audio recorded and transcribed to ensure that important contents discussed by participants had been captured. Discussions were driven by the need to determine what participants knew about the NCP; what benefits and barriers participants could foresee in implementing the NCP in their practice; and what support and resources participants required in implementing the NCP.

**Results:** Most of the participants were female (86%). Majority of participants (88%) were working in hospitals [64.3% (27/42) in private hospitals; 19% (8/42) in public hospitals; and 4.7% (2/42) in both hospital and academic settings] and 12% of participants were working in private practice. Almost all participants (92.8%) were working full-time. The majority of participants reported having heard about the NCP previously; mostly during national dietetic conferences or as a part of dietetic courses from universities. Locally trained,

newly graduated dietitians and experienced clinical dietitians who had graduated or previously worked in the USA, Canada, Australia and New Zealand reported more familiarity and confidence in utilising the NCP in their practice compared with others. Important benefits of the NCP identified by dietitians included improving standards of dietetic care and medical record documentation; promoting robust inter-professional communication among multidisciplinary teams as well as within the dietetic profession; and in evaluating the outcomes of patient care and conditions from medical nutrition therapy. However, barriers were identified in terms of what they felt were lacking, including: a lack of NCP knowledge, time, access to NCP training and education locally, peer support and the funding required to gain access to the NCP resources. Participants believed that more resources and support would be needed to prioritise adoption and use of the NCP. For example, participants initiated that a website which allowed 24/7 access to electronic resources, practical case studies, and expert support would be helpful. They also reported that mentoring and peer support could enhance learning through sharing experiences of the NCP adoption process.

**Conclusions:** Almost all participants expressed their interest in the adoption of the NCP in their routine practice. The results from this initial exploratory study are now being used to inform the development of the DoNCP website. The next stages of the study will focus on launching the site to dietitians internationally—regardless of location, time zone, and financial status—to enhance the adoption of the NCP globally.

## COMPETING INTERESTS

The authors state that there are no conflicts of interest in preparing the manuscript.

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7 September 2016 | INTERVENTION AREA: EQUITY AND PROFESSIONAL ETHICS  
WITHIN THE DIETETIC PROFESSIONAL

ROUND TABLE: TRAINING DIETITIANS-NUTRITIONISTS. EDUCATIONAL QUALITY IN PRE AND  
POSTGRADUATES. SUSTAINABLE PROFESSIONAL TRAINING

Lecture Sequence: 1



### Sustainability practices and local food systems in the curriculum of nutrition professionals in health, wellness and performance

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The University of Colorado, Colorado Springs (UCCS) developed a sport nutrition graduate program that was launched in 2009. Yearly, 8 new registered dietitians join the program to become sport dietitians. UCCS also has an undergraduate nutrition program, a nutrition minor, and several other health-related graduate tracks and is housed in the Department of Health Sciences, College of Nursing and Health Sciences. In 2010 a new course was launched with the aim to integrate sustainable food systems, local food literacy, and organic agriculture and connect these constructs to healthy lifestyles and the practice skills of dietitians. This intensive course has now become a required core course for all sport nutrition graduate students. The graduate program has also been supported by a local foundation paying 3 graduate students stipends to run programs on farms, in urban gardens, at farmers markets, schools, and low income areas related to sustainable food practices to improve access to good food and to promote health and wellness. In addition, the Flying Carrot Food Literacy Project was launched as part of the foundation's effort to bring more knowledge about local food and skill in the kitchen to the citizens of this region.

As part of early collaborations between UCCS and the United States Olympic Committee, also located in Colorado Springs, sustainable practices have been expanded to food and nutrition services in both institutions with graduate students, who are registered dietitians, working to link farmers to institution, education to students and athletes, and transmit their newly acquired knowledge and skill in sustainable food systems, farming, gardening, and cooking to food service staff. UCCS also owns a farm and farmhouse, which house the SWELL (Sustainability, Wellness and Learning) Initiative on campus. The next steps are to develop an academic curriculum with focus on sustainability and health leveraging this local food system and targeting health professionals, including dietitians. This session will introduce this established network from producers to consumers and illustrate opportunities and lessons learned of these educational pathways and practices to the nutrition care process of dietitians in community, institutional and Olympic sport settings.

### COMPETING INTERESTS

The authors state that there are no conflicts of interest in preparing the manuscript.

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ROUND TABLE: TRAINING DIETITIANS-NUTRITIONISTS. EDUCATIONAL QUALITY IN PRE AND  
POSTGRADUATES. SUSTAINABLE PROFESSIONAL TRAINING

Lecture Sequence: 2



### International Professional Development: Building cultural competence and sharing dietetic knowledge through travel

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This international exchange program took place in August 2015, after a request by the co-founder/director of Dietitians Explore! Education Exchange Inc. (DE) (1-3), a non-profit organization located in Toronto, Canada, to the ICDA representatives from the German National Dietetic Association (4). Through intense e-mail communication, a dynamic itinerary was developed to give an overview of the key fields in which German Dietitians work. Prior to arriving in Germany, the co-founder/director of DE! worked with each student individually to select an assignment to be presented at the end of the trip and to set learning goals that would be pursued throughout the trip. The three Canadian students (in their third and fourth year of University studying food and nutrition), accompanied by the co-founder/director of DE!, participated in an interactive and professional development program and were mentored by German Registered Dietitians.

The program took place during one week. On Monday, the experience started by spending the day at the VDD/German NDA in Essen. The President, Ina Lauer welcomed the students and explained the main goals of the German NDA. A report about

German nutritional standards and eating habits rounded out the induction day. On Tuesday, the Canadian students joined German students for a day in a German Dietitians' school (5). The timetable provided lectures Dietetic education in Germany and a practical, menu planning course in the afternoon. The day allowed for plenty of time for networking between the students. On Wednesday, the morning was spent visiting a local market and the afternoon allowed the students to have some free time for touring and working on their presentation. Thursday offered a different experience, with an in-hospital foodservice tour and a lecture on Sousvide (6).

This included a demonstration of the technology used to collect meal requests from patients, the process of how this system regenerates the menu components and finally delivers meals to the patient on the ward. The students also had the opportunity to taste samples of the meals. Later that day, each student shared a presentation about the learning that had taken place throughout the exchange. The presentations highlighted professional development in cultural competence with specific examples related to food, dietetic practice

and social cultural experiences. On Friday, the last day of the program, the students visited a clinical dietitian team at a hospital (7) and gained insight into enteral nutrition (8), including patient observation and sampling of enteral feeding products. They also learned about screening for risk of malnutrition (9).

To conclude the experience, the co-founder/director of DE! had individual meetings with each student to reflect on learning and evaluation.

## COMPETING INTERESTS

The authors state that there are no conflicts of interest in preparing the manuscript.

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7 September 2016 | INTERVENTION AREA: EQUITY AND PROFESSIONAL ETHICS  
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ROUND TABLE: TRAINING DIETITIANS-NUTRITIONISTS. EDUCATIONAL QUALITY IN PRE AND  
POSTGRADUATES. SUSTAINABLE PROFESSIONAL TRAINING

Lecture Sequence: 3



#### Charting new ground: Creating opportunities for interprofessional education (IPE) with experienced clinical practitioners across three professions

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Patient care is a complex activity that demands that health professionals work together in an effective manner. Research suggests that health professionals may not communicate or collaborate well across professional boundaries in providing health care. Amongst policy makers, educators and researchers Interprofessional Education (IPE) is seen as an opportunity to enhance communication and collaboration between professionals with different backgrounds with the aim of improving professional practice and health care outcomes.

Interprofessional Education (IPE) is defined as "The application of principles of adult learning to interactive, group-based learning, which relates collaborative learning to collaborative practice within a coherent rationale which is informed by understanding interpersonal, group, organisation, and inter-organisational relations and processes of professionalism". IPE is distinguished from multi-professional education because the latter relates to circumstances when different professional groups learn together for whatever reason with common content of learning, while the former (IPE) focuses on learning from and about each other to improve collaboration and consequently quality of care (1).

Despite the need for good interprofessional communication and collaboration to help coordinate patient care in an effective manner, research has found that achieving this is

problematic. On one hand, IPE may improve departmental culture, collaborative team behaviour, and health professional competencies, as well as reduce clinical error rates. At the same time, research suggests the effect of IPE on patient satisfaction, the quality of care and clinical outcomes is uncertain, and that factors that may need to be considered in the applicability of IPE include resource and time requirements to implement such interventions (2).

Research summarized to 2013 affirms that further rigorous research is needed to demonstrate evidence of the impact of this type of intervention on professional practice and/or healthcare outcomes (3).

Notwithstanding the challenges of IPE identified in the research literature, the Canadian Association of Occupational Therapy (CAOT), Dietitians of Canada (DC) and Speech-Language and Audiology Canada (SAC) have collaborated to create a unique interprofessional education program designed facilitate improved interprofessional practice in the highly complex area of dysphagia assessment and management.

This presentation will describe the challenges and successes of bringing three national professional associations together to create a common learning program based on the true definition of IPE despite differing corporate and professional cultures, and diverse education programming approaches.

The presentation will provide evaluation results of program participants immediately following the program and after 6 months following the event, in order to assess the true impact on practice over the short term. Perspectives of the speakers and the three partnering organizations on the planning and implementation of the program will also be addressed. Examining the possibilities of IPE is an important strategy for ensuring that the registered dietitian is an integral part of the health care team, thereby growing and sustaining practice breadth and depth at the advanced practice level.

### COMPETING INTERESTS

The author states that there are no conflicts of interest in preparing the manuscript.

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7 September 2016 | INTERVENTION AREA: EQUITY AND PROFESSIONAL ETHICS  
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ROUND TABLE: TRAINING DIETITIANS-NUTRITIONISTS. EDUCATIONAL QUALITY IN PRE AND  
POSTGRADUATES. SUSTAINABLE PROFESSIONAL TRAINING

Lecture Sequence: 4



### Dietetics Professionals as Change Catalysts

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Humans are hard-wired to resist change (1). For most people, change implies pain and stress. Yet change is now constant. Individuals who embrace change will be the ones who thrive. Multiple theories have been published over fifty years, with varying levels of effectiveness since 60-70% of projects fail. The focus has to be on the people affected by the proposed change (2). One of the most important steps involves strategic communication about the desired change. Addressing underlying fears and concerns is a priority (3). All of the steps of leadership are important to catalyze change for the better.

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### COMPETING INTERESTS

The author states that there are no conflicts of interest in preparing the manuscript.



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7 September 2016 | INTERVENTION AREA: RESEARCH, DEVELOPMENT AND INNOVATION IN DIETETICS

ROUND TABLE: INNOVATION IN DIETETICS AND NUTRITIONAL THERAPY. IMPROVEMENT OF EVIDENCE

Lecture Sequence: 1



### A Task Force on Nutrition and Cancer To improve Nutritional Care in Cancer Survivors

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**Introduction:** With more than 10,000 epidemiological studies, and several animal and *in vitro* experiments, the major diet- and nutrition-related factors in the etiology of cancer are now well-known to researchers. Numerous reports and guidelines have been written on nutrition and cancer, which are widely available both online and in print (1). Guidelines for nutrition and cancer treatment are available, as well as information on nutrition and tertiary prevention (2). However, one of the most consistent findings in health services research is that scientific knowledge often does not reach the general public. Thereby, conflicting information (e.g. in the media and on the internet) leads to confusion and uncertainty, which may negatively influence the quality of life of cancer patients. The provision of appropriate information can result in an improved health competence, a better sense of control over cancer, better symptom management, lower levels of distress, and higher levels of health related quality of life (HRQoL) (3). A recent study shows that active information seeking about cancer-related information from nonclinical sources may lead to improved dietary habits among cancer patients (4). Therefore, the Task Force aims to make the scientific knowledge on nutrition and cancer, both on nutrition and prevention of cancer, nutrition during the treatment of cancer and nutrition after the treatment of cancer, as tertiary prevention, available for the general public. Improving nutritional information provision for cancer survivors might optimally support cancer treatment and recovery and diminish the risk of cancer recurrence and the development of other cancer-related chronic diseases.

**Methods:** The Task Force focuses on two target groups: health care professionals and patients / the general public. For the healthcare professionals, scientific evidence about nutrition and cancer and dietary guidelines will be implemented into routine daily practice. The following steps will be taken: description of appropriate nutritional care; inventory of current nutritional care by questionnaires and semi-structured interviews; define goals for improvement; analysis of the barriers for change; development, execution and evaluation of interventions. For patients and the general public, provision of nutritional information will be tailored to the patients' nutritional information needs. Patients' perspectives about their perceived nutritional information needs will be explored using focus group meetings and questionnaires.

**Results:** An easy on-line intervention for oncology nurses was developed to navigate them to appropriate dietary advices which can be immediately given to the patient during their consultation. A trial was performed in four hospitals, comparing patients who received information from nurses using the digital decision tree and patients who received information from nurses not using the digital decision tree. Data was collected from October 2015 onwards, preliminary results will be presented. For patients and the general public, a website, [www.voedingenkankerinfo.nl](http://www.voedingenkankerinfo.nl), has been developed with the option to submit questions (5). The evidence based answers were published on the website, with new questions and answers being published weekly. As an addition, recipes

for people with alterations in taste were added to the website. The website was altered based on the response to the questionnaires. Preliminary results of the questionnaires on perceived nutritional information needs in patients will be presented.

**Conclusion:** The website will (partly) meet the nutritional information needs in cancer survivors and will provide clarity in hypes that appear in the media. The digital decision tree will build a bridge between nutritional guidelines and daily practice of health care professionals to ensure that all health care professionals will bring the same nutritional message, not confusing cancer survivors anymore.

### COMPETING INTERESTS

The authors state that there are no conflicts of interest in preparing the manuscript. Our project is financed by the Dutch Cancer Society.

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7 September 2016 | INTERVENTION AREA: RESEARCH, DEVELOPMENT AND INNOVATION IN DIETETICS

ROUND TABLE: INNOVATION IN DIETETICS AND NUTRITIONAL THERAPY. IMPROVEMENT OF EVIDENCE

Lecture Sequence: 2



### Manual and Digital Guide Nutrition in Cancer

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**Background:** In order to give the best nutritional care to cancer patients, dietetic counselling should be based on scientific evidence and best practice (EBP). It is important that dietitians not only have practical nutritional knowledge of cancer in general, but also have tumour-specific nutritional knowledge and are able to cope with problems that could develop during the different stages and treatment of cancer. To improve daily practice of dietetic oncological counselling it is also important that nutritional guidelines are available for colleagues all over the world and can be discussed.

**Methods:** The Dutch Manual Nutrition in Cancer (Handboek Voeding bij kanker) (1) was based on relevant nutritional problems, scientific evidence and practical experience. A nationwide survey was initiated to obtain insight into the most relevant nutritional questions and problems in daily dietetic practice. An online survey was designed to give insight into the wishes and nutritional information needs of cancer patients.

To guarantee best evidence, results from the systematic literature search performed for the evidence based Dutch guideline 'Malnutrition in cancer patients' were incorporated and some additional literature searches were executed. To incorporate best practical experience, thirty-two experienced Dutch dietitians, specialized in oncology, were invited to write a chapter about their field of expertise (expert opinion). The Manual and Guide have been approved by the Dutch Dietitians Oncology Group (Landelijke Werkgroep Dietisten Oncologie LWDO) in cooperation with the Surgical Association Dietitians

Academic Hospitals and the Dutch Dietitians Haematology and Stem Cell Transplants Group.

Besides the printed version of the Manual, also a digital version was published on Oncoline, the site with free access to cancer guidelines in the Netherlands ([www.oncoline.nl](http://www.oncoline.nl) – Voeding en Dieet). This version is also available in English: [www.oncoline.nl](http://www.oncoline.nl) - Nutrition and Diet.

**Results:** The first part of the Manual and the digital Guide deals with the role of nutrition during cancer treatment in general. Specific attention is given to (screening for) malnutrition, sarcopenia, energy and nutrient requirements, the nutrition care process, nutritional complaints and dietetic counselling, clinical nutrition, comorbidity, cancer in the elderly, nutritional targets in the period of aftercare and rehabilitation and in the palliative stage of the disease (2-9). The second part of the Manual and digital Guide includes the nutritional problems commonly occurring in 20 tumour types per treatment and per stage of disease together with the corresponding nutritional treatment policy and advices.

**Conclusion:** Nutritional care is an important task for dietitians. These multidisciplinary nutritional guidelines, published in a printed Manual (Handboek Voeding bij kanker) and as a free access digital guide ([www.oncoline.nl](http://www.oncoline.nl) – Nutrition and Diet) are a very practical tool for all caregivers in the treatment and counselling of cancer patients.

## COMPETING INTERESTS

The authors state that there are no conflicts of interest in preparing the manuscript. The Manual and digital guide could be realized by a grant of the Dutch Cancer Society.

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7 September 2016 | INTERVENTION AREA: RESEARCH, DEVELOPMENT AND INNOVATION IN DIETETICS

ROUND TABLE: INNOVATION IN DIETETICS AND NUTRITIONAL THERAPY. IMPROVEMENT OF EVIDENCE

Lecture Sequence: 3



### Navigating and Advancing Current Guidelines: Evidence-Based Nutrition Care in Adults with Cancer

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Despite significant new information on the role of nutrition/nutritional status on cancer outcomes, the weight of the research does not routinely inform clinical practice.

A recent systematic review of studies and resulting nutrition guidelines on oncology describe the state of the evidence to improve outcomes in adults with cancer (1). If an adult oncology patient is undergoing chemotherapy or radiation treatment, the dietetics/nutrition professional should provide medical nutrition therapy (MNT). MNT has been shown to be effective in improving multiple treatment outcomes in patients undergoing chemotherapy, radiation or chemoradiotherapy in ambulatory or outpatient and inpatient oncology settings. Nutrition/dietetics professionals are in a position not only implement evidence-based guidelines, as an integral player of an interdisciplinary team but also identify gaps in knowledge, and generate further data to facilitate continuous guideline improvement (2). Emerging areas that require attention include understanding the value of body composition in assessing cancer patients, the link between obesity, diet, and cancer, as well as how food constituents may modulate the inflammatory processes (3).

### COMPETING INTERESTS

The authors state that there are no conflicts of interest in preparing the manuscript.

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7 September 2016 | INTERVENTION AREA: RESEARCH, DEVELOPMENT AND INNOVATION IN DIETETICS

ROUND TABLE: INNOVATION IN DIETETICS AND NUTRITIONAL THERAPY. IMPROVEMENT OF EVIDENCE

Lecture Sequence: 4



### Lifestyle patterns and cancer prevention: what we know and future challenges

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Several lifestyle habits related to nutrition, such as the consumption of certain foods and nutrients, the body weight and height, and physical activity patterns, have been associated to different cancer types. The World Cancer Research Fund/American Institute for Cancer Research (WCRF/AICR) is continuously updating the evidence on the association of lifestyle factors related to diet, body fatness and physical activity and cancer risk. Based on the evidence gathered at their report published in 2007, the WCRF/AICR published eight recommendations plus two special recommendations on diet, body fatness and physical activity for cancer prevention. These recommendations include guidelines such as: keep a healthy weight through adulthood; be physically active as part of your everyday life; avoid the consumption of certain foods such as red and processed meats, foods that promote weight gain, or salty and highly processed foods; promote the consumption of foods of plant origin such as fruit and vegetables; moderate the consumption of alcoholic drinks; promote breastfeeding; and for cancer survivors, follow the same guidelines than for cancer prevention (1).

In order to evaluate whether following all these recommendations for cancer prevention would indeed reduce the risk of cancer, we created an index score reflecting adherence to seven (six in men) recommendations and we called it the WCRF/AICR score. We demonstrated in the EPIC

study, a multi-centric European cohort including over half a million participants, that the greater the WCRF/AICR score, the lower the risk of developing total cancer and several cancer subtypes (2). Also, in the EPIC study, we have demonstrated that greater adherence to these recommendations is associated with a lower risk of overall mortality among healthy subjects (3), and also improves survival in participants that have developed colorectal cancer (4).

Other authors have also evaluated the association between the WCRF/AICR score and cancer incidence and/or mortality, and a total of twelve papers have been published on the topic. Results obtained are not always consistent. For instance, out of six papers, four found a significant association of the score with breast cancer risk, while two did not find an association. For other common cancers such as prostate or colorectal results are inconclusive. All studies observed that following these recommendations was associated with lower risk of death among healthy participants and cancer survivors. We are working at the moment, on a meta-analysis of these results and will try to elucidate the plausible reasons that explain the observed differences among studies.

Future challenges in the study of lifestyle patterns and cancer prevention include a revision of the recommendation based on the most updated evidence and overcoming the methodological challenges of constructing an index score that reflects

concordance with these recommendations in epidemiological studies. In the meantime, the current evidence still support current recommendations for cancer prevention and policy makers, dietitians and clinicians should encourage widespread knowledge of these guidelines for cancer prevention and longer survival.

## COMPETING INTERESTS

The authors state that there are no conflicts of interest in preparing the manuscript.

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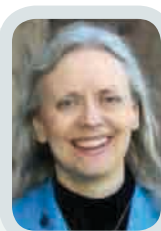


## CONFERENCE PROCEEDINGS

7 September 2016 | INTERVENTION AREA: RESEARCH, DEVELOPMENT AND INNOVATION IN DIETETICS

ROUND TABLE: DIETETICS AND 3.0 TECHNOLOGY

Lecture Sequence: 1



### #thenewnormal: Where does social media fit within dietetics?

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As most of us are aware, social media are not a passing fad, but rather a means for communicating. Over half of Canadian adults have a social media profile (1), yet a pilot study indicated that professional use of social media by dietitians seems limited (2). Similar findings exist for allied health professionals' use (3,4). Using Diffusion of Innovation Theory, it appears that some dietitians have fully adopted use of Web 2.0, likely representing the innovators and some of the early adopters. Thus, it is likely that the take-off point may not yet have been achieved. As Web 3.0 takes hold, fewer dietitians may be aware of methods for using the social media platforms to full advantage.

Since the development of Web 2.0 interactive forums, a true multi-level communication model is possible, rather than the one-way information sharing allowed with Web 1.0. Social media –Facebook, Twitter and other sites that allow people to search and collate information and engage with others in conversations and debates— are now a well established means by which individuals communicate with each other. With the majority of Canadian adults interacting through these forums (1), it is imperative that dietitians leverage this technology to avoid being left behind their publics (5). To this end, a larger national study of Canadian dietitians is underway to determine their personal and professional use of social media, facilitators and barriers to use, and strategies for building capacity in advanced use of Web 2.0 tools in practice.

The presenters will discuss current nutrition communications

conducted using the newer technologies. They will enlighten conference delegates' understanding of the determinants of social media use in professional practice and assist with strategies for professional skills development through an examination of online communities of practice. Original research and reviews of existing research will be combined in this presentation.

### COMPETING INTERESTS

The authors state that there are no conflicts of interest in preparing the manuscript.

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7 September 2016 | INTERVENTION AREA: RESEARCH, DEVELOPMENT AND INNOVATION IN DIETETICS

ROUND TABLE: DIETETICS AND 3.0 TECHNOLOGY

Lecture Sequence: 2



#### Getting Social: Using social media to optimise and measure a health promotion campaign for a dietetic association

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The Dietitians Association of Australia (DAA) uses social media (Twitter, Facebook, LinkedIn, Pinterest and YouTube) together with traditional advertising in promoting the credential, Accredited Practising Dietitians (APDs). In particular, social media has been used in the promotion of Australia's Healthy Weight Week (AHWW), an initiative of DAA to assist APDs in promoting their services. The campaign is based on behaviour change strategies and social media may be used in this way to recruit participants, motivate them and assist in initiating small, concrete actions (1). The strategic use of social media has resulted in substantial growth of the campaign over recent years. The aim is to report on the use of social media in AHWW and for other DAA communication.

A number of tools were used to evaluate the impact of social media (Google Analytics, online media monitoring, Storify, TweetReach and Klout score). In particular, Klout score (Klout Inc, San Francisco, US) was used to assess the success of the campaign over time. Klout is a free online social media analytics tool used to rank users according to their online social influence. The Klout Score is a numerical value between 1 and 100, measured using access and analysis related metrics from linked social media accounts in the preceding 90 days. These can include follower counts, retweets and the influence of the users who retweet your own messages. The average Klout score 40 (2).

Compared with 2013, more than 290 AHWW events (↑265%)

were held with more than 546 APDs (↑366%) involved in 2014. There were 9,731 visits and 70,000 page views of the AHWW website, 87.1% driven from Facebook and 11.5% from Twitter. This traffic drove an 11% increase to DAA's Find an APD, a key outcome measure for the association. The online media value alone equated to > one million AUD, more than any previous campaign. There were more than 1,700 tweets generated by 519 contributors and at the end of the 2014 campaign, the DAA @HealthyWtWk Twitter account had 1076 followers (↑44.8%) and achieved a Klout score (level of influence 1-100) of 50.

Facebook and Twitter were used to drive engagement and growth in the 2014 AHWW campaign and are effective tools for associations and practitioners in private practice and for health promotion campaigns. The ability of social media to drive two-way communication, sharing of information, and the potential role in inspiring behaviour change through engagement of wide networks of individuals, means that these tools are changing the nature and speed of health care interactions (3). In addition to the AHWW campaign, other examples of how DAA successfully uses social media will also be explored.

#### COMPETING INTERESTS

The author states that there are no conflicts of interest in preparing the manuscript.

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7 September 2016 | INTERVENTION AREA: RESEARCH, DEVELOPMENT AND INNOVATION IN DIETETICS

ROUND TABLE: DIETETICS AND 3.0 TECHNOLOGY

Lecture Sequence: 3



### Social Media and Ethical Communication Guidelines: What dietitians need to know

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Social media is the new way of communicating. Thoughts and information can be shared as fast as they can be typed. Social media has changed the way we as people or professionals obtain, share, publish and discuss information. Dietitians are uniquely positioned to share evidence-based nutrition information that can be very valuable to the large target audience that they are now able to reach through social media platforms. However as health care professionals RD's have ethical standards and rules that have to be upheld at all times. The Association for Dietetics in South Africa published a unique Social Media and Ethical Communication Guideline for Dietitians in the South African Journal of Clinical Nutrition in 2013. This presentation will focus on the following; pro's&con's of social media, confidentiality and privacy concerns, professional and personal responsibilities on social media and understanding the ethical rules that apply to healthcare professionals in the social media space. Case studies will be discussed to show real life examples of how to engage on these platforms in an effective&responsible manner that does not compromise professionalism and ethics (1-8).

### COMPETING INTERESTS

The author states that there are no conflicts of interest in preparing the manuscript.

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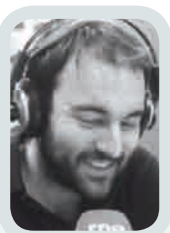


## CONFERENCE PROCEEDINGS

7 September 2016 | INTERVENTION AREA: RESEARCH, DEVELOPMENT AND INNOVATION IN DIETETICS

ROUND TABLE: DIETETICS AND 3.0 TECHNOLOGY

Lecture Sequence: 4



### Changing the paradigm at dissemination of nutritional knowledge: Social media and blogs

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The talk will share 3 different points of view about how the nutritional message is being spreading, and how can we do our best to improving its impact.

- 1: Internet, blogs, media and nutrition: How blogs (1,2) have revolutionized the nutrition paradigm? How can youtube or social media (3) help us on that purpose? For sure a new way at democratizing the information and get closer the information to the people (4) and other professionals.
- 2: Nutrition outreach: an overview of different communication strategies about how to talk about nutrition in media, how to deliver a correct and rigorous message, how a biased message from the industry could influence our nowadays habits (5).
- 3: New strategies in food habits education (6): how new approaches, new methodologies and new evidence in spreading nutritional knowledge is needed. We need to change the typical talk-based intervention and use new strategies (7) and policies in order to reach our health aims, using the experience and evidence we have (8).

### COMPETING INTERESTS

Manager of a nutrition blog. Working in radio as a science popularizer.

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7 September 2016 | INTERVENTION AREA: THE POWER OF DIETITIANS  
NUTRITIONISTS TO MAKE A DIFFERENCE IN SOCIETY

**ROUND TABLE: SUSTAINABLE EFFICIENT MODELS TO CONTROL AND TO PREVENT RISK  
FACTORS RELATED TO NON-COMMUNICABLE DISEASES BY USING DIETETICS AND  
NUTRITION AS A USEFUL TOOL TO PRIMARY AND SECONDARY PREVENTION THERAPY**

**Lecture Sequence: 1**



### Stepped and matched nutritional care in chronic disease management; The possibilities of a generic standard

**Wineke Remijnse-Meester\***

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According to the principles of disease management the care of several chronic diseases in the Netherlands is written down in so called standards of care (1). These standards describe where good care for a specific condition must meet at least, from the patients' perspective. The standard of care is developed and adopted by patient representatives and healthcare providers. In addition, the health care insurers should be at least involved in the determination of the standard. The standard of care consists of blocks such as early detection, prevention, education and self-management, diagnosis, treatment and counseling. The different modules can be elaborated scientifically proven (multidisciplinary) guidelines. Chain indicators are associated with the standard for measuring the outcomes of care (2).

Subsequent to these standard of care we developed a standard for nutritional interventions in chronic disease management to ensure nutrition care will be a regular part of the care process. The project has been done commissioned by the Ministry of Health, Welfare and Sports and authorized by different federations of integrated care.

This so called Nutritional Care Module (3) is part of those healthcare standards, in which the acquire of healthy or adapted nutritional behavior is part of the treatment.

The Nutritional Care Module itself does not describe the content of treatment in detail, but it describes the organization,

competences and indicators needed to improve the quality of care. The disease specific interpretation of or addition to the contents of the Nutrition Care Module is written in the different standards of care (4,5).

The Nutritional Care Module describes four profiles of care, from self-management, involvement of healthcare professionals, up to more or less specialized intervention of a dietitian. The module can be used for stepped and matched nutritional care.

To implement the Nutrition Care Module we developed and redesigned tools to encourage and assist other healthcare professionals in working with the module (6).

In this presentation the Nutritional Care Module will be presented together with the steps we have taken, the struggle and results of implementation and further plans for the future.

### COMPETING INTERESTS

The author states that there are no conflicts of interest in preparing the manuscript.

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Lecture Sequence: 2



### Quality processes and procedures in Nutrition Service in Uruguay

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Quality control in healthcare system was established in a way that it became a part of management. The technical concept of quality represents a way to perform the tasks, predominantly the concern for customer satisfaction with continuous improvement through processes and results. To achieve this management line of continuous improvement, it is necessary to develop guidelines concerning processes and procedures in the various services that constitute the organizations (1,2).

It is important to remark that the concept of quality is not a synonym for luxury or complexity, but quality should be the same at all levels of care, a process that involves continuous improvement.

The challenge is to evaluate the process as a whole in each service, so that it can be measurable and comparable, allowing the creation of standards and development of amendatory processes to generate continuous improvement.

In the evaluation of quality of healthcare we refer to Donabedian (1966), who systematized a triad of "structure, process and results", marking a trend in quality in the healthcare system (3).

Structure – comprises the relatively stable characteristics of the providers of healthcare, tools and resources at its disposal and the physical locations where they work.

Processes – sequence of activities that are met to produce a

valuable outcome for the institution and its users. For internal customers involved to have well-defined responsibilities and to feel supported. The training of employees is systematized and allows a periodic revision.

The description of how employees accomplish each task in this process is defined as "procedures". This allows standardization of responses and new staff training. This description must be made with every employee involved.

Results – refer to achievements regarding a specific health benefit, both in health and economic outcomes or assessment by the patient and the staff of professionals.

Nutrition Services at different hospitals perform functions as a support service in its management and healthcare process at different levels of care. As a consequence of this complexity, designing a process manual has become a key element in order to obtain quality service according to accomplish the established objectives.

The *Hospital Evangelico* is an institution with 59 years of experience in development and permanent growth. It has a hospital in Montevideo with 130 beds with three levels of complexity. Five family medicine centers throughout Montevideo and Canelones; a second hospital in the city of Colonia with 25 beds and eight nearby subsidiaries.

The processes and procedures manual of the Department of Nutrition of the *Hospital Evangelico* contains the following topics: Major processes; Nutritional Care; Room Management Formula; Standardized Operational Practices; HR Process Development; Integrated Logistics Process; Food Processing Procedures; Food distribution procedures; Indicators; Preventive and corrective maintenance of equipment; Staff training; System of Record.

It is a technical document management policy, which aims to formally establish the procedures required for the implementation of organizational processes. Achieving compliance with functional and strategic objectives that consider processes as well as the jobs involved in its implementation, specifying responsibilities and participation during its development.

The preparation of this manual was through the collection of documents prepared over the years but without a common format. When facing the manual's elaboration, annual updates of "processes and procedures" are made, involving staff in the process.

Considering processes has benefits for both the institution and the services that opt for this mode. The institution is creditable, which is a permanence others, and something that defines their stay. Added to this, service improves its results, the

Management, user relationship with internal customers (4,5).

Teamwork is of major importance and must be implicit in the management of any service. To feel part of the process allows a spontaneous pursuit of continuous improvement.

## COMPETING INTERESTS

The author states that there are no conflicts of interest in preparing the manuscript.

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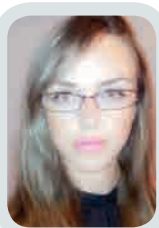


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Lecture Sequence: 3



### The importance of continuity of nutritional care from the hospital to the community and its association with health and functional indicators among elderly patients

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**Background:** Undernutrition among older people is a continuing source of concern, particularly among hospitalized patients. The undernourished elderly have longer periods of illness, longer hospital stays, higher rates of complications and increased mortality rates (1). Data from previous studies indicate that up to 71% of elderly hospitalized patients are at nutritional risk or are malnourished upon admission (2-5). Nutritional risk tends to be under-diagnosed among the elderly, probably due to the nature of patient-physician encounters that usually focus on symptoms, prescriptions, and medical diagnoses, rather than on nutritional topics, and are too brief to allow a comprehensive assessment (6-7).

**Economic Cost:** Research studying the annual cost of treatment of undernourished people (all ages) in Great Britain showed a total expenditure of 7.3 billion Euros while the expenditure on the elderly (age 65 and above) was 5.3 billion Euros (more than 70% of the total cost). Out of the 5.3 billion Euros, 2.7 were spent on long term hospitalization in institutions such as retirement homes and assistant living. Another 2.3 billion were spent on acute hospitalization and the smallest portion of 0.3 billion was spent on follow-up treatments in the community (such as, home visits by doctors, nurses and paramedical staff, usage of nutritional supplements, etc.). When comparing to obesity expenditures in the country we learn that the costs are much lower- total of 3.5 billion Euros a year (8).

**Importance of the study:** Lack of compliance to nutritional recommendations was shown to be associated with undernutrition resulting in increased medical complications, longer hospital stay and increased cost of care. However data on the continuity of care after discharge from hospitalization are scarce and need to be thoroughly studied in various populations and settings.

**Results:** Study population included 86 elderly with average age of  $7.3 \pm 81$  years, average BMI at discharge of  $4.7 \pm 25$  kg/m<sup>2</sup> and, average hospitalization time of  $18.3 \pm 36.4$  days ( $p < 0.03$ ). 15% of the participants passed away while 47% had recurring hospitalization within one year after discharge. Medical records showed discrepancy between proposed prescriptions provided at the hospital and the actual prescriptions filled by medical staff in the community (HMO). Only 21% of the doctors in the community followed the recommended prescription for nutritional supplement and in cases where two recommended prescriptions were given at the hospital, 0% prescribed both. Out of the 21% provided with prescriptions, 66.7% complied (consumed the supplements) and among the 79% who did not receive the prescription in the community, 28% purchased and consumed the supplement recommended at discharge independently. Among those who received the prescription from the medical staff in the community, 60% had full

compliance (consumed the full dosage prescribed for a period of at least three months after discharge) while, among those who did not receive the prescription in the community, only 40% had full compliance ( $p < 0.001$ ).

Among the compliance group (partial and full) the average BMI was lower ( $23.6 \pm 4.2$  vs.  $26 \pm 4.9$  in the non-compliance group), a higher percent needed assistance in feeding (32% vs. 10.9%) and protein consumption was lower  $77 \pm 12.6$ gr vs.  $83 \pm 17.3$ gr ( $p < 0.05$ ). The functional abilities in the compliance group were lower (by FIM questionnaire- 56% vs. 67.6% in the non-compliance group) ( $p < 0.05$ ).

Among the 15% of those passed away, 61% belonged to the neurological department and had an average diagnosis of 14 vs. 11.5 among those who did not pass away ( $p < 0.05$ ). 85% of the elderly who passed away had Albumin level lower than 3.5mg/dL at discharge and 100% had total protein lower than 6.5mg/dL. Surprisingly, among the elderly who passed away, there was a higher BMI than among those who didn't ( $27.7$  vs.  $23.7$ ) ( $p < 0.05$ ). Ironically, more prescriptions were given to elderly with lower BMI.

**Discussion:** Following hospitalization and discharge to the care of medical services in the community, elderly people are vulnerable to a decline in their medical, functional and nutritional status, the continuity of care in this transitional point in time is crucial in preventing re-admissions and other medical complications which may impact the patient and his family as well as the cost and effort of care of health care providers. Thus, it is critical that we identify population at risk and ensure proper continuation of care in the community by raising medical staff awareness to the matter. Data showing that 20% of those who did not receive prescription and went on to purchase the supplements independently (at a higher cost), had only partial compliance and stopped usage all together after a short period of time shows the importance of proper support by the medical staff and subsidized prescriptions in the community.

**Conclusions:** The study shows that elderly with a lower BMI received a more mindful care than those with a higher BMI while the population with the higher BMI consumed less protein and micronutrients. In most cases, the elderly who are not underweight receive less nutritional attention by the medical staff in the community. In the literature underweight is considered

a risk factor for illness and death among elderly but, it is important to remember that under nutrition is different than under-weight and in times, the elderly with the overweight have higher percentage of illness and death because of under nutrition. This segment of population tends to be missed by the medical staff.

## COMPETING INTERESTS

The authors state that there are no conflicts of interest in preparing the manuscript.

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## CONFERENCE PROCEEDINGS

7 September 2016 | INTERVENTION AREA: THE POWER OF DIETITIANS  
NUTRITIONISTS TO MAKE A DIFFERENCE IN SOCIETY

**ROUND TABLE: SUSTAINABLE EFFICIENT MODELS TO CONTROL AND TO PREVENT RISK  
FACTORS RELATED TO NON-COMMUNICABLE DISEASES BY USING DIETETICS AND  
NUTRITION AS A USEFUL TOOL TO PRIMARY AND SECONDARY PREVENTION THERAPY**

**Lecture Sequence: 4**



### Impact on Nursing Perception of a Food Service Delivery System Change

Rylee Blasky, Tyla Haygarth, Laurel Splawski, **Julie Stachiw<sup>1,\*</sup>**, Cathy Paroschy Harris<sup>2</sup>,  
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This presentation will highlight a research project conducted at Thunder Bay Regional Health Sciences entitled 'Nursing feedback on patient food service delivery,' which determines nurses' satisfaction, attitudes and beliefs, as it relates to the implementation of a new food service delivery system. Nurses' were surveyed pre and post implementation of the food service delivery system. The findings have resulted in a smooth implementation process, as well as other identified opportunities to improve patient meal delivery and patient satisfaction. These examples will be shared (1-4).

Learning outcome: How to emphasize importance of food and food choice as part of quality patient care through better engagement of stakeholders.

### COMPETING INTERESTS

The authors state that there are no conflicts of interest in preparing the manuscript.

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8 September 2016 | INTERVENTION AREA: WORLDWIDE IMPACT OF DIETETIC PRACTICING. DIETITIAN-NUTRITIONIST IS KEY

ROUND TABLE: SUSTAINABLE EATING AND NON-COMMUNICABLE DISEASES

Lecture Sequence: 1



### Children Obesity, Multi-disciplinary model recognised in Swiss Healthcare system: role of dietitians

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Dietitians are recognized in Swiss healthcare system since 1997. But child obesity diagnosis is recognized only since two years. A national study has showed that multidisciplinary program for obese children and their families are efficient. In these programs dietitians have responsibility to teach nutrition, to collaborate with doctors, psychologists, physiotherapists and physical trainers in order to engage change in lifestyle and parental skills. Dietitians are part of groups program but also for individual sessions. Up to 6 or 12 consultations are refunded by health insurance. In Lausanne University Hospital we have experiences with such groups and individual sessions. We built the content of the children and parents sessions. In collaboration with psychologists and also physical trainer we developed some content like sessions about hunger and satiety but also mindfulness experiments with foods for children and parents. We also developed parental coaching in nutrition and lifestyle especially in parent's groups of obese children from 3 to 6 years old. As in literature we have more efficient results if a parent-centered dietary component is included. Objectives of the dietetic treatment are to treat the children as soon as possible and we developed collaboration with paediatricians in order to slow the progression of the BMI and to follow them for a long time. The swiss dietetic guidelines about children obesity are supposed to be published in 2016.

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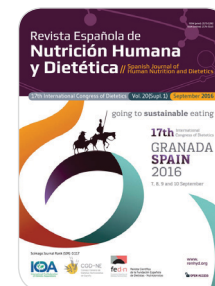
## COMPETING INTERESTS

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ROUND TABLE: SUSTAINABLE EATING AND NON-COMMUNICABLE DISEASES

Lecture Sequence: 2



### Non Communicable diseases and their management

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**Non-communicable disease (NCD):** Is a disease which is non-infectious, can last for a long period with a slow progression. NCD's are the leading cause of death globally. There are 68% (38 million) deaths due to NCD's globally and about 50% of these are below the age of 70 years. At least ¾ of these deaths occur in low and middle income countries. The four main types of non-communicable diseases are cardiovascular diseases, Diabetes, Cancers and chronic respiratory diseases. Overweight/Obesity, Hypertension, Diabetes, Hyperlipidaemia along with other factors like environment and life style have a major role to play (1)

**Prevention and control of NCDs:** A comprehensive approach is required by the society and individuals including all sectors like health, education, agriculture, finance and planning commission to work on strategies to prevent and manage NCD's. WHO planned a global mechanism with more than 190 countries in 2011, to reduce the burden of NCD's between 2013-2020. In this *Global Action Plan* (2), there are nine voluntary targets in focus. First is to establish that 80% receive affordability of medicines to treat NCD's. Second is that 50% receive preventive measures for heart attack and stroke. Third is halt in obesity and stroke. Fourth is that there is 30% reduction in salt intake. Fifth is that there is 10% reduction in over use of Alcohol. Sixth is to have 25% reduction in premature NCD deaths. Seventh is to achieve 10% reduction in prevalence of insufficient physical inactivity. Eighth is 30% reduction in tobacco use and ninth is 25% reduction in high blood pressure.

To achieve the above mentioned targets there is focus on modifiable risk factors:

- 1. Unhealthy diet:** It is difficult to have an overall estimation of an unhealthy diet, therefore we need to check on important components. The World Cancer Research Fund has estimated that 27–39% of the main cancers can be prevented by improving diet, physical activity and body composition. Evidence shows that to prevent the risk for cardiovascular diseases, stomach cancer and colorectal cancer, adequate consumption of fruit and vegetables (3) reduces the risk as compared to the consumption of high energy processed foods that are high in fats and sugars. Amount of daily salt intake has a major role to play in the prevention of hypertension and cardiovascular diseases and WHO recommends a salt intake of less than 5 grams per person per day. Current global level of salt intake is around 9–12 grams per day. Saturated fat and trans-fat increase the risk of Type 2 diabetes and cardiovascular disease and when replaced with, monounsaturated and polyunsaturated fats the risk is reduced.
- 2. Tobacco:** Tobacco is used in a chewable and smoking form. Chewable tobacco has been associated with oral cancer, hypertension, heart disease and other conditions. Smoking tobacco, by far the most commonly used form globally and contains many carcinogenic chemicals. Annual tobacco-related deaths are projected to increase and are estimated to be 10% of total deaths by 2020. 71% of all lung cancer

deaths, 42% of chronic respiratory disease and 10% of cardiovascular disease are related to Smoking.

**3. Insufficient physical activity:** Insufficient physical activity is a leading risk factor for mortality. People who are insufficiently physically active have a 20–30% increased risk of mortality, as compared to those who engage in at least 30 minutes of moderate intensity physical activity on most days of the week. 150 minutes of moderate physical activity every week is estimated to bring down the risk of ischemic heart disease by approximately 30%; diabetes risk by 27% and breast and colon cancer risk by 21–25%.

**4. Alcohol:** Harmful use of alcohol is major risk factors for disabilities and premature deaths in the world. Higher levels of alcohol consumption have a direct relationship between and rising risk of liver diseases, cardiovascular diseases and some cancers. Both the amount and the pattern of alcohol consumption have a role to play. Different countries and different populations have varied amount of alcohol consumption. Per capita consumption of alcohol is higher in the countries with higher income.

#### 5. Other Physiological Risk Factors :

- **Over weight/Obesity:** Overweight and Obesity have adverse effect on cholesterol, triglycerides, blood pressure and insulin Resistance. Risk of Type 2 Diabetes, coronary artery disease and stroke increase steadily with increase of body weight/Body Mass Index (BMI). There is also an increased risk of certain cancers primarily, breast, endometrial, kidney, colon and pancreas. About 2.8 million die due to overweight and obesity globally each year. It is important to keep the BMI within the range of 21–23kg/m<sup>2</sup> for optimal health.

- **Raised Blood pressure and Cholesterol:** Raised blood pressure is a major risk factor for ischemia, stroke and coronary artery disease, renal and visual impairment. Keeping systolic blood pressure and diastolic blood pressure, below 140/90mmHg is associated with a reduction in cardiovascular complications. Raised blood pressure is estimated to cause 7.5 million deaths globally every year. The prevalence of raised blood pressure was 40% amongst both the sexes in low-lower-middle- and upper-middle-income countries and the prevalence in high-income countries was lower, at 35% for both sexes. High blood cholesterol levels increase the risks of heart disease and stroke. High cholesterol causes 2.6 million deaths globally every year.

#### COMPETING INTERESTS

The author states that there are no conflicts of interest in preparing the manuscript.

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8 September 2016 | INTERVENTION AREA: WORLDWIDE IMPACT OF DIETETIC PRACTICING. DIETITIAN-NUTRITIONIST IS KEY

ROUND TABLE: SUSTAINABLE EATING AND NON-COMMUNICABLE DISEASES

Lecture Sequence: 3



### Gender nutrition approach to women's increasing risk in the obesogenic environment: implications for metabolic diseases and breast cancer

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**Background:** Narrowing gender health gap in life expectancy (LE) and increasing unhealthy life years (UHLE) in women raised the hypothesis of women's higher risk than men's in the obesogenic environment. It implies that the advantage of women's evolution for fat accumulation against scarcity, which historically yielded greater health and longevity, is now counteracted by increasing risks in the obesogenic environment. This assumption is supported by women's historical lead in the obesity epidemic, and research showing their faster obesity-related decrease in life expectancy (LE), increase in disabilities and morbidity, and further increases in metabolic diseases and cancer (1-3).

**Objectives:** To identify women's specific lifestyle and diet/nutritional correlates with disease risks, based on lifelong performance, metabolic tendencies, critical periods, and chronology of health events *vis-à-vis* the women's greater morbidity and disability despite their longer LE, as compared to same-aged men.

**Methods:** Intensive review of epidemiological, clinical, biochemical, and statistical evidence from government/international registrations and scientific studies suggesting gender dimorphism in diet-health correlations, potential explanations of increasing women's risk, and corresponding suggested approaches to life-style and nutritional prevention.

**Results:** Women's specific metabolic/disease risks include higher lifelong fat accumulation and differential distribution, as observed during puberty/adolescence, early adulthood, and menopause (4); and women's higher bodyfat% than men, even with equal BMI (5), suggesting that bodyfat better reflects prediction for women; differential metabolic responses to weight-reduction diets, with women's lesser abdominal fat loss (4) and better response to high-protein vs. high-carbohydrate diet for men (6); women's greater sedentary risks vs. exercise benefits (7); and delayed manifestation of central obesity, metabolic syndrome, and related disease (cardiovascular, diabetes, cancers) until menopause, but accelerated thereafter. Much higher sensitivity to increasing dietary n-6 PUFA (2), with resultant increased inflammatory and DNA damage risks, including cancer predisposition, especially for breast cancer (8,9), where lifelong risk periods and direct estrogen-nutrition interactions may be involved and/or potentially prevented - together exemplifying the critical importance of gender nutrition approach to women's risk prevention and health promotion.

**Conclusions:** Epidemiological, statistical, and interventional data suggest a need for gender differential metabolic and chronological perspectives for screening and designing comprehensive lifelong nutritional prevention/intervention strategies, especially facing women's increasing health risk in

obesogenic environment and western lifestyle/diet. Warranting emphasis of differential gender nutrition in research and treatment as essential component within the promotion of personalized medicine.

## COMPETING INTERESTS

The author states that there are no conflicts of interest in preparing the manuscript.

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ROUND TABLE: SUSTAINABLE EATING AND NON-COMMUNICABLE DISEASES

Lecture Sequence: 4



#### Diet and changes in dietary patterns and their relationship with Chronic Non-communicable in Chile

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Currently, population's lifestyles are determining their state of health and there is an increase of Chronic Non-Communicable Diseases (NCDs), according to the last National Health Surveys (1,2). Since the 1980s, it is possible to observe changes in the epidemiological profile of Chilean population; these changes are related to variations in food availability, consumption patterns and diet's nutritional composition in the entire population's households without distinction of income (3,4). Data about food expenditure, collected through Household Food Expenditure Surveys carried out in Chile every ten years and since 2012 every five years, have contributed to identify variations in diet and nutritional profiles of the population according to their level of income. In this regard, food expenditure surveys and trends observed in the Fourth (1986-1987), Fifth (1996-1997), Sixth (2006-2007) and Seventh (2011-2012) Household Budget and Expenditure Surveys, carried out by the National Institute of Statistics (INE), showed that absolute food expenditure increased for the total of households and increased considerably in the lowest income quintiles; relative food expenditure showed a decreasing trend in relation to total household expenditure (5).

Moreover, there is an increase in the expenditure in processed products from 42% of total food expenditure to 57% for the total of households; from 31% to 48% for the lowest income quintile (QII) and from 53% to 68% for the highest income quintile (Fifth Quintile) (1987-2007). The greatest increase was noticed in the expenditure on sodas and processed juices, alcoholic drinks,

ready meals and take-out food. This improvement in food access is reflected in an increase in the apparent consumption of energy, saturated fats from animal products (meats and dairy), processed products (mayonnaise, creams, pastries) and added sugars (soft drinks, processed juices). The amount of dietary fiber from grains, legumes and cereals decreased. Consumption of critical food for the prevention of Chronic Non-communicable Diseases, such as vegetables and fruits, sources of antioxidants, slightly increased, but remains very low. The consumption of legumes, source of complex carbohydrates and dietary fiber, decreased noticeably. Consumption of fish and other sources of omega 3 remained very low (6,7).

The nutritional profile of the Chilean population is characterized by a high energy density and calories derived from fats, saturated fats, simple sugars of a high glycemic index and sodium; low availability of protective foods (fish, grains, legumes, fruits and vegetables). These changes are evident by noticing the replacement of more natural or minimally processed foods by moderately and ultra-processed foods and salt (8).

Additionally, the study that compared food consumption patterns and lifestyles in Chile to the recommendations suggested by the World Cancer Research Fund (WCRF), considering the same database, showed that consumption patterns depart substantially from those recommendations and there is a higher consumption of high risk products (soft

drinks, sugary juices and processed foods high in sodium and total fats) and a low consumption of protective foods (legumes, green vegetables, fruits high in antioxidants and fiber). The analysis reveals that Chilean population is highly exposed to cancer risks associated with diet, high Body Mass Index (BMI) and sedentary behaviors. The observed changes have possibly played a role in the population's epidemiological and nutritional profiles, revealing an increase in obesity, diabetes and risk factors of Chronic Non-Communicable Diseases in the last decades (9,10).

Concurrently, studies about other factors that affect changes in diet and consumption patterns, such as food advertising and population's knowledge about diet and nutrition, indicate the importance of designing strategies to guide the community according to the guidelines stated by the World Health Organization. In Chile, changes in food availability, diet and consumption patterns, as well as conditioning factors, are related to the dominant epidemiological profile of the country's population.

## COMPETING INTERESTS

The author states that there are no conflicts of interest in preparing the manuscript.

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8 September 2016 | INTERVENTION AREA: EQUITY AND PROFESSIONAL ETHICS  
WITHIN THE DIETETIC PROFESSIONAL

ROUND TABLE: IMPROVEMENT OF EDUCATION AND COMPETENCES IN DIETETICS.  
SUSTAINABLE PROFESSIONAL TRAINING

Lecture Sequence: 1



### Improvement of Education and Competences in Dietetics – Get to know the IMPECD Project

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Non communicable diseases (NCDs) take 38 million people's lives each year worldwide (1). In Europe NCDs are the leading cause of morbidity and mortality. The World Health Organization (WHO) and the European Union (EU) have recognized the importance of nutrition in prevention and treatment of NCDs (2,3). Dietitians play an important role in the prevention of NCDs and in patient care of several diseases (4).

Dietetics is a relatively young discipline at HEIs in Europe and differences in curriculum and thus education still exist. An example of the differences encountered is the "Dietetic Care Process" (DCP) or "Nutrition Care Process", which is of key concern to all dietetic professionals. Worldwide and within Europe different frameworks of DCPs are used e.g. differences in the number of steps or used terminology. Equally important, each step should be strengthened by evidence-based recommendations, which are still not available for Europe. Furthermore, not all countries use a standardized language in dietetics (5). Thus implementation of international research projects, comparability of project results, agreement of the most efficient therapies and cross border mobility for professionals is difficult.

Moreover, there is a substantial need for innovative learning materials. Different learning materials for the training of the various DCP are available, but unfortunately none use an innovative learning approach or are free for use. Therefore,

another key output of this project is a Massive Open Online Course (MOOC) based on the unified framework DCP and free for use.

Health professionals need to be trained to use new technologies as well as to provide innovative means of health care aimed at improving patient care (6). Therefore a Strategic Partnership composed of five European institutions of higher education (HEI) has been formed to enhance the quality of dietetic education.

Project goals:

- unify the framework Dietetic Care Process (DCP)
- produce a Massive Open Online Course (MOOC), free for use
- implement two Intensive Study Programs (ISP) to test the MOOC and evaluate the materials
- set up a syllabus and implementation guidelines to disseminate the results
- improving quality and relevance of dietetic higher education in Europe
- improving key competences including English language, digital competences, knowledge and understanding

of dietetics, dietetic process as well as professional reasoning

- building professional relationships, autonomy and accountability
- research and development in dietetics and thereby increasing employability
- support discussions concerning a dietetic standardized language
- support Life Long Learning for dietitians

Output of the project include a unified framework DCP, as a basis for the development of clinical cases, and the production of the innovative MOOC, which is embedded in the IMPECD-platform and available 3 years after the project has ended. Furthermore, pedagogical training materials are developed to present the clinical cases on the MOOC and for the development of the contents of the two ISPs. A syllabus is compiled and addresses the other European universities as a guideline to implement the mentioned results within the curriculum. To disseminate the results as a role model for Europe, implementation guidelines are compiled as a discussion basis for the stakeholders. These results will support the development of a unified framework DCP and the discussions about the implementation of a standardized language in the field of dietetics. Furthermore, quality and relevance dietetic higher education improves and Life Long Learning will be supported and serves as basis of excellent dietetic therapy in all of whole Europe, which lead to cost savings in the health care sector.

This project has been funded with support from the European Commission. This publication reflects the views only of the author, and the Commission cannot be held responsible for any use which may be made of the information contained therein.

## COMPETING INTERESTS

The authors state that there are no conflicts of interest in preparing the manuscript.

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8 September 2016 | INTERVENTION AREA: EQUITY AND PROFESSIONAL ETHICS  
WITHIN THE DIETETIC PROFESSIONAL

ROUND TABLE: IMPROVEMENT OF EDUCATION AND COMPETENCES IN DIETETICS.  
SUSTAINABLE PROFESSIONAL TRAINING

Lecture Sequence: 2



### Unified framework of the Dietetic Care Process (DCP)

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**Background:** The “Dietetic Care Process” (DCP) or “Nutrition Care Process” is of key concern to all dietetic professionals. It is a systematic approach to recognize, diagnose and intervene in nutrition related health concerns. It improves consistency and quality of dietetic care and the predictability of outcomes, ensures evidence-based practice, and supports critical thinking as well as decision-making in all areas of dietetic practice (1). Worldwide and within Europe different frameworks of DCP are used e.g. differences in the number of steps or used terminology. Equally important, each step should be strengthened by evidence-based recommendations, which are still not available for Europe. Furthermore, not all countries use a standardized language in dietetics (2). Thus implementation of international research projects, comparability of project results, agreement of the most efficient therapies and cross border mobility for professionals is difficult. The European Federation of the Associations of Dietitians (EFAD) is the European key player with respect to dietetic issues. The organisation is accelerating a unified framework DCP and a standardized language (3). Recommendations for the education of dietitians have been published thanks to the funding of the “Thematic Network for Dietetics” (DIETS 1 and 2) by the EU. This Strategic Partnership aims to unify the framework DCP and implement it in the curriculum of our five HEIs.

One of the key issues of this project refers to the framework Dietetic Care Process (DCP). Hence, in this collaboration four

countries have been given consideration due to their tradition of the implementation of the framework DCP. The Netherlands have the longest tradition in the use of the framework DCP, dating back to the 80’s. Belgium uses a similar framework and has a comparable tradition. In Austria another framework was implemented by law in 2006. It is the only participating country in which the framework DCP was set by law. In Germany, a further framework will be published this year and this country has the shortest tradition in the use of the framework DCP.

The project IMPECD aims at the IMProvement of Education and Competences in Dietetics. Therefore, IMPECD includes several intellectual outputs. One of this is the unified framework of the Dietetic Care Process (DCP), as a basis for the development of clinical cases, and the production of the innovative Massive Open Online Course (MOOC), which is embedded in the IMPECD platform.

**Goal:** One of the main goals of the project IMPECD is the creation and the implementation of a unified framework DCP, based on common terms and definitions used. In this intellectual output, the dietetic care practices in the participating countries and HEIs are assessed.

**Method:** The project starts with a search of the different framework DCP used in Austria, Belgium, Germany and the Netherlands followed by analyses of the documentation as well as the differences in terminology and needs. Strengths and

weakness of framework DCP were worked out. This is necessary to build a common understanding of the DCP. Concerning the methodology only a special part of the DCP which is focused on nutrition therapy will be examined. Project partners have to decide the number of steps of the process model DCP as well as the nomenclature of each step. Under discussion are dietetic assessment, dietetic diagnosis, planning and implementation of dietetic intervention and monitoring and evaluation.

Based on these agreements it will be clarified which data should be collected for dietary assessment and which methods are appropriate for this, for example food and nutrient intake, knowledge, beliefs and attitudes, behaviour, physical activity and function, body composition and anthropometric measurements, parameter of the metabolism of nutrients, client history.

Consequently all the other processes of the framework DCP have to be defined including quality criteria for each step. The developed model of the unified framework of the DCP will be evaluated using ten different clinical cases.

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## COMPETING INTERESTS

The authors state that there are no conflicts of interest in preparing the manuscript.

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8 September 2016 | INTERVENTION AREA: EQUITY AND PROFESSIONAL ETHICS  
WITHIN THE DIETETIC PROFESSIONAL

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SUSTAINABLE PROFESSIONAL TRAINING

Lecture Sequence: 3



### Conception and challenges for creating a MOOC for dietetic students

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The Erasmus+ Strategic Partnership for Higher Education IMPECD, Improvement of Education and Competences in Dietetics, is working on a unified framework 'Dietetic Care Process' (DCP) or 'Nutrition Care Process', a systematic approach to recognize, diagnose and intervene in nutrition related health concerns (1), within a consortium of five higher education institutes. Based on this unified framework DCP, the innovative learning tool Massive Open Online Course (MOOC) with ten clinical cases will be developed. This will be done because different learning materials for the training of the various DCPs are available, but unfortunately none use an innovative learning approach or are free for use. Moreover, there is a substantial need for innovative learning materials because health professionals need to be trained to use new technologies as well as to provide innovative means of health care aimed at improving patient care (2). This need is also in line with the outcome of the DIETS 2 report (3).

MOOCs are online courses and became popular in 2011. Different to other distance learning tools MOOCs offer unlimited participation, open access via the internet, and interactive user forums. Furthermore, they are free of charge and asynchronous. Generally, MOOCs are offered through existing web-based platforms and in cooperation with universities. MOOCs include videos, various resources, assignments, and assessment for a specific time period. MOOCs could bring information to a bigger audience and might be a way to

reduce costs of higher education. Limitation of this learning tools are partly inconsistent quality, low completion rates, and limited research on their effectiveness (4). The IMPECD-team will reduce these limitations by appropriate research and design e.g. several feedback approaches. Since the project has started in September 2015 the team has made comprehensive literature analysis on several relevant topics e.g. learning theories, problem based learning, problem orientated learning, development of virtual patients, skills lab concept, MOOCs in general, MOOCs in dietetics, and different platforms for MOOCs. The next step was to evaluate strengths and weaknesses of the different types of MOOC according to the needs and challenges of the project e.g. five different higher education institutes will use the MOOC in different curricula. Furthermore, the team collected ideas for the IMPECD-MOOC. This needs-analysis and the structure of the unified framework DCP, which is the basic concept of the MOOC, will be discussed with the projects technician and adequate solutions will be developed. This will be done by intensive exchange of dietitians, lectures as well as students, and technicians. The prototype will be discussed and tested within the consortium as well as with the students of the participating higher education institutes in different lectures. The two Intensive Study Programs will be used as another usability test for the MOOCs as well as an exchange opportunity for students and lectures. Results of these Intensive Study Programs will be implemented in the development of

the MOOC. Students will have the possibility to practice the DCP and gain more experience in dietetic work by working on the cases for the MOOC. Furthermore, the 'Sustainability and Impact Board', consisting of the European Federation of Associations of Dietitians (EFAD), ENDietS (European Network of Dietetic Students) and five National Dietetic Associations feedback major project steps e.g. the MOOC.

Besides the unified DCP and the MOOC with ten clinical cases, pedagogical training materials, evaluation and testing tools are produced and a syllabus is compiled and addresses the other European universities as a guideline to implement the unified framework DCP, the MOOC, and the evaluation tools within the curriculum. All projects results are intended to be used by dietetic students and dietitians as well as other interested professionals for Life Long Learning and will increase the quality of the European healthcare systems.

This project has been funded with support from the European Commission. This publication reflects the views only of the author, and the Commission cannot be held responsible for any use which may be made of the information contained therein.

## COMPETING INTERESTS

The authors state that there are no conflicts of interest in preparing the manuscript.

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8 September 2016 | INTERVENTION AREA: THE POWER OF DIETITIANS NUTRITIONISTS TO MAKE A DIFFERENCE IN SOCIETY

ROUND TABLE: THE POWER OF DIETITIANS-NUTRITIONISTS TO MAKE A DIFFERENCE IN THE SOCIETY

Lecture Sequence: 1



### Non-nutritive sweeteners, consumer risks, obesity and current evidence in Latin America

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Non-caloric sweeteners (ENS) are chemicals that provide a negligible amount of calories and have a great sweetening power (saccharin, ciclamato, acesulfame potassium, aspartame, stevia, sucralose), several times higher than table sugar, so a very small amount is needed to achieve the desired sweetness and yes, a great majority of these are harmless. Among the organizations that considered safe for consumption for the entire population, as long as it's in moderation and as part of a balanced diet, include the Codex Alimentarius, the Food and Drug Administration (FDA) and its European counterpart EFSA.

The ENS can be consumed without risk, however intake should not exceed the acceptable daily intake (ADI), a study in Chilean schoolchildren shows a consumer (over 90% of schoolchildren consume ENS), obese school they are the most consumed, however intakes are under the IDA (1).

Recent studies of short-term interventions, show that especially ENS drinks, may be helpful in reducing energy consumption and body weight and reduce the risk of type 2 diabetes and cardiovascular disease, compared with the intake of sugars, however epidemiological studies in Europe and the United States, ENS consumption associated with increased risk of obesity (2). Studies at school and university students, in the case of schoolchildren observed no association between consumption and body weight ENS (3), in the case of university students a multicenter study involving university students in

Chile was conducted were performed, Guatemala, Panama and Peru, the first article I wanted to determine the association between obesity and beverages ENS, the results show that 80% of students consumed drinks with ENS, none of them exceeded the permissible daily intake. The increased consumption in both men and women was observed in Chilean university students ( $p < 0.05$ ). For men of all countries aspartame appears as a protective factor  $OR = 0.3$  ( $CI = 0.1$  to  $0.9$ ). Instead women in all countries, sucralose consumption shows a tendency to increase the risk of overweight/obesity  $OR = 2.1$  ( $0.9$  to  $4.5$ ) (4). The other article evaluated the association between total ENS consumption and body weight, showed that consumption of sucralose and acesulfame potassium reduces the risk of overweight/obesity  $OR = 0.5$  ( $0.3$  to  $0.9$ ) and  $OR = 0.4$  ( $0.2$  to  $0.8$ ). In contrast, other sweeteners tested, both women and men, are not associated with risk of overweight/obesity, except in Guatemalan men whose consumption does increase the risk and who are at increased consumption ENS (5). They wanted to assess consumption stevia (sweetener rage in Chile) (6) and its association with body weight of 5 different universities of Chilean, resulting in 69.8% of students consumed stevia during the week. 69.8% of the students consumed stevia every week, the liquid form being the main contributor to the dietary stevia intake (81.2%). Only 1.4% of the students went over the Acceptable Daily Intake (ADI). Normal weight women show a higher stevia intake compared to those obese or overweight ( $p < 0.05$ ). Finally, stevia consumption appears to be positively

associated to normal weight in the first model (adjusted) (OR=0.219; IC 95%: 0.13-0.35;  $p<0.05$ ) and second model (OR=0.21; IC 95%: 0.13-0.35;  $p<0.05$ ) (7).

We are currently working to determine the intake ENS Chilean women, there are currently no recommended or controversy ENC pregnant.

## COMPETING INTERESTS

The author states that there are no conflicts of interest in preparing the manuscript.

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8 September 2016 | INTERVENTION AREA: THE POWER OF DIETITIANS NUTRITIONISTS TO MAKE A DIFFERENCE IN SOCIETY

ROUND TABLE: THE POWER OF DIETITIANS-NUTRITIONISTS TO MAKE A DIFFERENCE IN THE SOCIETY

Lecture Sequence: 2



### Diet and the Microbiome – The next Frontier for Dietitians

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Research on the human microbiome is one of the hottest areas of medical science and offers great promise for optimizing health and managing disease. Over the last decade, research has demonstrated that the microorganisms in our gut are not benign, but carry out a large range of physiological functions that are important to the health and well-being of the individual (1,2). Disorders of modern society, such as Irritable Bowel Syndrome, obesity, Type 2 Diabetes, food allergies, depression and autism are now linked to diet and alterations in the gut microbiota (dysbiosis) (3-6).

Mounting evidence indicates that dietary patterns have a major influence on the microbiota (7,8). Dietitians are the experts in food and nutrition and need to be at the forefront of this new frontier in medicine. This session will focus on the future implications for dietetic practice.

### COMPETING INTERESTS

I have received honoraria and/or have been paid from grants from the following companies: Danone Canada, Institut Rosell-Lallemand, Dietitians of Canada.

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NUTRITIONISTS TO MAKE A DIFFERENCE IN SOCIETY

ROUND TABLE: THE POWER OF DIETITIANS-NUTRITIONISTS TO MAKE  
A DIFFERENCE IN THE SOCIETY

Lecture Sequence: 3



#### Behavioural Lifestyle Intervention In the Treatment of Obesity: EGO Programa – Randomised Controlled Clinical Trial in a Hospital Obesity Unit

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**Introduction:** Due to the high prevalence in modern societies, obesity rises as a priority in public health (1). This multifactorial chronic disease is related with a wide number of comorbidities and must be treated by a multidisciplinary team with different and complementary knowledge, abilities and competencies commitment for the integral approach to the obese patient. It is therefore necessary the definition, standardization and evaluation of therapies, according to the evidence of international and national strategies for the prevention and treatment of this disease (2,3).

Scientific evidence has revealed that the obesity treatment has to focus in the promotion of lifestyle changes. These interventions, known as lifestyle interventions or behavioural therapies, must provide the patient with all the necessary tools for the integral control of his obesity (dietary intervention, physical activity and psychological and motivational assistance). Intensive interventions based on lifestyle modifications are more effective than individual and traditional ones (3-6).

In recent years multidisciplinary group interventions have increased but time and resources in the hospital setting limit their optimal development. On the other hand, there are very few studies that evaluate the effectiveness of these kind of therapies for obese patients in clinical practice (from primary to tertiary hospitals) (7-10).

**Objective:** The main research goal of this study was to evaluate the effectiveness of group-based and multidisciplinary lifestyle intervention (EGO Program), based on educational program concerning food, physical activity and behaviour modifications, in the integral control of obesity.

**Materials and Methods:** The study has been realised on 152 obese patients from a tertiary hospital obesity unit, aged 18-65 years old. Participants were randomly assigned to either a control (CG) or intervention group (IG), during a six-month period. The CG received traditional nutritional education program led by nurses (4 sessions, 3 month-follow up by a nurse), and the IG received an intensive program (EGO Program) including 6 training workshops (nutrition, physical activity and behaviour modification) led by nutritionist, physical trainer and psychologist.

Physical parameters (weight, BMI, body composition, waist circumference and blood pressure), biochemical parameters, lifestyle and behaviour, diet quality, physical activity and health related quality of life were evaluated at the beginning, during and at the end of the six-month intervention period. The perceived effort and satisfaction level with the programs were collected at the end of the study.

**Results:** The EGO Program showed significant improvements in physical parameters, lifestyle and behaviour, diet quality,

physical activity and health related quality of life compared with CG. The main significant results are: fat mass loss (kg) (-3.5 vs. -1.4;  $p < 0.05$ ), waist circumference (cm) (-5.1 vs. -2.8;  $p < 0.05$ ), decreased energy intake (kcal) (-933 vs. -305;  $p < 0.001$ ), increase healthy eating index (HEI) ( $p < 0.01$ ), increase energy expenditure by physical activity (kcal) (739 vs. 161;  $p < 0.001$ ), percentage of participants who cease to be sedentary (65 vs. 10;  $p < 0.001$ ), improvements in quality of life related to body pain ( $p < 0.05$ ), percentage of participants satisfied with habits improved (100% vs. 89%;  $p < 0.05$ ). The percentage the weight loss (-4 vs. -2.4) and decreased of TAS (mmHG) (-5 vs. -3) showed no significant differences between groups but were important in the control of obesity. The EGO program participants reported a lower perceived effort and greater satisfaction when compared to traditional education participants.

**Conclusions:** According to the results we can conclude that the intensive lifestyle intervention with multidisciplinary approach is more effective than traditional education program in the integral treatment of obesity. The EGO Program represents an effective and formalized therapeutic strategy. Follow up may be required for long-term maintenance of lifestyle modification. We hypothesized its application in other situations, such as primary care, in order to provide obese patients with a useful tool to control their disease.

## COMPETING INTERESTS

The authors state that there are no conflicts of interest in preparing the manuscript.

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## CONFERENCE PROCEEDINGS

8 September 2016 | INTERVENTION AREA: THE POWER OF DIETITIANS  
NUTRITIONISTS TO MAKE A DIFFERENCE IN SOCIETY

**ROUND TABLE: HEALTH EFFICIENCY WORK TEAMS. DO DIETETICS AND NUTRITION COVER  
SOCIETY'S HEALTH NECESSITIES?**

**Lecture Sequence: 1**



### Evidence of innovative teaching strategies in nutritional education to prevent malnutrition and childhood obesity

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This presentation is about an innovative project focused on nutrition education, which has been developed by an Argentine nonprofit organization in order to fight against global childhood obesity and unhealthy eating habits.

Our presentation will cover the following topics: current status of childhood obesity around the world, childhood obesity in Latin America, childhood obesity in Argentina, the new role of dietitians in education, Supersaludable Foundation (*Fundación Supersaludable*) efforts in promoting nutrition education (reference to Supersaludables's ten most important programs and their social impact), and introduction to the musical short film on nutrition education Supersaludable.

### COMPETING INTERESTS

Alberto Arribas is the president of Supersaludable Foundation.

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8 September 2016 | INTERVENTION AREA: THE POWER OF DIETITIANS  
NUTRITIONISTS TO MAKE A DIFFERENCE IN SOCIETY

ROUND TABLE: HEALTH EFFICIENCY WORK TEAMS. DO DIETETICS AND NUTRITION COVER  
SOCIETY'S HEALTH NECESSITIES?

Lecture Sequence: 2



### Improving Lives and Strengthening Communities: A Multi-sectorial Food Systems and Nutrition Approach

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People in every country in the world suffer from some form of malnutrition, and both undernutrition and overnutrition lead to adverse health outcomes. It is estimated that 1 billion are undernourished from a lack of calories, and 2 billion have micronutrient deficiencies, the highest among them are vitamin A, iodine, iron, and zinc (1). Calorie and micronutrient deficiencies lead to childhood stunting, impairment of mental and physical development, and negatively impacts productivity of individuals and communities. At the same time, overnutrition-overweight or obesity, is a risk factor for many noncommunicable diseases, such as cardiovascular diseases, cancers, diabetes, and chronic lung diseases. According to the World Health Organization, noncommunicable diseases were responsible for 68% of all deaths in 2012 (2).

Unprecedented attention is being given to achieving food security by governments, public and private sectors. Many efforts are food systems based-focusing on increasing access to nutrient-dense food in a manner that is sustainable and reduces environmental impact. This approach brings collaboration by several stakeholder groups and recognizes the important contribution of nutrition to individual health and strong societies. Therefore, it makes sense that increasing access to and consumption of sufficient calories and nutrients supplied by a diverse diet through healthy food systems can improve the health of individuals and lead to stable and thriving communities.

To achieve these goals, many organizations are developing nutrition-sensitive agriculture interventions. Nutrition-sensitive agriculture interventions are ones that increase the variety of nutrient-rich foods produced and consumed by at risk populations. These types of interventions need to be well-designed, implemented, and tested to determine if they improve health outcomes in different regions of the works and within diverse cultures. The value of these types of interventions was highlighted at the second International Congress of Nutrition in 2014 (3).

The Academy of Nutrition and Dietetics (Academy) recognizes the importance of working with other organizations to promote sustainable agriculture while improving global health outcomes. The Academy's international strategic plan helps to illuminate the need for consensus around the RDN's role at the global intersection of agriculture, nutrition, and health. A conference on the topic was hosted by the Academy and its Foundation in December 2014 to find consensus among nutrition leaders and continue the advancement of our profession (4). The goals of the conference were to: assess the current landscape in the intersection of agriculture, health, and nutrition to identify where the Academy and its members can help to strengthen current efforts; increase accessibility to sufficient amounts of nutrient-dense foods that promote optimal health; and increase Global Capacity for RDNs. Following in October 2015,

a global nutrition conference with dietetic associations around the world and with leading organizations in food security was held in Amsterdam. The purpose of this two day forum was to identify ways to accelerate improvements in nutrition and food interventions and health outcomes thereby decreasing malnutrition globally by bringing together multi-sectorial actors with international dietitians to identify priorities for action; establishing a mechanism for global coordination of actions and the monitoring of effectiveness; and making commitments and pledges of support to empower dietetic and nutrition communities to take action. In this session, opportunities for involvement of dietitians and dietetic associations in healthy food systems to achieve food security and improved health will be presented.

### COMPETING INTERESTS

The author states that there are no conflicts of interest in preparing the manuscript.

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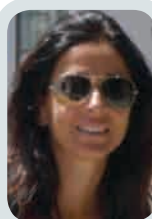


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ROUND TABLE: HEALTH EFFICIENCY WORK TEAMS. DO DIETETICS AND NUTRITION COVER  
SOCIETY'S HEALTH NECESSITIES?

Lecture Sequence: 3



### Impact of dietetic advising on sustainable management of chronic diseases

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According to WHO, modifying four risk factors –i. e., unhealthy diets, physical inactivity, tobacco use, and excess alcohol consumption– could prevent up to 80% of cardiovascular disease and type 2 diabetes, and at least one-third of all common cancers (1).

The principle authorities on chronic diseases recommends the adoption of a healthy diet as the cornerstone not only for preventing but managing chronic diseases like cardiovascular diseases (2), diabetes (3), cáncer (4) and hypertension (5).

Although dietitians has the better knowledge and skills to nutrition counselling provides, in our country are doctors and nursery who mostly working on nutrition counselling.

There are 8 promising interventions for enhancing adherence to dietary advice : behavioural based on Cochrane (6) systematic review, contracts, exchange lists, feedback based on self-monitoring, individualized menu suggestions, multiple interventions, portion size awareness, telephone follow-up, and videos. Canadian dietitians ranked 3 interventions as the most important and applicable for enhancing dietary adherence: feedback base don self-monitoring, use of multiple interventions and portion size awareness.

We present four different interventions made in our public health system where dietitians was crucial, one of them using Medtep digital platform as a support to engage patients in their weight reduction.

**1) Overweight and obesity patients (7,8):** To determine the effect on cardiovascular risk factors in a group of motivational intervention by nurses trained by an expert psychologist and dietitian, complementarily to the usual procedure.

Methods: Multicenter intervention in overweight and obese patients randomized clinical trial. Randomization of intervention by Basic Health Zones (ZBS). Two groups located in separated different centers, one receiving motivational intervention in group (study group) and the other routine monitoring (control group) were established. Variables: Sociodemographic. Outcomes: percentage of patients reducing 5% of weight, assessment of cardiovascular risk factors and analytical data.

Results: 696 patients were evaluated; 377 control and 319 of the study group. Weight diminished in both groups in each visit. Mean percent weight reduction remained at 1% in the control group and 2.5% in the intervention group (p-value=0.009). 55.8% of patients reduced their weight in the control group and 65.5% in the study group (p-value=0.0391). 18.1% of patients in the control group reduced more than 5% of weight; this percentage increased to 26.9% in the intervention group being statistically significant (p-value=0.0304). No significant differences (5% vs. 8%) were detected at 2 years in the case of the 10% target. It was found after two years that BMI was reduced an average 0.9kg/m<sup>2</sup> in the control group and 2.4kg/m<sup>2</sup> in the study group (p-value=0.0237). A significant

evolution in triglycerides reduction and systolic blood pressure was detected. However there was no statistically significant reduction in blood sugar, diastolic blood pressure and other lipid parameters (total cholesterol, HDL and LDL-cholesterol).

**2) Childoooh obesity:** We present too, results of intervention program in overweight and obese pediatric patients, age between 6 and 10, based on "Nens en moviment" program in public health system.

**3) Chronic Renal Failure:** There were significant differences between, portion size awareness in patients with renal failure recently diagnosed, reaching in order to achieve the target for protein intake at 1 month intervention, made by dietitians in front usual care in Basic Health Zones.

**4) Disminishing dietary sodium intakes on Hypertension:** Using games on digital platform, dietitians and nurses trained by dietitian have obtained bigger reduction on dietary sodium intakes, measured by natriuria (mEq/24 h) and better control on reduce high blood pressure than using usual care in hypertension patients.

## COMPETING INTERESTS

The authors state that there are no conflicts of interest in preparing the manuscript.

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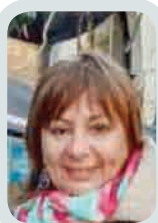


### CONFERENCE PROCEEDINGS

8 September 2016 | INTERVENTION AREA: THE POWER OF DIETITIANS NUTRITIONISTS TO MAKE A DIFFERENCE IN SOCIETY

ROUND TABLE: HEALTH EFFICIENCY WORK TEAMS. DO DIETETICS AND NUTRITION COVER SOCIETY'S HEALTH NECESSITIES?

Lecture Sequence: 4



#### AADYND Food Education Projects

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The projects "Healthy Citizens" and "Healthy Family", in charge of the Argentina Association of Dietitians and Nutritionists Dietitians (AADYND) management associated with the Development Program for Food and Nutrition Policy (PDPAYN) of the Ministry of Social Development GCBA, They were part of the Porteña Citizenship Program (PCP) by a proposed food and nutrition education program users. The projects were conducted in 2010 and 2012 respectively.

They were based on:

- A massive communication campaign aimed at nutrition education program for families.
- Meetings with cardholders for advocacy, health promotion and orientation toward healthy food practices, the lowest possible cost.

From these lines the proposed project objective is to improve the quality of feeding program user families.

In 2010 in the "healthy citizen" messages were incorporated variety of foods (1), promoting healthy food shopping, choose safe food (2). Each message lasted a month.

In 2012 "Healthy Family" we worked with three key messages. "Fruits and vegetables", "Woman housewife" and "Nutrition Labeling" (3) in addition to conducting nutrition education always with a nutrition degree present at points of sale. Each message in this project lasted two months.

These projects showed satisfactory results in terms of reception and participation of the population involved.

The team working on both projects was made up of one project coordinator and one consultant project coordinator (both graduates Nutrition), 1 social communicator, 1 graphic designer, 1 drawer and 8 nutritionists who received monthly training specific tasks to develop nutritional education in outlets in schools, supermarkets through workshops.

**Overall conclusions:** The total number of leaflets delivered by nutritionists throughout the campaign was 31,791 and 9,910 in the second project.

Individual consultations: The most frequent consultations were those related to: healthy eating for toddlers and school age, recipes and ways to eat vegetables, overweight/obesity/how to lose weight, feeding chronic diseases such as diabetes, hypertension and hypercholesterolemia.

The vast majority of inquiries were made by women in the age range of 26-64 years.

Nutrition education workshops conducted in five schools and community kitchens, were a very interesting strategy.

Regarding the place of delivery of brochures and capture the interest of people turned out to be the sector in relation to the message of the month or the checkout.

Through continued throughout the months, both workers

and customers of the stores involved in the campaign and particularly users PCP card, began to recognize the space, to identify and Nutritionists role they had at the point of sale.

The community kitchens are a good place to capture them and to make nutrition education at a reasonable cost.

It is currently conducting the project "Healthy Families from the first months" aimed at beneficiaries Porteña Citizenship Program and the beneficiaries of the First Months Network, a program for all pregnant women in households with coverage of Citizenship Porteña .

The proposal is to incorporate the Food and Nutrition Education incidentally in the waiting rooms of the headquarters of the program approach as a strategy, especially on issues such as the prevention of infant mortality by promoting breastfeeding and food timely and effective complementary.

Taking the project main objectives: firstly to promote breastfeeding from birth to two years of life and on the other, stimulate the desire to incorporate healthy dietary practices in families, through the shopping promotion healthy and efficient food distribution campaign started in digital audiovisual short form with three main messages of nutritional food educational content: "Breastfeeding", "Complementary Feeding" and "Healthy Hydration"(4).

It was also proposed to strengthen this strategy with other communication channels such as brochures and interpersonal communication through surveys conducted by Nutritionists to direct beneficiaries, this will allow monitoring and feedback on the project.

Massive programs like Citizenship Porteña, (which has a coverage of about 60,000 households) have a common factor

the near impossibility of direct contact with the beneficiaries. That is why we encourage the realization of these projects include mass campaigns graphics or video projection audiovisual allow the desired coverage and replication in families.

AADYND participation in management programs associated with government agencies is an important initiative for intervention with the community.

## COMPETING INTERESTS

The author states that there are no conflicts of interest in preparing the manuscript.

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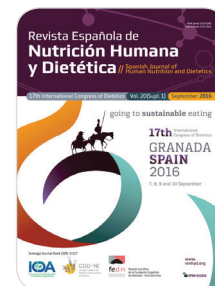
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8 September 2016 | INTERVENTION AREA: MULTICULTURALISM OF A GLOBAL SOCIETY

ROUND TABLE: FOOD SERVICE: DIETITIAN NUTRITIONIST AS AN ASSET

Lecture Sequence: 1



### Intervention dimensions of the nutritionist/dietitian in food services

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According to the Eurostat 2012 data, they were about 1.5 million enterprises that reported having food and beverage services related as their principal activity in the European Union (EU)-28. These enterprises thus contribute to impressive numbers. An estimated 8 million persons employed and 1432.2 billion euros of value added, puts the food and beverages services as a top-notch sector with regard to its influence on the lives of communities, local, regional and international. This as to be seen as a major opportunity for a nutritionist/dietitian to have a key role, and work in order to make food service a potential stage for many activities in their areas of competence (1).

Modern life, as we know it, as increase and still increasing, the way an ordinary citizen does its meals away from home. Over 20 years ago, at the World Food Summit of 1996, World Health Organization (WHO) defined food security as existing "when all people at all times have access to sufficient, safe, nutritious food to maintain a healthy and active life" (2). In 20 years the evaluation, the availability and the nutrition take major steps, leading us to realize that all this points need to be controlled and followed, mainly when the Analysis of Global Burden of Disease Study 2010 shows that dietary factors are the most important factors that dent health and well-being in every Member State in the WHO European Region (3).

It is recognized unhealthy diets result in malnutrition, including undernutrition, micronutrient deficiencies, overweight and obesity, as well as non-communicable diseases (NCDs),

having from high social and economic costs for individuals, communities and governments (3).

More, the 2010 Study added that, of the six WHO regions, the European Region is the most severely affected by NCDs, which are the foremost cause of disability and death. Diabetes, cardiovascular disease, cancer and respiratory diseases together account for 77% of the burden of disease and almost 86% of premature mortality (3).

Excessive consumption of energy, saturated fats, trans fats, sugar and salt, as well as low consumption of vegetables, fruits and whole grains are the main risk factors and are major priority concerns (3).

What that premise, the role of nutritionists/dietitians in food service need to be even more emphasized; has we know, the line of action can be as an intervenient in food safety, food literacy, food policies, food sustainability, being unlimited the development of activities by a nutritionist/dietitian in food service. But if all that dimensions of action could be the path to promote better life styles inside the communities? Or, if the link between different areas inside the food service, could provoke a chain reaction that lead to food service as a main vehicle to promote health?

The food service, as a work field with major potential in employability, need also to understand the full asset potential that a nutritionist/dietitian has. For that,

the nutritionist/dietitian need to exploit all the different intervention dimensions.

For the WHO it's as imperative measure the promotion and accessibility of a healthy and varied diet (that is both available and affordable), reaching the goal to improve the health, well-being and quality of life of the population, promote healthy ageing and reduce health inequalities (3).

For the allocation of that measures, it's required that additional effort and resources need to exist, in order to enhance food literacy, skills and knowledge. For this purpose, a nutritionist/dietitian is clearly an asset.

A nutritionist/dietitian in food service can improve skills in order to have action health dimension, working in food safety, food security, food policies, food development; as well as work in management, such as human resources, food quality, food costs, for example; or even work in customer satisfaction, social responsibility, a dimension that is more abroad and have impact in all the community (4).

So, for the future of all the food service, we need to realized, if in that same future, food required will need to be safe, sustainable and healthy?

The nutritionist/dietitian can be the professional that add a different view about what are de consumer's expectations *versus* the recommendations, and has the knowledge to know what the client/consumer needs. The perfect connection between food and health expectations (4).

## COMPETING INTERESTS

The author states that there are no conflicts of interest in preparing the manuscript.

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8 September 2016 | INTERVENTION AREA: MULTICULTURALISM OF A GLOBAL SOCIETY

ROUND TABLE: FOOD SERVICE: DIETITIAN NUTRITIONIST AS AN ASSET

Lecture Sequence: 2



### The puzzle of coordination and communication in the provision of food and meals

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The dietitian/nutritionist working in food service has to have knowledge, skills and competence belonging to different dimensions of food and meals. Commonly those dimensions are related to academic subjects as nutrition, dietetics, food safety, food science, sustainability and so forth as well as leadership and financing. To take all this dimensions into consideration is a puzzle of coordination and communication in the provision of food and meals in the food service context; meals that has to be nutritious (for prevention or treatment) and tailored for specific individuals and groups, as well as being tasty, tempting and familiar they must be safe, sustainable and financially reasonable (1). The food service dietitian/nutritionist has a significant role and a possibility to influence a lot of people's consumption of food and drinks and thereby play a key role on the arena of food and health.

The food service dietitian/nutritionist role and the possibility to influence people's consumption entail important challenges, also those of different dimensions. One of the challenges is to have knowledge and understanding of culture and the sociology of food and nutrition. Human food habits are not biological facts or only based on physiological needs, they are social constructs (2). Food habits are learnt by socialization, the process by which culturally norms and values concerning what constitute appropriate and inappropriate food are transformed from generation to generation (3). Those cultural values and norms concerning what to eat and not has been

described as a cuisine, by Farb and Armelagos (4). Moreover they described how every specific cuisine has four elements: basic foods, manners of preparing food, flavoring principles and the way that food is eaten (the set of manners). In the multicultural society of today different groups belonging to different cuisines have their meals in different food service contexts as school, hospitals, nursing homes, social care and so on and this is a challenge for menu planning. Menus and the food served has to satisfied many different needs and wishes and to make that possible the food service dietitian/nutritionist have to avoid ethnocentric food and meals. Another challenge in the context of food service is to avoid a paternalistic behavior when decide what other people, who are more or less dependent on what is served, have access to concerning food and drinks. Being so involved in other people's consumption entails a great responsibility and a necessity to be aware of if there are any parts of the puzzle that we are paying more attention to than others. Commonly it is easy to pay attention to every dimension that is measurable as nutrition calculation, food safety controls, food waste, the proportion of organic food and cost. At the same time it is more difficult to pay attention to and to manage dimensions as taste, commensality and values' belonging to people's food habits, and this is certainly a challenge for the food service dietitian/nutritionist who has to be aware of the modern world codification of knowledge (5).

## COMPETING INTERESTS

The author states that there are no conflicts of interest in preparing the manuscript.

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8 September 2016 | INTERVENTION AREA: MULTICULTURALISM OF A GLOBAL SOCIETY

ROUND TABLE: FOOD SERVICE: DIETITIAN NUTRITIONIST AS AN ASSET

Lecture Sequence: 3



### Food literacy and consumers choices

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**Culinary and health practices:** Food choices are usually a product of individual behavior or a lifestyle choice. However, actually, they depend on educational, social, cultural, and family factors, and the same happens with the skills and culinary practices (1). The culinary skills can influence the ability of individuals to practice one consistent feeding routine with nutritional recommendations, but their relationship with food consumption and the health of populations is not a matter truly studied and understood (2,3).

Some studies suggest that consumers will become more distant from the food preparation, by using pre-prepared products and ready meals; in a similar manner, the purchase of food will be more sporadic and small meals will take the place of lunch meals and dinner, making it more transportable food.

The debate on how the culinary skills can be a conditioning factor of health and well-being of individuals and populations focuses on a possible reduction or transition and a probable cause-effect of the increased availability, the food industry, the said products and convenience, instead or together, their increased demand by consumers.

**On the difficulty on the significance of "practical cookery":** According to Francis Short, the definitions of researchers about the culinary practices do not match the public concepts and, in order to ensure the coherence between the responses of participants in research, the definition used must be clearly established (4).

Short (4) classifies culinary skills as complex (mechanical, technical, perceptual, conceptual, organizational and academic) and centered on the individual, although showing the difficulty in its definition and a much higher level of complexity to the usually presented in scientific papers.

**On the variation of culinary skills:** The culinary skills are complex and belong to each individual ("person-centered"), consisting of mechanical, perceptual, conceptual, academic and planning skills. This interpretation set up a new approach, showing, for example, that the cooking skills are a concept of the domain of needs and domestic embodiments, and as such and to a certain extent, are not decreasing, instead are regarded as constant and invariable.

Although there is a relation of culinary skills with knowledge and practice, this is not straightforward. Some authors emphasize that, more than a loss of culinary skills, the question can focus on the lack of confidence and distancing in the application of practices and basic cooking skills (5).

**On the factors affecting skills:** One of the main causes identified as responsible for the loss of culinary skills is the decrease of the intergenerational transmission of knowledge of basic cooking practices in the family context. However, in infancy, mothers are reported as the main source of learning to cook, although other formal learning contexts are mentioned, such as classes, cookbooks and media (6).

Another aspect described is the transition of the acquisition and purchase of ingredients to prepare a meal for the composition

of a meal with pre-prepared foods, which may explain why and how the skills necessary to prepare and cook a meal are changing under the influence of globalization, the change in the production and processing of food, the emergence of a greater number of pre-prepared foods and meals ready to eat, and increased food consumption outside the home. The question can also be put on the following point: is the availability of convenience foods by the food industry a result from the decline in culinary skills or are these factors only coincident in time? On the other hand, as it is not necessary to practice the daily food preparation, this may have originated a reduction on culinary skills (7).

It is also considered the fact that the day-to-day lives of individuals are influenced by a chronic sense of lack of time, thus tending to reduce times for food consumption and taking meals as well as the effort involved in these tasks.

The international literature also demonstrates that the termination of cooking classes in schools is a decisive factor. The teaching of the principles of nutrition as part of the formal curriculum in schools is divorced from the practice of cooking, being substantially transmitted in the context of health education.

**About how the culinary practices influence health:** The literature that reports studies that show a direct relationship between skills and culinary practices and the health status of individuals is indeed scarce. Although some evidence shows a decrease in the culinary skills of some individuals, there are studies that show that even when the culinary practices are predominant; these are not always used as they are regarded as an obligation or a hassle, with people opting for food consumption outside the home or by convenience foods (8).

There is no data to confirm that the lack of culinary skills is related to a more disadvantage socio-economic position, but it is often indicated as a risk factor in food insecurity.

Given the complexity of health promotion through culinary skills, it is necessary that nutritionists and other technicians have adequate levels of culinary skills, in order to incorporate the necessary flexibility in the variety of interventions. They must also meet the social and cultural context that the act of cooking adds, so that their interventions have a positive impact (9).

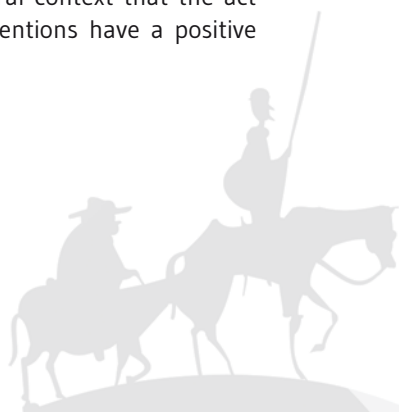
The World Health Organization, in its action program developed and published for the European region (2014), places particular emphasis on the empowerment of citizens to make healthy food choices, taking into account the different age groups, gender and socio-economic realities, and through initiatives that promote food literacy and rising culinary skills (10).

## COMPETING INTERESTS

The author states that there are no conflicts of interest in preparing the manuscript.

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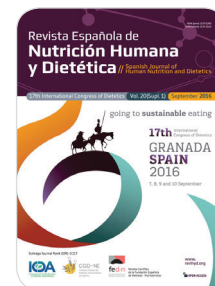




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8 September 2016 | INTERVENTION AREA: MULTICULTURALISM OF A GLOBAL SOCIETY

ROUND TABLE: FOOD SERVICE: DIETITIAN NUTRITIONIST AS AN ASSET

Lecture Sequence: 4



#### The European FOOD programme: promoting healthy eating in restaurants and in companies

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FOOD (*Fighting Obesity through Offer and Demand*) was initiated as a project in 2009, thanks to the co-funding of the European Commission (DG SANCO).

Edenred, as lead partner and coordinator, proposed to representatives of Public Health Authorities, Nutritionists, NGOs and Universities to join the project as partners in Belgium, the Czech Republic, France, Italy, Spain, and Sweden.

The two main objectives of the project were to improve:

1. The nutritional habits of employees by raising their awareness on balanced nutrition
2. The nutritional quality of the food offer in restaurants

A five-step methodology with a strong evaluation was followed, enabling a qualitative and adapted set of actions. After a phase of analysis of the needs, a set of tools was created to provide practical advice and assist in implementing recommendations to encourage healthy choices.

Edenred used its network of meal voucher as a unique channel of communication between the main target groups and, in this way, created a network of dedicated restaurants that have decided to commit and to adhere to the national FOOD nutritional recommendations in order to better reconnect the offer and the demand sides of balanced nutrition. The project's results are available in the Final publication (1) of the EU project.

After the project phase, the partners decided to take advantage of the actions and results and created a long-term programme, despite the end of the EU funding. In total, 300 communication tools have reached more than 6 million employees, 205 000 companies and 430 000 restaurants in the 9 participating countries. The Slovak Republic, Portugal and Austria have also joined the programme and more countries and partners are expected.

As such, last year, the FEDN (*Fundación Española de Dietistas-Nutricionistas*) joined the programme.

**The FOOD barometers:** In the framework of the programme, European barometers have been launched every year since 2012 in order to understand and analyse societal changes and needs of employees and restaurants. In 2015, 8587 employees coming from 7 Member States (Belgium, the Czech Republic, France, Italy, Portugal, the Slovak Republic and Spain) and 1278 restaurants coming from 6 Member States (the Czech Republic, France, Italy, Portugal, the Slovak Republic and Spain) answered the FOOD questionnaires.

Thanks to the analysis of these surveys, the communication tools can be reviewed and adapted according to the expectations from each target group.

The FOOD barometers enable also to measure the impact of the programme among the two target groups and to give an overview of the evolution of the results from year to year but also over a larger period. Looking overall at the results

achieved from 2012, the outcomes reflect a growing interest in the subject of balanced nutrition from both sides of offer and demand. For instance, in 2015 (2), 33% of restaurants noticed an increase in the demand of healthy meals from customers. This figure has never been so high since 2012 and corresponds to a rise of 6 points compared to the 2014 questionnaires. The interest for information about balanced nutrition and the sales of healthy meals have risen the same way. This general trend was also confirmed by the questionnaires addressed to employees: in 2015, 40% of employees stated that the balance of the dish can influence their food choice at lunch time, right after what they want to eat at the present time (46, 5%) and even before the price (31%). For the 4<sup>th</sup> running year, the balance of the dish is the second most chosen criteria.

**The 17<sup>th</sup> International Congress of Dietetics will be the opportunity to present:**

- The main results of the FOOD programme in Spain and in the other participating Member States as well
- The results of the 2016 FOOD barometers and the evolution since 2012

**COMPETING INTERESTS**

The author states that there are no conflicts of interest in preparing the manuscript.

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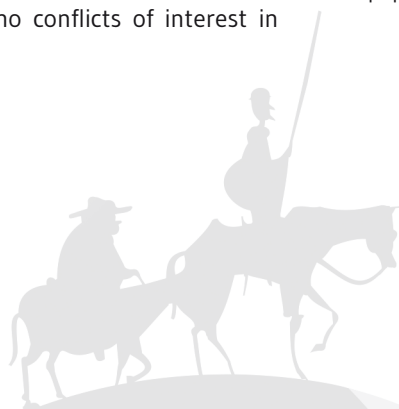
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### CONFERENCE PROCEEDINGS

8 September 2016 | INTERVENTION AREA: MULTICULTURALISM OF A GLOBAL SOCIETY

PLENARY SESSION



#### A journey across “La Mancha”, food, sustainability and union of civilizations

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“La Mancha” is a natural and historic Spanish region, located in Castilla-La Mancha (central Spain), and occupies most of the provinces of Albacete, Ciudad Real, Cuenca and Toledo. It is one of the most extensive plateaus and natural regions of the Iberian Peninsula. It represents the southeastern corner of the Central Plateau.

The origin of the name “Mancha” is unknown, although several sources claim their Arab origin, pronounced Manxa (land without water) or Manyá (high plateau).

It was ruled since antiquity by several people. The Romans lived sparsely on it; and so did the Arabs.

After the Christian Reconquest, between the XI and XIII centuries, La Mancha was part of the Kingdom of Toledo; much of their lands were dominated by the military orders of Santiago, Calatrava and San Juan. They were finally submitted by the Catholic Monarchs.

In today’s La Mancha’s cuisine they are reflected the Roman, Arabic, Jewish and Christian influences, forming a full culinary cultural image. From the technical point of view, however, this cuisine is sometimes not easy to prepare.

The cuisine of “La Mancha” covers the culinary customs, traditions and dishes that comprise a significant part of what today is known as Castilla-La Mancha. It is a simple cuisine with rural and pastoral origins. Some of the dishes are described in Cervante’s *Don Quixote of La Mancha*. He was influenced by the Andalusian cuisine, a geographical and historical neighbor.

“La Mancha” has a beautiful landscape, with continuous warm light and thick atmosphere. “The greatness of the thought of *Don Quixote* cannot be understood without the greatness of *La Mancha*... He needed that horizon, that land without roads, and yet all of it is the way; the land without directions, for by it goes everywhere without going determinedly to none; land crisscrossed by the paths of chance, adventure, and where everything must pass apparently by chance or genius of the fable; he needed sun that melts the brain and makes mad sane, this endless field where dust rises imaginary battles” (1).

From a dietary point of view, the cuisine of “La Mancha” is well balanced, and it is an example of the Mediterranean Diet (2).

La Mancha’s agriculture is based on dry farming, especially on the “Mediterranean trilogy”: cereal, vines and olive trees. Among cereals, the most cultivated are wheat and barley.

This diet naturally includes olive oil, tomato, potato, garlic, peppers and other vegetables which constitute the essence of La Mancha classics like “pisto” (some kind of ratatouille), the “moje” (wet) the “alboronía” or “asadillo”. Some of the best known vegetables are eggplant “Almagro” and garlic “Las Pedroñeras”.

There are also several own style cuisines that incorporate local meats such as lamb, pork, rabbits, hares and partridges. It is possible to taste dishes like the “Caldereta” (Stew) or “Tojunto”, the “Morteruelo”. The partridge is a delicacy premium. Pork sausages, black pudding, ribs, loin or salami daggerboard can be also found in this cuisine (3).

It is also necessary to mention some cereal dishes like “Gachas” (porridge), “Migas” (crumbs), “ajoharina” and “cenceña cake”, and also “Gazpacho manchego”, that incorporate game meats.

With the use of potatoes in the kitchen it is possible to make very tasty dishes, as the “Somallao”, the “Tiznao” or “Atascaburras”. And there are also dishes that incorporate historical salted cod or trout (4).

Succulent vegetables are often used in the cuisine of “La Mancha”, also in stews. Usual condiments are saffron, rosemary and thyme. Very important is the cultivation of saffron, with its own Denomination of Protected Origin.

The list of tasty ingredients proper of the “Mediterranean diet” would not be completed without including the “manchego cheese”, which is made from milk from their own sheep in the area (5).

It should be included in this diet the proper wines of “La Mancha”. There are so many and varied names of wines that it is impossible to catalogue all here. La Mancha’s vineyards are the largest in the world by land area. On these grounds, the Designation of Origin La Mancha, that extends to the provinces of Albacete, Ciudad Real, Cuenca and Toledo, occupies 182 municipalities, and it is the most extensive denomination of origin wines in the world.

La Mancha pastries including the traditional “fritter” have been developed since the Middle Ages: the “fried flower”, the “chips”, the “fritters”, the “fried milk”, the “pancake” or “rolls”. Should also be mentioned the “Babas”, “cakes of Alcázar”, the “wafers” and “miguelitos”.

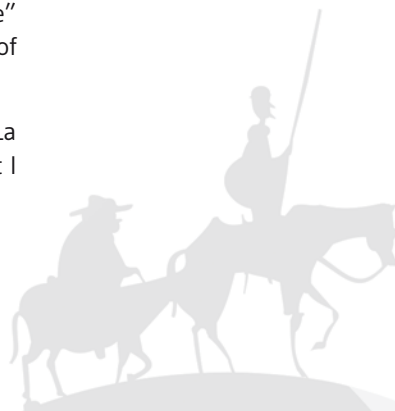
Some of these old culinary customs, that the people of “La Mancha” have kept, will be presented in the conference that I have the honor to offer, giving its main dietary aspects.

## COMPETING INTERESTS

The author states that there are no conflicts of interest in preparing the manuscript.

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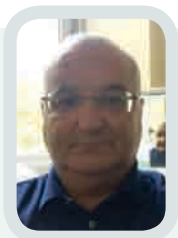


## CONFERENCE PROCEEDINGS

8 September 2016 | INTERVENTION AREA: WORLDWIDE IMPACT OF DIETETIC PRACTICING. DIETITIAN-NUTRITIONIST IS KEY

ROUND TABLE: DIETITIAN-NUTRITIONIST'S EDUCATIONAL ROLE FOR RAISING AWARENESS AMONG PATIENTS AND CONSUMERS

Lecture Sequence: 1



### Implementation of a balanced nutrition education programme in schools in Turkey

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**Introduction:** The nutritional and health status of the Turkish population mirrors that in other developed nations (1,2). Diseases of the circulatory system account for 40% of deaths whilst cancers account for some 22%. On average, the Turkish population consumes an excess of calories, salt, sugar and fat, whilst dietary fibre intake is inadequate. Obesity is increasing at an alarming rate. Also, sectors of the population are deficient in certain micronutrients. The Sabri Ulker Food Research Foundation (SUGAV), has implemented a programme of nutrition education in primary schools in collaboration with the Turkish Ministry of Education. British Nutrition Foundation (BNF) material has also been adapted for local use (3).

**Objectives:** The primary focus has been to instil healthy eating habits in students aged 8 to 11 years, encouraging the consumption of a variety of foods and balancing energy intake and expenditure. Their teachers, all other school employees, parents and all children are also engaged in the programme. The key messages of the programme can be summarised as follows:

1. Around the world people choose and combine different foods to make their meals and snacks. The total amount and range of foods eaten is called the diet.
2. A healthy diet comprises a variety and balance of different foods and beverages, as depicted in the Eatwell plate of the UK's Department of Health, which has been adapted for local use.
3. Food provides energy which is essential for the body to be active and healthy.
4. A variety of food should be included in the diet as different foods contain the different substances needed for health. Nutrients, water and dietary fibre are all essential.
5. Being active and looking after yourself are important for good health.

**Method/Design:** A pilot scheme has been implemented in 500 schools, 50 in each of 10 regions, representing diversity in the Turkish school population (4). Trainers were recruited and introduced to a wide variety of educational materials.

1,000,000 students, teachers and parents have so far been included. The target age range has been 8 to 11 year olds. Detailed lesson plans have been provided including a comprehensive website open to all. The programme has been set up to last for 38 weeks during the school year.

**Results:** Qualitatively the programme has been well received in all regions and has achieved the endorsement of the Turkish Ministry of Education. In an effort to quantify the success of the intervention a 'self-check' programme has been developed, enabling subjects to enter detailed food intake information online. This programme has been adapted for local use from a food frequency questionnaire originally developed at the University of Hohenheim. Analysis of the results shows positive behaviour change among a majority of subjects including reduced sugar and salt intake, an increase in fruit and vegetable intake and increased dietary fibre intake. Detailed results will be presented of food consumption patterns before and after the intervention, as determined by the self-check programme.

**Conclusions:** School children in Turkey aged 8 to 11, supported by their parents and teachers, have responded positively to a programme of food and nutrition education. There is now a

mandate to roll out the programme to all schoolchildren aged 8 to 11 in Turkey and also to extend the outreach to secondary school children. It is hoped that this programme of nutrition education in schools in Turkey will be taken as a model for interventions elsewhere where nutrition education is lacking.

## COMPETING INTERESTS

The authors state that there are no conflicts of interest in preparing the manuscript.

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ROUND TABLE: DIETITIAN-NUTRITIONIST'S EDUCATIONAL ROLE FOR RAISING AWARENESS AMONG PATIENTS AND CONSUMERS

Lecture Sequence: 2



### Nourishing Potentials: Assessing the Sustainability of Manitoba School Breakfast Programs

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Over the course of the school year, many children attend nutrition programs, which offer and promote the consumption of healthy food and drinks throughout the school day and therefore can be big step towards improving the nutrition of children. An increasing popular type of school nutrition programs is the school breakfast program, intended to provide students with a nutritious breakfast at the start of the school day. Researchers (1,2) have found that the consumption of breakfast is specifically beneficial for school aged children and adolescents as eating breakfast is negatively correlated with risk of obesity, body mass index, and weight gain and positively associated with the likelihood of having healthy body weight. Likewise, eating breakfast is beneficially linked to cognitive performance, particularly among nutritionally at-risk students. Thus it is unsettling that research (3,4) has found that many children are not consuming breakfast for many different reasons. As a result, many students go to school hungry or poorly nourished and in turn have decreased abilities to reach their full developmental and academic potential. Unlike many other countries, Canada does not have a national school food program (5). Therefore the long-term sustainability of these programs is being questioned. While there are best-practice guidelines available to inform the operations of school breakfast programs there has been relatively little focus on policy considerations. This is an important omission as the long-term sustainability of school

breakfast programs depends on creating and maintaining a positive policy environment in which these programs are seen as a valuable tool in supporting child nutrition, so that funding and resources are allocated appropriately. In this presentation I will provide a brief background on School Breakfast Programs focusing on the effects of these programs on students, parents, community members and school environments. I will also present the findings of my research study designed to assess long-term sustainability of School Breakfast Programs in Manitoba, Canada by exploring the beliefs, attitudes and values of the diverse stakeholders involved in decision-making around school breakfast programs. Through interviews with school administrators, government policymakers and non-profit program funders I identify stakeholders perceptions of the benefits of school breakfast programs and factors that may threaten or help secure their long-term sustainability. I will describe the major themes that emerged from the interviews and show how each informant group provided unique insights into the sustainability of school breakfast programs. I will present a conceptual model of school breakfast programs, incorporating operational and policy factors, inputs and outcomes. Finally I will discuss the funding dilemmas and operational challenges identified in this study and how they may be addressed in order to ensure long-term program sustainability. As a result of the presentation the audience will have a better appreciation of the role of policy in shaping and

sustaining nutrition programs. They will learn the importance of positioning school nutrition programs within the context of desirable educational and organizational outcomes. Furthermore, with a better understanding and appreciation for these programs, the audience will be able to advocate for school nutrition programs within their communities.

## COMPETING INTERESTS

The authors state that there are no conflicts of interest in preparing the manuscript.

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### CONFERENCE PROCEEDINGS

8 September 2016 | INTERVENTION AREA: WORLDWIDE IMPACT OF DIETETIC PRACTICING. DIETITIAN-NUTRITIONIST IS KEY

ROUND TABLE: DIETITIAN-NUTRITIONIST'S EDUCATIONAL ROLE FOR RAISING AWARENESS AMONG PATIENTS AND CONSUMERS

Lecture Sequence: 3



#### Achieving sustainable health outcomes using a non-weight focused approach to nutrition counselling

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CurrentlyThe 'burden of obesity' is largely a result of socio-economics and not merely due to the widely accepted, yet inaccurate hypothesis of an imbalance of 'calories-in *versus* calories-out'. Weight loss centres, the diet industry and licensed medical practitioners specializing in weight loss continue to gain popularity, resulting in a near \$61 billion annual industry in the United States alone (1). Current approaches to chronic disease prevention and management include weight loss. However, the scientific literature and experiences from clinical practice reveal that 95% of people who lose weight regain most or all of that lost weight within 5 years (2).

Unintended negative health consequences of a weight-centred focus include, but are not limited to: weight cycling, insulin resistance, increased risk of developing Type 2 diabetes and coronary artery disease, weight bias and discrimination, disordered eating and depression (3,4) that ultimately lead to increased health care costs. These consequences indicate how a weight centred focus as a strategy is flawed, ineffective and detrimental to the physical, social and mental health of our clients and society.

The public often perceives diet intervention as a vehicle to losing weight by restricting food(s) and seeking out the services of registered dietitians (RDs); however, the role of RDs is to promote health via nutrition for the prevention and/or management of certain health conditions, as well

as to promote long term adherence to an overall balanced nutritional lifestyle. While modest weight loss or changes in body shape can sometimes occur with behavior modification, experience from clinical practice reveals many people often do not observe these changes. Even when healthy lifestyle behaviours have been adopted, but weight and/or waist size are still higher than recommended guidelines, people continue to hear that they must lose weight.

This focus on weight is causing a backlash for the dietetic profession and the medical community as evidence reveals weight bias is rampant in the healthcare system (5), and can deter people from seeking timely and routine therapeutic treatment (6). Many chronic illnesses are attributed to poor lifestyle practices including nutrition that can be prevented with early intervention. By adopting a weight neutral approach to nutrition counselling, RDs have the opportunity to improve efficiencies to health care systems while guiding clients towards achieving positive health outcomes.

This presentation will allow RDs and other health care providers the opportunity to understand the physiological and psychological complexities associated with weight loss attempts and understand why this approach is futile. Literature in support of a weight neutral approach to nutrition counseling will be examined. Case studies from clinical practice will reveal how positive health outcomes have been achieved, despite the

absence of weight loss. Furthermore, reference to the 'obesity paradox' and how fitness can be achieved despite fatness to improve outcomes will be explored.

RDs play a critical role in communicating important food and nutrition messages to clients and health care colleagues on how to effectively promote sustainable health behaviours and explain the consequences associated with dieting. In addition, RDs are in a unique position to raise awareness of weight bias and discrimination in society.

The stigmatization of obesity is a social justice issue and is the source of unfair treatment leading to poor quality of life indicators. People with obesity can share similar experiences to those subject to racism, gender inequality and those challenged with a physical and/or mental disability. By raising consciousness of the social stigma associated with obesity, and understanding how it impacts the health of our clients, RDs can be leaders in effecting transformation that can drive societal improvements and acceptance of people of all shapes and sizes.

**Learning objectives:** At the end of this presentation, attendees will: a) Recognize the detrimental impact a weight-centred focused approach to nutrition counselling has on patients' health outcomes and the dietetic profession; b) Hear patient experiences around their attempts at losing weight; c) Learn how a weight neutral approach can lead to improvements in physiological and psychological parameters that can result in sustainable healthy lifestyle habits; d) Develop a practical

understanding of how to adopt a non-weight focused approach in clinical practice that can lead to civility within society by fostering acceptance and non-judgment of body size.

## COMPETING INTERESTS

Honoraria received in the past from Unilever, CANADA for work performed for education purposes.

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8 September 2016 | INTERVENTION AREA: WORLDWIDE IMPACT OF DIETETIC PRACTISING. DIETITIAN-NUTRITIONIST IS KEY

ROUND TABLE: DIETITIAN-NUTRITIONIST'S EDUCATIONAL ROLE FOR RAISING AWARENESS AMONG PATIENTS AND CONSUMERS

Lecture Sequence: 4



### Implementation of SMARTsize to help people maintain their behavioural change

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SMARTsize is an evidence-based weight management programme which uses self regulatory techniques and change management to help people change their eating habits and lose weight by themselves. SMARTsize consists of 4 components, a book, website, homescreener and three interactive cooking workshops. A Randomized Controlled Trial showed effectiveness of SMARTsize in improving portion control behaviour and in short-term weight loss. Once the intervention ceased, sustained effects on Body Mass Index were no longer evident (1). Regaining weight is a well-known phenomenon, also in dietary treatment (2).

Therefore, attention should be paid to relapse prevention, to maintain behaviour change (3).

In Dutch Healthcare people receive 3 hours of dietary treatment a year, payed for by basic health insurance. This is hardly enough to address relapse prevention. Implementation of SMARTsize gives the dietitian the opportunity to use individual consultations to address relapse prevention in order to maintain behavioural change.

This study aims to evaluate implementation of SMARTsize in the dietetic practise and investigates:

- the attitude of dietitians with regard to evidence based practise and implementing an evidence based programme

in dietary treatment

- factors that promote or hinder the implementation of an evidence based programme
- the effect on weight loss and behavioural change maintenance when SMARTsize is implemented in dietary practise

In the spring of 2015 over 300 dietitians filled in a questionnaire about their attitude toward evidence based practise and implementing evidence based programmes in their treatments. This was followed by the implementation study. All 43 participating dietitians received training in the SMARTsize method and relapse prevention (e-learning and class training). Dietitians included 7 patients each. They started with SMARTsize (12 weeks) followed by dietary treatment. Half of the patients received 3 hours of dietary treatment and half of them 6 hours. The SMARTsize-dietary treatment period was between September 2015 and June 2016, after which the data is collected and analysed.

### COMPETING INTERESTS

The authors state that there are no conflicts of interest in preparing the manuscript.

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8 September 2016 | INTERVENTION AREA: EQUITY AND PROFESSIONAL ETHICS  
WITHIN THE DIETETIC PROFESSIONAL

ROUND TABLE: TRAINING DIETITIANS-NUTRITIONISTS

Lecture Sequence: 1



### Dietetic process models from a didactic perspective

Adrian Rufener<sup>1,\*</sup>, Sandra Jent<sup>1,\*</sup>, Andrea Räss-Hunziker, Louise Pollard  
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To achieve its vision of dietitians being recognised as leaders in the field of dietetics and nutrition, EFAD seeks to promote the highest quality of dietetic education and professional practice. Since there is evidence that implementing a nutrition process model results in better outcomes and higher quality care, EFAD aims to ensure that a nutrition care process model is being used by all dietitians in Europe and is included in the curriculum at all Higher Education Institutions by 2020. Teaching the nutrition care process to future dietitians requires the development and use of a model based on didactic considerations.

Competent nutrition care requires knowledge that is well-structured and cross-linked as well as a certain routine when making numerous decisions during the interaction with the client. However, novices and advanced beginners recall their knowledge context free and usually have not yet developed the necessary experience and confidence required for competent nutrition care (1). A nutrition care process model may serve to orientate novices and support the planning and implementation of complex dietetic tasks including dietetic counselling. Nutrition care process models may therefore be understood as expert structures supporting the student learning process (2).

However, the optimal design and the way in which such process models should be taught to facilitate student learning remains unclear. The Bern University of Applied Sciences has developed a process model based on empirical findings and didactic

considerations. Important features are thorough subject and case-specific preparation, the deliberate planning of activities and systematic reflection following nutrition care activities. Such features may help prevent potential problems from arising during the nutrition care process and may promote the consideration of potential solutions (3).

Nutrition counselling is strongly influenced by the interaction with the client. Often, decisions about how to progress must be made within seconds, increasing the likelihood that students may not be able to access newly acquired knowledge, overlook relevant aspects or completely lose track of the situation. In such situations, novices and advanced beginners often revert to non-informed patterns of action (4). They tend to act more instinctively and are less likely to be able to justify their actions. Teaching must ensure that novices are able to decide on a particular course of action during the nutrition care process, using newly-acquired knowledge. This underscores the need for a process model that has been developed with didactic considerations in mind. Such models must be understood by students in their entirety.

The goal of the presentation is to illustrate the needs of novices and to justify the necessity for a process model that has been developed based on didactic considerations. In addition, ideas on how to implement a process model in curricula will be discussed.

## COMPETING INTERESTS

The authors state that there are no conflicts of interest in preparing the manuscript.

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8 September 2016 | INTERVENTION AREA: EQUITY AND PROFESSIONAL ETHICS  
WITHIN THE DIETETIC PROFESSIONAL

ROUND TABLE: TRAINING DIETITIANS-NUTRITIONISTS

Lecture Sequence: 2



### Nutrition and distance education. Nutrinfo.com experience in continuous training

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As health professionals we have an enduring commitment to be updated. In Latin America there is a large and varied range of university education in nutrition (1), but it is not accessible to professionals who live far from large cities or who, because of their numerous obligations, they do not have time to attend a classroom course regularly. In Nutrinfo.com we have faced the challenge of creating a training system that would allow Spanish-speaking nutritionists around the world to access different courses of the highest academic level.

To implement this, we had to identify the main barriers that are presented to professionals when taking a distance learning course: resistance to change, high costs; poorly designed packages; inadequate technology; lack of skills; the need for a component of face to face teaching; time-intensive nature of e-learning; computer anxiety (2). We have also conducted numerous surveys to identify study habits of students; for example, what kind of educational material they prefer (written classes, multimedia presentations), where and when they study, how much time per day they spend reading classes, etc. (3)

In 2001 we implemented our first e-learning course about Food Policy, even before they began to emerge the first open source learning management system (LMS), e.g. Moodle. In that edition 20 students of 7 countries were enrolled.

Currently Nutrinfo.com offers over 40 postgraduate e-learning courses, with about 2400 students around the world. The countries with the highest number of trainees are Argentina 47%, Mexico 13%, Spain 11%. Each course is organized in conjunction with a scientific or academic institution renowned, such as: *Universidad de Navarra* (Spain), *Universidad Austral*, *Universidad Favaloro*, *Universidad de Morón*, *Asociación Argentina de Dietistas y Nutricionistas*, *Sociedad Argentina de Nutrición* (Argentina), *Fondazione ADI - Associazione Italiana di Dietetica e Nutrizione Clinica* (Italy).

Our education system focuses on the student and not on the platform and could be adapted to any type of organization and structure, and our main achievements is to have a course completion rate, students who take the final exam, greater than 95%; which is a dropout rate below 5%.

### COMPETING INTERESTS

All the information presented by the speaker is produced by the company he represents.

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ROUND TABLE: TRAINING DIETITIANS-NUTRITIONISTS

Lecture Sequence: 3



### Develop programs for Nutritional Careers based on competencies: tools for reflection, growth, and advancement

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In this moment the Universities has a great challenge; design and develop programs for Nutritional Careers based on competencies. This Conference aims to give clarity about this issue. In order to introduce the reader into this topic, we show the information found (1).

The importance of the issue for a career is due to the Career Profile is defined as the set of competencies (knowledge, skills and attitudes) that all graduates must master as a requirement for obtaining enabling to practice their profession (2). The concept of skills and competencies used by the Universities is based on the opinions delivered by experts from different areas of professional development, who are usually consulted on the contents that grade students should receive.

The general opinion is that the Nutritionist may have generic and specific competences. The generic competences must be considered by graduate training and provides for development of knowledge-based and interpersonal skills, which are crucial in being successful in a variety of careers (3,4). To become a Nutritionist, the generic competencies are: excellent communication skills, the ability to relate to people from all backgrounds, a non-judgemental attitude, the ability to inspire and motivate people, evaluation and reporting skills, good time management and organization skills, the ability to work as part of a team and with other professionals.

The specific competencies listed below are the most common used in the Career Profile of Nutritionist: a) Achieve solid

knowledge of the discipline and basic sciences that will enable a rational and informed professional practice; b) Achieve skills and abilities for a systemic approach to solving problems of their disciplinary jurisdiction and that allow to integrate multidisciplinary teams; c) Reach human virtues that permanently guide their professional, personal and social action; d) Develop the profession guided by a genuine interest in service and a permanent responsiveness problems that affect the population; e) Be able to lead in the areas of professional endeavor and deliver safe and reliable advice; f) Be able to plan and implement research projects; g) Reach constructive spirit and self-criticism, assuming the role of change agent.

In the countries studied Nutritionists typically do the following:

- Explain nutrition issues
- Assess clients health needs and diet
- Develop meal plans, taking both cost and clients preferences into account
- Evaluate the effects of meal plans and change the plans as needed
- Promote better nutrition by giving talks to groups about diet, nutrition, and the relationship between good eating habits and preventing or managing specific diseases
- Keep up with the latest nutritional science research
- Develop nutrition education resources

- Deliveries sports nutrition education sessions with children, young and adults
- Provide nutritional advice for clients
- Ensure compliance with the meal services via auditing methods
- Support the provision of nutritional labelling

Finally, employers have recognized the following key skills for Nutritionists:

- Teamworking skills
- Keen interest in the impact of diet on health
- Good interpersonal skills
- Communication skills
- An understanding of biochemistry and human physiology

## COMPETING INTERESTS

The author states that there are no conflicts of interest in preparing the manuscript.

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### CONFERENCE PROCEEDINGS

8 September 2016 | INTERVENTION AREA: THE POWER OF DIETITIANS  
NUTRITIONISTS TO MAKE A DIFFERENCE IN SOCIETY

ROUND TABLE: DIETETICS AS AN EFFICIENT TOOL FOR HEALTH SYSTEM:  
OLDER ADULTS HEALTH

Lecture Sequence: 1



#### Making the Most of Mealtimes: Dietitians leading culture change for older adults living in residences

Heather Keller<sup>1\*</sup>, Susan Slaughter, Christina Lengyel, Natalie Carrier, Lisa Duizer, Catriona Steele

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Poor food intake is endemic in long term care and other residential living environments for frail older adults. While some level of poor food intake and malnutrition are expected as a person nears the end of life, the food provided, mealtime environments and access to food all need to support and promote food intake and quality of life. Due to the many cognitive, behavioural and functional challenges that frail older adults experience, the onus is on the interdisciplinary team of health care providers to remove as many barriers to food intake as possible. The Making the Most of Mealtimes (M3) concept is based on the understanding that Meal quality, Mealtime experience, and Meal access converge to predict food intake (1). Meal quality includes the nutrient density of food, offerings that meet the preferences of residents and food that looks and is appetizing (2-5). Mealtime experience involves the interacting physical and psychosocial environment when dining, including how staff offer choices to residents, the décor of the dining room and the social stimulation that is provided (1,6,7). Meal access focuses on the various challenges that can limit one's ability to eat food including sensory loss, oral hygiene, and assistance from trained staff to support food intake (1,8). To date, many of the interventions and practice improvements used in long term care have been focused on a single determinant or mechanism for improving intake and are often reactive (1,8). As a result, these simple interventions and improvements do not reach all

residents. There is limited understanding of the inter-related factors that affect food and fluid intake, and how these might be amenable to change. The M3 concept suggests that there are a wide range of opportunities for changing the culture of care such as designing dining spaces that are conducive to social interaction for persons with dementia (1). Dietitians can lead an interdisciplinary team in a culture change movement by promoting the prevention of malnutrition and adequate food intake through system and organizational level changes that promote quality food and care practices in residences. The M3 concept is currently being tested in a large multi-site prevalence study in Canada. The design of this study and measures used to assess the M3 determinants of food intake will also be discussed.

#### COMPETING INTERESTS

The authors state that there are no conflicts of interest in preparing the manuscript.

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NUTRITIONISTS TO MAKE A DIFFERENCE IN SOCIETY

ROUND TABLE: DIETETICS AS AN EFFICIENT TOOL FOR HEALTH SYSTEM:  
OLDER ADULTS HEALTH

Lecture Sequence: 2



### Meeting the Diverse Food and Nutrition Needs of our Frail Elders

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Familiar food and beverages are some of the few pleasures left for many older adults living in facilities called long term care centres in Canada. Yet low food intake within these facilities is prevalent and contributes to the malnutrition of 45% of this population in Canada (1). Consequences of malnutrition include a weakened immune system, increased risk of infections including pressure sores, and fractures; all adding a burden of cost to the health care system and significantly and sadly reducing quality of life for our seniors in the last days and even years of life.

Poor food intake is a primary cause of malnutrition and weight loss (2). Dietitians working in long term care share in the privilege of determining how an individual will spend the rest of their lives eating. Food is as integral to a country as its history. Care centres in Canada are becoming amalgamations of cultures, mirroring the diverse immigrant populations who choose to live in our country. In a 2013 survey of long term care centres in the province of Alberta, Canada, 10% of our population requested culturally-based foods (3). Many of these foods are either unavailable, expensive or require complex ingredients and/or recipes to prepare. This challenge was made more complex when compounded with swallowing and chewing problems, often requiring expensive machinery to modify the texture of the diet - to puree *paella* or mince *pulpo a la gallega*.

This presentation will profile the work of the Dietitians of Canada Alberta Long Term Care Action Group that began

following public reports of concerns about food quality and dissatisfaction with the food being served to people living in long term care. The project began with a province-wide survey of registered dietitians, food service supervisors and administrators to understand the challenges of meeting the diverse personal, cultural, therapeutic and special diet needs of their residents. The project's findings point to gaps in both the current funding model and provincial standards for food and nutrition in long term care. Recommendations arising from the study include dedicated funds for food procurement; standardized food cost reporting for all provincial facilities; and nutritional risk screening and assessments upon admission and periodically thereafter. Through a collaborative province-wide effort, improvements in the nutritional status of people living in care can contribute to a sustainable provincial health system.

### COMPETING INTERESTS

The author states that there are no conflicts of interest in preparing the manuscript.

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ROUND TABLE: DIETETICS AS AN EFFICIENT TOOL FOR HEALTH SYSTEM:  
OLDER ADULTS HEALTH

Lecture Sequence: 3



#### Quality of life, sleeping and eating in older adults

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Older adults (OA) are the fastest growing age group in Chile and Latin America, yet there is little research in this group.

975 OA were evaluated and the quality of life associate with the amount of sleep, the main finding is that the group reporting OA Chileans sleep between 7.0 and 8.5 h have better quality of life scores, sleeping less or over that time it is associated with a deterioration in the quality of life in the OA sample (1).

Later determine association between hours of sleep during the week and weekend with constipation, they were interviewed 424 OA, half of the participants reported having abnormal stools (constipation and diarrhea). Subjects who had constipation had less physical activity and more difficulty sleeping than subjects with normal bowel movements. The OA constipated had a greater amount of sleep during the week and weekend, that subjects with normal stool ( $9.4 \pm 1.6$  vs.  $8.8 \pm 1.8$  hours;  $p=0.013$ ). The OA constipated sleep significantly more than normal evacuation AM ( $9.7 \pm 1.5$  vs.  $9.2 \pm 1.8$ ;  $p=0.024$ ). No differences in the OA and fiber intake among patients with different consistencies were found (2).

Another study determined the prevalence of mild and excessive sleepiness and what factors are associated with the presence of daytime sleepiness in OA. 1780 OA. In the adjusted model the factors associated with increased risk of sleepiness ( $ESS > 10$ ) were older than 80 years ( $OR=1.58$ ; 95%  $CI=1.14$  to  $2.19$ ), and after dinner 21 hours ( $OR=1.3$ ; 95%  $CI=1.01$  to  $1.68$ ) (3).

We associate in another article breakfast intake with quality of life, for which he interviewed 1285 OA. Each OA were applied two surveys (survey food and healthy lifestyles), 5.6% of OA not eat breakfast. Those who eat breakfast have better quality of life ( $p=0.004$ ), especially in men a lower body mass index (BMI) when breakfast ( $p=0.002$ ) is taken. Finally there was an association between breakfast consumption and better nutrition ( $p=0.01$ ) and self ( $p=0.005$ ) (4).

We associate the intake of macro and micronutrients to the quality of life of OA, 1,704 OA were evaluated, vitamin A was associated with better stress management ( $r=0.166$ ;  $p=0.001$ ), health responsibility ( $0.171$ ;  $p=0.001$ ) and exercise ( $r=0.167$ ;  $p=0.001$ ); Vitamin  $B_{12}$  is a protective factor in having a good quality of life  $OR=0.78$  (95%  $CI=0.67$  to  $0.90$ ), whereas the consumption of cola  $OR=1.92$  (95%  $CI=1.42$  to  $2.60$ ), overweight  $OR=1.77$  (95%  $CI=1.02$  to  $3.06$ ) and be male  $OR=1.62$  (95%  $CI=1.27$  to  $2.07$ ) are factors endanger the quality of life (5).

We evaluate quality of life, sleep and nutrients in octogenarians, resulting in the average BMI was similar in both sexes ( $p=0.06$ ), but showed differences dietary intake for energy, macronutrients and micronutrients ( $p < 0.01$ ). By comparing the criteria MINSAL vs. WHO found that the first detected almost twenty times OA proportion of underweight and to overweight condition WHO classifies cases more frequently ( $p < 0.01$ ) (6).

Finally we quantify plasma levels of vitamin D (NPVD) and relate to anatomical location of hip fracture (FC). 222 OA hospitalized for FC. There was a predominance of women (80.6%), the average age was 80.7 years (SD=7.8) and 43.2% of FIC was found. Plasma levels of vitamin D were average 13,3ng/ml (SD=6.7), patients with intra capsular fracture are 4.52ng/cc less vitamin D than those with FEC ( $p<0.001$ ). 80% of the sample had vitamin D deficiency (7).

We are currently in the stage of publishing a study that associates the amount of sleep and the risk of overweight/obesity.

## COMPETING INTERESTS

The author states that there are no conflicts of interest in preparing the manuscript.

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OLDER ADULTS HEALTH

Lecture Sequence: 4



### Nutrition-related Quality of Care Outcomes for Older Adults: Implications for Dietetic Practice in Nursing Homes

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**Introduction:** Today's nursing home (NH) population includes an increased number of frail elders with a higher proportion of those with complex care needs. Malnutrition and other dietary problems are widespread, with rates increasing over time in NHs, and these issues have been associated with poor health outcomes, morbidity and mortality. The purpose of this paper is to highlight the nutrition-related quality of care risk factors and outcomes commonly used for screening older adults and the implications for dietetic practice in nursing homes.

**Methods:** Through a systematic analysis of nutrition and nursing home publications in various research databases (Medline/PubMed, Cochrane Library, Embase, CINAHL, ISI Science, and Web of Science), we have highlighted various nutrition-related quality of care risk factors and outcomes commonly used for screening resident outcomes in nursing homes. Specifically, a three-step process was utilized. First, articles were extracted based on pre-determined inclusion criteria outlined in the comprehensive search strategy. Second, the quality of the studies were assessed and categorized using the Cochrane methodological quality assessment protocol as part of the systematic review. Third, data were extracted and analysed from the identified studies. The articles were eligible for inclusion based on the following criteria: (a) human study with older adults (mean age of eligible study population over 65 years of age and residing in NHs); (b) description of a screening tool used in the NH context; (c) measures of nutritional health – weight loss, low BMI, eating dependency,

poor oral intake and others. Only articles written in the English language between 2000 and 2015 were included.

**Results:** A total of 20 nutrition risk screening tools were identified. Most common risk factors used across the screening tool are unintentional weight loss (with several different definitions) and low body mass index (BMI). In addition, other factors included are decreased food intake, poor appetite, and low satiety, compromised functional mobility, acute and chronic diseases, eating and living alone, low serum albumin, and polypharmacy. Along with the monitoring of weight loss, which is an ultimate outcome and mandated reporting indicator for nutritional health, attention must be paid to poor dietary intake and other factors that precede its onset. Adequate training must also be provided to assessors, and their adherence to assessment protocols must be monitored. The literature highlights specific methodological challenges in studies considering NH residents as a homogenous group and a lack of coherent conceptualization and operationalization of key nutritional constructs.

**Conclusions:** Currently, there is discordance between the indicator required for regular monitoring and what might be most beneficial to bring positive nutritional improvements in the residents. Opportunities exist to address knowledge gaps related to the nutrition-related quality of care outcomes and to develop valuable explanatory models to guide promising interventions to improve nutritional health. While each of

the components of the quality of care model is essential, the integration and alignment of the care process with the structural element to achieve desired nutritional outcomes is critical. As the senior population grows globally, the need to address nutrition-related quality of care will become more pressing. Providing quality care within the reality of this context will continue to be an increasingly important issue for decades to come. Improving nutrition in NHs should be a research, program, and policy priority.

## COMPETING INTERESTS

The author states that there are no conflicts of interest in preparing the manuscript.

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ROUND TABLE: DIETITIAN-NUTRITIONIST'S ROLE WITHIN THE LOCAL, NATIONAL  
AND INTERNATIONAL HEALTH SYSTEMS

Lecture Sequence: 1



### Nutrition and dietitians leadership in the new era of over and under nutrition causing chronic mal conditions

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**Background:** The Israel Ministry of Health is concerned with the high percentage of overweight and obese people and the prevalence of people suffering from chronic disease related to over and under nutrition. The dietitians are the natural profession to lead actions to promote better nutrition of the population.

A few researches were done in Israel on the important part of the dieticians in the primary care (1-8).

For many years the dieticians mainly worked in treatment of sick people, in health clinics and in hospitals. Now is the time for dieticians to be key leaders of the movement for better nutrition for all, in the fight against obesity and the fight to reduce hidden hunger of the people from young to old age.

#### Methods:

1. Initiating an annual conference on nutrition leadership for managers and senior personnel in all fields of nutrition.
2. Involvement in the academic curriculum so as to add public health studies and food management.
3. Conducting a national program for nutrition security for all, involving various stockholders.
4. Involvement in a national program for health promotion to deal with obesity by initiating nutritional policy and laws relating to nutrition and food.

5. Initiation of, and participation in, research related to food and nutrition security.
6. Participation in international conferences on public health nutrition and nutritional care for all.
7. Developing specialization training programs and skills improvement workshops for dieticians.
8. A representative national health and nutrition survey for all ages.

**Results:** The first dietetic leadership conference was held last year with 110 dietician participants from all sectors. Leadership programs were presented in all the fields the dieticians are involved in.

A nationwide program was created with the aid of many stakeholders for "better nutrition for all" including addressing the budget for health technologies so as to include tube feeding in the health services basket.

The academic coordinators of the four schools of nutrition met and agreed on a unified curriculum concerning teaching of public health nutrition and food service management.

Many nutrition-related laws were initiated, to promote better nutrition. These included trans fatty acids elimination, calories labelling in restaurant chains, a voluntary program for

reformulation of food, focused mainly on salt reduction, and restriction of advertising of unhealthy food.

A committee lead by the Nutrition department was formed, aimed at documenting, coordinating and unifying research and interventions related to food insecurity. The committee includes representatives of academia, NGOs, government ministries and other researchers. Research into a group of food-insecure persons is currently underway, with a focus on nutrition status, and quality and quantities of foods consumed. Representatives from the Nutrition Department have participated in a few European conferences of public health nutrition and nutrition policy research with the WHO and with the nutrition care for all with to learn and share experience.

Educational programs for the dieticians were held, and included: 1) Nutrition management of the food systems; 2) An international course in Oral nutrition diagnosis; 3) Nutrition in the elderly; 4) Nutrition in the care of psychiatric patients. A dietetic specialization training program and syllabus is currently being developed in nine arias.

A national health and nutrition survey is currently being carried out, and its results will guide development and implementation of the nutritional guidelines, based on the eating patterns of the Israeli population.

**Summary and conclusions:** The nutrition habits and status of the Israeli population is of major concern to the Ministry of Health in Israel and leadership for better nutrition for all is a key component of better nutrition for all. The dieticians should take a leading part in establishing a health, including nutrition, promotion policy based on partnerships and up-to-date knowledge.

## COMPETING INTERESTS

The authors state that there are no conflicts of interest in preparing the manuscript.

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ROUND TABLE: DIETITIAN-NUTRITIONIST'S ROLE WITHIN THE LOCAL, NATIONAL  
AND INTERNATIONAL HEALTH SYSTEMS

Lecture Sequence: 2



### Pregnancy and Pre-existing Diabetes: Incorporating Medical Nutrition Therapy to Improve Outcomes in Diabetes Management

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Diabetes is one of the most common complications in pregnancy (1). The majority of women who experience hyperglycemia during pregnancy are classified as gestational diabetes. As the prevalence of diabetes increases throughout the world, this includes women of childbearing age. Hyperglycemia in pregnancy is associated with maternal and fetal complications; glycemic control is key to decreasing fetal morbidity and mortality.

Most countries have developed medical nutrition guidelines for women with gestational diabetes (2). However, as medical nutrition therapy in the nonpregnant diabetes population varies, should this also apply to pregnant women with preexisting diabetes (3). However, the common practice is to use the same nutrition guidelines whether the woman has gestational or preexisting diabetes. Also, should the dietitian-nutritionist apply the same nutrition principles for pregnant women with type 1 and type 2 diabetes? This presentation will discuss the similarities and differences in the nutrition management of pregnant women with preexisting diabetes.

The presentation will begin with information on the components of a healthy pregnancy, including weight gain, physical activity and medical nutrition therapy guidelines from around the world. The elements of diabetes management in pregnancy for optimal glucose control in type 1 and type 2 diabetes will be described, which will include a brief discussion

of the pathophysiology of type 1 and type 2 diabetes and the complications associated with preexisting diabetes in pregnancy.

Monitoring, which includes blood glucose and ketones, and medication to control blood glucose control are important components diabetes management. The dietitian-nutritionist should be familiar with how monitoring can be used in conjunction with medical nutrition therapy. The presentation will also include a discussion on medications, which when combined with medical nutrition therapy contribute to the successful management in pregnancy.

Also, postpartum nutrition will be discussed including breastfeeding and diabetes.

### COMPETING INTERESTS

Alyce Thomas had authored, consulted and reviewed for the following organizations: the Academy of Nutrition and Dietetics, the American Diabetes Association and the American Association of Diabetes Educators. Diane Reader states that there are no conflicts of interest in preparing the manuscript.

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AND INTERNATIONAL HEALTH SYSTEMS

Lecture Sequence: 3



#### Decoding Carbohydrate skills in Dietetic Practice

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India and other countries in Asia are experiencing rapidly escalating epidemics of metabolic disease including Diabetes. The dramatic rise in the prevalence of these illnesses has been attributed to rapid changes in demographic, socioeconomic, and nutritional factors. The rapid transition in dietary patterns in India coupled with a sedentary lifestyle and specific socioeconomic pressures has led to an increase in obesity and other diet-related noncommunicable diseases. This has led to a clear thin fat Indian phenotype which has sarcopenia (less muscle mass) with visceral obesity. Studies have shown that nutritional interventions significantly enhance metabolic control and weight loss (1).

We recently published STARCH study which gave us insights into dietary habits of type 2 diabetics and non-diabetics in Indian population across India. Individuals belonging to any part of India consume high CHO in their diet if we compare with dietary recommendations. STARCH study showed that 64.1±8.3% of total calories came from total CHO in the individuals with type 2 diabetes and about similar quantities from their non-diabetes counterparts across India. This suggests that CHO consumption by T2DM participants in India is higher (Δ4.1% above the upper limit of 60%) than that recommended by the guidelines. This further shows that Indians consume high CHO in their diet compared to the western population. The comparison of macronutrients (i.e., region-wise CHO, fat and protein) revealed a similar pattern

of dietary consumption, that is, high CHO and a lower range of fat and protein. This study neutralises the myth that only the south Indian population consumes high CHO in their diet (2).

An expert consensus Consensus dietary guidelines for healthy living and prevention of obesity, the metabolic syndrome, diabetes, and related disorders in Asian Indians recommended reduction in the intake of carbohydrates, preferential intake of complex carbohydrates and low glycemic index foods, higher intake of fiber, lower intake of saturated fats, optimal ratio of essential fatty acids, reduction in trans fatty acids, slightly higher protein intake, lower intake of salt, and restricted intake of sugar (3).

Therefore, decoding or explaining carbohydrate skills are imperative to individuals with diabetes and their family members who do not have disease. Most of the nutritive value books available give carbohydrate content of food component and not recipes. Various methodologies can be used to make person with diabetes understand the importance of controlling carbohydrates in their diets to prevent weight gain, hypertriglyceridemia and high blood glucose. Portion sizes are not standard across the country in terms of size of plates, spoons, and cups. Therefore a new methodology of standardising carbohydrate portions using palm size was employed. This carbohydrate education was used in determining amount of carbohydrates required, with insulin: carbohydrate ratio in type 1 diabetes on basal bolus therapy. It was also used

in education of individuals with type 2 diabetes for portion control. This included traditional home made recipes and also ready to eat options available.

With modern tools of measuring glucose via self-monitoring as well as continuous monitoring it is easier now to measure glycaemic variability of various foods and their impact on glucose.

### COMPETING INTERESTS

The author states that there are no conflicts of interest in preparing the manuscript.

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AND INTERNATIONAL HEALTH SYSTEMS

Lecture Sequence: 4



#### One Potato Two Potato: Assessing Carbohydrate (CHO) Counting Accuracy in Teens with Type 1 Diabetes (T1DM)

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**Background:** CHO counting is a recommended daily practice to help manage blood glucose levels in T1DM. Evidence suggests that CHO estimates should be within 10-15g of the actual meal for optimal post-prandial blood glucose control, but there is a paucity of studies assessing how accurately adolescents CHO count. Information about accuracy level can help ascertain the need for clinical accuracy check and re-education.

**Objective:** To assess accuracy of CHO counting in adolescents with T1DM who self-identify as counting CHO.

**Methods:** Adolescents (aged 12-17 years) living with T1DM (for >1yr) who self-identified as regular CHO counters, were recruited from the SickKids Diabetes Clinic. Adolescents completed the Peds Carb Quiz (PCQ) and evaluated CHO content of test trays (3 meals +3 snacks) that were randomly assigned. ANOVA, chi-square, Fisher's exact tests were conducted to compare factors related to accuracy of counting. Univariate and multivariate regression were conducted to determine factors related to accuracy of counting and PCQ score.

**Results:** 140 participants (78 female), age 14.7±1.8yrs, A1c 8.6±1.5%, T1DM duration 7.1±4.1yrs, insulin regimen: Pump 53%, MDI 28%, T1D 19%, CHO counting self-reported frequency: Always 72%, Sometimes 24%, Rarely 4%. PCQ Correct: 81±10%. Meal Accuracy: Accurate(<10g)=42%, Inaccurate(10-20g)=44%, Grossly inaccurate(>20g)=14%. Underestimation (79%) was more common than overestimation (20%) of CHO. PCQ scores

were higher in teens counting accurately (<10g) than in those with gross inaccuracy (>20g) (p<0.05). On multivariate regression, there were no significant factors predicting CHO counting accuracy. In contrast, on multivariate regression of PCQ scores, those who reported they "always" CHO counted had higher scores than those who rarely counted (t=4.1, p<0.0001).

**Conclusion:** Underestimation of carbs is more common than overestimation. Less than half of teens are accurate within 10g/meal, however, the majority of teens are within 15g/meal.

#### COMPETING INTERESTS

The authors state that there are no conflicts of interest in preparing the manuscript.

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### CONFERENCE PROCEEDINGS

8 September 2016 | INTERVENTION AREA: MULTICULTURALISM OF A GLOBAL SOCIETY

ROUND TABLE: ENVIRONMENTAL COST OF PRODUCING FOOD

Lecture Sequence: 1



#### A limited planet and an unlimited demand: the environmental cost of food production

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FAO reports (1) show that nowadays the Planet already produces enough food for 9 billion people, but some sectors and public administrations still propose as almost the unique solution to hunger, the intensification of food production. It seems we continue ignoring all warnings that, if we continue consuming at the current rate, we will deplete natural resources and will risk the capacity of the Planet to supply us with food on a mid term. If by 2050 the world's population reaches 9.6 billion, almost 3 planets will be needed to maintain current lifestyles (2).

Out of the 9 planetary limits considered safe for the maintenance of human life on Earth, we have widely trespassed 3: Climate Change, Nitrogen cycle and biodiversity loss, and we are about to trespass the limits of the Phosphorous cycle and the depletion of stratospheric Ozone. The limit of the water has not yet been crossed at global scale, but the resource is locally over abstracted in wide areas of the Planet.

Activities related to the food system contribute to a 52% of the loss of biodiversity in the Planet, mainly due to agriculture –considering 2/3 of farmed land is for livestock- and extractive fisheries. We have even lost biodiversity inside the food system: 40 crops and 14 livestock species constitute 90% of the agricultural production worldwide.

1.5 billion people suffer the erosion problems that affect more than half of the world's surface. Only in the last 50 years it is

estimated that half of the fertile soil has been lost, reaching critical situations in Sub-Saharan Africa. At the same time, 2.5 billion people live in water stressed areas. Irrigated farming land has doubled since the 60's, and uses 70% of the available water to produce 40% of the agricultural production.

The food chain, heavily impacted by Climate Change, is, ironically, the main producer of greenhouse gasses –mainly due to livestock- and the main destroyer of CO2 sinks –due to the transformation of forests into farming land-. And the trend is increasing: the IPCC has estimated that between 1990 and 2020, greenhouse gas emissions from farming in developing countries will have increased by 60%.

The nutrients cycles in the planet have gone crazy: intentional nitrogen fixation is 2.5 times higher than what is considered to be safe, and the flow of phosphorous into the sea has doubled –mainly due to transfer to soils that are eroded-.

We don't even know how far we are going pass the limit of the Planet regarding the emission of new pollutants to the environment. It is estimated that 98% of pesticides and 95% of herbicides end up reaching a non-intended target, and the preventive use of antibiotics in livestock and aquaculture is one of the main causes of the creation of resistances.

All these impacts to produce food while 1/3 of it ends up in the trash (3).

Intensification has proved not to work. The current food system does not work: it is unsustainable, unequitable and clearly unfair. To ensure that the population of the Planet has access to healthy and balanced food on the long term, we must start by ensuring that the Planet is healthy to provide it. The food system needs to evolve starting with a change in the diets – more plants, less animals-, reducing food waste, improving governance at global scale, reviewing biofuels and bioplastics policies, recovering the links between consumer and producer, improving the coordination between policies –farming, fishing, environmental, of public health- or market aspects that determine the way in which food is produced and consumed.

### COMPETING INTERESTS

The authors state that there are no conflicts of interest in preparing the manuscript.

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## CONFERENCE PROCEEDINGS

8 September 2016 | INTERVENTION AREA: MULTICULTURALISM OF A GLOBAL SOCIETY

ROUND TABLE: ENVIRONMENTAL COST OF PRODUCING FOOD

Lecture Sequence: 2



### Local product and its impact in environment and climate change. How to translate it to dietary guidelines

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Portugal and other Mediterranean countries are gradually moving away from their traditional food patterns and incorporating more and more imported products or local products with imported ingredients. The production and consumption of local and fresh products in short chains can have an important role to mitigate the environmental impacts of food consumption. Given these needs, a strategy to promote healthy eating can adopt different strategies. In the last months, a new food guide was launched in Portugal with these principles. Looking at it and at other similar approaches we can find a way to match nutrition with an environmental approach (1-3).

### COMPETING INTERESTS

The author states that there are no conflicts of interest in preparing the manuscript.

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8 September 2016 | INTERVENTION AREA: MULTICULTURALISM OF A GLOBAL SOCIETY

ROUND TABLE: ENVIRONMENTAL COST OF PRODUCING FOOD

Lecture Sequence: 3



### The Dietitian Coach: Coaching for sustainable health and eating practices in a growing multicultural and global society

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This presentation will share with delegates the far reaching benefits of incorporating coaching principles into the practice of dietetics (1). A Dietitian Coach's role is to work with their clients by starting where they are at and then moving them forward to their desired goals. For Dietitians and their fellow healthcare providers, clients often come to them with a certain mental viewpoint/belief about the state of their health (2,3).

The challenge with working in an ever growing multicultural and global society is that mental views and beliefs about health, foods, food production and preparation and eating are as varied as there are people on this planet (4,5).

The Dietitian Coach plays a dual role as both food and nutrition expert and coach. This dual role facilitates the Dietitian Coach truly having a worldwide impact on establishing sustainable foods and healthy eating habits. The role also extends to Dietitian-nutritionists making a difference in the lives of peoples and consequently societies. This is made possible simply because of the tenets on which the field of coaching is built.

Coaches are trained to believe in human potential and to look for the potential in their clients for the purpose of maximizing this potential. A Dietitian Coach works with clients to help them see their potential through awareness creation and discovery of their solutions while gently yet firmly challenging them to take action. This requires the Dietitian Coach to honour the client by knowing they have the solutions within them, knowing that they are the expert on how they can best add value to their

overall health and well-being. They just need a space designed to allow these solutions to flow (2).

The coaching approach is a natural extension and augmentation of learning principles. This unique approach allows coaching and the practice of dietetics to create a space designed for clients' utmost learning and growth. This allows for *better facilitating clients' to contribute positively to their full professional, personal and economic potentials.*

It is this approach that best equips the Dietitian Coach to address the global to local effects on sustainable food production and preparation all the way to working with their clients to develop sustainable health practices. Coaching then is a practice that when added to dietetics truly enhances its efficiency as a tool for the health system. The application of key coaching principles coupled with dietetics makes the practice of dietetics truly having a more global reach and impact (3).

### COMPETING INTERESTS

I have no conflict of interest to declare, whether real, potential or perceived in any entity that relates to my ability to present at this conference.

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8 September 2016 | INTERVENTION AREA: MULTICULTURALISM OF A GLOBAL SOCIETY

ROUND TABLE: ENVIRONMENTAL COST OF PRODUCING FOOD

Lecture Sequence: 4



#### Youth leaders minds perspectives. The role of Nutritionists/Dietitians in feeding a hungry planet through sustainable ways

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I would like to spread my message and share my experience as an Argentinean delegate for the Youth Ag Summit (YAS), a Food Revolution ambassador, a nutritionist and a young mind.

By 2050, the planet's population will be nine billion people, according to United Nations prediction. This number is increasing by 83 million people annually (1). I had the opportunity to attend the YAS in Canberra, Australia last month, which was focused on that. I was chosen among 2000 people who also presented an essay as we were asked to do in order to participate. It was a worldwide event which held 100 young leader minds from 33 different countries. I was the lucky one from Argentina. The essay question was: ¿How are we going to feed our hungry planet? It's not so easy. We know it's not only "feed a hungry planet". This food must be healthy. Even more difficult is finding sustainable production systems and responsible consumption. It was a surprise to me being selected because I have no farmer background, and the summit had an agricultural perspective. But I'm a passionate nutritionist about food security, human development and family farming. Even more surprisingly was being chosen as the Latin American delegate. I had the opportunity of presenting my essay as a "PechaKucha" speech.

The outcome of the summit was the Youth Ag declaration, presented at the Committee on World Food Security (CFS) in October in 2015. We had to choose only 5 priority themes among 15 (based on our essays). It was a very tough decision that took us 4 days of long talks and several voting. At

the end, the winners were: Education and skills building; Communicate the value of agriculture careers and farming; Socially acceptable and responsible consumption; Innovation for sustainable intensification and new production systems; Personal and organizational leadership. This experience changed my thoughts. It opened my mind to new horizons. Even though it brought me more questions than answers, it's a good sign.

We have to look forward to the future in order to find solutions. Although we already have a problem today with almost 795 million people worldwide suffering from hunger (2). In the opposite side we may find similar numbers of people with obesity (3). So, malnutrition is everywhere. It's a matter of developed and developing countries in equal parts. To complete the scene, it's known today's food production could feed the whole planet, taking on account food losses and waste. But, is this food enough in quality?

Which is the role of nutritionists in this scene? It's evident we are doing something wrong. Not only consumers but dietitians too. As nutritionists, we need to empower consumers. And there's a need of more communication between farmers, producers, consumers and us. We are standing at the final step of the food chain. We have the responsibility to help consumers to know what quality of food they are eating. And nobody else than we, nutritionists and dietitians, know better which is the most healthy diet to follow and the best options related to food.



I proposed four ideas in order to feed a hungry planet. Nowadays they can be applying today looking forward to the future. To increase food production in a sustainable way, I've chosen entomophagy. It has a low environmental impact. Also we are solving the arable land problem and food waste or loss, by feeding insects with trash and giving people quality proteins through insects. In second place, I've chosen family farming, based on my work with poor families in the NGO I take part of. At the same time recycle stuff from home to make their own home gardens and make composting with their organic garbage. I focused my third idea in the access to clean drinking water. It would be perfect to desalinate and purify sea water but trying to find a cheap way. In the meanwhile, we could use rain water for domestic purposes. For my last idea, I've talked about environmental awareness related to food waste. Globally, we are losing almost one third of food production in all levels (4). Based on FAO statistics, in Argentina this is represented by 12,5% of our production (5). According to this organism, it is more effective to focus on reducing waste than increasing production. So following this recommendation, I suggest the existence of a truck to collect our food waste that is still in conditions to be eaten and give it to the poor ones. Maybe it is not too ethical, but unfortunately it is a way to answer to this problem on a short term.

So you may be asking yourself: Where fits the nutritionists there? Nutritional Education is the weapon we have to make changes. It's for me an essential tool to make people conscious about what we are eating and where our food comes from.

## COMPETING INTERESTS

The author states that there are no conflicts of interest in preparing the manuscript.

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### CONFERENCE PROCEEDINGS

8 September 2016 | INTERVENTION AREA: WORLDWIDE IMPACT OF DIETETIC PRACTICING. DIETITIAN-NUTRITIONIST IS KEY

#### SHORT LECTURE



### Design, Development and Implementation of Nutritional Screening at tertiary hospital. CIPA project. The importance of the role of Dietitian-Nutritionist

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Last year, the Senate unanimously approved setting measures aimed at prevention, detection and treatment of malnutrition especially in hospital patients (1). Generally malnutrition represents a poor prognosis feature for the hospital patient. It can contribute to increase the number and seriousness of the complications of the disease itself, to weaken the capacity of answering to the treatment, to diminish immune degree of response or to enhance its morbi-mortality (2-4). Therefore, it is essential to set the nutritional aspects as well as the specific aspect within the different strategies the Minister of Health carries out.

Today, many medical centres do not pay attention enough to the nutritional component. On the face of it, the Area of Nutrition and Dietetics of *Hospital Universitario Nuestra Señora de Candelaria* (HUNSC) has elaborated a nutritional screening method that has covered several steps in its elaboration and validation in order to reverse this situation.

In 2010, a control document of oral supplements requests prescribed by any doctor outside the Nutrition Area, was implemented. Such document included four nutritional parameters: control intake, Body Mass Index (BMI), proteins and albumin. Once these data were obtained, a relation with these parameters with the CONUT screening (5) was retroactively compared obtaining that with these later referred parameters, a great number of patients was identified to malnutrition or at risk of it than with the system CONUT (6).

The following step was to move such items to a mixed nutritional screening format referred to as CIPA (Control intake, Proteins and Anthropometric), constituted by standard parameters used in HUNSC: a) food intake decrease <50% in 48-72 h; b) total proteins <5g/dl; c) plasmatic albumin <3g/dl; and d) BMI<18.5kg/m<sup>2</sup>, in a way that a positivity of at least one of such items would result in a positive nutritional screening and would identify the patient with malnutrition or at risk for developing it.

In order to validate the implementation of the method, it was performed a pilot study where 305 patients were screened through CIPA to admission in internal medicine ward, detecting a 23% of malnutrition or risk for developing it. The validity of the implement was basically studied according to its validation with clinical endpoints because the methods of nutritional screening do not have a gold-standard to compare with (7). In such study we observed that patients with positive screening CIPA presented one more week of average stay (26.7±25 vs. 19.4±16.5 days; p=0.005), early readmission rates nearly three times higher (18,6% vs. 6.8%; p=0.003) and three times higher mortality (30% vs. 10.3%; p=0.001) than negative screened patients (8).

A remarkable percentage of the examined patients could not be weighed and/or sized after their admission, so in such patients the BMI was obtained through an estimated weight and referred size (just as it is used in other methods of nutritional screening). In view of avoiding this situation, a new retroactively study was

done, gathering anthropometric data of 1373 patients who had been examined by the Nutrition Area between 2004 and 2013, in order to value the relation between Mid-Upper Arm Circumference (MUAC) with the BMI, and particularly a value of MUAC which predicted a BMI<18.5kg/m<sup>2</sup>. The results obtained were optimal, in such a way that there was a good correlation between BMI and MUAC (correlation coefficient of Pearson of 0,78 with a coefficient of correlation R<sup>2</sup> of 0.609 (p<0,001)). It was observed that a MUAC≤22,5cm identified the patient with BMI<18,5kg/m<sup>2</sup> with a positive predictive value (PPV) of 71% and with a negative predictive value (NPV) of 93% (not yet published). Therefore, this MUAC parameter has been recently included in screened patients who can be neither sized nor weighed.

Subsequently, it was carried out a prospective study in which the results of the screening method CIPA were compared to Subjective Global Assessment (SGA)(9) (because without being a gold-standard method, it is the most recommended as a comparative method) in patients with non-surgical pathology. In such study (ready to be published) it was also evaluated the results of performing a CIPA screening without total proteins (because in the performed pilot study the albumin was the most sensitive parameter). The concordance among the methods and the patient's clinical prognosis according to the obtained results was also analyzed. Again, the results have been promising, as the patients with complete CIPA and without proteins CIPA (w/p) positive present a three week more average stay than the negative, unlike the SGA, as well as a bigger hospital mortality and up to a month of hospital discharge (also obtained with SGA). Regarding the evaluation of screening CIPA with/without total proteins, it could be observed that the current differences between them are minimal, concluding the research team that the CIPA will be performed without proteins, due mainly to the cost savings.

At this stage we have been given a health research project in 2014 (HRP), nº PI14/01226, funded by the Carlos III Health Institute. In this occasion, an economic assessment is being undertaken comparing the health results and the cost savings of patients with nutritional screening CIPA opposed to patients without it. This way not only clinic aspects are evaluated but also economic and it is also recorded the importance of the Dietitian-Nutritionist in the clinical setting.

## COMPETING INTERESTS

The authors state that there are no conflicts of interest in preparing the manuscript.

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### CONFERENCE PROCEEDINGS

8 September 2016 | INTERVENTION AREA: EQUITY AND PROFESSIONAL ETHICS WITHIN THE DIETETIC PROFESSIONAL

#### SHORT LECTURE



### Allergen management in food industry: an assessment of the efficiency of control measure

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**Introduction:** According to the white book on allergy of the World Allergy Organization (WAO), the incidence of food allergy is estimated to be greater in toddlers (5-8%) than in adults (1-2%). In Europe, one in four children is allergic and it is documented that 87 million people suffer from allergies, but the prevalence of allergic diseases worldwide is rising dramatically in both developed and developing countries. Globally, 220-520 million people may suffer from food allergy (1).

Due to this, food allergies and intolerances are an emerging health problem that has a significant socio-economic impact. And the food industry needs to establish strategies to address it.

The focus is on the prevention allergies diseases through/ with exclusion diets. Therefore, consumers must have all the information of food composition and thus they can choose according their needs. The food industry must ensure their food products are safe for allergic populations.

The aim of this study is to evaluate the efficacy of a protocol for management gluten in food industry located in Seville (Spain) and dedicated to the manufacture and mixtures of additives and spices.

**Material and Methods:** Initially, a previous assessment of the presence of gluten in products and industrial facilities was made with Stick Operon®. In some samples, 200 ppm of gluten were overcome, while according to the law, to declare a food as "gluten-free" must contain less than 20 ppm.

Concurrently, an analysis of processes, raw materials and products were conducted in order to develop a specific protocol for gluten management in the company. The measures were grouped into the following key aspects:

1. Control of raw materials and suppliers with the following actions: application the declaration of allergens products to suppliers; establishment of a monthly analytical sampling plan for the control of gluten in raw materials; minimization of the presence of allergenic raw materials, replacing them with no allergens.
2. Formulations: identification of allergenic ingredients in data sheet of each product; replacement or removal when is possible the presence of allergenic substances in the product formula; no use of allergenic ingredients in the development of new formulations.
3. Equipment and processes: establishment of production orders, concentrating gluten products manufacturing in a single day, preferably the last day of production of the week; storage area: identification of allergen raw materials and products and separate them physically from the rest of products, gathering together products with gluten; in the manufacturing plant, installing physical barriers to hinder the spread of the allergen in the environment (for instance automatic doors separate work areas); limiting the movement of staff by the factory by defining jobs and

professional competencies; particles in suspension control: making small packaging formats gluten products in a specific area (dirty area); programmed cleaning processes after the manufacture of products with allergens; evaluating the cleaning efficiency with monthly analytical controls of gluten on work surfaces and equipment.

4. Good manufacturing practices and training: improving workers training in good manufacturing practice to avoid cross contamination and promoting the measures for gluten management; the main rules to be followed are: exclusive use of utensils for raw materials with allergens; using specific work clothes when working with allergens; preventing cross contamination from allergen raw materials to free-allergen raw materials, surfaces or environments, avoiding open containers or bags; strict compliance with the protocol of cleaning equipment and utensils in contact with gluten; intensifying supervision during manufacturing to ensure they are carried out according to established procedures.

The time taken for the implementation of the protocol was one month, after that time, a control of the presence of gluten in products and facilities was made by gluten E.L.I.S.A sandwich (RD antibody) >5mg/kg.

**Results and Discussion:** In previous studies, before applying control measures of gluten, 60% of the products tested contained less than 20 ppm of gluten; the remaining 40% had greater than 20 ppm and 17% of these values exceeded 100 ppm.

As to the contamination of work surfaces and equipment, it was found that 80% of the surfaces analyzed exhibited values greater than 20 ppm but less than 100 ppm.

After the implementation of the control measures, the presence of gluten in products and surfaces has been reduced to values below 20 ppm, representing a reduction in some cases 90% of the initial content.

The successful implementation guaranteed the safety than whose products labelled as gluten free would have less than 20 ppm of gliadine according to the current legislation (2).

**Conclusions:** If we consider that the FDA defines as gluten free foods for those with a maximum of 20mg/kg (3) and the European Community recognize as food "gluten-free" that contain up to 20mg/kg and "very low gluten content" that contain less than 100mg/kg", all products of this company can be declared as "gluten-free" o "very low" gluten content.

## COMPETING INTERESTS

The authors state that there are no conflicts of interest in preparing the manuscript.

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### CONFERENCE PROCEEDINGS

8 September 2016 | INTERVENTION AREA: RESEARCH, DEVELOPMENT AND INNOVATION IN DIETETICS

#### SHORT LECTURE



### The role of dietitians in the PREDIMED study: consequences for the dietetic practice. 14 points Score

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The PREDIMED Study is a multicenter, randomized, controlled, primary prevention trial that aims to assess the effects of a Mediterranean-type diet on the risk of cardiovascular events (1). From October 2003 to June 2009, 7447 participants were recruited and randomized to one of three interventions: two Mediterranean Diets supplemented with nuts or extra-virgin olive oil, or a control low-fat diet.

A 14 item questionnaire was specifically designed and validated for this study to control for compliance with the intervention (2). This brief tool is an adaptation of a previously validated 9 item index (3) and consists of 12 questions about the consumption of food items typical of the Mediterranean Diet and 2 questions on food intake habits. Each question scores 0 or 1 depending if the condition is met or not, so the final punctuation ranges from 0 to 14. It is considered a good adherence if the punctuation is equal to or above 9.

The PREDIMED dietitians used this score to assess every three months the adherence to the intervention in an individual motivational interview with participants. This questionnaire has the advantage of allowing immediate feedback to participants so the dietitian could negotiate with them the goals for the next visit (4).

A higher adherence to the Mediterranean food pattern using this score was inversely associated with the prevalence of cardiovascular risk factors (diabetes, hypertension, dyslipidemia or obesity) (5), some obesity indexes (6) and the prevalence of metabolic syndrome (7) in the PREDIMED trial.

#### COMPETING INTERESTS

The author states that there are no conflicts of interest in preparing the manuscript.

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8 September 2016 | INTERVENTION AREA: RESEARCH, DEVELOPMENT AND INNOVATION IN DIETETICS

### SHORT LECTURE



### Dietitians – don't shy away from Twitter!

**Azmina Govindji\***, Emma Carder, Sasha Watkins

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Dietitians are legally recognised experts in the field of nutrition and dietetics, yet bloggers, tweeters and “Instagramers” are far more influential when it comes to giving dietary advice. Not only is this potentially harmful to the public; it undermines the profession and we risk being left in the 20<sup>th</sup> century.

I will present a case study of #RDUK (1), award-winning twitter chats that have been presented a Roll of Honour by the British Dietetic Association (2015) and awarded the Complete Nutrition Award for Nutrition Resource of the Year (2013/14). The BDA further promotes dietitians who have embraced social media by launching the Trust a Dietitian online page (2).

RDUK stands for Registered Dietitians UK. It is a moderated online live conversation held once a month on Twitter (3), covering various nutrition topics. Azmina Govindji RD (<http://www.azminanutrition.com/>), Emma Carder RD (<http://www.emmacardernutrition.co.uk/>) and Sasha Watkins RD (<http://www.thefoodcoachltd.com/>) lead the hour-long twitter session. We explore themes related to the latest headlines or new studies – and we don't shy away from controversial topics.

RDUK has been established since November 2011 and to date has organised & led over 30 nutrition chats. Monthly statistics show an average of 60 participants with an average Twitter Impressions Reach of 2 million people. Chats regularly trend on Twitter in the UK.

We moderate each chat, keep to strict timings, tweet links to quality resources, encourage continuous professional development, provide the media with credible messages, and promote the value of seeking qualified dietetic expertise. Each chat is graced with at least one special guest who has

particular specialist knowledge of the topic. Organisations such as Diabetes UK, the Hydration Council, the British Dietetic Association, Diabetes Research and Wellness Foundation often attend.

Twitter helps us to have an opinion on a hot topic, to demystify the science of nutrition, and to add balance to sensational media headlines. Indeed, RDUK was featured in the Grocer publication (4) after our Twitter chat on sugar.

This presentation will enlighten delegates on why we need to be active on social media, how we can interact responsibly, how to engage an audience, how to create impact in a crowded marketplace, where most of the “noise” comes from self-styled nutrition experts who impart little or no evidence base. The talk will include social media guidance from the BDA (5) that advises dietitians on how to maintain their strict Code of Professional Conduct while interacting online.

I will encourage live tweeting from the conference by walking through the jargon, and helping delegates to create punchy sound bites in the moment, thereby spreading learning from the Congress to dietitians around the world.

Everyone has a voice, but we are the experts. We can't afford not to be part of the conversation.

### COMPETING INTERESTS

Authors are Co-Founders of RDUK chats and on occasions, the time input and marketing of RDUK chats are supported by the Food Industry.



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8 September 2016 | INTERVENTION AREA: THE POWER OF DIETITIANS  
NUTRITIONISTS TO MAKE A DIFFERENCE IN SOCIETY

### SHORT LECTURE



### Compliance to oral nutritional supplements in the daily clinical practice in geriatric wards: a French National Research Program in dietetics care

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**Aim:** Malnutrition affects up to 70% of hospitalized geriatric patients (1), and constitutes a risk factor for morbidity and mortality (2). The clinical efficacy of energy-dense, protein-rich, small-volume oral nutritional supplements (ONS) is widely demonstrated (3). In geriatrics, only 50 to 65% of prescribed doses are consumed (4). The reasons of this poor compliance are multiple. We conduct a clinical study to demonstrate that respecting patients' preferences is crucial to improve compliance to ONS.

**Methods:** This is a prospective, randomized, controlled and open-label study aiming to evaluate the efficacy of a strategy of product choice after prior testing among 220 elderly hospitalized in geriatric wards for whom the prescription of ONS was justified. Our main objective is to compare the in-stay compliance to ONS when the products are delivered according to the usual procedures (preferences displayed orally) or when patients can choose the products after tasting a panel of products with different flavors and textures (always respecting the nutritional criteria of the prescription) (5). The main secondary objective is to compare the evolution of clinical and biological nutritional status during the hospital stay and 3 months after hospital discharge.

**Conclusion:** Our hypothesis is that the strategy of "informed choice" will significantly improve the actual consumption of ONS in geriatrics. We believe that this strategy will also lead

to a significant improvement in nutritional status in short and medium term. The verification of this hypothesis could allow to generalize the recommendation of prior tasting before prescribing ONS, in aim to optimize the therapeutic compliance.

### COMPETING INTERESTS

The authors state that there are no conflicts of interest in preparing the manuscript.

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### CONFERENCE PROCEEDINGS

8 September 2016 | INTERVENTION AREA: THE POWER OF DIETITIANS NUTRITIONISTS TO MAKE A DIFFERENCE IN SOCIETY

SHORT LECTURE



#### Review Process Dietary Guidelines for Argentina Population

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Argentina Food for population guidelines (1) were published in November 2000 by the AADYND (Argentina Association of Dietitians and Nutritionists Dietitians) with great effort and dedication. Nutrition education has been an ongoing task nutritionists in our country since the beginning of the occupation in 1930. The Dietary Guidelines are an educational instrument for health teams, teachers and the general public as well as companies that integrate production chains and the food industry, including recommendations on healthy eating habits and nutritional quality of food. After 10 years he has passed, due to changes in the nutritional profile of the Argentineans was necessary to review and update them.

This update is based on general recommendations for over two years healthy people who seek to promote prevention of chronic diseases and contribute to reducing their burden of disease; incorporate tips for healthy eating according to national circumstances considering the diversity of regional food cultures and guide consumers in choosing their own food culture improving choosing them according to their nutritional value, supply and their ability to access, among others. It is supported by scientific evidence and the changes since then in eating habits and behaviors of the population of our country where overweight and obesity increased.

**The review process was conducted from June 2011 to March 2015:** In the first stage (June 2011 to March 2013) AADYND Consensus convened a meeting with representatives Nutritionists around the country to work in consensus to revise the Guidelines. In this meeting the Framework Convention on Mutual Cooperation between the Argentina Association of Dietitians and Nutritionists Dietitians and Nutritionists

Association of Córdoba "Review and update of GAPA" emerged. Each institution appointed technical consultants to prepare the "basis for the revision of the GAPA Document" (2) and the agreement between AADYND and CNPC signed.

The second phase was conducted by the Ministry of Health (March 2013 - March 2015), who called for scientific and academic entities related to nutrition.

Food guides are educational tools including scientific, nutritional requirements and food composition to provide a practical tool that facilitates the population healthy food selection with clear and specific messages accompanied by a chart that summarizes information. The documents are aimed at the medical community, teachers and the general population, as well as the food industry.

To carry out this upgrade process, the data obtained from the latest National Survey of Risk Factors (NSRF) (3), under which 6 in 10 adults in Argentina are overweight and 10 have 2 obesity were taken into account. This trend is repeated in young people between 13 and 15, where 1 in 3 presents overweight and almost 6 percent are obese, as revealed by the Global School Health Survey 2012. It was also used as literature base "base document for the revision of the Dietary Guidelines" developed as a product of the cooperation framework between Argentina Association Dietician and Nutritionists Dietitians and Nutritionists Association of the Province of Córdoba agreement.

Thus, the Ministry of Health began to incorporate these Dietary Guidelines as part of its state policy. The update task was carried

out by a panel of interdisciplinary consensus coordinated by the Department of Health Promotion and Noncommunicable Disease Control of the Ministry of Health of the Nation. The interdisciplinary panel was composed of the Argentina Federation of Graduate Nutrition (FAGRAN); the Argentina Association of Dietitians and Nutritionists Dietitians (AADYND); the Center for Studies on Child Nutrition (CESNI); Argentina Society for Clinical Nutrition (SANC); the Association of Schools of Medical Sciences of Argentina (AFACIMERA); the Center for Economic Studies and Food Studies (CEPEA); Nutritionists College of Cordoba; National University of Cordoba; the Argentina Society of Obesity and Eating Disorders (SAOTA); the Department of Nutrition at the University of Buenos Aires; the Quality of Health Services, University ISALUD and Argentina Society of Nutrition (SAN).

Also they are participating teams of the Ministry of Social Development of the Nation; the Ministry of Agriculture, Livestock and Fisheries of the Nation, the National Institute of Food and the National Maternal and Child Health Ministry of the Nation.

The dynamics of work was done through a "National Multisectoral Committee" in which its members signed the Declaration of Conflicts of Interest. For the methodology

proposed by the Pan American Health Organization / PAHO and the Guide to Adaptation of Clinical Practice model guides it took.

## COMPETING INTERESTS

The author states that there are no conflicts of interest in preparing the manuscript.

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8 September 2016 | INTERVENTION AREA: EQUITY AND PROFESSIONAL ETHICS  
WITHIN THE DIETETIC PROFESSIONAL

ROUND TABLE: FOOD PRODUCTION AND GLOBAL HEALTH: FOOD REGULATION

Lecture Sequence: 1



### What should be the nutrient profiling system towards healthy foods

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With diet-related disorders such as obesity and its consequences looming large on the chronic-disease horizon, there is a need for consumers to choose a nutritious diet and manage their healthy weight without having to navigate through the Nutrition Facts panel or evaluate various and often confusing health claims. Food manufacturers, supermarket chains, trade associations and health organizations have developed independent nutrition-symbol systems based on different nutrient-scoring or profiling criteria to direct consumers to 'healthier' choices in a matter of seconds. Labeling food products as more or less healthy is not a new concept –the American Heart Association's HeartCheck mark was an early example– but has gained momentum in a world sometimes described as 'overfed and undernourished'(1). It is estimated that there are over 50 different icon systems in the United States or Europe marketplace, with others emerging globally (2). Nutrient profiling is defined as the science of ranking or classifying foods based on their energy and nutrient composition. Measures of nutrient density or quality, previously applied to total diets, are being adapted to evaluate individual foods with applications ranging from consumer education to policy development and/or regulation (3). Nutrient-profile models often include nutrients to encourage and nutrients to limit, and can be calculated on a 100g, 100 calorie or per-serving basis (3-4). Transparent scoring systems that have been published or derived from open-source data enable health professionals to accurately communicate the science behind the profiling and instill confidence in ranking systems that consumers might interpret as marketing ploys. Selecting

criteria in the development of the nutrient-profile model is a key decision, and results in variation among the different scoring systems. In general, nutrients beneficial to health are referred to as positive, recommended, desirable or shortfall nutrients such as certain vitamins and minerals; those less beneficial to health often are described as negative, restricted, less desirable, problematic or avoidance nutrients (those to limit) such as different types of fats, added sugars and sodium. Nutrient-profile scores are derived mathematically (for example, the sum of positive nutrients minus the sum of negative nutrients) using algorithms or equations and communicated to consumers graphically on the front of the package or on shelf tags (5). Ranking or profiling systems can have limitations. By itself, nutrient profiling provides little information on the use of a food in the context of a meal or how a food can be incorporated into daily food choices to build a healthier total diet. Across the-board scores –especially those emphasizing negative nutrients– could lead to foods failing a nutrient-profile 'test.' For example, nuts, cheese, reduced-fat milk and lean meats are rich sources of important nutrients, yet due to fat and calorie contents may be scored lower and considered less healthy. Profiling criteria need to ensure that no one nutrient contributes disproportionately to the overall score (6). Additional limitations to scoring systems include the failure to score foods on their complete nutrient profile due to limitations of standard databases or due to using only nutrients required for labeling. For example, there is limited information on vitamin D in standard databases, a nutrient now recognized as having expanded functions and benefits

beyond calcium metabolism. These limitations place foods high in vitamin D—including milk, some fortified juices and cereals—at a disadvantage in some scoring systems. In summary, many gaps remain in our knowledge of consumer use and understanding of symbols conveying nutrition information at a glance. Research is needed to link the use of these symbols and the nutrient criteria upon which they are based to some independent measure of nutrient quality or health outcome. In the meantime, health professionals are encouraged to visit program sponsor websites to evaluate the science behind the symbols using tips in the sidebar.

## COMPETING INTERESTS

The authors state that there are no conflicts of interest in preparing the manuscript.

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8 September 2016 | INTERVENTION AREA: EQUITY AND PROFESSIONAL ETHICS  
WITHIN THE DIETETIC PROFESSIONAL

ROUND TABLE: FOOD PRODUCTION AND GLOBAL HEALTH: FOOD REGULATION

Lecture Sequence: 2



### Health and Sustainable Diets: How valid are nutrient profiling models?

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**Introduction:** Nutrient profiling (NP) is defined as the science of ranking foods according to their nutritional composition for the purpose of preventing disease and promoting health (1). NP models are used for a variety of purposes including: (i) the determination of food claim eligibility (2); (ii) to stimulate product reformulation by the food industry (3); (iii) to determine the eligibility of food marketing directed at children (1,4); (iv) to determine food eligible for sale in school canteens (5); and (v) for nutrition signposting schemes (6). All applications of NP models have been designed with an aim to positively influence consumer food choice and to ultimately reduce the incidence of diet-related chronic disease (6). Sustainable diets are defined as those diets with low environmental impacts which contribute to food and nutrition security and to a healthy life for present and future generations (7). Here we present the evidence on the validity of NP models and explore the possible impacts on health and sustainable diets.

**Previous Investigation:** The construct validity of NP models has been examined in a review (1) of the seven most appropriate articles published after January 2000 which investigated the agreement between two and six different models and concluded that an external reference is desirable for validation. A review (8) on the methodological quality of studies conducted to assess the impact that front-of-pack labelling (FoPL) has on consumer behaviour, product reformulation and health outcomes, identified 31 studies (eight of which assessed the construct or criterion-related validity of NP models) and concluded that the methodological quality of FoPL studies was low to mediocre. To our knowledge, no prior systematic

review has assessed the evidence to confirm the construct and criterion-related validity of NP models.

**Study Contents:** We conducted a systematic review to investigate the construct and criterion-related validity of NP models in ranking foods according to their nutritional composition for the purpose of preventing disease and promoting health. We searched English language peer-reviewed research published to 30 June 2015 and used PUBMED, Global Health (CABI), and SCOPUS databases. Bias was assessed using an adapted version of the QUADAS-2 (Quality Assessment of Diagnostic Accuracy Studies-2) tool for all diagnostic studies and the Cochrane Collaboration's Risk of Bias tool for all non-diagnostic studies. The GRADE (Grades of Recommendation, Assessment, Development, and Evaluation) approach was used to guide our judgement of the quality of the body of evidence for each outcome. From a total of 83 studies, 69 confirmed the construct validity of NP models; however most contained methodological weaknesses. Only six studies used objective external measures (including biomarkers and chronic disease outcomes) to assess the criterion-related validity of NP models.

**Discussion and Conclusions:** The overall quality of evidence on the validity of NP models was judged to be very low to moderate using the GRADE approach. These findings are significant for the production and marketing of foods as well as their effects on health and the environment. Specifically, the application of NP has the potential to directly impact one of the three overarching principles of healthy and sustainable diets



proposed by Friel *et al.* (9). This principle relates to reducing the consumption of discretionary foods, which are energy dense and highly processed and packaged (9). Minimising the intake of discretionary foods reduces both the risk of diet-related chronic disease and the use of environmental resources (9). In addition, any adverse health or environmental outcomes will compound when highly processed foods are over-consumed (9). If NP models are insufficiently tested to establish both construct and criterion-related validity, the accuracy of foods identified to prevent disease or promote health is questionable. In other words, there is a risk that poorly validated NP models will assess unhealthy or discretionary foods as healthy options. Such inaccuracies in NP models would lead to the inefficient use of sustainable diets.

Manufacturers, along with academic, government and non-government organisations, must work together to ensure carefully designed studies to establish both construct and criterion-related validity are conducted. NP models should not be applied until adequate validation testing has been undertaken as inadvertent promotion of energy dense packaged foods will have both health and environmental impacts.

## COMPETING INTERESTS

The authors state that there are no conflicts of interest in preparing the manuscript.

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WITHIN THE DIETETIC PROFESSIONAL

ROUND TABLE: FOOD PRODUCTION AND GLOBAL HEALTH: FOOD REGULATION

Lecture Sequence: 3



### Food taxation: what should dietitians know about this issue?

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Fiscal measures offer an opportunity to influence sub conscious food choice through placing greater taxes on foods with either a high energy density and/or a low nutrient density, examples being foods high in refined sugars and saturated fats. Some innovative work has already taken place, where interventions have used fiscal measures to try and reverse the increasing trend in obesity prevalence and other non-communicable diseases. Some examples are "Action Plan for implementation of the European Strategy for the Prevention and Control of Non-Communicable Diseases 2012–2016 (1)", "European Food and Nutrition Action Plan 2015–2020 (2)", "The European Observatory on Health Systems and Policies (3)", or "Using price policies to promote healthier diets. WHO 2015 (4)", among others.

An example of how governments are following some of the recommendations given in the proposed policies, is the Hungarian Public Health Product Tax. The health impact assessment of the tax affecting sugar-sweetened beverages, energy drinks, confectionery, salted snacks, condiments, flavoured alcohol and fruit jams, was conducted with the support of the WHO Regional Office for Europe in 2013. According to this impact assessment, sales of products subject to the public health tax have fallen by 27%, with a 20–35% decrease in consumption observed. An additional benefit observed has been the response of manufacturers in removing entirely, or substantially reducing, the taxed ingredient in their products through reformulation. Also in France, tax on sugar

and artificially-sweetened beverages, was adopted in 2011. The tax generates revenues of almost €280 million per year and its alignment with the goals of reducing overweight and obesity have been noted, particularly with regard to childhood and adolescent obesity. Sugar-sweetened beverage sales have decreased by 3.3% due the tax (5).

Assessing the effectiveness of fiscal measures is difficult, given uncertainties over product substitution and compensatory behaviours, which nutrients to tax, the size of the tax to be implemented and calculation of resulting health outcomes. Levied taxes could motivate industry to reformulate. A specific tax (sugar, salt etc) provides a stronger incentive to reformulate products as manufacturers can lower the impact a tax has on their cost by reducing or removing the taxed ingredient.

The systematic review Food Pricing Strategies, Population Diets, and Non-Communicable Diseases: A Systematic Review of Simulation Studies, found that a 10% increase in the price of soft drinks could decrease consumption anywhere from 1% to 24%, and that for foods high in saturated fat, for every 1% increase in price, energy intake from saturated fat could fall by 0.02%, but concluded that given the limitations of the current evidence, robust evaluations must be planned when food pricing policies are implemented by governments (6).

But the European Commission Evaluation of the implementation of the Strategy for Europe on Nutrition, Overweight and Obesity related health issues - CASE STUDY

REPORTS (5), suggests that any alterations in consumption patterns, taking into consideration industry responses and the impact of product substitution, may potentially have an impact on public health.

As health motivated food taxes are a relatively recent policy initiative and public health studies require long-term data to assess effects on diet, obesity and non-communicable diseases, impacts of food taxes on public health will need to be further researched and assessed over the longer term.

Addressing health inequalities is of great importance and thus it is important to fully understand the impact that fiscal measures on food and drinks would have on people/families with lower incomes. OECD published a report in 2010, which found that fiscal measures are the only intervention producing consistently larger health gains in low SES groups (7). Although there is much controversy over this issue, the evidence available allows to infer that diets and diet-related health might improve by changing the relative price of superfluous foods by improving the affordability of healthy food, especially in these groups.

Public health dietitians have a role to play in ensuring that fiscal measures achieve their potential in promoting healthier diets through the provision of educational strategies to ensure compensatory behaviours, which limit the beneficial impact, do not occur. In addition, as professionals, they should strongly support the use of revenues generated to subsidise healthier foods, particularly fruit and vegetables, and the provision of clean drinking water for all school children.

## COMPETING INTERESTS

As member of a research group in the Agricultural University of Athens, we have received funding from private, public and European sources, subject to all established academic procedures on ethics and project management. As an individual, I have received fees as a researcher, a lecturer and a consultant from both public and private entities, which don't compromise my scientific and professional judgement in any way.

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## CONFERENCE PROCEEDINGS

8 September 2016 | INTERVENTION AREA: EQUITY AND PROFESSIONAL ETHICS  
WITHIN THE DIETETIC PROFESSIONAL

ROUND TABLE: FOOD PRODUCTION AND GLOBAL HEALTH: FOOD REGULATION

Lecture Sequence: 4



### Food Marketing for children and teenagers: Threat or Opportunity? Experiences in regulation of advertising and sale

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Promotion and marketing of unhealthy foods and beverages has been recognized as one of the most important risk factors of child obesity (1). Responding to concerns over the threat of an epidemic of diet-related non communicable diseases (NCDs), such as heart diseases, certain types of cancer, diabetes and obesity, the World Health Organization (WHO) has promoted the strategy on diet, physical activity and health. Physical activity, nutrition and healthy food habits are the main factors for the control of NCDs. For the purposes of control of these diseases it has been established regulations for food industries and publicity. It has been broadly defined as any law, statute, guideline or code of practice issued by any level of government or self-regulatory organization. At the same time the term "marketing" is used to refer solely to those processes that are very visible to the consumer, namely: advertising and promotion.

The purpose of this Conference is to take stock of what countries around the world are doing in the area of nutrition and food marketing towards children and adolescents, their successes and their challenges, and to analyze the consequences on the food habits of the population. The Conference presents basic theoretical and conceptual background for the implementation of the marketing of food products intended for children and adolescents. The Conference will show experiences of different societies to regulate the advertising and sale of food products. These regulations can be divided into three categories: statutory regulations; non-statutory government guidelines and self-regulations. Were studied 22 experiences of the

America's region to October 2014, which will be presented to know the key aspects. The purpose is to provide concepts that enable to discuss the impact on the food consumption due to the food marketing to children.

Small children and their families are a public of interest for corporations who are investing in new foods that substitute breast milk and nature foods. Industry influence is growing and facilitating industry's top strategic priority to change traditional food cultures. Babies are the perfect entry point for market-driven solutions. The effort of governments to bring in effective legislation is becoming even more of an uphill battle. Meanwhile, the market for formulas for older babies, many with high levels of sugar, is being fuelled with cross-branding and deceptive marketing tactics (2).

The WHO and the Pan American Health Organization (PAHO) has urged countries to restrict the promotion and advertising of unhealthy food and drinks aimed at children, which has been defined as all those techniques marketing used in all communication channels intended exclusively for children and adolescents. The most identified government regulations focused on limiting the presence and sale of certain foods and drinks in schools and set standards for nutrition labeling and/or health claims (3). Of the six techniques, television advertising is perhaps the most popular means of promoting food and beverage products worldwide and consequently has been the subject of more debate, in terms of its effects on children, than any other marketing practice (4).

## COMPETING INTERESTS

The author states that there are no conflicts of interest in preparing the manuscript.

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8 September 2016 | INTERVENTION AREA: THE POWER OF DIETITIANS  
NUTRITIONISTS TO MAKE A DIFFERENCE IN SOCIETY

ROUND TABLE: THE ROLE OF DIETITIAN-NUTRITIONISTS IN THE CONTROL  
AND PREVENTION ON HEALTH DETERMINANTS: A COST-EFFECTIVE TACTIC  
TO APPLY TO "HEALTH IN ALL POLICIES"

Lecture Sequence: 1



#### The Netherlands: new dietary guidelines and translation to the general public

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In November 2015 the Netherlands Health Council has released new dietary guidelines (1). These dietary guidelines focus on the prevention of chronic diseases and take sustainability into account (2). The Netherlands Nutrition Centre translates dietary guidelines to the general public, and offers practical tools that support behavioral change towards a healthier and more sustainable diet. The translation of the new dietary guidelines led in 2016 to a new "Wheel of Five", the national model (3). It was the result of a thorough development process, in which nutrition scientists, communication and behavioral scientists, and dietitians were involved. In the presentation both the process and outcome will be shared.

#### COMPETING INTERESTS

No conflict of interest. The Netherlands Nutrition Centre is 100% government funded: by the Ministry of Public Health, Welfare & Sport, and by the Ministry of Economic Affairs, Agriculture & Innovation.

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Lecture Sequence: 2



### Food-Based Dietary Guidelines for South Africa – an overview of the revised guidelines

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Food-based dietary guidelines (FBDGs) are short, positive, science-based messages that aim to change the eating behaviour of the general population towards more optimal diets that meet energy and nutrient requirements, while simultaneously helping to protect against the development of noncommunicable diseases (1).

FBDGs should be based on locally consumed foods. They should address existing nutrient deficiencies and excesses, and the resulting nutrition-related public health problems of a specific country or community (2). In order to be locally relevant, FBDGs should also consider local culture, ethnicity, and indigenous and traditional foods specific to the country or region (2). The World Health Organisation (WHO) and Food and Agriculture Organisation of the United Nations established the scientific basis for developing and using FBDGs to improve the food consumption patterns and nutritional well-being of individuals and populations (3).

The Nutrition Society of South Africa (NSSA) initiated the process of designing FBDGs for the general South African population in 1997 in partnership with the Department of Health, Directorate Nutrition, the Medical Research Council (MRC) and several other stakeholders from different United

Nations' agencies and food producer organisations in South Africa (1).

Following working group discussions, development of the guidelines and testing of these guidelines in relevant community settings, the guidelines were published in the South African Journal of Clinical nutrition in 2001 (2). Supporting materials were developed following the publication of the technical support papers of these guidelines (4). Due to South Africa's rapid economical development, urbanisation, acculturation and modernisation of dietary habits; as well as continued dissemination of new knowledge about the relationship between dietary intakes and health, the 2003 FBDG working group recommended that the guidelines would be reviewed and adapted regularly (1).

In 2012 these guidelines were revised and specifically targets individuals older than 5 years (see Table 1) (1,4). Separate paediatric guidelines for infants and children younger than five years of age, the inclusion of a milk guideline in the general FBDGs, a focus on the quality of fats in the fat guideline, and minor changes to the wording of some of the other guideline messages where some of the main changes that took place during the revision (1).

**Table 1.** South African Food Based Dietary Guidelines

1. Enjoy a variety of foods.
2. Be active.
3. Make starchy foods part of most meals.
4. Eat plenty of vegetables and fruit every day.
5. Eat dry beans, split peas, lentils and soya regularly.
6. Have milk, *maas* or yoghurt every day.
7. Fish, chicken, lean meat or eggs can be eaten daily.
8. Drink lots of clean, safe water.
9. Use fats sparingly: choose vegetable oils, rather than hard fats.
10. Use sugar and foods and drinks high in sugar sparingly.
11. Use salt and foods high in salt sparingly.

Revised 2012 and published: South African Journal of Clinical Nutrition. 2013; 26(3)(Suppl): s7.

During the revision of the FBDGs, a Food Guide was developed, that illustrates the food groups that should be eaten regularly and was specifically designed for South Africans with the support of the FAO (see Figure 1) (1).

**Figure 1:** South Africa's Food Guide

The recognition that child malnutrition remains a major public health problem in South Africa led to the formulation of a specific set of FBDGs for the mothers and caregivers of infants and young children from birth to five years of age, based on existing paediatric nutrition-related health issues and local dietary habits in South Africa (1).

This presentation will provide an overview of the South African FBDGs dietary guidelines, the technical support papers that support these guidelines, practical implementation tools such as the Food Guide and initiative such as South Africa's National Nutrition Week that are used to communicate these messages; as well as a short overview of the South African Paediatric FBDG's.

### COMPETING INTERESTS

The author states that there are no conflicts of interest in preparing the manuscript.

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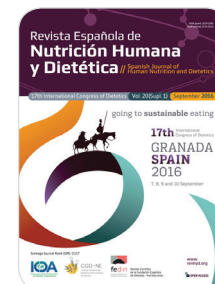
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8 September 2016 | INTERVENTION AREA: THE POWER OF DIETITIANS  
NUTRITIONISTS TO MAKE A DIFFERENCE IN SOCIETY

ROUND TABLE: THE ROLE OF DIETITIAN-NUTRITIONISTS IN THE CONTROL  
AND PREVENTION ON HEALTH DETERMINANTS: A COST-EFFECTIVE TACTIC  
TO APPLY TO "HEALTH IN ALL POLICIES"

Lecture Sequence: 3



### Development of a vegetarian food guide to Spanish population

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**Introduction:** Although health benefits of vegetarian diets are recognized, dietary patterns of many vegetarians may not be healthy, due to the inadequate intake of energy and certain nutrients or their reduced bioavailability. Vitamin B<sub>12</sub>, omega-3 fatty acids, protein and calcium, iron or zinc are the most concerning (1,2). A meal-planning guideline to vegetarian population becomes necessary in order to plane adequate diets.

The objective of this work was to design a guide to Spanish vegetarian diets that reflect the Spanish common practices and vegetarian eating styles, and that includes food choices that provide sufficient energy and nutrients to different types of vegetarians (3).

**Material and Methods:** The research underpinnings of this food guide had four phases:

- (i) Study of dietary habits and nutritional deficiencies in Spanish vegetarian population (4);
- (ii) selection of foods commonly consumed by Spanish vegetarians and nutritional data recompilation of these foods by usual portions (5);
- (iii) development of food groups on the basis of omnivore Spanish guide and similar nutritive value of vegetarian food portions;

- (iv) determination of the number of daily servings required for each food group.

**Results:** The food groups chosen for the vegetarian food guide were in line with those of the Spanish Food Pyramid (6), but changes in groups or portions were suggested in order to reach similarity in nutritive values and match each food group according to statistical criterions (7).

#### Food groups proposed:

**Grains, potatoes and legumes:** it was included bread, dry and raw cereals such as rice, millet, spelt, barley, rye, quinoa, bulgur and kamut, pasta, potatoes and legumes as chickpeas, lentils, soy, beans, adzuki bean, mungo bean and lupin.

**Vegetables:** it was included fresh vegetables and cruciferous and sprouts subgroups.

**Fruits:** it was included typical whole fresh, juices and dried fruits.

**Milk, dairy and analogs:** after nutritional analysis they were divided into soy products and other vegetable beverages, due to the wide range of protein content. Soy products group included soy drink, soy yogurt and tofu. Other fortified milk substitutes portions included oat drink, rice drink and almond drink.

**Rich protein group:** after nutritional analysis, meat analogs as textured soy, tempeh, seitan and vegetable burger were considered. For ovo-vegetarians, egg was included.

**Vegetable fats:** vegetable oils commonly chosen by vegetarians, nuts, seeds and their butters (tahini, peanut and almond cream) were included in fats group, due to similar caloric and fat content to vegetable oils per serving.

**Occasional foods:** portions of sugars group, including white and brown sugar, soluble cocoa, jam, honey, molasses, syrup and candies, and baked products including classic cookies, whole-fiber cookies, chocolate cookies, cake, croissant, donut, cupcake, batons or pastries were taken into account.

#### **Determination of the number of servings:**

Number of servings was defined at three levels of total daily calories (1600, 2000 and 2500kcal). Taking into account the mean nutritional values of each group, the number of servings was calculated, considering different choices for meal planning (legumes *versus* rice, pasta or potato or soy products *versus* other milk substitutes). Also, other dietary recommendations were included in order to reach nutritional requirements and adequate dietetic patterns.

#### **COMPETING INTERESTS**

The author declares that it is an original work and that there is no conflict of interest or any economic relationship with the work sent.

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NUTRITIONISTS TO MAKE A DIFFERENCE IN SOCIETY

ROUND TABLE: THE ROLE OF DIETITIAN-NUTRITIONISTS IN THE CONTROL  
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Lecture Sequence: 4



### Use of traditional and nontraditional whole grains in health promotion in Latvia

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Dietary guidelines around the world recommend people to choose more plant based foods including at least three whole grain portions per day. There is growing evidence that whole grain consumption contribute to the health benefits. Whole grain consumption and fiber rich diet reduces risk of many chronic diseases, including cardiovascular disease, metabolic syndrome, obesity, type 2 diabetes and certain cancers (1,2). Higher consumption of beta-glucan fiber is associated with lower blood pressure and cereal fiber consumption is inversely associated with lower total mortality (3).

The specific effects of whole grains related to metabolic syndrome include slower digestion, increase satiety, lower energy absorption, modulation of glycaemic and insulin response, impact on serum lipid profile, as well as antioxidant and anti-inflammatory activity (4). Anticancer properties in addition include influence on sex hormones, facilitation of short chain fatty acids formation in the colon and apoptosis. Numerous bioactive compounds have been supposed to be responsible for these effects, including soluble and insoluble dietary fiber, lignans, alkylresorcinols, minerals, trace elements and vitamins (5).

In general, whole grains that are used daily in Latvia include wheat, rye, oat, barley, rice and buckwheat. Furthermore, there are also nontraditional cereals, which have special features.

Among them triticale which possible protective effects to weight management, blood sugar control and cholesterol lowering. Hull-less barley is supposed to have positive impact on metabolic syndrome and cholesterol lowering and hull-less oat is suggested to have blood glucose on cholesterol lowering properties.

Research of bioactive compounds of rye, hull-less oat, hull-less barley and triticale is increasing in Latvia. There are series of studies - invention of new types of breads with additional nutritional value, like wheat bread with buckwheat and oat flour, bread with activated wheat, rye and hull-less barley grains and triticale bread. For the first time, scientists from Latvia found lunasin peptide in triticale (6). Lunasin is a peptide which anticancer, antioxidant, anti-inflammatory and cholesterol reducing properties have been studied.

More recent studies focus on possible protective effects in humans. Fiber sources are studied. The findings are that the most important source of dietary fiber is grain products and rye bread plays the most important role. Lignan intake and major food sources in Latvian men and women was studied as well. In addition alkylresorcinol and lignan content was assessed in Latvian breads and alkylresorcinol and lignan metabolites were investigated in urine and plasma (7,8). Ongoing study focuses on investigation of alternative cereals: hull-less oats,

hull-less barley, triticale and developing new cereal products with improved nutraceutical properties. Sensory attributes, chemical composition of grains and grain products will be examined and glycaemic and insulin index of different grain and germinated grain products will be assessed as well. The project will result in new breakfast cereal products from particular cereal species with higher amount of fiber, vitamins, phenols, antioxidants and product with low glycaemic index and insulin response. Such cereal product could be useful in prevention treatment of metabolic syndrome.

The further research of local whole grains is promising to provide with new functional products for prevention and treatment of cardiovascular diseases and cancer.

### COMPETING INTERESTS

Conflicts of interest regarding glycaemic and insulin index of grain products. The research leading to these results has received funding from the Norwegian Financial Mechanism 2009-2014 under Project Innovative approach to hull-less spring cereals and triticale use from human health perspective (NFI/R/2014/011)

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8 September 2016 | INTERVENTION AREA: MULTICULTURALISM OF A GLOBAL SOCIETY

ROUND TABLE: EQUITY AND FOOD SECURITY: LEARNING FROM THE PAST FOR A BETTER FUTURE

Lecture Sequence: 2



### Hunger and opulence, two sides of the same coin

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**One side of the coin:** Undernourishment (hunger) currently affects about 800 million people worldwide (1). Stunting and wasting affect about 160m and 99m children under 5 years respectively. About two million people suffer from one or more forms of micronutrient deficiencies. Undernutrition has severe consequences affecting human dignity. Other negative consequences include poor cognitive development, less schooling, reduced educational attainment, and subsequently reduced adult earnings. In sub-Saharan Africa for example, the Cost of Hunger studies indicate that undernutrition reduces workforce up to 13.7% and could cost up to 16.5% of GDP for countries (2).

**The other side of the coin:** The other side of the malnutrition coin relates to the rise in overweight and obesity. FAO's State of Food and Agriculture (3) indicates that from 1998 to 2008 all regions of the world experienced a rise in both conditions, even in developing countries that still have high undernutrition prevalence. Currently about 1.9 billion people are either overweight or obese and 500 million are obese. The nutrition transition characterized by changes in physical activity and dietary patterns is the main driver in the emergence of the obesity and its related non-communicable diseases. Both undernutrition and overweight and obesity have high costs in human and economic terms. Undernutrition is estimated to cost about 2-3% of global GDP while obesity and its NCDs could cost up to US\$ 47 trillion over the next decades (4). Global opportunities point to the need to address malnutrition in all its

forms. At the 2<sup>nd</sup> International Conference on Nutrition (ICN2) hosted by FAO and WHO in November 2014 (ICN2), and the Sustainable Development goal both emphasize the need and the commitment to end hunger and all forms of malnutrition.

**The need to focus on food systems:** There is increasingly global consensus to focus on reforming the food systems to deliver on healthy diets. This is because underlying the current nutrition situation are unhealthy diets (5). The food system determines the food available, and how affordable it is, its acceptability and the quality of the food that lands on the plate of the consumer. Consumers rely on markets for most of their food needs. With the nutrition transition, there is heavy reliance on processed foods. Consumer food choices are being influenced by food companies as seen in the increased consumption of processed foods with high sugar, fat and salt contents.

**ICN2 recommended actions for sustainable food systems promoting healthy diets (6):** The ICN2 Framework for Action, provided countries with flexible policy options they may consider to improve their food systems to deliver on healthy diets. Countries are to:

- review national policies and investments and integrate nutrition objectives into food and agriculture policy, programme design and implementation, to enhance nutrition sensitive agriculture, ensure food security and enable healthy diets (recommendation 8);

- strengthen local food production and processing, especially by smallholder and family farmers, giving special attention to women's empowerment, while recognizing that efficient and effective trade is key to achieving nutrition objectives (recommendation 9);
- promote the diversification of crops including underutilized traditional crops, more production of fruits and vegetables, and appropriate production of animal-source products as needed, applying sustainable food production and natural resource management practices (recommendation 10);
- improve storage, preservation, transport and distribution technologies and infrastructure to reduce seasonal food insecurity, food and nutrient loss and waste (recommendation 11);
- establish and strengthen institutions, policies, programmes and services to enhance the resilience of the food supply in crisis-prone areas, including areas affected by climate change (recommendation 12).
- develop, adopt and adapt, where appropriate, international guidelines on healthy diets (recommendation 13);
- encourage gradual reduction of saturated fat, sugars and salt/sodium and trans-fat from foods and beverages to prevent excessive intake by consumers and improve nutrient content of foods, as needed (recommendation 14);
- explore regulatory and voluntary instruments –such as marketing, publicity and labelling policies, economic incentives or disincentives in accordance with Codex Alimentarius and World Trade Organization rules– to promote healthy diets (recommendation 15);

- establish food or nutrient-based standards to make healthy diets and safe drinking water accessible in public facilities such as hospitals, childcare facilities, workplaces, universities, schools, food and catering services, government offices and prisons, and encourage the establishment of facilities for breastfeeding (recommendation 16).

## COMPETING INTERESTS

The author states that there are no conflicts of interest in preparing the manuscript.

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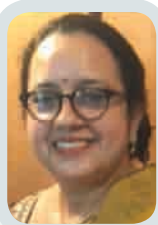


### CONFERENCE PROCEEDINGS

8 September 2016 | INTERVENTION AREA: MULTICULTURALISM OF A GLOBAL SOCIETY

ROUND TABLE: EQUITY AND FOOD SECURITY: LEARNING FROM THE PAST FOR A BETTER FUTURE

Lecture Sequence: 3



#### Are Circumstances who promote diseases or are diseases who create these circumstances? – Early onset of Dietary and Lifestyle Diseases (NCD) in India

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India is in a peculiar state of dual burden of malnutrition which is a classic interplay of environment, dietary factors and genetic predisposition. The situation is grim across the age groups and socioeconomic strata. The secular trends in Indian nutritional intake pattern over past two decades reveal a disproportionate macronutrient modulation. The data shows a decreased caloric intake with low proteins and high fat intake both in urban and rural population. The total intake of cereals and pulses has shown a decrease with a surge in total fat intake. The diet diversity has not improved in terms of qualitative food groups like milk and milk products, vegetables and fruits. This is observed in both ends of the socio economic spectrum. It is further aggravated by the globalization nutrition transition trends increasing easy access to poor quality, fat laden, refined starchy ready to eat foods. These observations very keenly synchronize with the increasing incidence of Non Communicable diseases accounting for an estimated 60 % of mortality in the country with highest deaths due to CVD. There are different pattern which have emerged over the years with famine like situation-low calorie, protein, fat diets, low body fat, growth retardation to decreasing scarcity and famine and also decreasing labor intensive work profile resulting in a pattern of rise in obesity, metabolic syndrome and diabetes. These emerging patterns can be observed and are likely to affect all socioeconomic strata. The maternal malnutrition,

increasing consumption of trans fats and saturated fats in Indian environment with a special reference to the younger population are the contributory factors to early onset of NCD. There is a felt need to have a multistakeholder approach with strong components of nutrition education, availability and affordability of healthy options with special reference to drastic reductions in total fats, sugar and salt intake and strengthening the quality of diet.

#### COMPETING INTERESTS

The author states that there are no conflicts of interest in preparing the manuscript.

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ROUND TABLE: EQUITY AND FOOD SECURITY: LEARNING FROM THE PAST FOR A BETTER FUTURE

Lecture Sequence: 4



#### Trends of obesity around the world: trends, causes and preventions

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Obesity arises from a chronic disequilibrium between calorie intake and energy expenditure, where mutual interactions between unhealthy dietary habits, sedentary attitudes and genetics are involved (1). Furthermore, epigenetics and perinatal nutrition, iatrogenic and pollutants side-effects, environmental and climate factors, neuroendocrine disruptors as well as social, ethic, cultural and religious matters may play a role in the obesity epidemic (2-5) This disease affects about 1500 millions adults in the world being a leading risk factor for death in low and high income countries (6).

Indeed, unbalanced nutrition based on fast-food and busy lifestyle patterns are important contributors to an excessive body weight gain as well as household/professional chore inactive behaviors or a transgenerational selective "thirty" inheritance (7,8).

The high prevalence of obesity has been associated to increases in the rates of diabetes, cardiovascular diseases, cancer or metabolic syndrome manifestations, where portions and energy density food yielding distortions, snacking, outdoors restauration, westernized dietary food consumption, shift working schedules or sleep debit as well as adverse socioeconomic scenarios may be relevant as etiological contributors for an excessive adiposity accumulation (7,9).

Preventive means against the rising obesity trends are to promote nutritional education and healthy dietary advises, hydration, regular exercise and physical activity with changes

in sedentary urban environment and to reduce energy rich foods intake following personalized guidelines (6,10).

#### COMPETING INTERESTS

The author states that there are no conflicts of interest in preparing the manuscript.

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ROUND TABLE: ETHICAL AND SUSTAINABLE FOOD PRODUCTION. NEW VISION

Lecture Sequence: 1



### Conventional, organic and integrated production models. Pros and cons

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Agricultural practices influence the production and quality of the harvest. The comparative of different agricultural practices can be used to revealing their strengths and weaknesses. Organic, conventional and integrated farming systems are strictly defined. Organic management practices exclude synthetic chemical pesticide and fertilizer inputs and use naturally derived products as defined by organic certification programs (EU regulation n. 834/2007 on organic production). Integrated farming systems, utilize methods of conventional and organic production in an attempt to optimize both environmental quality and economic profit. Some reviews indicated that organic and integrated systems had higher soil quality and potentially lower negative environmental impact and organic foods was quality and organoleptically higher than conventional and integrated.

### COMPETING INTERESTS

The author states that there is no commercial, financial or particular link with persons or institutions that might be interests related to the proposed work.



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ROUND TABLE: ETHICAL AND SUSTAINABLE FOOD PRODUCTION. NEW VISION

Lecture Sequence: 2



### Health-oriented ecosystem through a sustainable food chain vs. climate change and food insecurity: from tradition to updated agro-industry and home preparation

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**Introduction:** The appearance of agriculture and domestication of animals some 10,000 years ago and the Industrial Revolution some 200 years ago introduced new dietary pressure for which no adaptation has been possible in such a short time span. Anthropologists and some nutritionists argued that this has caused a discordance that could explain many of the chronic 'diseases of civilization' (1,2). Moreover, modern agriculture, together with both the 'Green Revolution' in the 1960s-70s – focused mostly on larger and rapid gains in grain yields against food insecurity– and the new 'Livestock Revolution' –with explosive growth of livestock production, fuelled by changing standards of living, especially in developing countries– further conferred unwanted side effects on the environment and public health (Stanford Report, March 16, 2010), which now require basic paradigm shifts for sustainable 'rehabilitation'.

**Objectives:** To assess predicted effects of climate change on human health, the food chain (production and nutritional values), environmental deterioration, and corresponding agro-industry, home food preparation and potential nutritional strategies for encountering those risks.

**Methods:** Comprehensive search of scientific studies and informed analyses describing the predicted climate change phenomena and their effects on human health, the food chain and the environment were combined with prospective studies of agro-nutritional strategies for enhancing food and nutritional security.

**Results:** Mediterranean Basin inhabitants are already experiencing profound impacts of climate change, including drought, crop failures, increased food prices, and resultant malnutrition and food insecurity (3), as well as significant health hazards caused by unprecedented heat waves/stress and solar UV (4). Extreme high temperatures, humidity/aridity, and carbon dioxide have been shown to reduce photosynthesis, agricultural yields, protein synthesis, and concentrations of polyunsaturated fatty acids (PUFA) – especially n-3 PUFA (5). Low socioeconomic status, obesity, and impaired temperature regulation (i.e. in women, young children, and the elderly and during pregnancy-lactation) increased the risks (6-8).

Beyond adoption of greener, energy-saving lifestyles with low environmental footprints, i.e. by plant-based diet for decreasing gas emissions (9), there is a need for upgrading technologies for meeting environmental challenges and management of crop growth/yield against reduced food availability and quality.

A new paradigm of 'health-oriented agriculture' (10) was recently suggested to guide needed redesign of food composition for eradication of nutritional deficiencies, and to support disease prevention and lifelong performance/productivity in climate affected environments and nutritional insecurity. This entails combining modern/advanced technologies –i.e. soil enrichment (selenium, nitrogen) and genetic selection– firstly in plants, for enhancing nutritional components (e.g.,

n-3 PUFA, n-9 monounsaturated fatty acids [MUFA], vitamins, minerals and phytonutrients), for increased nutritional and functional values of crop varieties; then further in animal products (e.g., eggs, fish, milk, poultry, meats); and developing environmentally friendly agricultural methods with traditional strategies (e.g., local vegetation, shade arrangements, cooling and grazing management) and methods advantageous for the ecological impact of foods, i.e. water intake and gas (CO<sub>2</sub> and CH<sub>4</sub>) emissions as criteria for environmental food production and selection; and home-based preparation (e.g., soaking, sprouting, slow cooking, fermentation), gardening, and meal planning according to traditional practices, especially those continuously supported by scientific research.

**Conclusions:** Acknowledging that agriculture and diets co-evolved for optimal environmental adaptation –as effectively represented by the Mediterranean diet, exemplifying ecological wisdom for health and longevity in hot climate – is now especially relevant vs. climate change and predicted intensification of environmental hazards, including desertification, increased temperatures, heat waves, and water shortages. Combining traditional agricultural strategies with new industrial technologies and food modifications –as compensation for reduced food production, nutritional values, and food security, and for increasing sustainability against environmental hazards– will be presented and discussed.

## COMPETING INTERESTS

The author states that there are no conflicts of interest in preparing the manuscript.

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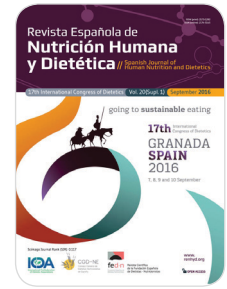
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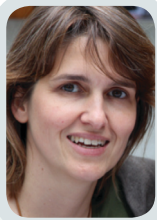


### CONFERENCE PROCEEDINGS

8 September 2016 | INTERVENTION AREA: MULTICULTURALISM OF A GLOBAL SOCIETY

ROUND TABLE: ETHICAL AND SUSTAINABLE FOOD PRODUCTION. NEW VISION

Lecture Sequence: 3



#### Live well for Life: recommendation for a sustainable food production and consumption models

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Food is set to be the next major issue for the world, not just tackling malnutrition and over-consumption, but also ensuring equitable access to food and revising our aspirations regarding the food we eat (1). Regarding environmental impacts, food production and distribution are responsible of 29% of greenhouse gas emissions at EU level affecting climate; deforestation for crop and livestock growth, which affects wildlife and habitats in sensitive areas such as the Amazon and Cerrado regions of Brazil; over-extraction and pollution of water used for growing crops, which affects sensitive environments. In summary, our dietary choices affect climate and environment.

To achieve the Sustainable Development Goals (2) –not only those regarding hunger, food security and nutrition- we need to change the way that we produce, distribute and consume food.

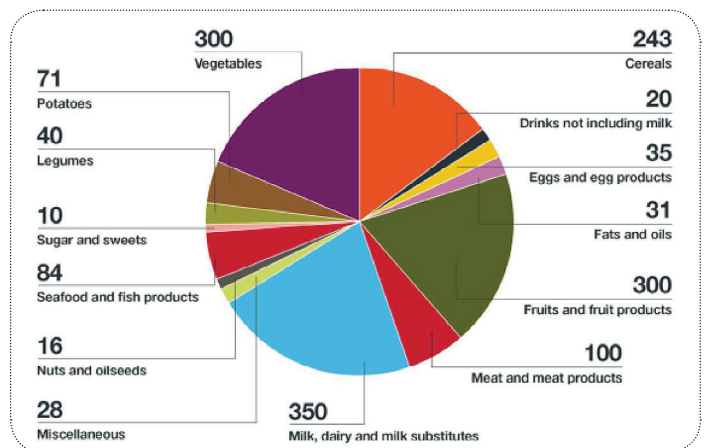
Livewell for Life is a Life project, funded by European Union, managed by WWF and Friends of Europe, to show that a low carbon diet, healthy for people and the Planet, is possible.

The project's aim is "To contribute to the reduction of greenhouse gas (GHG) emissions from the EU food supply chain, so they fall below 1990 levels by 2020, in line with international agreements." The project's objectives include (3):

- Test and evaluate the LiveWell Plate in three pilot countries: France, Spain and Sweden, following the criteria: Criteria:

Meeting national dietary guidelines; 25% reduction in GHG; Resembling current diet; Costs no more than current diet and taking into account cultural issues, following the definition of Sustainable Food (FAO).

After a careful revision according to national nutritional guidelines and taking into account stakeholders and experts' advisor, the final version of Spanish plate looks like (4).



- Identify social and economic barriers and opportunities (5) for the adoption of sustainable-healthy diets in the EU. The main opportunities identified were to invest in

health, saving money and meeting societal expectations. Key barriers identified were limited knowledge/confusion, habits and cost.

- Carrying out a socio-economic assessment (6) and Develop EU policy options and 'pathways' for practical implementation of the LiveWell Plate (implementation of no-regret policies; Upgrade agricultural and nutrition policies to one sustainable food policy; strengthen preventive action on diet-related non-communicable diseases; make better use of economic governance; competition policy should not eclipse sustainability objectives; seek local-global synergies; ensure a supportive, cohesive policy environment; ensure food chain accountability) (7).
- Disseminate the LiveWell Plate, policy options and implementation 'pathways' in the pilot countries and across the EU.

The project contributed to a long term vision by demonstrating how sustainable diets look like for EU Member States, facilitating a conducive policy environment, developing tangible pathways for implementation of sustainable diets and disseminating this widely across Europe. This groundbreaking project worked with the Network of European Food Stakeholders, key stakeholders from the food supply chain and EU and national policy makers to ensure sustainable diets forms part of a future policy agenda. Some Spanish stakeholders, key during all the project implementation were *Hospital de la Paz, Fundación Española de Dietistas y Nutricionistas, Fundación Española del Corazón, Sociedad Española de Agricultura Ecológica, Organización de Consumidores y Usuarios, Confederación de Consumidores y Usuarios* and other associations of producers or distribution and regional and national administrations.

The Livewell project findings regarding low carbon diet could be summarized in the next principles:

- Eat more plants - especially seasonally grown fruit and vegetables
- Waste less food - up to 30% of what is brought home is wasted
- Eat less but better meat - Meat, be it red or white, can be a tasty complement rather than just a centre piece of a good meal
- Eat less processed food - as they tend to be more resource intensive to produce and often contain high levels of sugar, fat and salt
- Where available, buy food that meets a credible certified standard (MSC, organic farming, etc.)

Sustainable food is key to achieve social, economical and environmental objectives. Sustainable food for healthy people and Planet.

## COMPETING INTERESTS

The authors state that there are no conflicts of interest in preparing the manuscript.

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8 September 2016 | INTERVENTION AREA: MULTICULTURALISM OF A GLOBAL SOCIETY

ROUND TABLE: ETHICAL AND SUSTAINABLE FOOD PRODUCTION. NEW VISION

Lecture Sequence: 4



#### Is there a place for organic food in evidence-based dietetics practice?

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Organic food is a growing movement worldwide: 2015 private sector estimates (1) place the value of the industry at 104.5 billion dollars. As the popularity of organic food grows with the public, dietitians are expected to be well versed in the risks and benefits to accurately guide their clients in making appropriate food choices. Consumers select organic foods over concerns about the safety of their food supply, including genetically engineered seeds; the sustainability of their food choices, and impact on personal and environmental health (2). But are these concerns validated by current evidence?

For some time, data on nutrition outcomes of organic foods has been scarce; however, a small but rapidly growing body of research is delineating interesting differences between organic and conventionally prepared foods, particularly where phytochemical and antioxidant content is concerned (3-7). In addition, as pesticide residues on conventional foodstuffs may independently contribute to disease risk or adverse outcomes for our most vulnerable clients, dietitians must also be aware of the impact of dietary pesticide intake. Consumption of organic foods has been shown in the literature to lower exposure to pesticide residues in humans (8) and the growing knowledge about the microbiome is providing an interesting new paradigm through which to view potential impacts of pesticide exposure (9).

Despite the potential benefits of organic foods, we must also be aware of the challenges of recommending organic foods to our clients and patients. These challenges include potential for increased cost within the family food budget and lack of local availability for our clients in addition to weighing the impact of

organic foods within the overall context of the therapeutic diet recommended. There is also considerable misunderstanding about what organic foods are –for example, that organic foods are grown without pesticides and fertilizers– and their documented benefits, including a ‘health halo’ effect of the organic label that may mislead consumers into making higher sugar, more processed food choices.

Finally, as dietitians, the impact of our dietary counselling on consumer demand for foodstuffs has an impact on the sustainability of our food supply (10). There is debate about whether organic agricultural practices are adequate to feed a growing global population (11). Improving our understanding of the issues around organic agriculture will help us to better counsel our clients and patients in way that improves both individual health and protects the sustainability of our healthy foods supply. It is for the dietitian to decide whether organic food belongs in evidence-based dietetics practice, or whether organic is a philosophical lens through which consumers can interpret our dietary guidance.

During this session, attendees can expect to learn:

- What defines an organic food and why consumers choose organic foods
- An overview of the potential benefits of organic food from a sustainability and social impact standpoint and whether current data supports the theoretical benefits
- An up-to-date summary of the clinical evidence for organics in human nutrition and health

- Debunking myths about organic agriculture and foods
- A brief review of the current science around genetically engineered foods
- The challenges faced in implementing organic foods into dietetics practice, such as availability and cost

## COMPETING INTERESTS

The author states that there are no conflicts of interest in preparing the manuscript.

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8 September 2016 | INTERVENTION AREA: EQUITY AND PROFESSIONAL ETHICS  
WITHIN THE DIETETIC PROFESSIONAL

ROUND TABLE: EDUCATIONAL QUALITY IN PRE AND POSTGRADUATES. SUSTAINABLE  
PROFESSIONAL TRAINING. TRAINING DIETITIANS-NUTRITIONISTS

Lecture Sequence: 1



### Developing standards to prepare entry-level Dietitians for practice

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Competency-based health professional education has developed as a movement to create a workforce equipped to manage the emerging health needs of the population (1). Health professional Competency Standards provide the framework and benchmark for the preparation for the workforce and document the knowledge, skills and attitudes required for acceptable performance in the workplace (2). Competency standards support a shared understanding of acceptable performance relevant to the workplace and they focus on outcomes. They assist in designing education programs to meet the requirements for accreditation. This includes the implementation of judgement-based approaches to the assessment of the achievement of competence, eliminating time as the main factor in determining readiness to practice. Competency standards can also be used to direct continuing learning and to guide the processes for credentialing (3).

The dietetics profession internationally has developed competency standards (4). Growing professional competence as a dietitian involves both an initial attainment of competence at the point at which a trainee is deemed 'competent' to enter the workforce, as well a commitment to the continued development of new skills, and revision of previously mastered skills, to adapt to new contexts and changing work environments and challenges. Competence is thus best understood as a continuum, whereby an individual develops additional abilities overtime by practising the same skills in a continuing education environment with increasing complexity (4).

Competency-based education involves providing evidence of the achievement of competency standards as outcomes or 'competency-based assessment'. 'Competency-based assessment' is a key component of competency-based education and continued professional development (5). Such assessment is used for certification, for entry into the workforce, and for professional development. The evidence suggests that competency-based assessment should be approached as a whole system, rather than focusing on single assessment tasks or observations (6). A system of assessment is a program of learning and assessment activities that contribute to the development of competence, with these activities being intricately linked, interconnected and dependent on each other reflecting the multi-dimensional and dynamic nature of competence. A competency-based assessment system provides a body of evidence that illustrates an individual's competence to practice against competency standards as a whole (7).

There is limited evidence available on recommended approaches to develop or revise competency standards of health professionals. Of what is published, the role of experts in formulating the standards for entry-level practice is clear. However there is no agreed upon methodology and some methodological approaches are criticised for their narrow perspective. The methodology undertaken in Australia to review the entry-level competency standards for dietitians used an iterative approach that aimed to support change. The approach engaged over 150 members of the profession

in systematically identifying and then seeking consensus on the major work roles, key tasks and observable activities of entry-level practitioners. The revised competency standards are contemporary and articulate current and future practice of entry-level dietitians (8).

This presentation will address the challenges of defining and assessing professional competence. The limitations and critiques of competency standards and the challenge of assessing competence will also be discussed.

## COMPETING INTERESTS

The author states that there are no conflicts of interest in preparing the manuscript.

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WITHIN THE DIETETIC PROFESSIONAL

ROUND TABLE: EDUCATIONAL QUALITY IN PRE AND POSTGRADUATES. SUSTAINABLE  
PROFESSIONAL TRAINING. TRAINING DIETITIANS-NUTRITIONISTS

Lecture Sequence: 2



### Career Restructuring for a New You

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Finding the right job choice is not a simple decision and must be repeated throughout adulthood. Planning a new career or changing jobs demands extensive self-assessment. Clarification of life goals, a vision of the future, recognition of outdated habits, and self-awareness are requirements. One must look inside first, then outside to find a perfect fit. To lead an emotionally intelligent life, one must also handle life stresses successfully. Change, guilt, learned helplessness, even differences between the sexes have to be addressed. Learning about whole brain thinking (1) and choosing jobs according to one's interests and abilities (2,3) will promote higher likelihood of finding the best match.

### COMPETING INTERESTS

The author states that there are no conflicts of interest in preparing the manuscript.

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WITHIN THE DIETETIC PROFESSIONAL

ROUND TABLE: EDUCATIONAL QUALITY IN PRE AND POSTGRADUATES. SUSTAINABLE  
PROFESSIONAL TRAINING. TRAINING DIETITIANS-NUTRITIONISTS

Lecture Sequence: 3



### Education standards of the Swiss association of dietitians

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Educational standards define the qualifications of a profession and can be understood as a quality assurance measure. There are no clear guidance's for setting educational standards for dietitians (1). For this reason the SVDE-ASDD decided to formulate educational standards as part of its educational strategy.

The educational strategy (2) of the SVDE-ASDD formulates positions on profession-specific issues related to education. An attempt is therefore being made to implement a consistent understanding of education in the professional group which can be consulted for strategic guidance by the executive committee and SVDE-ASDD members when dealing with issues relating to education.

The educational strategy is based on the basic principle of lifelong learning. Lifelong learning is subdivided into basic education and further and advanced training. Further and advanced training is aimed at both continuing professional development and broadening expertise.

**Basic education:** Upon completion of basic education and successful graduation with a BSc in Nutrition and Dietetics, students gain a formal qualification entitling them to work as certified dietitians. As currently, the formal qualification can only be attained with a Bachelor's degree, it is this path only that will be included in the education strategy. The universities of applied sciences are considered by the SVDE to be partners which ensure equal learning outcomes in the two linguistic regions with different curricula. If new educational services are

to be launched, it is crucial in the SVDE's opinion that these services are oriented towards these learning outcomes (3) and have a minimum proportion of practical work, as defined in the guiding principles.

**Continuing professional development:** Continuing professional development means the further training required to keep the professional skills up to date, in order to guarantee high-quality care. This understanding assumes that empirical knowledge will continually increase based on reflective practice. However, regular further training is required in order to keep acquired knowledge up to date. This further training is broad, ranging from profession-oriented further training to working for the association, being on committees, developing articles for the webpage, regular supervision and working as an instructor responsible for training up-coming professionals. It is necessary to regulate the recognition of internal further training offered by our institution. Furthermore, access to profession-specific knowledge must be ensured.

**Broadening of expertise:** Broadening of expertise means a further education in the sense of gaining more experience in the professional field or expanding a professional field. Accordingly, it is about specialising in a specific area. By specialisation, we mean the acquisition of knowledge coupled with a corresponding practical position. This specialisation can be technical, hierarchical or academic and is usually completed by gaining a title. The aim here is to discuss possible solutions and to recognise appropriate further education services.

## COMPETING INTERESTS

The authors state that there are no conflicts of interest in preparing the manuscript.

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WITHIN THE DIETETIC PROFESSIONAL

ROUND TABLE: EDUCATIONAL QUALITY IN PRE AND POSTGRADUATES. SUSTAINABLE  
PROFESSIONAL TRAINING. TRAINING DIETITIANS-NUTRITIONISTS

Lecture Sequence: 4



### Collaboration is takes time but is necessary: Partnership for the advancement of dietetic education and practice in Canada

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Explicitly defined professional standards are the underpinnings of dietetics education programs delivered at universities and in practical placement settings. They establish the foundational criteria for entry-to-practice evaluation by dietetics regulators and create the conditions for moving dietetic practice toward excellence and innovation, which sustains the profession and propels it into the future.

Beginning in 2009, the Alliance of Canadian Dietetic Regulatory Bodies (the Alliance), Dietitians of Canada (DC), and dietetic educators from academic and practicum programs across Canada came together as the Partnership for Dietetic Education and Practice (PDEP) (1). PDEP works in those areas where the goals and achievements of the professional association, regulatory bodies, and educators depend on each other's work, and undertakes projects in areas of common interest to advance excellence in dietetic education and practice. Through collaborative and consultative processes, two significant projects on professional competencies and education accreditation standards have been successfully completed by the Partnership.

In 2009, the Integrated Competencies for Dietetic Education and Practice (ICDEP) project began. Under the leadership of an experienced Project Consultant, a Project Manager and volunteer Working Group (WG) met regularly over 10 months to develop a draft list of Job Tasks for the Entry Level Dietitian. The proposed job tasks were presented to the profession for

validation and over 2200 dietitians responded to an on-line survey, representing approximately 24% of the profession nationally from every practice setting and every province in Canada. The survey generated valuable qualitative and quantitative data.

Supported by a grant from Human Resources and Skills Development Canada, PDEP then undertook a three year process to use the validated job task list to articulate a unified framework for education and training that would form the standard for entry to practice for dietitians in Canada. The result of this extensive work was the Integrated Competencies for Dietetic Education and Practice (ICDEP) published in its present form in April 2013 (2). The ICDEP includes statements of Purpose, Definitions and Structure, Framework and a detailed competency grid that outlines the Practice Competencies and related Performance Indicators, Assessment Vehicles and related foundational knowledge content areas. Canada now has a fully integrated framework to support the development of education programming, entry-to-practice regulation and professional standards.

Since 2013, PDEP has been working on ways to operationalize the adoption of the ICDEPs. As one component of that process, the Alliance reviewed and updated the Canadian Dietetic Regulatory Examination to ensure that the national question bank tests for the competencies as defined in the ICDEP.

Secondly, PDEP considered accreditation standards as driven from the ICDEPs. Accreditation standards provide an assurance of dietetic program commitment to quality education but also benefit the profession in knowing that graduates are adequately prepared for practice and benefit the regulatory bodies in knowing that graduates meet entry-level practice requirements.

The draft accreditation standards were developed using an expert working group and extensive consultation with all stakeholders. In April 2014, Accreditation Standards for Dietetic Education Programs in Canada were released (3). Dietitians of Canada created a series of accreditation assessment documents to support education program implementation of the standards. To date four programs have undergone peer review, with seven more accreditation visits scheduled to be completed by June 2016. In addition, PDEP has developed policies to support an expanded accreditation system.

In this presentation, representatives of PDEP will discuss the importance and value of undertaking a project so fundamental to the profession in partnership with all those interested and, in different but complementary ways, affected by the outcomes of the work. Through the development of the ICDEPs and related accreditation standards and systems, not only has Canada created a unified system underpinning professional education and entry to practice, but there has been an increased

appreciation for, and recognition of, the complementary and interrelated mandates from three diverse sectors. This has had a positive impact on reducing the jurisdictional tensions that had to greater or lesser degree existed between the professional association, the regulatory sector and the education system. Samples of the ICDEP products will be made available and the results of the first phase of evaluation of the ICDEPs and accreditation systems will be presented.

## COMPETING INTERESTS

The authors state that there are no conflicts of interest in preparing the manuscript.

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NUTRITIONISTS TO MAKE A DIFFERENCE IN SOCIETY

ROUND TABLE: PROFESSIONAL QUALIFICATION THROUGH REGISTRATION,  
ACCREDITATION AND EVALUATION OF CONTINUAL PROFESSIONAL DEVELOPMENT.  
ROLE OF PROFESSIONAL CORPORATIONS

Lecture Sequence: 1



### Forging a new path: Developing a New Competency Assessment Process for Internationally Educated Dietitians (IEDs) in Ontario, Canada

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Over the past decade, the number of internationally educated dietitians (IEDs) registering with the College of Dietitians of Ontario (CDO) has been increasing. IEDs practicing in Ontario, Canada each contribute to the profession by bringing global expertise, and necessary language and cultural competency to help serve Ontario's diverse population (1).

Currently, the CDO uses a *credential-based assessment* (document review of academic work and practical training) to assess IEDs' applications for registration. Challenges with the credential-based assessment process, such as difficulty obtaining required documents, being unable to provide sufficient descriptions of educational experiences, and/or gain recognition for informal learning (e.g. through work experience), have been noted by IEDs. These challenges can cause significant delays and result in high direct and indirect costs. In addition, lack of specificity in credential documentation has implications for IEDs in obtaining outstanding requirements to fill gaps.

From a regulator's standpoint, credential-based assessments rarely provide a valid assessment of knowledge, professional competence, and readiness for practice due to information gaps, or language nuances lost in translation.

In 2012, the CDO Registration Regulation was amended to enable the use of Prior Learning Assessment and Recognition

(PLAR) to determine qualifications for registration (2). Prior Learning Assessment and Recognition (PLAR) is the practice of evaluating and acknowledging knowledge, skills and competencies acquired through formal education and training, and informal learning (3-5). One method of PLAR is competency-based assessments. In competency-based assessment, knowledge, skill and practice-based judgment are assessed. This project is a competency-based assessment and, therefore, a PLAR method.

In April 2014, the CDO, in collaboration with a multi-province and multi-stakeholder advisory group, began a 3-year project to develop a new competency assessment process for IEDs to replace the credential-based assessment process currently being used. The project is funded by the Ontario Ministry of Citizenship, Immigration and International Trade (MCIT).

The proposed new competency assessment process will more directly assess IEDs' current knowledge, skill and the ability to apply these for safe, competent and ethical dietetic practice in Canada, and enhance the fairness, objectivity and validity of the assessment process.

The experience in Ontario is not dissimilar to other jurisdictions in Canada. This has led to the desire, as much as possible, to develop assessment tools that can be implemented in



many jurisdictions and made more sustainable through joint collaborative efforts and economies of scale.

As such, the CDO has initiated the project by establishing a Project Partners and Advisory Committee comprised of representation from:

- The Saskatchewan Dietitians Association,
- The College of Dietitians of Manitoba,
- The Nova Scotia Dietitians Association,
- The Newfoundland & Labrador College of Dietitians,
- Dietitians of Canada,
- Bridging Programs (The Internationally Educated Dietitians Pre-registration Program [Ontario] and The University Bridging Process [Nova Scotia]),
- IEDs and Preceptors.

The new competency assessment process will include an initial professional qualification assessment, an online exam that will assess current knowledge and competency, followed by a performance-based assessment. Supportive tools such as an online self-assessment, study resources and preparation guides are also being developed.

The objective of the oral presentation will be to share the learning, insights, challenges and processes that have taken place to transition to a new competency assessment process, highlighting the development of an online self-assessment tool, knowledge and competency exam and performance-based assessment.

This presentation will have significance to regulators and other stakeholders involved in competency assessment, labour mobility and international dietetics.

## COMPETING INTERESTS

The authors state that there are no conflicts of interest in preparing the manuscript.

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ROUND TABLE: PROFESSIONAL QUALIFICATION THROUGH REGISTRATION,  
ACCREDITATION AND EVALUATION OF CONTINUAL PROFESSIONAL DEVELOPMENT.  
ROLE OF PROFESSIONAL CORPORATIONS

Lecture Sequence: 2



### Helping RDs to be Safe, Ethical & Competent – A Regulator's Toolbox for Public Protection

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The College of Dietitians of Ontario (CDO) exists to serve the interests of the Ontario public. As a regulatory body, we set and enforce standards for the qualifications, registration, continuing competence, conduct and ethics of the approximately 3,800 Registered Dietitians in Ontario. The CDO is dedicated to the ongoing enhancement of safe, ethical and competent nutrition services provided by registered dietitians in their changing practice environment.

As a regulatory body, we are expected to ensure public protection by helping members to integrate laws and ethics into their practice, and to further develop the honesty, fairness, decision-making, judgement and values that they will need to function as individual and collaborative members of health care.

While there are traditional ways of regulating members through enforcing laws, standards and policies, the challenge has been to engage members who lacked understanding of what was expected of them. If we only focused on regulating, then members generally associated standards and policies with making their life and practice more difficult.

Instead, the CDO has taken on a more active role in supporting, not just regulating members. With the growing imperative for

regulatory oversight, this shift towards supporting members in the provision of quality client services through public protection initiatives is intended to instil confidence, awareness and judgement in providing safe, competent, ethical services. In short, this shift has helped our members to become truly engaged in public protection.

This new regulatory philosophy has deliberately transformed how the College is perceived from a policing organization to one that supports members.

The College has developed several tools to support RDs in their practice and has monitored the impact. These tools have become imbedded in the College's programs and are there to enable RDs to understand their professional obligations in keeping with the laws and regulations that govern dietetics.

During this session, we will explore strategies, tools, and resources that enable RDs/Nutritionists to apply ethics and laws to support their health care practices. The content of the session will examine the impact of the CDO's Practice Advisory Service on how Registered Dietitians engage in and apply day-to-day regulatory advice and support, while keeping the public protection mandate at the forefront of all activities.

The session will highlight the following:

The Practice Advisory Service – Individualized guidance for RDs. When RDs need help with ethical or professional issues, they are encouraged to call or email the Practice Advisory Service.

The Jurisprudence Handbook for Dietitians in Ontario (1) and JKAT – The handbook is a valuable reference for the CDO's Practice Advisory Service, the dietetic profession, educators and students alike. It also provides the foundation for the Jurisprudence Knowledge and Assessment Tool (JKAT), a component of the CDO's Quality Assurance Program, which must be completed by RDs every five years.

Other Resources – Standards (2), guidelines and policies to support dietetic practice, such as Professional Practice Standards for Point-of-Care Testing, Record Keeping Guidelines (3) for RDs in Ontario, and the Dysphagia Policy.

Website and quarterly *résumé* newsletter articles – Inform RDs about topical practice issues and developments in laws that affect their practice.

Annual Workshops – Interactive, face-to-face and webinar formats with RDs across 26+ locations in Ontario about topical issues that impact safe, ethical and competent dietetic practices. Topic examples include: Record Keeping, Risk & Resilience (4,5), Conflict of Interest (6,7), Using Technology, Cultural Competence (8), and Interprofessional Collaboration (9). Workshops also highlight CDO activities over the past year to keep RDs informed of regulatory developments.

Dietetic Internship Presentations – Presentations to students on the role of the CDO and jurisprudence issues.

Other Presentations – Provide speakers for conferences (10) and special events related to College business, jurisprudence and dietetics in Ontario.

A focus on a culture of collaboration, including consultation strategies and evaluative resources to ensure public safety will also be covered. The CDO regularly consults and collaborates with members to ensure that the work we do and the resources (11) we provide are timely and relevant to practice. Most recently, CDO members provided valuable input into the development of a new, novel Framework for Managing Risk in Dietetic Practice.

## COMPETING INTERESTS

The authors state that there are no conflicts of interest in preparing the manuscript.

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### CONFERENCE PROCEEDINGS

8 September 2016 | INTERVENTION AREA: THE POWER OF DIETITIANS  
NUTRITIONISTS TO MAKE A DIFFERENCE IN SOCIETY

**ROUND TABLE: PROFESSIONAL QUALIFICATION THROUGH REGISTRATION,  
ACCREDITATION AND EVALUATION OF CONTINUAL PROFESSIONAL DEVELOPMENT.  
ROLE OF PROFESSIONAL CORPORATIONS**

Lecture Sequence: 3



#### Quality Register for Dietitians – competences made visible

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The Quality Register Paramedics established in 1998 by several paramedic association, among which, the Dutch Association of Dietitians (NVD). Nine paramedic associations work together within the Quality Register Paramedics. The goal of the registry is to make visible to the public, like patients, referrers and health insurance, that the professionals inside the register work on Life Long Learning, according to the criteria set by all of the associations. It is a quality guarantee. There are criteria on a) the amount of working hours within the profession and b) the amount of professional development. In the Netherlands the Health Insurance only pays for a dietitian if she is 'quality registered'.

Every five years it is checked if a dietitian meets the criteria to stay in the quality register. The criteria are also evaluated and updated every five year. In 2015 the new criteria started (1). A big difference with the criteria before is a cycle called 'Individual Professional Development'. Within this criteria dietitians still have to work as a dietitian and still have the range of activities they need do to continue professional development. Now however, there is also a tool to make visible how oneself is scoring on the different competences. The

competences, which are also used by the NVD, are bases on the CanMEDS Framework (2,3). The dietitian scores herself on the different competences, but also has to ask several patients or colleagues. She reflects on the outcome and writes a report on this.

#### COMPETING INTERESTS

The authors state that there are no conflicts of interest in preparing the manuscript.

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**ROUND TABLE: PROFESSIONAL QUALIFICATION THROUGH REGISTRATION, ACCREDITATION AND EVALUATION OF CONTINUAL PROFESSIONAL DEVELOPMENT. ROLE OF PROFESSIONAL CORPORATIONS**

Lecture Sequence: 4



#### How to sustain an effective and productive network of dietitians across country borders to impact professional development (and still have fun): DIETS2

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In 2014 the Second International Conference on Nutrition (ICN2) was held and the following statement appeared in the report of the meeting (1); "Following the 1992 ICN, many countries prepared National Plans of Action on Nutrition (NPANs) reflecting country priorities and strategies for alleviating hunger and malnutrition. Many countries have also developed strategies to address unhealthy diets, obesity and/or nutrition-related NCDs. However, implementation of these plans has been uneven, often slow."

Dietitians undoubtedly have a role to play in development and implementation of the plans spoken about by ICN2. But working across country boundaries and sharing best practice is not easy.

Europe is a microcosm of countries striving to work together to solve common problems and between 2010 and 2013 a project was funded to provide a European Thematic Network in Dietetics named 'Dietitians ensuring education, teaching and professional quality' (DIETS2) (2). The aims can be summarised as 'enhancing the impact of European dietitians through addressing their competence in the rapidly evolving areas of nutritional science, social and demographic change. But in order to meet future challenges dietitians will need to increasingly embrace

their own lifelong learning (LLL) using the full power of information communication technology (ICT)'. Partners (101) from across 31 European countries with international partners and non-governmental organisations (NGOs) made a cohesive resource for the development of dietetics and nutrition in Europe. Additionally the Network aimed to strengthen the "knowledge triangle", linking education, research and business which are a key objective in Europe (3).

DIETS2 has had four major objectives:

- To promote, encourage and support dietitians to use, exploit and create new ways of communication and learning between themselves, academia, the people they serve and dietitians who are innovative users of ICT
- To emphasise the centrality of workplace (placement) learning, the need for evidence-based practice and produce guidance for effective learning
- To define the competences required for post-qualification dietitians and provide support and encouragement for dietitians to engage in LLL once qualified
- To ensure that investment in the DIETS2 project has value, impact and is sustainable

To sustain the engagement of its key stakeholders a number of strategies were used; working groups, website and Facebook pages, conferences and publications. Key Contacts in each Partner institution became a direct beacon for dietitians in-country and fostered a culture of dissemination and exploitation, sharing and engagement.

Engaging the expertise of the DIETS2 Network Partners through innovative use of ICT (e.g. Facebook) attracted dietitians and Higher Education Institution (HEIs) to cooperate in new ways of learning, enabling dietetic students to learn about enquiry-based learning, LLL and experience enterprising environments to support better nutrition. The full multiplier effect is still being realised for example through EFAD's membership of the EU Platform on Nutrition, Physical Activity and Health (DG SANCO) and the commitment by EFAD to share information about the Network to all members of the Platform including policy makers (e.g. WHO Europe), food industry, academia and NGOs.

EFAD now assumes responsibility for the work, strategies and partnerships created in DIETS2 Network and has formed a sustainable partnership of higher education, professional dietetic associations and NGOs. It is estimated that with EFAD as the key networking Partner, a total of 35,000 dietitians and about 60,000 student dietitians are in partnership. The approaches adopted by DIETS2 were key to success and sustainability summarised as:

- Coordination through partnership
- Development through engagement
- Quality through awareness

Partners continue to progress national projects together, e.g. HEIs and practising dietitians in Belgium have agreed national placement standards. The use of the DIETS2 Guide to Best Practice for Student Placements (4) and DIETS2/EFAD Pedagogic Standards (5) have supported and informed this project.

During the presentation other Network resources will be detailed such as a 'A guide to e-learning' (6); 'A map of student placements learning opportunities' (7), 'EFAD advanced dietetic competences' (8), EFAD Lifelong Learning policy (9) and a 'EFAD European e-journal for student dietitians' (10). Sustaining the impact beyond DIETS2 and building on the outcomes will also be discussed.

## COMPETING INTERESTS

The authors state that there are no conflicts of interest in preparing the manuscript.

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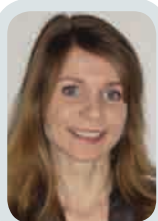


## CONFERENCE PROCEEDINGS

9 September 2016 | INTERVENTION AREA: EQUITY AND PROFESSIONAL ETHICS  
WITHIN THE DIETETIC PROFESSIONAL

ROUND TABLE: PROFESSIONAL ETHIC: CODES OF CONDUCT AND GOOD PRACTICE  
TO PROMOTE HEALTHY AND SUSTAINABLE EATING

Lecture Sequence: 1



### Ethic codex of the Swiss association of dietitians

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The SVDE/ASDD is the professional association of all legally recognised nutritional advisers in Switzerland, irrespective of which professional field they work in. In our small country, the SVDE/ASDD accounts about 1000 members. This small number does not mean an exceptional homogeneity or a foolproof harmony. With our four national languages, Swiss culture is characterised by diversity and disparities. This is also true in the Swiss Association of Dietitians SVDE/ASDD. Although that Switzerland has a high performing and fit for purpose health care system it is also costly (1). Pressures increase to contain growing healthcare expenditures. Significant pressure on health professionals, including dietitians, is exerted. In this context to help our members struggling with the reality of the healthcare system without forgetting our moral values the formerly Quality and Ethic Commission decided to create our own Ethic Codex and thereby initiate an ethical reflection. The purpose was not limited to the redaction of the paper, it was really the will to initiate a shared professional ethic (2). The process took five years until the final acceptance of the Code of Professional Ethics of the Swiss Dietitians. During these five years, various promotional activities were performed.

The Code of Professional Ethics of the Swiss Dietitians is know the reference document that encourages our members to think seriously about ethical issues relating to the standards and values in the areas of "professional expertise", "professional conduct", "co-operation within the profession and between different professions" and "further development

of the profession" (3). The Code of Professional Ethics of the Swiss Dietitians serves decision making, helps to differentiate us from other persons who provide nutritional advices and underlies the quality improvement.

The current SVDE/ASDD strategy focusses on three main strategic objectives: income, awareness and networking. Various activities relating to vocational policy are required to achieve the strategic objectives. Advocacy should be used to optimise legal framework conditions in such a way that solid framework conditions are created for our profession in the long term. In order for the ASDD/SVDE to be able to perform this role, it is important that all nutritional advisers work according to high standards specifically educational and working standards. Code of Professional Ethics of the Swiss Dietitians and ethical thinking belongs to working standards. We expect our members to carry out their work based on our code of professional ethics. SVDE/ASDD works to create and continuously update a consistent understanding of professional ethics.

The Code of Professional Ethics of the Swiss Dietitians stays broad and general and is not use to impose sanction. Thereby, we currently are revising our Code of Professional Conduct. The rules of professional conduct stipulate the guidelines, obligations and attitude which nutritional advisers must take into consideration when carrying out their work, also where relations with their co-workers and patients are concerned. The rules of professional conduct both correspond to the relevant

documentation of the SVDE and meet the legal requirements. The Code of Professional Conduct enables fair rulings to be made in case of complaints and legal action (4).

In conclusion, the Code of Professional Ethics of the Swiss Dietitians belongs to the basics documents that define what a Dietitian SVDE/ASDD is. The Code of Professional Ethics of the Swiss Dietitians support the decision making and promote the critical thinking at all levels and in all areas of activity.

## COMPETING INTERESTS

The author states that there are no conflicts of interest in preparing the manuscript.

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TO PROMOTE HEALTHY AND SUSTAINABLE EATING

Lecture Sequence: 2



### Ethic codex of the Spanish dietitians-nutritionist. Ethic Commission of National Council of Dietitians-Nutritionist of Spain - CGDNE

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Working Commission No. 4 of the Spanish Association of Dietitians-Nutritionists (AEDN) was established on 13 March 2009 (1). The aim of this commission was to develop a Professional Code of Conduct (PCC) for the profession, drawn from other codes and similar documents (2-5), which would serve as a reference for Spanish dietitians and nutritionists in the practice and exercise of their profession.

Three years later, on 14 March 2012, the PCC was approved by the General Council of the AEDN for submission for final approval by the General Assemblies of Regional Professional Associations and Colleges affiliated with the AEDN. Since that time, the various Spanish Colleges and Associations of Spain have gradually approved and adopted the PCC.

The primary objective of the Professional Code of Conduct is to raise the standard of professional practice and conduct. It consists of a set of ethical principles and rules that should inspire and guide professional conduct, establishing standards and responsibilities for DNs, and is a vital instrument for the satisfactory development and functioning of the profession of dietetics and nutrition. A professional DN has a serious and responsible commitment to society, which must be satisfied through explicit, public adherence to the PCC, freely accepted by any professional DN who practices as such.

The PCC must be constantly updated in line with the changing needs of professional practice and new situations generated by social and scientific progress. Therefore, it is a general guide to practice, and is unable to offer detailed guidance on situations that require specific actions.

### Summary of the Professional Code of Conduct for the profession of dietetics and nutrition in Spain.

#### Responsibilities to Society

Professional dietitians and nutritionists shall:

- P-1. Exercise their profession in the service of health according to internationally established standards, considering the health, safety and welfare of the public at all times.
- P-2. Carry out professional activities in accordance with laws and regulations.
- P-3. Adhere to the Professional Code of Conduct, in compliance with the rules and best practices governing professional practice in their sphere of action.
- P-4. Exercise their profession with integrity, responsibility, honesty, justice, impartiality and dignity, respecting the specific needs and values of individuals.

P-5. Not engage in fraudulent or deceptive practices or communications.

P-6. Retire from professional practice when no longer able to fulfil their professional roles and responsibilities with clients, patients and others.

P-7. Help alleviate food and nutrition inequalities.

#### *Responsibilities to Clients/Patients*

P-8. To recognise and exercise professional judgement within the limits of their qualifications/responsibilities and seek advice or refer on as appropriate.

P-9. To treat clients/patients with respect and consideration, recognising freedom and equality in dignity and rights.

P-10. To rigorously observe professional confidentiality, safeguarding the client/patient's right to privacy. This condition may only be waived in self-defence, in the case of legal obligation or to protect public health.

P-11. To respect the client/patient's right to choose his/her dietitian and nutritionist.

P-12. To comply with the principles set out above in "Responsibilities to Society" (Principles 1 and 7) when treating and providing services to clients, patients and others.

P-13. To assume the responsibility and personal freedom that empowers them to exercise their right to conscientious objection and the right not to undertake work corresponding to another profession, respecting the client/patient's freedom and right to health.

#### *Responsibilities to the Profession*

P-14. To employ evidence-based practice in the exercise of the profession of dietetics and nutrition.

P-15. To always ensure professional competence through formal academic training and updating of knowledge and skills.

P-16. To present reliable and substantiated information and interpret controversial information without personal bias, acknowledging the existence of legitimate differences of opinion.

P-17. To assume responsibility throughout their entire working life for the professional competence of their personal practice, adopting the Best Practices, striving to improve their knowledge and professional skills and constantly applying these in practice.

P-18. To be alert to the emergence of a real or potential conflict of interest and to adopt the appropriate measures in such an event.

P-19. To allow the use of their name to certify the dietary services provided solely in the case that they personally provided or supervised the provision of such services.

P-20. To not solicit, accept or offer gifts, financial incentives or other inducements that could affect, or could give reasonable cause to suspect that they affect, professional judgement.

#### *Responsibilities to Colleagues and Other Professionals*

P-21. To demonstrate respect for the values, rights, knowledge and skills of colleagues and other professionals.

P-22. To help improve the profession by participating in its development.

P-23. To deploy the skills corresponding to the profession when collaborating in a multidisciplinary team.

## COMPETING INTERESTS

The author states that there are no conflicts of interest in preparing the manuscript.

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ROUND TABLE: PROFESSIONAL ETHIC: CODES OF CONDUCT AND GOOD PRACTICE  
TO PROMOTE HEALTHY AND SUSTAINABLE EATING

Lecture Sequence: 3



### Ethics and professional responsibility from AADYND

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Ethics is the critical reflection on the values and principles that guide our decisions and behaviors. The universalization of health services in much of the countries forced to consider how to finance and distribute equally limited resources, and how to regulate access different technologies by citizens (1). How sanitary basic needs of all citizens are met? But what are basic needs? What is difference between necessary and accessory?

Diego Gracia (1992) says that the four principles of bioethics are arranged in two levels. Level 1: Non-maleficence and justice. This is the level we can call "ethical minimum", in which we can force from outside, because it regulates the common good. It refers to the "perfect" transitive obligations generated negative duties "what not to do to others". It would be socially regulated by the law. Level 2: Autonomy and beneficence. It is the level of "maximum ethics", related to the vital project that everyone chooses freely in pursuit of happiness and the shaping of their own values. It refers to the "imperfect" obligations calls me that I can require me, but I cannot impose on others. This level would correspond to the study of morality.

Adela Cortina (1994) says that the ethos of a society is shaped by dialogue between civic morality –set of values that a democratic society shares–, positive law and political institutions. The task of bioethics would inspire friendly forms of life with life's basic needs and reach legal plasmaciones only when unavoidable. One difficulty is to define what basic requirements (enforceable rights) are than are subjective preferences or desires who

cannot claim their legal satisfaction. This leads to ask who can access certain health services, and what utilities are entitled. For example, how society is obliged to help any individual to use methods of artificial reproduction?

Although medicine has evolved over the last 50 years than in previous centuries, modern man is not satisfied with the way he died. Research has told us that in industrialized countries, 80% of deaths occur in hospitals and at least 70% after a shorter or longer period of mental incapacity for making decisions for yourself. The medicine can prolong life ends up imaginable while the courts have difficulty shorten the biological life of a person who cannot express their will.

The eating disorders (ED) have become a social scourge in our day. The approach of starting a nutritional support in these patients may become an ethical conflict.

When a patient has been reliably diagnosed as being in a persistent vegetative state, when it is clear that the patient would not want further medical treatment, and the family agrees with the patient, all further medical treatment, including the artificial provision of nutrition and hydration, may be foregone (2).

The nutrition and hydration have in our life a symbolic meaning. Feeding and drinking is a significant human action of respect for life and care for our fellow men. This symbolism

faces ethics rational emotional attitude, social and medical attitudes against death, bearing in mind respect for patient autonomy (3).

The force-feeding is never ethically acceptable. Even with the intent to benefit, feeding threats, pressure, force or use of physical restraints is a form of inhuman and degrading treatment. Just as it is unacceptable force-feeding of some detainees in order to intimidate or coerce others on hunger strikes to put an end to his fast (4).

In daily practice the professional relationship of health-patient manifests itself in verbal form is a contract party and thus bonds of varying affinity is set, the statement by the professional to the patient is the strongest link the relationship. Ethical behavior pattern that has sustained the relationship health professional-patient was paternalism. This moral principle ruled professional ethics and set up over the centuries, the moral excellence. However, only after the disaster of World War II, the beginning of the technological transformation of medicine in the 50s, the explosion of movements claim of civil rights in the 60, and the emergence of bioethics in the 70s, caused the medical professionals began to accept that the paternalistic model of health relationship was difficult to sustain.

Recommendations for a good informed consent should be that the professional must be careful of the information given

to the patient; it must be complete, free from prejudice and suitable to their human condition.

Norms, values and ethical principles must govern the responsibilities of professional associations, colleagues, and our houses of studies in society.

## COMPETING INTERESTS

The author states that there are no conflicts of interest in preparing the manuscript.

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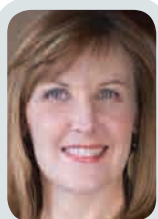


## CONFERENCE PROCEEDINGS

9 September 2016 | INTERVENTION AREA: RESEARCH, DEVELOPMENT AND INNOVATION IN DIETETICS

ROUND TABLE: RESEARCH, DEVELOPMENT AND INNOVATION IN DIETETICS. INNOVATION IN DIETETICS AND NUTRITIONAL THERAPY. IMPROVEMENT OF EVIDENCE

Lecture Sequence: 1



### Collecting Meaningful Nutrition data: Locally and Globally

**Alison Steiber\***

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United States of America.

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Collecting meaningful nutrition data is both an art and a science. Within this session Dr. Steiber will review the resources, infrastructure, and skills required to collect data that is sensitive to nutrition change from interventions on both a local and a global level. The session will briefly review examples of nutrition specific and nutrition sensitive outcomes as laid out by the Global Nutrition Report in both 2014 and 2015. Further the session will suggest a variety of ways for nutrition data to be synthesized and aggregated for use by local dietitians and the global nutrition community. Finally the session will describe tools that can be used to aggregated data and capture nutrition focus data with special emphasis on nutrition care patterns.

### COMPETING INTERESTS

Alison Steiber is an employee of the Academy of Nutrition and Dietetics and has received a grant funding from government (AHRQ, NIH), Foundation (Academy of Nutrition and Dietetics Foundation), and industry (Abbott, ConAgra, Anjinomoto, Pepsico) to conduct research in all areas but none for this topic.



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Lecture Sequence: 2



### Where is ME? Relook on equations for predicting energy expenditure in human

Sheva Goldenberg\*

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This work presents the analysis of and challenges the axioms and equations we use today in diet \ medical treatment and research, and proposes an expansion of the commonly used formula.

Using all knowledge that is available today, it is still difficult to explain a curious situation of Jews who survived for 4 years in concentration camps during the Holocaust (1). Also, I shall introduce a case study of autistic patient from Eitanim Mental Health Center from my own practice that cannot be explained by existent theories.

The Harris-Benedict equation has been the standard for decades and is still the most widely used for estimating Basal Metabolic Rate (BMR). According to today's test standards, the Harris-Benedict equation does not estimate BMR, but rather Resting Metabolic Rate (RMR) (2). Since the Harris-Benedict equation was first published in 1919, a number of studies have attempted to improve it. Of these, none has been shown to produce more accurate results than the Mifflin equation (1990) we use for calculating RMR (3). As BMR and RMR only represent resting energy expenditure, an adjustment must be made to reflect one's activity level. This is done by multiplying one's BMR (or RMR) by an activity factor (4). Note that the following Activity Factors (AF) also takes into account the thermic effect of food. During underfeeding, converse changes occur which cause a decrease in metabolic rate and hence a limitation of

body weight loss. This was first documented by Benedict *et al.* during studies on caloric restriction in normal volunteers a century ago and has been found by other investigators since then also (5). JS Garow in 1987 discussed the possible internal energetic storage and metabolic adaptation to a change in energy intake (6).

While being correct in most cases, when applying the mentioned above equations (including metabolic adaptation) in Holocaust case it could be possible to explain Jews survival for few months, but not years as it was observed in fact. Therefore, it is obvious that we need to upgrade the current perception and formula.

My presentation offers a relook of the axioms that are base of the current theory and suggests a possible explanation and a necessary expansion to traditional equation based on Mental Element (ME).

### COMPETING INTERESTS

The author states that there are no conflicts of interest in preparing the manuscript.

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ROUND TABLE: RESEARCH, DEVELOPMENT AND INNOVATION IN DIETETICS. INNOVATION IN DIETETICS AND NUTRITIONAL THERAPY. IMPROVEMENT OF EVIDENCE

Lecture Sequence: 3



### Nanofoods: Do we (dietitians) support this novel foods?

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Do we need nanofoods? Food nanotechnology is started to be used in food cultivation, production, processing, preservation and packaging in many developed countries mostly by widely recognized firms. Once considered science-fiction kind of a thing is now becoming a reality and many food products are now being displayed on the market with different color, texture and more appealing properties. There is a great competition between the food production companies for it is possible to make any kind of change in the food products and packaging by nanotechnology. What food nanotechnology is promising can be enumerated as: 1) giving desired flavor, texture, color; 2) increasing density in the nutritive value; 3) enhancing solubility; 4) protecting the nutrient stability; 5) improvement of bioavailability; 6) encapsulating the elements to mix with others; 7) adding dissolving property into substance not soluble in nature; 8) giving adhesive property to the substance to bind and clear the gut from harmful elements; 9) improving shelf life by using specific coating nanoparticles in packaging; 10) putting sensory particles to detect the spoilage; 11) reducing waste by qualified packaging; 12) increasing the amount of production; 13) cost effectiveness.

These benefits look very appealing and improving the nutritive value of foods specifically with the nutrients that are lacking in a given society, such as iron, zinc, vitamin A and folic acid can alleviate these nutrients deficiency are the most popular claims of the firms involved. However, as nanoparticles are very reactive elements, toxicity is an issue to take into

consideration in using nanofoods in regard to public health concern. Researchers are warning that their accumulation in the body can increase oxidative stress that may trigger DNA mutation and cancer (1,2). Therefore the consumer must be aware of these potential danger and wait till the studies and responsible bodies assure its consumption. As there is no regulation and sanction for not showing if nanotechnology is used for the given food products on its label the consumer is very worried and confused. Nanoparticles effect to the body is not easy to show and there are no informative action for consumers leaving them head to head with their confusion. The industry claims that their major aim of creating nanofoods is to improving the safety and quality of foods. For the growing world population this is in a way understandable as food damages can occur during the storage and transportation. But is it really necessary to apply nanotechnology to store and transport the foods, or can this be achieved by other means? Today there are more than 200 companies involved in this new technology, America is acting as a leader and then comes Japan and China. In general, people want their foods fresh and natural. However, in modern societies people started to be addictive to readymade food staffs as they are extremely convenient to use not needing any preparation, cooking and easy to store. If we look at this phenomena in a larger scale like polluting the earth, risking the human beings health it is vital to discuss the beneficial and harmful aspects of nanotechnology in multidisciplinary and multisectoral levels (3).



## COMPETING INTERESTS

The author states that there are no conflicts of interest in preparing the manuscript. I declare that all information used in this presentation have been achieved and cited in the ethics rules.

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Lecture Sequence: 4



### Nutrigenomics: Do our genes determine what we should eat?

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There is increasing awareness among researchers, educators, healthcare professionals and consumers that the one-size-fits-all, population-based approach to nutritional guidance is inefficient and sometimes ineffective (1). This awareness has created a growing market for personal genetic testing services. However, the clinical validity and utility of such testing services remains controversial. There is a need for dietitians and other healthcare professionals to obtain sufficient training to be able to understand the benefits and limitations of the different kinds of genetic tests and to equip themselves with the tools needed to interpret test results that provide clinically actionable information. Recent advances in human genomics have uncovered extensive variations in genes affecting nutrient metabolism, but their full impact on nutrient response remains to be elucidated. Differences in the rates of absorption, distribution, uptake, utilization, biotransformation and excretion ultimately impact the concentration of a nutrient or food bioactive at a target site of interest, which could impact health and performance. Variations in genes that code for target proteins such as receptors, enzymes, transporters or ion channels can also impact the response to nutrition. Our research program examines how individual genetic differences affect our response to nutrients and food bioactives on health- and performance-related outcomes. There are now a number of good examples where variations in certain genes can help us better predict an individual's response to the various foods, beverages or supplements they consume (2,3). Findings from

recent randomized controlled trials of genetic information on personalized nutrition also show that giving DNA-based dietary advice is superior to population-based recommendations (4,5). Incorporating markers of genetic variation into nutritional intervention studies aims to benefit those seeking personalized dietary advice to optimize health and performance.

### COMPETING INTERESTS

A. E-S holds shares in Nutrigenomix Inc., which is a genetic testing company for personalized nutrition.

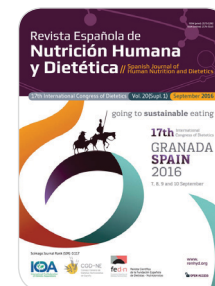
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NUTRITIONISTS TO MAKE A DIFFERENCE IN SOCIETY

ROUND TABLE: DIETITIAN-NUTRITIONIST IN SPECIALIZED CARE

Lecture Sequence: 1



### Registered Dietitians' role in interdisciplinary dementia care across the continuum of care

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\*Contact: [Allison.cammer@usask.ca](mailto:Allison.cammer@usask.ca)

Dementia, as defined by WHO, is "a syndrome, usually of a chronic or progressive nature, caused by a variety of brain illnesses that affect memory, thinking, behaviour and ability to perform everyday activities" and is now recognized as a public health priority (1). Globally, the estimated prevalence of dementia in 2010 was 35.56 million people (4.7% of world population), and is anticipated to increase to 75.62 million by 2030 (2). Dementia is incurable and can be devastating for those patients and their caregivers that it affects. The current population demographics and increasing prevalence of dementia both clearly show need for care.

Dementia is the top chronic condition necessitating relocation to long-term care (LTC), and residents with dementia require more direct-care time compared to those without dementia (3). Within Canada, approximately 60% of LTC residents have a diagnosis of dementia and dementia is the second most common health condition experienced within LTC, after bladder incontinence (4). Among residents of LTC with advanced dementia it has been estimated that nearly 86% had an eating problem (5).

There is increasing attention to the role of nutrition in preventing cognitive decline and dementia. We know that adherence to certain dietary patterns can reduce risk or delay development of cognitive impairment, particularly the Mediterranean style diet, DASH diet, and recently published

MIND diet (6). Nutrition and primary prevention of dementia is a key area for dietitians and nutritionists in the public health arena. Once a cognitive impairment or dementia is diagnosed, nutrition care to delay decline and prevent adverse symptoms or outcomes is imperative. Slowing the progression of the disease and then mitigating complications are the secondary and tertiary prevention strategies where dietitians and nutritionists can have a strong impact as they expand in this emerging field.

Nutritional health of persons with dementia is central to quality of life. Physiological changes associated with dementia, such as reduced hunger and thirst cues, difficulty in mastication, dysphagia, and digestion can negatively impact nutritional intake, while behaviour changes such as repetitive actions and chronic wandering can increase nutritional needs. Combined, these factors contribute to a higher risk for malnutrition in persons with dementia which in turn predisposes them to adverse health outcomes such as muscle wasting, infection, poor wound healing, reduced skin integrity, loss of sensory function, increased risk of falls, reduced cognitive ability, and reduced quality of life (3, 7Chen, 2001, 8). Undernutrition is a chief concern and weight loss is a characteristic feature of Alzheimer Disease (AD), the most common type of dementia. Optimizing nutritional status can reduce disease co-morbidity and prevent accelerated decline in physical health (9). While nutrition intervention may not reduce dementia mortality, it

can "...help to slow down disease progression, and improve quality of life" (3). Slowing the progression of the disease, preventing complications, and enhancing quality of life are the fundamental aims of current treatment and care for persons with dementia.

This presentation will focus on two areas of dietetic practice in dementia: the dietitian in an outpatient setting addressing early-stage dementia and the dietitian in the LTC setting addressing moderate to advanced stage dementia. Part one will describe the role of the dietitian within the interdisciplinary care team of a memory clinic focused on diagnosing and treating early stage and complex cases of dementia for community-dwelling persons living in rural and remote areas. This interdisciplinary team consists of a neurologist, neuropsychologist, psychometrist, nurse, physical therapist, and dietitian and uses a streamlined, same-day assessment and diagnosis model with follow-up care delivered via telehealth video technology. The role of the dietitian within the team as well as practice-based research collaborations will be described. Part two will address a study of dietitians working in rural and urban LTC and their perceived role in dementia care, with attention paid to difference in consultative *versus* focused practice, and direct clinical care *versus* administrative or policy work.

Each of these important areas of dietetic practice will frame a discussion of the impact that dietitians can have as leaders in healthcare for persons with dementia. Dietitians and nutritionists are essential members of interdisciplinary care teams and can help to directly enhance quality of life for persons with dementia across the care continuum.

## COMPETING INTERESTS

The author states that there are no conflicts of interest in preparing the manuscript.

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NUTRITIONISTS TO MAKE A DIFFERENCE IN SOCIETY

ROUND TABLE: DIETITIAN-NUTRITIONIST IN SPECIALIZED CARE

Lecture Sequence: 2



### Public Mental Health and the Role of Dietetics Practice

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In recent years there has been increasing global attention to the importance of diet and its role in mental health (1). As part of this international recognition, the role of dietitians is increasingly identified as integral in public mental health which encompasses mental health promotion, mental illness prevention, treatment, and rehabilitation.

There are many ways in which nutrition and mental health intersect (2). From an intervention perspective, medical nutrition therapy is recognized as a cornerstone in psychiatric rehabilitation and recovery as the body of evidence about diet as treatment for conditions such as depression, schizophrenia, attention deficit hyperactivity disorder, autism, Alzheimer's disease, eating disorders, and addictions continues to grow. Interventions provided by dietitians to individuals with mental health conditions and their care providers can lead to reduced nutrition-related side effects of psychiatric medications, improved cognition, better self-management of concurrent and co-morbid conditions, and improved overall occupational, social, and psychological functioning. Investigations of therapeutic approaches used by dietitians in mental health practice such as cognitive behaviour therapy, mindful based eating awareness, dialectical behaviour therapy, motivational interviewing, cognitive adaptive training, and applied behavioural analysis show that food intakes and eating behaviours can be positively modified and lead to enhanced well-being.

The role of nutrition is also integral to prevention and mental health promotion. Nutritional interventions as part of collaborative and integrated programs are cost-effective and contribute to social inclusion, self-reliance, self-determination, food security, healthy body image, and fostering health and social equities. Links between nutrition and mental health have also been shown in different developmental periods across the lifespan. As exemplars, several studies have shown that when mothers consume low quality diets during the perinatal period and up to the first five years of their child's life, their children have increased risk of attention problems, aggression, anxiety, and depression (3). Similar findings have been found in childhood and adolescence where a synthesis of seven studies revealed a consistent trend between a higher intake of nutrient-dense foods and lower rates of depression, low mood, emotional problems and anxiety (4). In early to late adulthood, the nutrition and mental health research has largely focused on factors associated with cognitive decline, forms of dementia, and depression. Thus, comprehensive mental health promotion interventions aimed at different stages of the life cycle (e.g., perinatal, childhood, adolescence, early and late adulthood) that may include nutrition education and food skills training can foster mental well-being.

Drawing upon an integrated literature synthesis of the evidence and work being done in Canada in nutrition mental health, this session will highlight the many intersections of

nutrition and mental health and how dietitians can effectively position themselves as specialized and competent contributors to public mental health. Furthermore, we will highlight the recent national nutrition and mental health research agenda that was developed in Canada. After this session, participants will be able to:

1. Identify different intersections that occur between nutrition and mental health.
2. Describe programs, policies, research, and evidence-based nutrition-related strategies that support public mental health.

To meet these objectives, content that will be covered in the session includes:

1. Interrelated theories that explain the intersections between the food we eat and the functions of the mind.
2. How healthy eating and nutrition strategies can foster mental health.
3. Factors that may affect nutritional intake in populations with mental health conditions and suggested interventions.
4. How dietitians can facilitate nutrition and mental health practice through advocacy and competency-building.

This session will include a package of support materials and is intended to be a practical exploration of the role of dietetics practice in public mental health.

## COMPETING INTERESTS

The authors state that there are no conflicts of interest in preparing the manuscript.

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ROUND TABLE: DIETITIAN-NUTRITIONIST IN SPECIALIZED CARE

Lecture Sequence: 3



#### Changes in body weight during chemotherapy in breast cancer and colorectal cancer patients

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**Background:** For many years, the nutritional support of cancer patients under going chemotherapy was always focused on the prevention of weight loss through an energy and protein enriched diet. However, more recently, studies show that some types of chemotherapy also cause weight gain. Weight gain is a common problem for breast cancer patients treated with chemotherapy (1-4). Among colon and colorectal cancer patients, chemotherapy has also been associated with weight gain (5,6). We therefore performed two studies to investigate weight change in breast cancer patients and colon cancer patients undergoing adjuvant chemotherapy.

**Methods:** In a retrospective study among 739 breast cancer patients treated with chemotherapy between 2001 and 2010 in 4 different hospitals, we assessed the amount of weight change during chemotherapy and whether these changes differed between types of chemotherapy (7).

The study in stage II/III colorectal cancer patients diagnosed between 2007-2012 and treated with surgery and adjuvant chemotherapy in three hospitals in the Netherlands consisted of 485 patients. Eligible patients for both studies were selected from the Netherlands Cancer Registry. Data about body weight, clinical and personal factors was retrieved from the Netherlands cancer registry and from medical records.

**Results:** In the study in breast cancer patients, body weight information was complete in 483 patients (66%). There was substantial between-patients variability in weight change

during chemotherapy: within the upper quintile of weight change, median weight gain was +6kg, while in the bottom quintile median weight loss was of -3kg. Adjusted multivariate regression analysis showed that change in weight differed between types of chemotherapy: women treated with anthracyclines+taxanes gained +0.9kg (95% CI 0.1, 1.7) more than women treated with anthracyclines only (7).

In the study in colon cancer patients, from diagnosis until shortly after surgery, patients on average lost weight (mean weight loss -1.9kg, SD 4.6kg) (n=357). Body weight increased during chemotherapy with a mean of 2.9kg (SD 5.8kg) (n=291) and continued to increase in the period of follow-up by 2.2kg (SD 6.6kg) (n=242). Overall, from diagnosis until at least 6 months after chemotherapy, there was a mean weight gain of 2.0kg (SD 6.8kg) (n=283). Factors associated with weight gain over the total period were a normal BMI (vs. patients with a BMI>25), open surgery (vs. laparoscopic surgery) and Xeloda chemotherapy (vs. Xelox chemotherapy).

**Conclusion:** In both breast cancer patients and colon cancer patients weight gain is a common problem during chemotherapy partly explained by the type of chemotherapy. Studies –mostly among breast cancer patients– suggest that these changes may be characterised by unbeneficial changes in body composition (a decrease in muscle mass together with an increase in fat mass). Future studies should characterize changes in body weight including body composition and the impact on the health of colorectal cancer patients. Furthermore,

oncology care providers should inform these patients about the possibility of weight gain and promote a healthy life style.

## COMPETING INTERESTS

The authors state that there are no conflicts of interest in preparing the manuscript.

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9 September 2016 | INTERVENTION AREA: THE POWER OF DIETITIANS  
NUTRITIONISTS TO MAKE A DIFFERENCE IN SOCIETY

ROUND TABLE: DIETITIAN-NUTRITIONIST IN SPECIALIZED CARE

Lecture Sequence: 4



### Evolution of lipid profile in vertical transmission of HIV + children with antiretroviral treatment over a period of 7 years

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The HIV epidemic is a public health problem worldwide. From the description of the first patients in 1981 morbidity and mortality associated with acquired immunodeficiency syndrome (AIDS) has declined significantly with the use of highly active antiretroviral therapy (HAART).

Pediatric research has documented alteration in body fat distribution (lipodystrophy) and metabolic disorders (dyslipidemia, insulin resistance, mitochondrial toxicity, osteopenia) with the use of HAART for long periods, whose pathogenesis and future health consequences are still under investigation. The pro-atherogenic lipid profile of people with HIV/AIDS poses a high risk for developing coronary heart disease. As HIV infection is associated with other inflammatory factors it is considered model of atherosclerosis progression (1).

In Uruguay, triple antiretroviral plan in children began in 1998. In 2003, lipid profile in patients receiving HAART was included in the annual pediatric control, obtaining first national data on the prevalence of dyslipidemia and lipodystrophy. In 2004 the prevalence of lipodystrophy (22%) was similar to that observed at an international level and prevalence of dyslipidemia was 55% (2). There are few studies of long-term monitoring of the effects of ARVs in HIV + child transmission, not only nationally but also at an international level.

Different studies on children and adolescents living with HIV do not refer to the diet as a factor that modifies the values of lipid

profile, while importance of healthy eating habits and exercise as part of the multidisciplinary treatment is mentioned (3,4).

After more than ten years using HAART is important to value what has happened to these children, teenagers today, as they should continue throughout their life with such therapy.

Knowing the lipid profile evolution of vertical transmission HIV+ HAART-treated children over a period of seven years is fundamental to define preventive actions to follow. The present study is a longitudinal study of 7 years of a cohort of 37 vertical transmission HIV+ children receiving HAART (2003-2010), assisted in the Obstetric-Pediatric Center of HIV-AIDS National Reference Hospital Pereira Rossell. The universe were children and adolescents who began treatment with HAART with three or more drugs (NRTIs with a PI or NRTI, another ITIANAN and IP), with a minimum of six months before July 2003 and had at least one lipid profile in 2007 and/or 2010.

The children are from all over the country and were assisted by a multidisciplinary group. Each child had at least two annual inspections and in case disturbances or disorders in treatment were present more frequent inspections were made.

Dependent variables: hypertriglyceridemia (HTG), altered LDL, HDL and hypercholesterolemia altered (HCoI). Independent variables: growth retardation, obesity, viral charge (VC), CD4 percentage. Analysis of variance was used to determine whether

there were differences in the years studied. The correlation between quantitative variables was performed using Pearson's  $r$ . Chi<sup>2</sup> test was applied to categorical variables. A p-value less than 0.05 was considered statistically significant. SPSS 17 was used.

Twenty two females (55%) and fifteen males were studied. In 2003 mean age was  $6.7 \pm 2.4$  years, in 2010  $13.8 \pm 2.4$  years. All of them were receiving HAART. Undetectable VC ( $\leq 1 \log_{10}$ ) 78% in 2003, 89% in 2007 and 78% in 2010. CD4 percentage  $39\% \pm 17\%$ ;  $37\% \pm 14\%$  and  $29\% \pm 13\%$  respectively ( $p=0.05$ ). Growth retardation 27%; 10.8% and 8.1% respectively. Obesity fell 12.1% (2003), 9.1% (2007) to 7.4% (2010) ( $p<0.0001$ ). Hypercholesterolemia 19% (2003), 22% (2007) and 16% (2010). Altered LDL 8% in 2003 ( $85 \pm 24 \text{ mg/dl}$ ) and 5% in 2007 ( $93 \pm 32 \text{ mg/dl}$ ). 2007 altered HDL 13%; 32% (2003) ( $p=0.02$ ) and 5% (2010). 2003 HTG 43%; 35% (2007) and 24% (2010).

Conclusion: During the 7 years studied, lipid profile of children was not deteriorated. Whereas HIV-infected children represent a high cardiovascular risk population, a continuous multidisciplinary approach is reinforced for the sake of these children's present and future.

## COMPETING INTERESTS

The authors state that there are no conflicts of interest in preparing the manuscript.

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9 September 2016 | INTERVENTION AREA: THE POWER OF DIETITIANS NUTRITIONISTS TO MAKE A DIFFERENCE IN SOCIETY

ROUND TABLE: HEALTH EFFICIENCY WORK TEAMS. DO DIETETICS AND NUTRITION COVER SOCIETY'S HEALTH NECESSITIES?

Lecture Sequence: 1



### Meeting Society's Needs for Nutrition and Healthy Eating Advice: A National Dietetic Workforce Model

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Determining workforce requirements is an essential activity of ensuring an adequate number of dietitians to meet the needs for nutrition and healthy eating advice of society. A 2011 report of the dietetic workforce in Canada revealed a number of issues affecting the ability of dietitians to meet these societal needs. The dominant issues were a significant lack of dietitians available to fill existing vacant positions and an impending wave of retirements creating the potential for even more vacant positions (approximately 50% of respondents retiring within 10 years) (1). At the same time, national dietetic workforce data collected was not sufficiently detailed to adequately predict future needs for trained dietitians (2).

In an effort to address the need for reliable data, Dietitians of Canada undertook a data collection project using provincial dietetic regulatory body data as a proxy for employer workforce needs (3). A simplified model, previously used to assess dietitian human resources needs in a single Canadian province following a decision to cancel the province's sole dietetic education program, developed in collaboration with provincial staff was used (4).

The model considered both demand data and supply data. Demand included employer requirements for qualified workers and included net growth in those practicing in the jurisdiction. Demand includes replacement of those who

do not renew registration (exits) and those who are new registrants (entrants). Net growth is derived from the increase (or decrease) in registrants and is based on employer needs for dietitians and new opportunities for dietitians. Supply was interpreted as the number of students that graduate annually in a jurisdiction and seek registration and those who re-locate to that jurisdiction and seek registration to practice less those who do not renew registration (exits). The resulting report provided provincial profiles of and a national summary of the dietetic workforce. Differences in workforce capacity between provinces and predicted future demand for registered dietitians in Canada were highlighted.

The presentation will focus on the current dietetic workforce capacity (demand and supply) in Canada; predicted future needs for dietitians (exits from the profession and net growth in the profession); how the project findings will be used to advocate for additional capacity for training dietitians and emerging roles for dietitians in the health system; and, the use of this simplified and predictive workforce model for the dietetic profession in other countries.

### COMPETING INTERESTS

The authors state that there are no conflicts of interest in preparing the manuscript.

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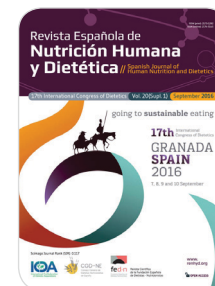
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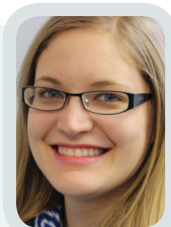


## CONFERENCE PROCEEDINGS

9 September 2016 | INTERVENTION AREA: THE POWER OF DIETITIANS  
NUTRITIONISTS TO MAKE A DIFFERENCE IN SOCIETY

ROUND TABLE: HEALTH EFFICIENCY WORK TEAMS. DO DIETETICS AND NUTRITION  
COVER SOCIETY'S HEALTH NECESSITIES?

Lecture Sequence: 2



### Health at Every Size: A Canadian clinic's 30 year journey to a health-centered approach

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**Introduction of Health at Every Size (HAES):** HAES is an approach that is gaining momentum in the health care community. It supports health behaviour change (healthy eating, physical activity, etc.) for people of all shapes and sizes. HAES offers an alternative to a 'weight-normative' approach that has been associated with adverse health outcomes of weight cycling and weight stigma (1). To date, there have been six randomized control trials of the Health at Every Size approach (2). Notably, Bacon *et al.* 2005 (3) concluded that those in a Health at Every Size group sustained improved healthy eating and activity behaviours, metabolic health measures and showed improved measures of self-esteem. Whereas in the traditional weight management approach group, participants did not maintain healthy eating or activity behaviours, had no significant difference in metabolic health measures and had lowered measures of self-esteem.

**History of HAES at Women's Health Clinic (WHC):** WHC in Winnipeg, Manitoba has been in the process of adopting the HAES philosophy since the clinic opened in 1981. WHC considers the HAES philosophy to be part of its core clinic values. Since 2009, formal HAES training has been implemented as part of all-staff training, with the expectation it will be used in clinical practice. In 2009, WHC staff developed a 1-hour HAES presentation to educate all staff on HAES as part of a 2-day staff orientation. Staff may also be required to do observation,

job-shadowing and additional reading. Internationally, WHC is seen as a leader in the adoption of the HAES approach as it has been using the concepts for over 30 years. To our awareness, WHC is the only health clinic in Canada, and perhaps the world, that has HAES concepts as part of its core values and model of care. WHC serves as a powerful case study in adopting HAES in a health care setting due to its long-term use and having it as part of WHC's orientation process.

**Research results – The Adoption of HAES by WHC Staff; A case study:** In a partnership with the University of Manitoba, Department of Human Nutrition Sciences and the Manitoba Partnership Dietetic Education Program, WHC participated in a research project which looked at the adoption of the HAES approach at WHC. A survey was developed and implemented to assess awareness, knowledge and need for additional training about HAES. Eighty-five staff responded to the survey. Of the responses, the majority of staff (89%) were able to identify what HAES was not vs. 65% who were able to identify what HAES is. When working with clients, 62% reported challenging/negative responses for e.g. "The paradigm shift towards HAES can be a tough sell for clients. It's tough to go against the grain of society's narrative on weight and health". When working with colleagues and peers with HAES, 58% reported positive attitudes for e.g. "Working in an HAES environment allows for a happier healthier workplace". Those who were part of WHC for 0-5 years reported

not knowing enough about HAES (62%) compared to the 6 or more years group (16%). Conclusions drawn from the survey is that WHC has been successful in creating understanding of HAES with its staff and would benefit from additional and ongoing training to for those newer to the organization and also to help providers with the challenges of the approach.

\*Please note the results of the study are currently being written for submission to a scientific journal for publication. We are hoping to have the results published prior to September 2016.

**Research implications for dietetic practice:** Education of dietetic students/professionals and other health care professionals about the HAES approach, and preparing them to deal with the challenges that may arise with colleagues/clients during adoption.

Development and assessment of new training programs aiming to improve implementation of HAES and other new health approaches in healthcare settings.

Experiences of the WHC can be used as a model for other healthcare settings interested in incorporating HAES. Dietitians would be well-suited leaders for the implementation.

**Strategies on how you and/or your clinic/worksites can begin to adopt a HAES approach:** We will discuss practical and small steps approaches to shifting the physical, social, and psychological environment to make it more HAES friendly.

## Acknowledgements

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## COMPETING INTERESTS

The authors state that there are no conflicts of interest in preparing the manuscript.

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ROUND TABLE: HEALTH EFFICIENCY WORK TEAMS. DO DIETETICS AND NUTRITION  
COVER SOCIETY'S HEALTH NECESSITIES?

Lecture Sequence: 3



#### Dietitians can Translate Nutrition Science into Practice

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#### Dietitians hold the power to change the food environment:

We live in an obesogenic food environment that bears little relation to any recommendations made in any of the National Dietary Guidelines. Dietitians need to take the power and be proactive in applying nutrition science to make a difference to the available food supply.

The messages advocated by these dietary guidelines is not reflected in most of the food that is readily available in prepared food establishments. In particular vegetables are poorly represented.

Australian Dietary Guidelines (1) were released in 2013 and advocated the consumption of 5 serves of vegetables per day. The Australian National Nutrition Survey released in 2014 showed the most severe anomaly in that only 7% of adults met this recommendation (2). With an increasing number of meals either eaten out of the home or as takeaway, it is hard to achieve this recommendation. 95% of fast-food, restaurants, both casual and formal, do not serve sufficient vegetables.

The marketing budget is inversely proportional to the nutritional value of the food. Healthy food, in particular vegetables, have limited budgets and have to compete with the very slick marketing of foods that have little nutritional contribution.

Vegetables need to be readily available and prepared and presented in a manner that make them attractive to the

consumer. Wansik showed that people will eat what is available (3). The choice of food needs to be changed and Vegetables need to be more available at all points of foodservice.

It has been shown that if the western world simply ate their required 5 serves of vegetables every day, obesity and lifestyle related diseases would be significantly reduced.

Lite n' Easy, an Australian company privately owned by one man, has focused on "Changing the way Australians Eat". Making healthy food that people want to eat has been their mantra.

In an attempt to be truly healthy, not just better than bad, they have developed their meals and planned their menus around the Australian Dietary Guidelines. The science has been put into practice in a viable commercial model.

They have achieved a home delivered eating plan that is acceptable to thousands of customers yet still incorporates 5 serves of vegetables per day. And this is achieved on a reduced energy plan. Customers are not even aware they are consuming the required 5 serves of vegetables yet report that they feel much better for eating well.

The key is making vegetable taste good and available. Ottolenghi, a British chef has demonstrated this by the success of his restaurants and accompanying cookbooks that vegetables, prepared well can be popular.

People are never going to improve their diet if the foods they should be eating are not readily available. This model needs to be taken to all parts of the food supply-catering, restaurants, fast food establishments etc. Dietitians, the professionals' best qualified to advocate for healthy food, need to take the science and transfer it into the food supply.

### COMPETING INTERESTS

Maryl-Ann Marshall is the Head of Nutrition of Mitchells Quality Foods - Lite n' Easy.

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COVER SOCIETY'S HEALTH NECESSITIES?

Lecture Sequence: 4



What do an iceberg, three circles, and a police car have  
to do with sustainable eating behaviour?

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Nutrition experts often hear clients say, "I know what to do, but I just can't seem to do it!" Although the nutritionist/dietitian has provided excellent nutrition advice, used motivational interviewing techniques, coached the client to set behaviour goals and addressed the potential barriers to change, the client still struggles. What's missing? What else can the client do? What else can the nutritionist/dietitian do? The answer may be - to focus on the client's *thinking* habits to help them understand and change their *eating* habits.

We are all 'mind-full' eaters. Our minds are filled with thoughts and feelings about food and eating. These include beliefs, teachings, marketing slogans, associations and memories that have been filed away in our mind since infancy. We are influenced by our emotions, our mood, the time of day, cost of food, and even by our gender. Moving beyond the 'what, when and how much' to eat discussion to focus on the 'why' of eating can be transforming for the client and the nutrition expert.

How does a nutritionist/dietitian expand their teaching and counselling to include psychological aspects of eating? The most prolific and researched psychological interventions for understanding and changing behaviour are rooted in the "cognitive-behavioural" model (1-5). Clinical practice guidelines around the world recommend cognitive-behavioural (CBT) strategies for successful management of chronic diseases and obesity (6-9). However, the reality is that few programs have access to adequate psychological expertise to meet the needs

of the tremendous proportion of people who struggle with their eating.

In 2008 in response to this need and as experts in program development, Ms. Shah and Dr. Cannon launched a comprehensive program to train non-psychologist professionals, including nutritionists/dietitians, to use a cognitive-behavioural approach with individuals and groups\*. The program provides clinicians with resources, facilitation tips and techniques for presenting complicated concepts in an engaging, easy-to-understand manner. The four key components of the program include: 1) Increase clients' awareness of the internal and external factors that influence and challenge their eating; 2) Identify clients' personal problematic eating triggers; 3) Teach clients basic cognitive-behavioural techniques and skills to respond to triggers differently; 4) Coach clients in effective strategies for sustaining positive eating behaviour change.

This highly successful program has transformed the practice of trained and licensed Canadian dietitians. The curriculum is applicable for chronic disease or weight management or for those simply seeking a healthier relationship with food. Outcomes from the program intervention have been independently measured by large, primary care clinics as a component of quality assurance. The results demonstrate improved eating self-efficacy. Self-efficacy is believed to be one of the strongest predictors of behaviour change. One centre

showed that improvements from baseline were sustained over a six-month period.

Ms. Shah and Dr. Cannon are keen to share some of the key components of their program with fellow clinicians.

\*Craving Change™ is the gold standard, cognitive-behavioural program for problematic eating across Canada. There are more than ten large health care organizations and 2500 health care providers licensed to use the program in a variety of settings. Professional training and certification for the program is available online. Craving Change™ is recommended as a professional tool and resource by PEN (Practice-based Evidence in Nutrition), a global resource for nutrition practice.

## COMPETING INTERESTS

The authors state that there are no conflicts of interest in preparing the manuscript.

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ROUND TABLE: MULTICULTURALISM OF A GLOBAL SOCIETY. DIETITIAN-NUTRITIONIST AS FUEL TOWARDS CHANGE

Lecture Sequence: 1



### Yes! Local Food All Year Round – Is It Realistic; Even Desirable?

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Beginning in 2011 and continuing for the next 3 years, Food Systems Consulting Inc. undertook 3 projects to assess the feasibility of significantly increasing the use of fresh, whole, local foods (1) on menus for healthcare, educational and workplace consumers in Ontario, Canada's most populated province. The research and field trials were made possible by grants awarded by the Ontario government sponsored Greenbelt Foundation (2) and with the contribution in kind of the time and expertise our healthcare, educational and workplace clients and their respective suppliers.

The approach adopted is one of emergent strategy where insights gained at each stage are used immediately to revise the next steps and alter implementation. The goal is learning how to successfully transition public and private sector foodservices to fresh, whole, local food menus (3).

The research and implementation of actionable programs demonstrated:

- What was easily achievable
- What could be available year-round
- What required considerable investment of resources and marketing
- What mattered most to consumers, operators and suppliers
- What needs more thinking and research

A key finding that will be of interest to an international audience is the need for a safe, secure global food marketplace. That is ensuring access to a global food market where food and nutrition professionals working with foodservice professionals can have confidence that the needs of ever more ethnically diverse populations can be met with foods that are appealing, familiar, affordable, nutritionally appropriate and safe.

Dietitians involved in this work needed to become advocates for change in obsolete institutional purchasing practices; creative menu and recipe developers; and innovative marketers and communicators to achieve the desired results and ensure sustainability (4).

The presentation will provide the quantitative results achieved in the changes in food item specifications, volume of purchases, new products and new sources of ingredients and whole foods. The challenges associated with making the needed changes and the lessons learned about setting realistic goals for sourcing local foods year round in a northern climate will be discussed. Conclusions and recommendations presented to Canadian food policy developers will be reviewed.

Overall conclusion – Goals for sourcing fresh, whole foods locally must realistically be combined with those for sourcing globally to satisfy the tastes and preferences of increasingly ethnically diverse consumers who demand that food taste great, be affordable, authentic, safe and good for you.

## COMPETING INTERESTS

The author states that there are no conflicts of interest in preparing the manuscript.

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Lecture Sequence: 2



### Going to Sustainable Eating: Strategies to Curb Food Waste in Healthcare Food Services

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Food waste is a growing concern dietitians are ready to tackle, no matter where they work. Dietitians view it as part of their role to help curb excessive waste and promote a sustainable food system. In healthcare food services, dietitians are challenged to minimize food waste while providing nutritionally adequate meals that meet cultural, religious, physiological and social needs of the patient and resident. While nutrition standards drive menu planning and portion size, a variety of factors can influence meal consumption including clinical reasons, food issues and meal service (1). Sending food that is not consumed by the patient does not improve nutritional status and results in 100% waste. Dietitians can be aware of food waste as a financial and environmental burden as well as a malnutrition risk.

In 2011, Vancouver Coastal Health Authority (VCHA) identified food waste reduction as a priority. This led VCHA and food service provider Sodexo to embark on a journey to “zero waste” and the development of a standardized audit tool that is used to measure and track food waste in a number of healthcare facilities in the region. At the time, VCHA also hired a food waste project coordinator to explore the underlying causes of food waste. This preliminary study determined overall tray waste averaged 44% and primary reasons reported included poor appetite, dislike of the food, receiving too much food, and not receiving what they had ordered (2). Although industry food waste average is 20-30% (1), VCHA pushed boundaries and set a goal of 10%.

This presentation will provide an overview of the standardized food waste audit tool that is used to measure food waste streams. Waste is separated into categories, including solid post-meal tray waste, production waste, pharmaceuticals, beverages, and thickened beverages. Armed with waste metrics, food service managers are able to identify trends and root causes of waste which are used to develop targeted action plans.

The next section will also share food service’s pursuit of initiatives that were effective in reducing food waste yet improve patient satisfaction. Initiatives include:

- Development of Meal Planning Guidelines that guide clinical nutrition and food service responsibilities in reducing food waste and controlling food costs
- Introduction of flexible, patient-centered service models to improve meal selection (hostess bedside ordering, dining room service)
- First meal visits capture patient food preferences
- Improving communications around patient discharges and transfers
- Waste training for foodservice staff
- Technology
- Audits
- Mindful menu planning
- Increasing sustainable and local food

Results have been phenomenal and regional waste is now down to 14% in facilities (3). However the journey is not over and there is more to accomplish to reach the 10% goal. Stakeholder engagement is critical and success hinges on clinical dietitians and food service administrators jointly working together. This presentation will be useful for food service administrators and clinical dietitians who can learn and adopt some of these programs.

### COMPETING INTERESTS

The author states that there are no conflicts of interest in preparing the manuscript.

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# 17th International Congress of Dietetics

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## CONFERENCE PROCEEDINGS

9 September 2016 | INTERVENTION AREA: MULTICULTURALISM OF A GLOBAL SOCIETY

ROUND TABLE: MULTICULTURALISM OF A GLOBAL SOCIETY. DIETITIAN-NUTRITIONIST AS FUEL TOWARDS CHANGE

Lecture Sequence: 3



### The role of dietitians and dietitian organizations in regulatory consultation and public policy advocacy: making a difference for a sustainable, healthy food supply

Pat Vanderkooy\*

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Dietitians demonstrate concern for the health of the population by contributing to federal food and health policy. In this session, the Canadian perspective and experience will be shared, based on contributions of Dietitians of Canada, on behalf of its members, to the federal government's food regulatory policy decisions.

Dietitians are very important stakeholders who can make a substantial contribution to the future of the food supply in one's country and region. As government departments of health, agriculture, social services, education and industry explore and propose new regulations and policies, dietetic associations can provide evidence-informed input to advance the health of the population.

This session will provide examples from Dietitians of Canada of its contributions to the modernization of food regulation in Canada including new nutrition labelling regulations. For example, in 2015, Dietitians of Canada officially responded to the first change in food regulations addressing nutrition labelling since 2003 (1,2). Collectively, Canadian dietitians, with their diverse perspectives, are providing strong leadership in building a healthy food system in Canada (3).

The second part of this presentation will examine other examples of health advocacy including recent advocacy to shape the 2015 federal party platforms, and input to Federal government committees (4).

The session will conclude with a short question and answer period and an opportunity to share experiences from other jurisdictions.

### COMPETING INTERESTS

The author states that there are no conflicts of interest in preparing the manuscript.

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## CONFERENCE PROCEEDINGS

9 September 2016 | INTERVENTION AREA: MULTICULTURALISM OF A GLOBAL SOCIETY

ROUND TABLE: MULTICULTURALISM OF A GLOBAL SOCIETY. DIETITIAN-NUTRITIONIST AS FUEL TOWARDS CHANGE

Lecture Sequence: 4



### FOOD BANKS. Difficulties in maintaining the principles of solidarity, sustainability and healthy diet

Paz Redondo del Río\*, M<sup>a</sup> Alicia Camina Martín, Carmen Alonso Vicente, Beatriz de Mateo Silleras, Margarita Alonso Franch

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**Introduction:** Food Banks (FB) emerged in the mid-20<sup>th</sup> century as a united and sustainable idea. They were founded by Hengel in Phoenix (Arizona, USA), due to the paradox of the huge amount of food thrown away and the growing population of people who came to it for food. The idea spread to Europe, where there are currently 265 FB from 23 countries that are associated with a Federation (FESBA) in which is also integrated the Spanish Federation (FESBAL), composed of 55 FB (1).

The FB are volunteer-based NGOs whose primary objective is "to facilitate access by anyone in Europe to adequate and balanced diet through combating waste and call for solidarity" (2).

The FB do not give food directly to individuals, but to officially recognized institutions whose contact with the needy groups is closest. These social associations (a total of 9,023 in Spain in 2014) are classified into: a) *distribution entities* (6,359): religious, ethnic, or otherwise; or b) *consumer entities* (2,734) where cooked food is offered: social canteens, nursing homes, convents, etc.

In our country, as in the rest of Europe, FB has become more necessary since the economic crisis began in 2008. It is estimated that in 2008 the FB furnished aid to 800,000 people, increasing by 25% until 2011. Currently there is a slowdown in demand: the annual increase fell to 8-9% in 2014

and it has stabilized in 2015 at almost 1,7 million people (3).

**Food:** The purpose of the FB is to schedule and manage the collection of food that are donated by European, Governmental, Community, or Local public and private entities, as well as to store them for a minimum time and distribute them according to social and nutritional criteria.

Non-perishable food, which came from solidarity, were initially received punctually and with little advance planning. With the current economic crisis, and in parallel to the increase in people at risk of exclusion, there is, on the one hand an increase in the solidarity of companies and individuals, and on the other greater involvement of government more regularly. As a result, there is a radical change in FB: charitable institutions become true food distribution companies.

Since the end of the last century, aid from the European Union arrived through the Spanish Agricultural Guarantee Fund (FEGA) from food surplus. However, since the surplus decreased due to the EU's agricultural policy, a new Fund for European Aid for disadvantaged people (FEAD) was approved. FEAD provides funding (3.8 billion euros / for the period 2014-2020) instead of food, and the various governments provide 15% more funding to buy food in each country. Since then, in Spain, Cruz Roja Española (CRE) also assists in the delivery of



food. Therefore, they are 2 NGOs involved in food distribution: FB ([www.fesbal.org](http://www.fesbal.org)) and CRE ([www.cruzroja.es](http://www.cruzroja.es)).

Therefore, the FB currently distributes food purchased with funds from FEAD and FB. Among the first there is a list of basic foods that include whole UHT milk, olive oil, legume, rice, pasta, canned tuna, tomato sauce, vegetables and fruits (no sugar added), biscuits and baby food (formula milk, cereal, jars baby food).

The food collected by the FB offer greater qualitative and quantitative variability, with the possibility of direct collection, and gradually introducing perishable foods. This allows design food bags according to nutritional criteria, although there are still many problems.

**Criteria for distribution:** To establish the average content of a bag of food with scientific criteria, would require, in addition to having the amount of adequate food, have the following information: 1) age, sex, ethnicity and physiological or pathological condition of people who are assisted, 2) to know whether the food aid is specific or continuous, 3) to know if diet must be complete or not (4).

Although there are recommendations from government agencies (e.g., FAO / WHO), they do not seem appropriate since they refer to emergency situations in most cases. Unfortunately aid in FB is continuous due to the consequences of the economic crisis.

For FEAD project, the European Community requested that FB draw up appropriate proposals for the people attending in order to not only meet the nutritional requirements, but also to respect, as far as possible, the socio-cultural customs (5). In 2012, the FB of Valladolid implemented the recommendations of the Professional Association of Dietitians of the Balearic Islands, which were subsequently accepted in full by the two Spanish NGOs involved in the aforementioned European program.

**Role of the Dietitians (D-N):** There is no doubt that FB require knowledge and professionalism of the DN, taking into account three aspects: 1) the high percentage of needy people in the European Community (24.4% at risk of exclusion and 9.8% starving); 2) the amount of food or funding received by FB; and 3) FB are based on voluntary institutions and not qualified professionals. An example of this intervention has been published by the Professional Association of Dietitians of the Balearic Islands.

On the other hand, most of the population at risk of exclusion lack of training and information on nutrition issues, leading to the FB to ensure, through the D-N, to control these crucial aspects that are necessary to obtain the maximum benefit from the aid received.

## COMPETING INTERESTS

The authors state that there are no conflicts of interest in preparing the manuscript.

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## CONFERENCE PROCEEDINGS

9 September 2016 | INTERVENTION AREA: RESEARCH, DEVELOPMENT AND INNOVATION IN DIETETICS

### SHORT LECTURE



### World Innovation in Food and Nutrition: A Dietitian's dream or nightmare?

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A disruptive innovation creates a new market and value network. It also eventually disrupts an existing market and value network, displacing established market leaders and alliances. The term was defined and phenomenon analyzed by Clayton M. Christensen as early as 1995. Disruptive innovation challenges *status quo* and often leads to new norms... until the next disruption (1,2).

Over the past decades, Professional Dietitians have witnessed an unprecedented number of disruptive innovations in the food and health sector.

With more than 10,000 new foods entering the market every year – in North America alone, never have we been so blessed and yet so challenged with the increase in NEW food choices and nutrition solutions (3,4).

Whether a new food or food product is the result of careful genetic breeding or formulated with the assistance of innovative science and technologies, we are often left wondering about the nutrition relevance and sustainability of these new solutions.

Dietitians – like consumers, are often overwhelmed by the number of new product launches, new claims, conflicting science, contradictory news reports and labelling rules. Innovation is happening at a pace that far exceeds anyone's professional ability to stay abreast.

That's where we come in!

nufoods PROMOCOM International Inc proposes to deliver a session that will examine world food innovation trends and the

new challenges they pose to both consumers and Professional Dietitians. Together, we will explore the drivers of innovation and discuss the proposed innovative features as they relate to health, well-being and sustainability.

More specifically the presentation will rely on 3<sup>rd</sup> party market research information and the latest scientific results obtained from public, private, voluntary and academic groups.

Dietitians have an important role to play in food innovation, whether it's at the developmental stage to ensure relevance to health and wellbeing, or as communicators and providers of solutions that offer true value to their clients, patients or consumers in general. It is our firm belief that Dietitians must help shape the food and nutrition landscape for future generations (5).

The presentation will focus on **three specific areas**, as follows:

**1)** World Food Innovation Trends: The market for functional foods and natural products in Canada for example, is robust and growing at a faster pace than the agriculture and agri-food sector overall. More than 750 Canadian companies are specialized in this area, garnering more than \$11 billion in revenues (4).

In this section, we will present an overview of worldwide trends on conventional, organic foods, functional foods, nutraceuticals, dietary supplements, medical foods and cosmetic foods (5).

Reference will be made to food innovation research & the attribution of awards to specific innovative products by the industry and by consumers.

Also discussed – What motivates innovation? scientific evidence, hype or? (6)

**2) Innovation in Food Science & Technology:** New production and processing technologies have led to a very different food landscape – one that sometimes does not resemble what mother nature intended. In this session, we will explore new technologies and their impact on health and well-being (3,6). Examples include, the explosion of functional foods, 3-D printing, nutrigenomics and NPO technologies for the delivery of nutrients.

Also discussed – What does the future hold? (7-9)

**3) Novel Application of Food Ingredients – Beauty Foods:** The beauty industry is flourishing. Food ingredients & nutrients are being proposed and promoted as key beauty solutions to be ingested or applied topically. In this session, we will discuss the role of food and food ingredients in beauty – inside-out (10).

Also discussed – The challenges that plague the beauty industry.

**Conclusion:** The session will conclude with thought provoking questions as to the role of Dietitians as full partners in the acquisition and implementation of new science and technology in response to new health and consumer demands (9).

Disruptive food innovation can be a nightmare when information gaps and misunderstandings exist. On the other hand, when managed to provide relevant solutions, disruptive innovation can greatly enhance quality of life.

## COMPETING INTERESTS

The author states that there are no conflicts of interest in preparing the manuscript.

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### CONFERENCE PROCEEDINGS

9 September 2016 | INTERVENTION AREA: THE POWER OF DIETITIANS  
NUTRITIONISTS TO MAKE A DIFFERENCE IN SOCIETY

#### SHORT LECTURE



### Vegetarian Diets and Disease Risk. Current state of the evidence

**Brenda Davis\***

Lead Dietitian, Diabetes Wellness Program, Canvasback Missions, Marshall Islands; Owner of Brenda Davis Nutrition Consulting providing corporate and private consultations. Canada.

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This presentation provides an update on plant-based diets in the prevention and treatment of chronic disease. Recent research comparing the health outcomes of similar, health-conscious meat eaters, semi-vegetarians, pesco-vegetarians, lacto-ovo vegetarians and vegans is discussed. The weight of the evidence comes predominantly from two large cohorts: EPIC-Oxford and the Adventist Health Study-2 (AHS-2), although findings from Taiwan are also factored in. The impact of dietary choices on longevity, and risk of heart disease, cancer, diabetes and other chronic diseases is explored. Compared to similar, health conscious meat-eaters, vegetarians live longer and enjoy reduced rates of chronic disease. Risk reduction rates were as follows:

#### Mortality

- 28% for vegan men, 19% for pesco-vegetarians, 15% for vegans and 9% for lacto-ovo vegetarians (1)

#### Cardiovascular Disease

- 28% for vegetarians and vegans combined (2)
- 42% for vegan males, 34% for pesco-vegetarian males and 23% for pesco-vegetarian males. No significant risk reduction for females (1)

#### Cancer

- 19% for vegans, 12% for pesco-vegetarians, and 11% for lacto-ovo vegetarians (3)
- 16% for vegans, 12% for pesco-vegetarians and 8% for lacto-ovo vegetarians (4)

#### Type 2 Diabetes

- 62% for vegans, 38% for lacto-ovo vegetarians and 21% for pesco-vegetarians (5)
- 51% for near-vegan mean 74% for pre-menopausal women and 75% for post-menopausal near-vegan women (6)

#### Other Diseases

- **Hypertension** – 75% among vegans; 55% among vegetarians (7)
- **Cataracts** – 40% lower risk among vegans (8)
- **Diverticular disease** – 31% lower risk among vegetarians (9)
- **Renal disease** – 52% lower risk among vegetarians (1)

The presenter will also review the evidence for plant-based diets in the treatment of chronic disease. Brenda Davis will share the details of her research in the Marshall Islands where she was the lead dietitian in a lifestyle intervention research project (10). She will discuss continued efforts to assist the Marshall Islands Ministry of Health in their effort to reverse the current diabetes epidemic. The Marshall Islands provides many lessons regarding the management of diabetes, and the potential for lifestyle intervention.

Brenda will discuss why eating lower on the food chain has become an ecological imperative and how plant-based diets provide substantial advantages for sustainable eating. Finally, she will provide a practical summary of essential practice points for dietitians.

## COMPETING INTERESTS

I am an author of food and nutrition books with publishers Harper Collins, John Wiley and Sons, and The Book Publishing Co.

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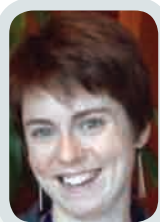
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### CONFERENCE PROCEEDINGS

9 September 2016 | INTERVENTION AREA: THE POWER OF DIETITIANS  
NUTRITIONISTS TO MAKE A DIFFERENCE IN SOCIETY

SHORT LECTURE



#### Creation of an Equation to Predict Hospital Staffing Needs

Rosa Hand\*, Jordan B, DeHoog S, Pavlinac J, Abram JK, Parrott JS

Dietitian Practice Based Research Network, Academy of Nutrition and Dietetics. United States of America.

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Currently, hospitals and clinical managers struggle to determine appropriate ratios of dietitian (RDN) to patient in varying acuity and clinical settings. Therefore, the Dietitian Practice Based Research Network collaborated with the Clinical Nutrition Manager's Dietetic Practice Group to conduct a cross-sectional study of RDNs employed in acute care hospitals across the USA to develop and validate a staffing equation. The primary goals of this study were to 1) determine time required per inpatient encounter, controlling for RDN, facility, and patient characteristics; 2) to describe other activities RDNs frequently complete; and 3) to determine the ration of direct to nondirect patient care time in an average day. 446 RDNs participated in the study and recorded 47,000 patient encounters. This data led to the development of equations for adult and pediatric nutrition care. This session will describe the RDN characteristics and activities, time to complete activities, the equations and case studies on how to use the equations (1-3).

#### COMPETING INTERESTS

Rosa Hand is an employee of the Academy of Nutrition and Dietetics and received a grant from the Clinical Nutrition Managers Dietetic Practice Group to conduct this study.

Jessie Pavlinac is an employee of the Oregon Health Science University and is a member of the advisory board for this study.

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### SHORT LECTURE



### Role of the Dietitians in Public Health. Position of the European Specialist Dietitian Network on Public Health

Grigoris Risvas, Amanda Avery, Manuel Moñino, Sophie Cairns, Teresa Rodrigues\*

ESDN Public Health Committee European Federation of the Associations of Dietitians (EFAD); Associação Portuguesa dos Nutricionistas (APN)..

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Public Health Dietitians are directly involved in the development of healthy eating policies and in promoting a healthy lifestyle through appropriate food choices, among individuals and groups, across the life-course. Their experience makes them key stakeholder whose expertise needs to be part of political developments and advocacy of food and health policies.

Take home messages:

- Public Health Dietitians are directly involved in promoting healthy food choice among individuals and groups, to optimize their nutritional health and minimize risk from nutritionally derived illness (1,2,3).
- There are some specific performance indicators to Public Health Dietitians, such as identify individual, public/private and government roles and responsibilities within public health; develop and implement strategies to promote safe and healthy food choices for individuals and population groups across the life-course; creates, contributes, and communicates a vision for development of public health nutrition (1,2).
- Public Health Dietitians working in health promotion regularly work in projects/programs, mainly focusing on healthy food choice, while the ones working at food policy level are improving the environmental opportunities for healthy eating, both working through partnerships and multidisciplinary teams, and using the best practices in counseling methodologies, e.g. techniques to help

improving motivation and behavioral change; tools, games and apps in education and also social media (4,5,6,7).

- To promote health, Public Health Dietitians apply and impart knowledge about food and nutrition to individuals and for population groups with special nutritional needs, or groups whose background, culture or circumstances may profoundly affect nutritional intake, or other individuals with special needs or limited access to healthy food and lifestyles (3,5,8,9,10).

### COMPETING INTERESTS

The authors state that there are no conflicts of interest in preparing the manuscript.

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### CONFERENCE PROCEEDINGS

9 September 2016 | INTERVENTION AREA: THE POWER OF DIETITIANS  
NUTRITIONISTS TO MAKE A DIFFERENCE IN SOCIETY

#### SHORT LECTURE



### Hospital foodservice: sustainability, packaging, advocacy, and patient outcomes

Sandra Capra\*

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Traditionally we have used china plates and steel flatware when providing meals for patients in hospitals. We have always considered that this is best practice and what the patient wants (1, 2). But is this true? And what role does the way we serve food play in the longer term with respect to “green” foodservices?

For many years now there have been concerns about the detergents and sterilants used to ensure safety when re-using crockery and cutlery. But is using disposable wares better? With malnutrition in hospital patients of serious concern, we undertook studies of satisfaction with meals and consumption of protein and energy when meals were served using disposable service ware and packaging.

Specially formulated tools were developed to measure satisfaction with specific trial meals, which were prepackaged in disposable containers. A total of 13,066 surveys were distributed at four different hospitals over a three month period, of which a total of 6,213 were completed (1).

Overall patient satisfaction with their total food services experience increased by 2% during the trial. This was due to multiple factors including additional choices, the ability to provide feedback and the ability to order foods close to mealtimes. Those who were able to choose their meals had a 5% increase in satisfaction (3).

Packaging, in terms of plate colour and shape, did not affect patient satisfaction with the meals or service. However, many frail patients needed assistance in opening packages.

We then tested in a randomised controlled trial, the same food

served on usual crockery compared with being served on a standardised plastic (disposable) plate. This study showed that whilst trends in preferences for china plates over disposable plates could be seen, no statistical significant results could be shown at the broader level, with the exception of beef where flavour and taste was rated better on china. The study also shows a shows gender differences in relation to plating systems for all meal components with men favouring china.

Food consumption was a key indicator of total energy consumption. The most common patient explanations for uneaten food were that the food was not their choice (being sent “default” meals), or was too dry, too bland or too large (especially vegetable serves), rather than presentation or appearance of the meal or packaging.

Both the food waste and packaging are potential sustainability issues. The packaging and service material used in these trials were all recyclable. At the end of service, trays were simply sorted into recycling materials or food waste. There was no washing up, except for the trays the meals used in meal delivery, and so this system led to a reduced water burden, no detergents or drying agents, and no linens to be laundered.

Dietitian-nutritionists need to be advocate for both patients and the system. We need to use evidence to support our position in terms of these changes in the healthcare system, and need to continually review our own thinking in the complex world of malnutrition (4) and resource scarcity (5). Going to sustainable eating must include consideration of eating in the broadest context including how we serve food in the healthcare system.

## COMPETING INTERESTS

The author states that there are no conflicts of interest in preparing the manuscript.

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### CONFERENCE PROCEEDINGS

9 September 2016 | INTERVENTION AREA: MULTICULTURALISM OF A GLOBAL SOCIETY

#### SHORT LECTURE



#### How many meals a day should we consume?

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In order to get healthy, adequate and balanced nutrition we need to consume certain amount and kind of food. This sounds simple, but it seems not simple to answer the question: How many meals a day should we consume? Anthropologists agree that none of the antiquity nations were practicing three meals a day. They were mostly consuming their food in one big meal a day or by nibbling depending on the availability of food, then with the beginning of the era of socialization it was formed as two meals a day which were one late morning meal and one early evening meal. In Greek Civilization these meals were named as *ariston* and *deipnon* respectively. During the 20<sup>th</sup> century all nutritional suggestions were built on three to four meals a day and the surveys conducted between 1940 and 1970 stated the importance of breakfast on work performance and school achievements as a consequence of the increase in schooling and employees (1). Additionally, the importance of meal frequency is very well shown for diabetic and hypoglycemic people (2). However, recently many experts started to discuss whether eating three meals a day is a must or on the contrary is the cause of many digestive system problems. As it is known the muslim world fasts starting from early morning till night, which is almost 13-16 hours a day, for 30 days during Ramadan. There aren't much survey carried out during Ramadan to show the effect of such long fasting in short and long term on health. However some researchers claim that intermittent fasting has health benefits such as improving insulin sensitivity, lowering effect on glucose and

insulin and inducing cellular clean-up process where body cells clear waste products that build up in the cells contributing aging and diseases (3). In the twentieth century people started to feed themselves not to satisfy their physiological needs but mostly to fulfill their social and psychological needs. One can think that increasing trend of obesity may be the result of this uncontrolled eating. In this presentation these issues will be discussed.

#### COMPETING INTERESTS

The author states that there are no conflicts of interest in preparing the manuscript. I declare that all information used in this presentation have been achieved and cited in the ethics rules.

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9 September 2016 | INTERVENTION AREA: RESEARCH, DEVELOPMENT AND INNOVATION IN DIETETICS

### PLENARY SESSION



### Sustainable food, what's already available and why isn't that enough to make an impact

**Fraukje Rosier\***

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Everyday more and more organic and/or local foods are finding its way to our table. And that's a positive thing. Most of these products are –at least in one aspect of sustainability– better than its 'normal' version. The big question we have to ask ourselves is whether organic and local food is enough to conquer climate change. The challenge for the near future is enormous. At one hand the world population is growing and there are more people who are able to take care for them self in terms of healthcare and food. Positive in itself but puts a huge pressure on food production. Of course the growing of the world population isn't a new thing, but dealing with the food demand at the moment is done by producing more in large quantities without viewing the down side of pollution, waste and emission.

On the other hand we know that global warming of 2 degrees or more will lead to series of problems with consequences hard to assess (1). To prevent this warming from happening there is an urgency to move fast. There is no consensus how much and how fast this is happening, but scientist are certain that there will be at least an increase in temperature of 2,7F by 2100 (1).

Time is running out and maybe we have to be prepared to make big changes in our daily lives. I'm no scientist and can't answer the question about what the changes should be. But I do know that food and food production are responsible for about 1/3 of the total global emission (1,2). That is a lot. But there also lies the opportunity to act. To make an impact.

Searching for the impact we can make, I found ideas in almost every part of the World but somehow it lacks ideas and action worldwide, something we make or do together. To me it seems like we all know we should do something on a large scale but we are somehow waiting for the one person, company or maybe government to set things in motion. Like we are all part of some bystanders effect.

Then a colleague told me about a congress she had heard of. The World Federation of Occupational Therapists Congress in Sydney. There was a Group of therapist that made a start with a document called Diversity matters: Guiding Principle on Diversity and Culture. The aim was to find common ground in how to deal with diversity and to occupational therapists worldwide to discuss, appreciate and incorporate diversity and culture into their daily practice, education and research to meet the occupational needs of people throughout the world (3).

Inspired by this guiding principle and in search of some worldwide action my proposal would be to take the opportunity at the 2016 ICD in Granada to make a Guiding Principle on Food and Sustainability. If we could reach a consensus on how to incorporate sustainability in our counseling to achieve a healthy lifestyle, if we could make a plan to do the same for education and if we could deal with difficulties on how to advise companies and governments we could make an impact. And I know this isn't a quick fix but this is an opportunity to set ourselves in motion.

## COMPETING INTERESTS

The author states that there are no conflicts of interest in preparing the manuscript.

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9 September 2016 | INTERVENTION AREA: WORLDWIDE IMPACT OF DIETETIC PRACTICING. DIETITIAN-NUTRITIONIST IS KEY

ROUND TABLE: MALNUTRITION RISKS IN VULNERABLE GROUPS

Lecture Sequence: 1



#### Fighting malnutrition: The Dutch approach

Hinke Kruizenga\*

Project leader Dutch Malnutrition Steering Group ([www.fightmalnutrition.eu](http://www.fightmalnutrition.eu)); Editor in chief of the Dutch Dietetic Journal ([www.ntvd-site.nl](http://www.ntvd-site.nl)). Netherlands.

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In the Netherlands, malnutrition is being approached centrally by the Dutch Malnutrition Steering Group. This group was founded in 2005 and consists of representatives of all relevant medical disciplines and the Dutch universities. Our common goal is to reduce the prevalence of malnutrition by stimulating optimal nutritional care and scientific research.

This lecture will focus on the care of the malnourished patient during hospital admission and at discharge from the hospital. I will share the most important steps of our approach to answer the question: What has been achieved, what is the current situation and Future plans and ambitions.

The Malnutrition Steering Group received government funding for implementation of early recognition and optimal treatment of malnutrition in hospitals. We performed implementation projects in the other health care sectors and at the moment we are working on the continuing care after hospital discharge. In hospitals the screening is implemented well. In the other sectors, especially in the GP offices, screening needs more attention. Timely and adequate nutrition in this malnourished group needs attention in all sectors of care. Much has been improved but still there is a lot left to be improved.

These are the 10 steps of the Dutch approach:

1. Raise a multidisciplinary steering group, which represents all disciplines involved in screening and treatment of malnutrition and which has authority
2. Create awareness for the problem of disease related malnutrition by collecting prevalence data

3. Quick and easy screening tools, connected to a treatment plan
4. Screening as a mandatory quality indicator
5. Evidence based, validated tools and cost-effectiveness research
6. Ministry of Health as a key stakeholder to strengthen the message
7. Implementation projects in all health care settings:
  - a. Start pilot projects to implement screening and treatment of malnutrition in
  - b. Evaluate and adjust where necessary
  - c. Use the field to develop tools and a toolkit
  - d. Disseminate the project over more institutions and organizations
  - e. Make sure projects team are multidisciplinary and have authority
  - f. A website to communicate between participating teams and organizations with
8. Toolkits with tools, ready-to-use presentations and best practices, downloadable, free accessible to everyone
9. Multidisciplinary project teams in all institutions
10. Training programs and workshops

In the past years the Dutch Malnutrition Steering group has put effort in fighting malnutrition in all health care settings.

At the moment our focus lies on the nutritional care for undernourished patients at discharge and in the home setting after hospital admission. This is not optimal mostly due to the absence of transmural collaboration and communication between dieticians and difficulties in sharing of confidential medical information. Improvements need to be made. As a first step we evaluated the care of the undernourished patients after discharge from the hospital with a group of dietitians working in hospital –home care– and primary setting in Amsterdam. I will discuss these results and present the toolkit on optimal care for the undernourished patients throughout all care setting to improve the optimal treatment of malnourished patients within hospital, at discharge and beyond (1,2).

## COMPETING INTERESTS

The author states that there are no conflicts of interest in preparing the manuscript.

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9 September 2016 | INTERVENTION AREA: WORLDWIDE IMPACT OF DIETETIC PRACTICING. DIETITIAN-NUTRITIONIST IS KEY

ROUND TABLE: MALNUTRITION RISKS IN VULNERABLE GROUPS

Lecture Sequence: 2



### The Role of A Dietitian as a Consultant in Rehabilitating Malnourished Children in the Village Setting

Mary Ellen Rivero\*

At the time of program development: United States Peace Corps and The National Food and Nutrition Commission of Zambia. Currently: Yavapai College in Prescott, AZ, United States of America.

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I will share my experience of culturally adapting and training health volunteers in Zambia on the Positive Deviance Hearth (PD Hearth model) (1-3). PD Hearth is an international program designed to rehabilitate malnourished children in a village setting using locally-available foods (4-6). The program's focus is to train the mothers of stunted and underweight children for 12 days on child feeding and supervise them in the home for an additional 12 days, following behaviour change protocol.

The goals of the presentation are to:

1. Introduce PD Hearth in areas with limited food resources as a tool for sustainable eating (4,5).
2. Describe the role of the dietitian/nutritionist as Consultant and trainer of trainers (6).
3. Share materials and lessons learned in Zambia (1-3).

### COMPETING INTERESTS

The author states that there are no conflicts of interest in preparing the manuscript.

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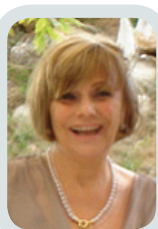


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9 September 2016 | INTERVENTION AREA: WORLDWIDE IMPACT OF DIETETIC PRACTICING. DIETITIAN-NUTRITIONIST IS KEY

ROUND TABLE: MALNUTRITION RISKS IN VULNERABLE GROUPS

Lecture Sequence: 3



### Invisible Care in Nutrition

Nahyr Schinca Lecocq\*

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In Spain our profession is still young, but it is growing and constantly evolving. That is why now it's a crucial moment to point out certain aspects that could be overlooked: humanization of the dietitian's role, new concepts related to the diets registering, and how to complete them, operating systems, and other.

In general, health policies are oriented to ensure quality in healthcare, so it is fundamental to keep in mind the deep social transformations that have taken place in the XX and XXI centuries: marked ageing of the world's population, the change in food generational habits, immigration, the increase in chronic diseases.

A deep analysis of the multiple ways to face this challenge is in order, and it is also necessary to design strategies that will allow for a quick response to the new needs of healthcare and its economy. It is urgent to endow our healthcare professionals with the necessary education in their field, and to provide institutions with the appropriate human resources, particularly with dietitians and nutritionists.

Both the dietitian-nutritionist and the nurse professions are nowadays subordinated to doctors in the healthcare sense. These two professions acquire visible and invisible skills, and in this text we will deal with the later.

As just a few works on invisible care in nutrition and diets have been produced as of yet, we will refer to the existing ones in other healthcare areas for definition purposes and also to establish the aspects they convey.

**Invisible Care (IC) – Definition:** They are autonomous healthcare professional actions, mainly tangible, but that contribute to the well being, health and comfort of patients/people in the same if not in a greater measure than technical actions directed only to the physical plane (1-3).

IC go further than measurement instruments but are considered as irrelevant even by healthcare personnel (1,4).

The "CARE" concept allowed the human species to live and survive under the most extreme natural, social, economical and political conditions. The action of "taking care of" is something that is part of being human, and it reveals its intimate constitution (1,5).

Healthcare protocols contemplate two variants according to action registering:

- Traceable/Visible actions: For example food anamnesis, anthropometry, diet prescription... All the steps in the function of nourishing.
- Non-traceable actions/Invisible care: For example DN's action and time devoted to the search of food (shrimps), a new flavor demanded by a patient which is not included in a healthcare centre's nutritional plan, the necessary adjusting time for a family in front of artificial nutrition's logistics (6).

#### Aspects they convey:

1. Health education: self-care promotion (1,5).

2. Psychologists: emotional support, listening, empathy, trust relationship (1,5).
3. Gender: women have always been and still are the ones taking care of the family's food and health. Their work has been historically neglected. Their role has been viewed as solely reproductive (2,5).
4. Human and economical resources management: materials selection, residue monitoring (2,5).

There are many difficulties for achieving a widespread recognition of invisible healthcare: how to measure them, how to measure their efficiency, how to determine the role they should take in the healthcare field (2).

Recently, there have been some proposals about how to classify IC in order to include them among biological and social sciences, recognizing their value and the weight they deserve in science. It is a priority to find the proper instruments to measure them and to compare the technical and the humanistic ones (4,6).

**Conclusions:** Nowadays, we have enough proof of a global increase of the need of concept changes on both Visible and Invisible care, specially about healthcare. The challenge is to design the appropriate recording methods for Invisible care. This challenge must be overcome with the help of dietitians-nutritionists.

It is an unavoidable requirement to take actions to improve scientists' education and investigation both in terms of quantity and quality.

A global political debate on these subjects cannot be delayed any longer, as the consequences derived from them will be not only economical, but also human.

## COMPETING INTERESTS

The author states that there are no conflicts of interest in preparing the manuscript.

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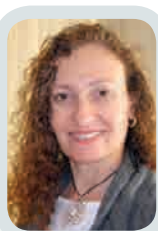


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9 September 2016 | INTERVENTION AREA: WORLDWIDE IMPACT OF DIETETIC PRACTICING. DIETITIAN-NUTRITIONIST IS KEY

ROUND TABLE: MALNUTRITION RISKS IN VULNERABLE GROUPS

Lecture Sequence: 4



#### Malnutrition in hospital patients: how to nutritional screening, nutritional diagnostics and a follow-up

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Malnutrition is highly prevalent in hospitalized patients. Despite this, it is not routinely assessed in most hospitals worldwide. One of the reasons that might explain this fact is that there is no gold-standard nutritional assessment tool, and much has been written advocating this or that technique. Several studies have recently reinforced the relationship between poor nutritional status and higher incidences of complications, mortality, length of hospital stay and costs (1). Therefore, it is of the utmost importance to be able to diagnose malnutrition early (1).

The evaluation of nutritional status is a broad topic that encompasses several clinical variables. In order to be ideal, the method should be able to predict patient outcome, should be able to be performed by most care-givers, should be inexpensive, and should not be time-consuming. Unfortunately, most nutritional assessment instruments were published with insufficient details regarding their intended use and method of derivation, and with an inadequate assessment of their effectiveness. Therefore, health professionals should be critical when defining which instrument should be adopted by an institution, and several factors should be taken into consideration.

The European Society for Clinical Nutrition and Metabolism (ESPEN) defines nutrition risk (2) as "chances of a better or worse outcome from disease or surgery according to actual or potential nutritional and metabolic status" and nutritional screening (3) as a "rapid and simple process conducted by admitting staff or community healthcare teams". The importance of the nutritional screening cannot be overlooked: the lack of routine screening procedure was shown to leave over half the patients who are nutritionally

at risk unrecognized (4,5) and one fourth without nutritional support or counseling despite the presence of an active contact of the patients with health care professional (6).

#### COMPETING INTERESTS

The author states that there are no conflicts of interest in preparing the manuscript.

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9 September 2016 | INTERVENTION AREA: THE POWER OF DIETITIANS  
NUTRITIONISTS TO MAKE A DIFFERENCE IN SOCIETY

ROUND TABLE: PHYSICAL ACTIVITY AND SPORT: APPLIED RESEARCH  
ON DIETETICS PRACTICE

Lecture Sequence: 1



### Efficiency: metabolic and thermoregulatory effects of technical changes in endurance sports

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In long endurance disciplines, the literature has identified several key factors on the performance (1). One of the most important is the effort economy, that is, the amount of oxygen needed by the athlete to produce every watt per unit of time ( $W \cdot L$  de  $O_2^{-1} \cdot \text{min}^{-1}$ ). Thus, an improvement in the performance of endurance activities is associated with an increased running, pedaling or swimming efficiency, depending of the discipline (2-6).

Regarding this aspect, an example in cycling about to modify the energy substrate and expenditure, would be the study carried on by Beneke&Alkhatib (7), where it tested how, despite low –50rpm– cadences are more efficient to produce higher cycling power rates (8), higher cadences –100rpm– allow a saving effect on carbohydrates if the required intensities are low.

Recently, it has been found in endurance athletes that running economy, and not the maximum oxygen uptake as an expression of physical aerobic fitness, is which alters thermoregulatory responses (9). It is also known that skin temperature during exercise may be related to muscular work, as a result of efficiency in dissipating the heat produced, which depends on the involvement of the cardiovascular system and sweating rate, also varying between trained and untrained subjects (10).

Therefore, the efficiency-fitness-thermoregulation relationship at different types of endurance athletes and different levels (cyclists, athletes, triathletes,...) remains to be analyzed in depth and it would be of great interest both for athletes and to supervise the training/nutrition by their trainer/dietitian.

### COMPETING INTERESTS

The authors state that there are no conflicts of interest in preparing the manuscript.

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NUTRITIONISTS TO MAKE A DIFFERENCE IN SOCIETY

ROUND TABLE: PHYSICAL ACTIVITY AND SPORT: APPLIED RESEARCH  
ON DIETETICS PRACTICE

Lecture Sequence: 2



### From dietetics guidelines to dietetic practice in Ultra-endurance training-Florida and Hawai Ultraman

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Ultra-man is an ultra-endurance event individually in which participants performed three modalities for three days: day 1 - swim (10km) and bike (144.8km); day 2 - bike (273.7km) and day 3 - run (84.3km), with a total of the 517.5km. Nowadays parameters to ultratriathlon performance remain unclear (1). Probably the relative contributions of physiological, psychological, anthropometric, and training could be conditioned athletes performance. In these types of tests, the body experiments an increase in the muscles capacity to oxidize fats and economize the use of glycogen trying to improve sport performance (2). The relative use of fats and carbohydrates during exercise can have considerable variations depending on the intensity of the exercise and the adaptations of each athlete (3). Both the volume and the level of intensity during sports practice will allow us to know the demands and requirements of the athlete when training and on the day of the competition (4).

The nutritional dietary preparation is important to avoid problems related with ingestion during these types of tests. Mountain passes and the effort needed during the test are associated with the onset of fatigue and a decrease in race rhythm due to the depletion of muscle glycogen. Especially after the first two hours (2). This produces the need to ingest

carbohydrates before and during the test, as fuel input (5). An inadequate ingestion of liquids together with body liquid loss through sweating can trigger dehydration (6). Hyponatremia is another factor to consider, possibly produced by an excessive ingestion of water which replaces part of the lost liquids but not of the electrolytes, leading to dilution of electrolytes in the blood (6,7). Finally, mention gastrointestinal problems like nausea, vomiting, gases or diarrhea caused by an excess or deficiency of liquids, food or ergo-nutritional aids or by ingestion of any of these without trying it before (5-7). However, all of these can be avoided using a correct nutritional dietary planning. The aim of this clinical case is to describe the nutritional dietary planning of a male triathlete of 29 years old for dealing with the Florida and Hawai Ultraman.

An evaluation of eating habits, training characteristics and food/liquid/supplement consumption was made. His body composition was evaluated following the methodology of the International Society for the Advancement of Kinanthropometry (ISAK). For the nutritional dietary planning, the macronutrients intake recommendations during the previous days of the sporting event were followed, as well as, the carbohydrates (CH), liquids and sodium per hour during competition (2,5-7).

## COMPETING INTERESTS

The authors state that there are no conflicts of interest in preparing the manuscript.

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9 September 2016 | INTERVENTION AREA: THE POWER OF DIETITIANS  
NUTRITIONISTS TO MAKE A DIFFERENCE IN SOCIETY

ROUND TABLE: PHYSICAL ACTIVITY AND SPORT: APPLIED RESEARCH  
ON DIETETICS PRACTICE

Lecture Sequence: 3



#### Professional Ballet: a new field for the insertion of the dietitian-nutritionist

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Dance is a discipline that demands the development of a specific technical body, a physical-mental performance and is conditioned by the aesthetics and all artistic activity. The professional challenge is to devise Nutrition food and nutrition recommendations that respond not only to the individual requirements of the dancers, but also contemplating the optimal physical performance and body image required (1,2).

The aim of this study was to evaluate the nutritional status, perception of body image and eating habits of professional ballet dancers. A personal survey was conducted and another over the Internet. Anthropometric measurements of weight and height were compared with the 2005 WHO criteria for body mass index (3) were performed. Body fat composition was measured using bioimpedance, evaluated by reference to professional dancers (4). The calculation of nutrients resulting from their eating habits compared to the estimate of needs expressed by FAO-WHO, 2001 (5). The perception of body image was considered as Studkard scale (6).

The results showed that while the average BMI is right, near the lower limit of what is considered healthy values were found. Regarding the percentage of fat mass it was detected that the average female literacy was excessive while the male was adequate, when compared with the same discipline dancers. Regarding discrepancies between body image perceived by the dancers and measurements found in nutritional status they were observed. It was found that energy intake was restricted

in both sexes, presenting an inadequate macronutrient distribution and supply of iron deficient women. The inclusion of nutritional supplements and ergogenic beverages was low. Concern was detected by the articulation between the health care and performance of artistic expression in most of the dancers.

This degree in nutrition intervention in professional ballet dancers, was an approach to the combination of nutritional goals with specific artistic goals. The challenge is raised as nutrition professionals, is to deepen the characteristics of this population seeking to respond more accurately to the demands that this artistic discipline.

#### COMPETING INTERESTS

The authors state that there are no conflicts of interest in preparing the manuscript.

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ROUND TABLE: PHYSICAL ACTIVITY AND SPORT: APPLIED RESEARCH  
ON DIETETICS PRACTICE

Lecture Sequence: 4



#### Dietary patterns and sedentary behaviours, what should be done in youth?

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Decreasing levels of physical activity, unhealthy dietary habits, and the adoption of sedentary behaviors in children and adolescents are some of the main contributors to the increasing incidence of chronic diseases. Sedentary activities are increasing, especially in developed countries, and involve all activities involving low levels of moderate-vigorous physical activity, including television (TV) and computer use, school work, reading, playing or listening music. The American Academy of Pediatrics recommends that children limit their total media time to no more than 1-2 h a day (1); while more restrictive limits are applied to pre-school children, recommending less than 1 hour per day of sitting and watching TV and the use of other electronic media (2). Television viewing is one of the most studied behaviors and is the dominant sedentary behavior during leisure time in youth. A third of European children failed to meet current screen time recommendations (3). At the same time in this population group, the majority of children spent less than 1 hour per week participating in physical activity (PA) in organized and programmed sport clubs (3), showing a low adherence to the PA recommendations (4,5). It has been shown to coincide with excess energy intake, increased meal frequency, and unhealthy eating patterns and food intake — that is, consumption of energy-dense foods and beverages with lower nutritional value advertised on TV. Increased TV viewing in adolescents has been associated with higher consumption of sweets, savoury snacks, soda, and sugar sweetened beverages

(SSB) and with lower consumption of fruit and vegetables. Results from the HELENA study offers the possibility to examine the relationship between sedentary behaviours and isolated food group intake. For instance, those European boys reporting more than 4 h/d of watching television, playing computer games, and using the Internet for recreation were more likely to consume SSB (weekends) (odds ratio [OR], 1.83 [95% CI, 1.21-2.75]; 1.99 [1.31-3.01]; and 1.73 [1.03-2.91], respectively), and less likely to consume fruit (weekdays) (0.39 [0.21-0.72], 0.37 [0.18-0.77], and 0.39 [0.19-0.78], respectively) than those who spent less than 2 h/d (6).

Traditional analysis in nutritional epidemiology typically reflects diet in relation to a single or a few nutrients or foods; however, analysis using dietary patterns (DP) offers a different view of possible associations as foods and nutrients are consumed in combination and not isolated. In a sample of European adolescents from the HELENA study, higher computer use and internet use for recreational reason were associated with higher adherence to the 'snacking' DP. For instance in girls, TV viewing and using internet for recreational reasons for >4 h/day was associated with higher adherence to the 'confectionary and snacking' and lower adherence with 'health conscious' DP (7). Also, studying between 2 and 4 h during weekend days was associated with lower adherence to the 'snacking' and with higher adherence to the 'plant based' and 'breakfast' DPs (7).

On the other hand the energy balance related behaviours (diet, PA and sedentary behaviours) should be examined together in order to provide evidence about their synergetic effect on multiple obesity-related behaviours. Changes in multiple lifestyle behaviours contributing to energy imbalance are required in successful multi-factorial approaches of obesity prevention. Results from the Idefics study offers the opportunity to examine clustering patterns of health behaviours and their association with body composition indicators and biochemical parameters. It has been shown that low levels of sedentary behaviours combined with low SSB consumption may result in a healthier cardiovascular disease profile in European children (8). In the same line, the combination of clusters characterized by high sedentary behaviour, low F&V and SSB consumption and low PA turned out to be the most obesogenic factors (8).

Some practical recommendations can be made based on the current evidence (9). First, parents should be aware of how different lifestyles impact their children's health in order to promote healthy behaviours. Regarding the familiar environment, it seems recommendable to lay TV sets outside children/adolescent's bedroom. Second, preferentially children should not eat while watching TV. Third, families should minimize the amount of time that children are exposed to food advertisements. Fourth, governments (i.e. by taxes) and communities (promoting competing sport-games activities) should not incentive passive electronic entertainment. Finally, given the multi-factorial origin of obesity, (micro-level) prevention strategies can result unsuccessful if global and macrolevels obesogenic factors are not altered substantially.

## COMPETING INTERESTS

The author states that there are no conflicts of interest in preparing the manuscript.

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9 September 2016 | INTERVENTION AREA: THE POWER OF DIETITIANS  
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ROUND TABLE: DIETITIAN-NUTRITIONIST'S ROLE WITHIN THE LOCAL, NATIONAL AND  
INTERNATIONAL HEALTH SYSTEMS

Lecture Sequence: 1



### The role of dietitians and dietitian organizations in leadership: forging new partnerships and developing new specialties

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A national dietetic association can support its members to deliver interprofessional care and contribute to improving society's response to issues like dysphagia management, mental health, Aboriginal nutrition and health, and food allergy prevention. This session will review work done by Dietitians of Canada to increase awareness and improve access to dietitians.

1. Dysphagia assessment and management – interprofessional education, advanced practice learning, consideration for certification program, forging new partnerships with other professional organizations (1).
2. Mental Health – promoting new specialties, working in a new political environment (The Mental Health Commission of Canada), driving research priorities to produce more scientific evidence for Dietitians working in community mental health settings and thereby supporting dietitians in their new roles (2,3).
3. Aboriginal nutrition and health – encouraging more dietitians to work within Aboriginal populations, recognizing the challenges of food insecurity and chronic diseases, working in a new political environment (Truth and Reconciliation Commission), encouraging more Aboriginal students to pursue a career in dietetics (4-6).
4. Food allergies – promoting a new specialty area for dietitians, providing advanced level training through our

association's professional development opportunities, partnering to lead the development of a National Food Allergy Strategy for Canada, supporting positions of other professions (e.g., infants introduced to potential allergens – liaison with the Canadian Paediatric Society), assessing the need for interprofessional education – certified allergy educators.

### COMPETING INTERESTS

The authors state that there are no conflicts of interest in preparing the manuscript.

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NUTRITIONIST TO MAKE A DIFFERENCE IN SOCIETY

ROUND TABLE: DIETITIAN-NUTRITIONIST'S ROLE WITHIN THE LOCAL, NATIONAL AND  
INTERNATIONAL HEALTH SYSTEMS

Lecture Sequence: 2



**“ATID”: the israeli clinical dietitians organization – promoting the dietitians profession in Israel**

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“ATID” is an Israeli NGO that was founded in 1988 in order to be the official representative and professional organization of the Israeli clinical dietitians (1). ATID has 2000 members and its official goals are to improve the status of the clinical dietitians in Israel and their professionalism, and to promote the nutrition awareness and healthier lifestyle in Israel. The organization holds special professional forums to discuss new nutritional trends developments and research on different subjects such as: sports nutrition, pediatric nutrition, eating disorders, nutrition for bariatric patients, geriatric nutrition, gastroenterology, public health, nutrition aspects in industrial food, sustainable eating, etc. In order to promote the dietitian professionalism ATID is conducting state of the art courses on different subject matter such as: vegetarianism and veganism, nutrition in pregnancy and lactation, nutrition of bariatric patients, pediatric nutrition, nutrition and gastroenterological diseases, etc. ATID is promoting public health by establishing unique initiative of “a dietitian for every city” that will help the municipalities in their decisions that has nutritional aspects (2). ATID members are also serving as media commentators on nutritional affairs and disputes.

ATID was founded by clinical dietitians to answer the growing need to strengthen the sector prestige both in the governmental and public health arenas and the within the Israeli public at large. This need was intensified due to the proliferation of alternative nutrition services which has been confused with clinical nutrition expertise. In this respect ATID

was taking an active role in the decision of the health ministry in Israel do define by law the clinical dietitian profession as one of the official health professions in Israel, that demands academic education and licensing (3). In this regard, ATID focuses educating the Israeli public to distinguish between certified clinical dietitians and alternative dietitians.

ATID is therefore a unique and successful case study in which clinical dietitians took upon themselves as a sector to promote public health in Israel, to improve nutritional habits of the public and nutritional aspects of the industry, and simultaneously to improve the sector status and professionalism.

### COMPETING INTERESTS

The author states that there are no conflicts of interest in preparing the manuscript.

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NUTRITIONISTS TO MAKE A DIFFERENCE IN SOCIETY

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INTERNATIONAL HEALTH SYSTEMS

Lecture Sequence: 3



### Strategies 2015-2018 from the Swiss association of dietitians

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The SVDE is the professional association of all legally recognised nutritional advisers in Switzerland irrespective of which professional field they work in (1). In recent years, it has unfortunately become clear that it is impossible to address all the different concerns alongside each other. The executive committee therefore recommends focussing the strategic objectives on the most urgent requirements and members' concerns. We already consider some objectives significant for all nutritional advisers, irrespective of which professional field they work in; the SVDE label (2) and the working and educational standards, for example. The strategy will be revised after three years and new objectives will be set which could be of significance for other professional fields.

The strategy 2015-2018 (3) recommends setting three main strategic objectives: income, awareness and networking.

**Income:** Nutritional advisers have a fair income which increases with age and experience and sufficient work-related opportunities and jobs.

**Awareness:** Nutritional advisers are known and recognised as professional service providers specialising in nutritional advice and therapy, both in the regulated health care market (basic insurance) and in the free market (supplementary insurance schemes/self-payers).

**Networking:** Nutritional advisers have close ties with each other and strengthen one another by means of mutual recognition and appreciation as well as through the exchange of experiences and knowledge.

Various activities relating to vocational policy are required to achieve the strategic objectives. Advocacy should be used to optimise legal framework conditions in such a way that solid framework conditions are created for our profession in the long term. In order for the SVDE to be able to perform this role, it is important that all nutritional advisers work according to high standards which have to be as consistent as possible. Standards help promote this consistency, specifically educational and working standards. Last year, the education committee developed proposals for educational standards and attitudes towards basic education on the topic of "continuing professional development" and the issue of specialisation (broadening of expertise). The working standards include the already well-known code of professional ethics, the current rules of professional conduct (4) as well as EFQM (5) for monitoring process quality. The quality committee is currently considering further developments to these working standards, especially the link to NCP/IDNT (6).

### COMPETING INTERESTS

The author states that there are no conflicts of interest in preparing the manuscript.

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9 September 2016 | INTERVENTION AREA: THE POWER OF DIETITIANS  
NUTRITIONISTS TO MAKE A DIFFERENCE IN SOCIETY

ROUND TABLE: DIETITIAN-NUTRITIONIST'S ROLE WITHIN THE LOCAL, NATIONAL AND  
INTERNATIONAL HEALTH SYSTEMS

Lecture Sequence: 4



### The Swiss federal law governing the health care professions

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Since 2011, the SVDE [Swiss Association of Registered Dietitians] (1) has been involved in framing a new Swiss federal law governing the health care professions (Healthcare Occupations Act [HOA]). The current law is to be revised in order to put the health care professionals qualifying at Switzerland's "universities of applied sciences" (2) on a better footing vis-à-vis doctors, who are trained in the traditional universities. The new law encompasses the following health care professions: nurses, physiotherapists, occupational therapists, midwives and dietitians.

The aim of the law is to promote quality in the professional health care courses taught in the universities of applied sciences, at the same time as uniformly regulating the requirements governing education and professional practice in this field throughout Switzerland (2). Education in Switzerland being the responsibility of the individual cantons, harmonisation is sorely needed. In addition, the recognition of foreign qualifications will be ensured. This will be achieved by enshrining in the new law certain general professional competences, which will be the same for all the health care professions. This regulation lends transparency to the acquisition of professional qualifications and constitutes an important precondition for the recognition of foreign degrees and diplomas. The unified regulation of professional practice within the responsibility of each specialism also forms part of what is being achieved. In this respect, the law stipulates obligations such as lifelong learning and disciplinary procedures for breaches of professional standards (3).

### COMPETING INTERESTS

The author states that there are no conflicts of interest in preparing the manuscript.

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9 September 2016 | INTERVENTION AREA: THE POWER OF DIETITIANS NUTRITIONISTS TO MAKE A DIFFERENCE IN SOCIETY

ROUND TABLE: DIETITIAN-NUTRITIONISTS IN POPULATION CARE ON DIETETICS

Lecture Sequence: 1



### Dietetic Practice for Pre-diabetes/Metabolic Syndrome in Primary Care

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As the prevalence of obesity has increased worldwide, approximately one in three adults who are overweight or obese exhibit metabolic derangements (including metabolic syndrome) that put them at increased risk of type 2 diabetes (T2D), cardiovascular diseases, and some cancers. Studies in several countries, notably Finland, USA, Australia, Canada and Spain have confirmed that structured lifestyle programs to alter diet and/or increase physical activity result in clinically relevant reductions (40-50%) in the incidence of diabetes. National guidelines groups are recommending identification of this high risk group for lifestyle counselling services, and dietitians are involved in the diet aspects of the interventions. Implementation of relevant dietetic services in different health systems is challenging, however, and is occurring at different rates in various countries (1).

I will discuss my and others' work to address this topic in Canada. I have been personally involved in three initiatives, including the development of practice guidelines for prevention services in primary care as a member of the Canadian Task Force on Preventive Health Care (CTFPHC). I chaired the working group on guidelines to address adult obesity in primary care (2). Secondly, my colleagues and I developed an obesity services planning framework for primary care organizations, based on a scoping review and consensus process, which could inform development of new and expanded services (submitted). Finally, we have been involved in implementing individualized diet counselling for metabolic syndrome in a demonstration project of 300 patients at 3 centres across Canada (3) and have

collected detailed data on dietetic practice for food behaviour change and counselling strategies.

This is an emerging area of practice for clinical and community dietitians. Programs to date have varied quite widely and it would be helpful to share ideas for improving implementation and sustainability across health systems. This state of the evidence and practice review is the first step to developing a community of practice for new strategies to implement effective dietetic services for diabetes and cardiovascular disease prevention.

### COMPETING INTERESTS

The author states that there are no conflicts of interest in preparing the manuscript.

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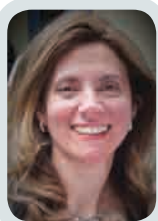


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ROUND TABLE: DIETITIAN-NUTRITIONISTS IN POPULATION CARE ON DIETETICS

Lecture Sequence: 2



### The Financial Crisis in Greece, its Effect on the Field of Dietetics and on its Citizen's Nutrition

**Maria-Despina Varaklas\***

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Financial Crisis is a term that all of us have been hearing and become familiar with the past years, and Greece is perhaps one of those countries that has been struck most by it, while its citizens are living new circumstances not known to them before.

The Greek culture is one in which Food and Nutrition are terms long before analyzed, studied, evaluated, have been used for different occasions and purposes, with a rich history and a key role in the everyday life of its people. The crisis though, seems to have effected this domain as well, but the Greek people's reaction proves how much they value this domain and understand its importance in their lives, their culture, and livelihood (1,2).

By 2010 it was obvious that the financial crisis was starting to effect this serious domain. The way people shopped for food, the choices they made, the efforts to maintain quality in food were all effected. The first statistics through a simple questionnaire were gathered in late 2011 and early 2012 which were presented in Italy in the Diabetes Education Study group meeting of the European Association for the Study of Diabetes. The crisis had begun to effect food choices and make its appearance on the plate. People starting to look for cheaper products but still demanding and wanting to keep high quality. The same questionnaire is being repeated this year, 2016.

So how did the crisis effect that? How did people react? And how do they confront the situation? Yes, the crisis seems to effect the people's health in general, and the effected level and

quality of food consumption is one aspect that unfortunately contributed to that.

A couple of years later statistics show that a serious threat are the young citizens of the country who are effected. The healthcare system is alert to threatening situations, and dietitians begin to play a key role in supporting the efforts.

Several factors though do seem to work to the benefit of the Greek citizens. The Mediterranean diet, homemade cooking, and the extended family seem to save the day.

Statistics have fluctuated in the past 5 years, but efforts are continuous, and the fight to diminish and exterminate cases of "no food on the table" is collective and tremendous. The importance and need for "sustainable nutrition" is very real and very close to home (3).

### COMPETING INTERESTS

I hereby declare that none of the work or its results were funded by any institution (pharmaceutical company, association, organization, university, or any other body), that would be given the right to have any conflict of interest with the above work.

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NUTRITIONISTS TO MAKE A DIFFERENCE IN SOCIETY

ROUND TABLE: DIETITIAN-NUTRITIONISTS IN POPULATION CARE ON DIETETICS

Lecture Sequence: 3



### Effect of very early parent training on feeding interaction and infant eating habits at 12 months

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**Background:** Raising a healthy child with healthy eating patterns in today's Western world is challenging to parents and caregivers (1). Developing positive feeding relationship between mother and child, by identifying the baby needs and responding to them with an appropriate response, may affect the infant's future eating patterns and the attitude towards food. Furthermore, unintentional parent feeding mistakes and undesirable behaviours may interfere with the infant's natural ability to regulate inner cues of hunger and satiety, which may lead to the internalization of external rather than internal cues, thereby possibly resulting in disordered eating pathology and obesity (2,3).

**Study Aim:** The reported study examined whether professional behavioural and nutritional training for first-time mothers can improve feeding relationships and infant eating habits at age 12 months.

**Methods:** Participants were 128 mother-infant dyads: 86 in the intervention group (IG) and 42 controls. Mother's' age was M=30 years (+2.6), with M=16 (+2.2) years of education. IG received four weekly workshops when infants were 4-6 months old, followed by continued internet-based support of a pediatric dietician and social worker until infants reached 12 months. Control group received municipal well-baby clinic's standard mother-infant support. Blinded coders evaluated videotaped home mealtime interactions (at age 12 months) using Chatoor Feeding Scale (CFS) (4).

**Results:** Significant inter-group differences emerged in mealtime interactions for four of the five CFS dimensions: dyadic conflict (IG=4.69 vs. control=8.38), talk and distraction (3.75 vs. 4.90), struggle for control (2.30 vs. 4.88), and maternal non-contingency (1.61 vs. 2.75). Findings indicated significantly more positive mother-infant mealtime interactions and maternal responses to infant cues in the IG than in controls. Written report by caregivers also indicated lower use of sweet drinks and sweets in the IG compared to control group.

**Conclusions:** Very early maternal training may support development of more positive mother-infant feeding interactions. This may contribute to preserved internal hunger and satiety, improved eating habits, and prevention of future eating disorders and obesity. Long-term follow-up may optimize training for specific target populations.

### COMPETING INTERESTS

The authors state that there are no conflicts of interest in preparing the manuscript.

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ROUND TABLE: DIETITIAN-NUTRITIONISTS IN POPULATION CARE ON DIETETICS

Lecture Sequence: 4



### The WWYP Approach, a new Approach in Patient Motivation in Disease Management

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It takes more than narrating pathology and physiology or mentioning the pros and cons of a specific treatment, in order to get patients more involved in disease management.

Many theories and approaches have been used in the past four decades, to facilitate the disease management process. We begin by seeing the traditional Patient Education (1,2), which aimed to put the basics of teaching patients about their disease, thus making them part of the disease management process. A different application like Patient Empowerment (3), helps the patient feel more involved through empowerment processes. Other systems, like Lean or Planetree, teach how to organize a system of work so as to dedicate more time and attention to the patient. All these systems have made important steps forward, but still patients are not fully motivated and willing to get involved in managing their own disease (4).

So the question that has puzzled Health Educators is "what more could be done with the patient?", until this author thought that perhaps the real question ought to be "What more could be done with the Health Care Provider (HCP)? and not the patient".

The WWYP Approach, The Work With Yourself, Work With Your Patient was developed by this author in 2009 to give insight into the HCP perspective first, in order to motivate the patient. It is an approach that seems to significantly increase patient

motivation, but more importantly it gives an insight into *how* to motivate a patient. Self-knowledge and self-assessment are a pre-requirement in this approach.

Most patient Education approaches that exist, begin by looking at the healthcare system in general, work by improving what is around the patient and slowly moving toward the patient awaiting for better results. The WWYP approach works the opposite way. It works from the inside out. We begin with the patient. The WWYP approach focuses mainly on a one to one relationship, patient and Healthcare provider. This relationship needs to be the primary relationship.

The WWYP approach helps not only communication and relations with the patients, but also communication and relations amongst the HCPs themselves. This means that patient centeredness is automatically a much easier and much faster task to accomplish. The WWYP approach aims to change the way the medical society relates itself to the patient, and also aims to contribute strongly to a more human centered care.

Until now, the perception was that the HCPs needed to level with patients and come closer to them so as to be able to help them the most; the WWYP approach goes a step further by saying that we cannot come close enough to a patient as long as we see ourselves within the frame of the HCP, and the patients within the frame of the Patient. This approach brings

both HCP and patient into the same frame – the frame of the “Human”, which by no means demeans or eliminates the professional status of the HCP.

In other words, it is necessary to see the “human” inside of the HCP first, in order to be able to see the “human” patient. It is this point that turns a patient from a regular patient into a motivated patient.

The WWYP approach is “Human” oriented and not “Disease” oriented.

We also know that several steps ought to be taken in order to achieve a final step: ‘motivation’. The WWYP approach sees the opposite picture; ‘motivation’ is one of the *first* steps required. It is a pre-requirement in order for the patient to “want” to go through the process of education. Only a motivated and a motivational HCP can take the patient through the process of motivation.

The WWYP approach has not only knowledge, communication, and behavior as its basic components but much more. It uses very interactive exercises for both HCPs and patients, training them how to turn the mirror on themselves first, in order to reach a change in behavior willingly. A trained HCP in the WWYP Approach can train and facilitate the patients to reach the highest levels of their performance no matter what those are.

(Figures from the first workshop will be presented during the presentation).

More than 5000 people have been introduced to this approach through presentations, and more than 450 people attended at least one full workshop. More than 25 workshops have taken

place with participants ranging from 15 to 30 in number. Specific, titled, and timed exercises carry the participants into the process of realization.

More than 80% of the HCPs who attended a workshop affirmed that they were able to apprehend the patient better after the workshop, while 33% of them would like to be trained further.

Workshops are continuous and there is need for further work and more statistics.

## COMPETING INTERESTS

I hereby declare that none of the work or its results were funded by any institution (pharmaceutical company, association, organization, university, or any other body), that would be given the right to have any conflict of interest with the above work.

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## CONFERENCE PROCEEDINGS

9 September 2016 | INTERVENTION AREA: WORLDWIDE IMPACT OF DIETETIC PRACTICING. DIETITIAN-NUTRITIONIST IS KEY

### SHORT LECTURE



### Macro and Micronutrients in Plant-based Diets

Vesanto Melina\*

Macro and Micronutrients in Plant-based Diets

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This presentation provides an overview of key nutrients of interest to dietitians and other health professionals who have clients or patients on near-vegetarian, vegetarian, vegan, and raw food diets. It focuses on the aspects of protein, fat, carbohydrate, vitamin, and mineral nutrition that deserve special attention.

It covers the shift in perspective over the past 60 years in our understanding of plant protein requirements for humans. It will provide an update on the concept of protein complementation, and the evaluation of protein quality. It addresses the different challenges in meeting needs for protein and other nutrients faced by those in developed and in developing countries.

When it comes to fats and carbohydrates, the issues for vegetarians are different from those for non-vegetarians. Saturated fats, cholesterol, and trans fats tend not to be problematic, whereas the intakes and balance of essential fats are of considerable interest. Here we will review the sources of essential fatty acids for those on plant-based diets, as well as current research on requirements and optimal intakes. We also will consider high fat diets (such as those followed by some raw foods enthusiasts) and low fat vegan diets, often used for therapeutic purposes.

When it comes to the third macronutrient, carbohydrates, vegetarians typically consume more of the “good” carbohydrates found in legumes, whole grains, vegetables, and fruits, and less of the refined carbohydrates. This results in abundant fiber intakes. We will mention dietary and food preparation solutions to concerns about flatulence. We will take note of the hierarchy of whole grains and whole grain

products, with comments regarding impact on blood glucose levels. Carbohydrate intakes can be somewhat low on raw vegan diets.

Vesanto will summarize the research related to intakes, food sources, and recommendations for the minerals iron, zinc, calcium, and iodine, specific to those on plant-based diets. This includes understanding of the issues that limit mineral absorption from plant foods (such as phytates and oxalates), as well as food preparation practices used by many on plant-based diets that optimize mineral absorption. She will cover status of vegetarians, vegans, and those on raw food diets with regard to iron. Dietary sources of calcium go far beyond dairy products, and these will be presented, along with bioavailability. Due to food choices, iodine intakes may be insufficient for some vegans.

In many countries, iodization of table salt is mandatory, although this is not the case in the United States and Great Britain. Some choosing plant-based diets avoid iodized salt; other options (reliable and unreliable) are reviewed.

Whereas many vitamins are abundant in plant-based diets, a few are of primary importance, when working with clients whose diets are entirely or mainly plant-based.

Studies consistently show vitamin B<sub>12</sub> deficiency when diets do not include supplements or fortified foods. Deficiency rates are low in some studies of vegetarians, very high in others. Fortification practices vary considerable from one country to another, as do common practices regarding supplement use. Sources of vitamin B<sub>12</sub> that are acceptable to those

on lacto-ovo-vegetarian, vegan, and raw food diets are summarized. Laboratory indicators of vitamin B<sub>12</sub> status are discussed, as well as deficiency symptoms. Optimal intakes will be discussed.

Vitamin D is of considerable interest to those on any diet, including those that are plant-based. Vesanto will review research on vitamin D status, as well as recommended intakes and acceptable sources for this nutrient: dietary, supplemental, and based on skin exposure at various latitudes.

Vegetarian and vegan food guides will be reviewed, showing several different models. A variety of nutritionally adequate days' menus, that are plant-based, will be shown.

This presentation will give an overview of resources, including those that are free and online, that can assist dietitians, other health professionals, and their clients and patients, in achieving optimal diets. These will be beneficial for individuals who are moving towards plant-based diets, and those anywhere on the spectrum between near-vegetarian and entirely vegan or raw.

Vesanto will help the Registered Dietitian Nutritionist and other health professionals navigate the world of vegetarian nutrition, using evidence-based practice and a sound background of science. This presentation is visually appealing, as well as being comprehensive, lively, and informative.

## COMPETING INTERESTS

I am an author of food and nutrition books with publishers Harper Collins, John Wiley and Sons, McGraw-Hill, and The Book Publishing Co. No other conflict of interest.

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9 September 2016 | INTERVENTION AREA: RESEARCH, DEVELOPMENT AND INNOVATION IN DIETETICS

### SHORT LECTURE



### Taste education and food sensory approach: a challenging pedagogy for Health education in dietitians' training

Evelyne Orsat\*, Sophie Bucher Della Torre, Xavier Marsault, Jocelyne Depeyre, Ludivine Soguel Alexander

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In this session, we propose to define sensory approach, to explore its application with social and healthy purposes and to present an example of integration in the educational curricula of future dietitians in Switzerland.

Consistent with the "learning by doing" principle, we plan to include an interactive workshop with sensory activities in this session.

Human food preferences are a strong determinant of eating behaviours (1). Individual food habits may affect everyone's health and lead to extreme thinness, overweight or illness. With an alarming prevalence of obesity worldwide (2), and in a general context of food related disorders, sensory approach appears as an attractive complement to traditional dietary education. In Europe, several programs as "Les classes du goût", "SAPERÉ" A.I.S.B.L., "EPODE", "Senso5", are based on a sensory approach, with the ultimate goal to develop healthy food patterns or to increase food variety. More generally, this approach may be used with healthy populations or patients of all ages.

In sensory approach, it's currently accepted that a food has no taste by itself. Food taste is rather the expression of sensitive perceptions when sapid molecules meet sensitive receptors of the eater. The goal of sensory education is that every child, adult or elderly people acquire the consciousness or their perceptions. By focusing attention on their senses, eaters will discover another dimension of tasted foods. This process should involve an active participation and develop food curiosity. Sensory education appears to positively impact willingness to taste novel food in children (3,4). However

few studies have evaluated the long term effects of sensory approaches programs, leaving opportunities for dietitians to develop project in that field.

Sensory approaches appear as an additional and complementary tool for dietitians to promote healthy eating. However, their use and implementation at a professional level require a detailed training based on a specific pedagogy. Since 2006, the Nutrition and Dietetics Department of University of Applied Sciences and Art, Western Switzerland, has formally included sensory approaches skills in the Bachelor program. Currently, the training program is structured around two main areas: sensory education and sensory analysis. At the theoretical level, students learn about: the physiology of 5 senses, sensory structuring, changing tastes according to age or disease or drugs, engineering in sensory education training and sensory analysis. They develop skills and competences required for a professional practice of sensory approaches through practical workshop. More specifically, at the end of their education, future dietitians are able to: master vocabulary, implement tasting protocols, create sensory awareness program, manage sensory analysis techniques, and train other professionals in sensory approach. In terms of training engineering, this transversal approach has been integrated in modules such as "Human Nutrition", "Public Health", "Therapeutic Education", "Food Science and Technology", included in lectures, workshops and practice.

To integrate sensory approach effectively in food education, a step of personal experimentation is essential. This allows students to further analyse their own sensory perceptions and awareness of individual differences. The sensory approach

encourages the eater to expand his food repertory, to listen to his own perceptions and to understand those of the others. The sensory approach leads the consumer to become aware of his behaviour towards food and to integrate an attitude of understanding of pleasure or displeasure around food and dishes. With sensory education and analysis, foods are not labelled as "good or bad" for health, but more emphasis is given to sensorial perceptions and emotional reaction while eating.

In conclusion, dietitians have to develop specific skills to integrate sensory approach in their practice and formally to evaluate the impact of interventions through research.

## COMPETING INTERESTS

The authors state that there are no conflicts of interest in preparing the manuscript.

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## CONFERENCE PROCEEDINGS

9 September 2016 | INTERVENTION AREA: RESEARCH, DEVELOPMENT AND INNOVATION IN DIETETICS

### SHORT LECTURE



### Creating transparency in results of dietetic treatment

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HAN University of Applied Sciences, associate professor Nutrition and Health, Netherlands.

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**Introduction:** Transparency in outcomes of dietetic treatment in everyday practice is more and more becoming a prerequisite for dietitians' performance (1). Standardized collection of data is necessary to investigate the effects of dietetic treatment. This creates transparency which gives clients the ability to choose the best health care professional and may increase referrals from other health care professionals. Furthermore, it can be used for quality purposes and for obtaining funding from health insurance companies. However, the majority of treatment outcomes in every day's practice is not uniformly registered. Consensus on a minimum set of treatment outcomes that should be collected by dietitians within a certain client group might be a first step to retrieve these standardized data. The aim of this study was to reach consensus on a minimum set of treatment goals in dietetic treatment for patients with cardiovascular disease. We therefore investigated which treatment goals, selected from the International Classification of Functioning, Disability and Health (ICF)-codes (2), should be evaluated, which methods should be used to evaluate these goals and at what frequency.

**Method:** We used a modified Delphi-technique (3) consisting of five rounds. Participants (N=14) were dietitians selected because of their expertise in cardiovascular risk management, quality control in dietetics or research. The first round was a face to face meeting, in which participants were to discuss the relevance of treatment goals, selected from the International Classification of Functioning, Disability and Health (ICF)-codes (2), in cardiovascular disease. In the following four questionnaire rounds, relevant goals were to be selected and prioritized and methods and frequencies to be determined. A discussion by

email was used in between questionnaire rounds, to further explore ideas about methods and frequencies for evaluation of selected goals.

The questionnaires contained statements about treatment goals and methods and frequencies to evaluate goals. Participants were asked to indicate if they thought a goal was important to evaluate in patients with cardiovascular disease on 5-point Likert scale, ranging from no agreement at all to full agreement. In addition, they were asked to indicate how and when these goals should be evaluated. Mean scores per statement were calculated. Mean scores of a statement >4 and 95% confidence interval >3 were considered as consensus on the statement.

**Results:** After the first questionnaire, eight out of 66 possible treatment goals were considered most important in cardiovascular risk management. Participants prioritized these goals in the second round, which resulted in consensus on the most important goals: decreasing waist circumference, increasing quality of life, and the capability of clients to incorporate the dietetic advice into daily life. As the third questionnaire did not reach consensus on methods and frequencies to evaluate these goals, a discussion by email was performed to develop the last questionnaire. Results from this questionnaire indicated consensus on the goals and on methods and frequencies to evaluate these goals.

**Conclusion:** The minimum set of treatment goals for dietetic treatment of clients with cardiovascular disease consists of decreasing waist circumference, increasing quality of life, and the

capability of clients to incorporate the dietetic advice into daily life. Consensus was also reached on the method and frequency of collecting these goals. Whether these goals and suggested ways of measurements are applicable in every-day practice will be studied from October 2015-2017. In that study, we will investigate how the data could be collected, which barriers dietitians may experience in collection and registration of these data and how these obstacles may be overcome. The aim of that study is to develop a tool that will facilitate recording of treatment goals in daily dietetic practice to obtain data to show results of dietetic treatment.

## COMPETING INTERESTS

The authors state that there are no conflicts of interest in preparing the manuscript.

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### CONFERENCE PROCEEDINGS

9 September 2016 | INTERVENTION AREA: MULTICULTURALISM OF A GLOBAL SOCIETY

#### SHORT LECTURE



### You are the change – the woman's body as a sustainable system

**Mor Duani\***

Private clinic with integrative therapy that includes nutrition

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Sustainability is the ability to maintain a certain process or situation over time. In a sustainable system, the biological balance, its diversity and its fertility, are maintained for a very long time.

If we look at the female body as a microcosmos, we can imagine that a woman has within her the whole world and all times, past, present and future. It is certain that women (females) have the responsibility for the continuity of existence, reproduction, feeding and care.

This cannot be enough, because, in order to keep the world existing, the female body must keep functioning at its best in a healthy, productive, balanced and happy way.

What can be possible to reach that?

What would it take for the woman's body to be all that?

Of course the answer is found in different layers: the physiological aspect, the psychological aspect and also in the launch points between those two.

At the physical level, it would be interesting to find out "How to take better care of your body" in order to live better and thus influence the world... and also, "what is the influence of the modern society on the existence of fat in a woman's body?"

What is the relationship between the idea of the "woman's perfect body" and the body's composition and function?

What is the role of the woman's body fat?

What would allow the maximum cooperation between the input and output to the brain comes from the limbs and back, to get good female organism functioning model?

Does the existence of a sustainable body of a woman, actually can become possible, only by the love of the woman to herself, her body, its dimensions and its surroundings and life?

Let's allow the women build for themselves, a deep inside, in their skin, in their body and then take responsibility for their life, their body, the harmony in their lives, perhaps there exists the solution to the continued existence of the better on the ground.

In summary, the "Earth convention" speaks of sustainability, which is "sustainable global society" founded on respect for nature, human rights, economic, justice and a culture of peace.

How is it possible to look at those elements of the "Convention" in the relationship between women and their bodies in one side, and women and the society, nature and the world, in the other side.

Therefore, all of that fit the idea of referring to the feminine body as a sustainable system, enabling continued healthy life.

#### COMPETING INTERESTS

The author states that there are no conflicts of interest in preparing the manuscript.

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### CONFERENCE PROCEEDINGS

9 September 2016 | INTERVENTION AREA: MULTICULTURALISM OF A GLOBAL SOCIETY

#### SHORT LECTURE



#### HORECA channel and food sustainability: ALICIA Foundation vision and actions

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The presentation will develop around the projects involving sustainability as a whole: from the repercussion on health to the environmental and economic development. Different projects from Fundació Alícia will be explained to reflect the vision mentioned: a guide to reduce food waste in the HORECA channel, a recipe book focused on health taking into account low income chances: ¡Tú ahorras, tú ganas!, a recovery strategy developed for a local Catalan region (*Pallars Jussà*) involving local producers and restaurants and focusing on valuing traditional food and cooking, etc.

The main project explained will be "*Benvinguts a Pagès*" which literally means: welcome to the farm. This project developed during 2016 is organized with the support and funding of the Catalan Government. The main aim of the project is to raise awareness around the local alimentary production and does so by suggesting a weekend visit to a farm for all the families and foodies interested in doing so. The participation program includes the Catalan territory, involving more than 180 farms. Around 200 restaurants and 200 accommodation sites are also included in the project with the idea of promoting a whole weekend visit. Previous work was done to encourage relation between farmers and restaurants, the objective was that restaurants would offer a menu based on local products during the whole weekend. The two days visit would consist in one or several free visits to the farm, a lunch and/or dinner in a restaurant that offered local products in the menu, and a night in one of the accommodation sites. All the information can be consulted in the web pages as follows [benvingutsapages.cat](http://benvingutsapages.cat)

The results this year (17<sup>th</sup>-19<sup>th</sup> June) are being really positive with more than 12500 visits done. The aim is to continue the movement and repeat this weekend action each year. Obviously the determination is not only the occupation the weekend in itself but to visualize, the whole year, the fact that food comes (is cultivated, grown and elaborated) near where it is sold and consumed. It is seen that consumers tend to value products if they know, first hand, their origin and restaurants are one of the principal prescribers of local food.

#### COMPETING INTERESTS

The author states that there are no conflicts of interest in preparing the manuscript.



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9 September 2016 | INTERVENTION AREA: WORLDWIDE IMPACT OF DIETETIC PRACTICING. DIETITIAN-NUTRITIONIST IS KEY

ROUND TABLE: WORLDWIDE IMPACT OF DIETETIC PRACTICING. DIETITIAN-NUTRITIONIST IS KEY. DEVELOPMENT AND IMPLEMENTATION OF NUTRITIONAL SCREENING

Lecture Sequence: 1



#### Culture of Nutrition, in a Canadian Acute Care Hospital Environment

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What does a Culture of Nutrition mean to you? What does a Culture of Nutrition mean in your organization: to your employees; to your patients?

As we integrate dietitians into the social and cultural health environment of an acute care hospital, their expertise in science and technology enables them to create a Culture of Nutrition for patients and employees (1-3).

This presentation will highlight areas where we as dietitians are creating a Culture of Nutrition:

1. Where professional practices around patient nutrition is an organization-wide employee philosophy and priority to enhance patient and family centered care, through:
  - Engagement of stakeholder groups within the organization;
  - Doing research on stakeholder preparedness to change to a different meal delivery system;
  - Incorporating sustainable mega-trend technology to support evidence-based practice, by use of a personal meal-choice bed-side-order-entry model;
  - Additional research in assessing and evaluation of nutrition risk prevalence;
  - Evaluating and implementing new process improvement initiatives to enhance the patient experience.
2. With a dietitian-led wellness-focused philosophy around food, to include strategies and policies in the professional

environment, and to promote healthy lifestyle behaviours, by:

- Engagement of stakeholders who are impacted by any change regarding food in their work environment;
- Partnering with local farmers, vendors and suppliers, and community groups to support and steer the philosophy;
- Demonstrating commitment to health and wellness in the work environment with food choice and activities;
- Making positive changes to effectively support a healthy food system while being a community leader in wellness initiatives.

#### COMPETING INTERESTS

The authors state that there are no conflicts of interest in preparing the manuscript.

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Lecture Sequence: 2



#### Introducing the Integrated Nutrition Pathway for Acute Care (INPAC): principles for improved nutrition care practice in hospital

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Malnutrition is common in acute care patients. It is estimated that up to 1 in 2 patients admitted to medical or surgical units is malnourished (1). As well, well-nourished patients during their admission can become malnourished due to poor quality mealtime practices, poor food intake, worsening condition and avoidance of food for tests and procedures (2,3). This malnutrition and poor food intake are costly to the health care system, and likely contributes to the increased frailty noted at discharge. Upon returning to the community, if nutritional gains are not achieved, continued poor nutrition can lead to further morbidity and increased health care utilization. Current processes for consulting a dietitian to assess and provide appropriate nutritional treatments are ad hoc and inefficient resulting in almost three-quarters of malnourished patients being missed (4). The Integrated Nutrition Pathway for Acute Care (INPAC) is a potential solution to break this cycle and positions the dietitian as a key change agent for improved care practices across the interprofessional team (5). INPAC ensures that the nutrition care needs of all patients are met, through Standard, Advanced and Specialized Nutrition Care activities. The role of the dietitian is also modified through using their advanced skills to confirm malnutrition after admission screening has identified nutrition risk and to triage these malnourished patients for detailed assessments and individualized treatments. INPAC is an evidence-based

guideline that was developed using consensus methods. It is currently being implemented in five Canadian hospitals and developmental and formative evaluation is being undertaken.

#### COMPETING INTERESTS

The author states that there are no conflicts of interest in preparing the manuscript.

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9 September 2016 | INTERVENTION AREA: WORLDWIDE IMPACT OF DIETETIC PRACTICING. DIETITIAN-NUTRITIONIST IS KEY

ROUND TABLE: WORLDWIDE IMPACT OF DIETETIC PRACTICING. DIETITIAN-NUTRITIONIST IS KEY. DEVELOPMENT AND IMPLEMENTATION OF NUTRITIONAL SCREENING

Lecture Sequence: 3



### Lost in (Knowledge) Translation: Experiences implementing evidence in critical care nutrition

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**Background:** The observation of significant and persisting gaps between research findings and clinical practice is a common in clinical and health service research, including dietetics. It is estimated that 35-55% of patients are not receiving care according to scientific evidence, and it takes 1 to 2 decades for research findings to be incorporated into routine practice. The Knowledge-to-Action model was developed by Graham *et al.* to better understand the complex process of closing the evidence-practice gap (1). It includes a knowledge creation component consisting of 3 phases: 1) knowledge inquiry (e.g. randomized controlled trials); 2) knowledge synthesis (e.g. meta-analyses); and 3) knowledge tools/products (e.g. Clinical Practice Guidelines (CPGs), and an action cycle. The 7 steps of the action cycle are: 1) identify the problem and/or review and select the knowledge to be implemented; 2) adapt knowledge to the local context; 3) assess barriers to knowledge use; 4) select, tailor and implement an intervention; 5) monitor knowledge use; 6) evaluate outcomes; and 7) sustain knowledge use. I will use my own experiences in critical care nutrition as an illustrative example of how this Knowledge-to-Action model can be operationalized in the 'real world'. However, the steps and strategies described during the oral presentation can be applied to any clinical setting or patient population.

**Learning Objectives:** At the end of the oral presentation the attendees will be able to:

1. To define Clinical Practice Guidelines and evaluate their quality.
2. To describe the steps of the audit cycle.
3. To identify common barriers to implementing nutrition guidelines.
4. To identify 3 strategies that can be adopted to implement new evidence in their own work setting.

**Clinical Practice Guidelines:** Clinical Practice Guidelines (CPGs) are systematically developed statements to assist practitioner and patient decisions about appropriate health care for specific clinical circumstances. The Canadian Critical Care Nutrition Clinical Practice Guidelines (CCPGs) were first published in 2003 and most recently updated in 2013 (2). The multidisciplinary guideline development committee adopted a rigorous approach to systematically review 300 randomized trials and conduct meta-analyses on 45 different nutrition topics to provide recommendations on how to optimally feed critically ill adult patients.

**Auditing Practice:** Following the publication of CPGs, the first step is to identify if an evidence-practice gap exists by measuring the degree to which current practice is compliant with or deviates from the guideline recommendations. In the hospital setting, chart audits involving review and assessment of documented care in a patients' medical record are frequently used. Since 2007, bi-annual international audits of nutrition practices in ICUs known as the 'International Nutrition Survey' have been conducted (3). This quality improvement initiative offers an opportunity for critical care practitioners to compare their nutrition practices to guideline recommendations and other ICUs, thereby identifying problems that need addressing. However, prior to developing an intervention, the barriers that may potentially hinder the proposed changes in practice must first be identified.

**Assessing Barriers:** To better understand the barriers to adhering to CPGs in general and the CCPGs specifically, a mixed methods study was conducted in 4 ICUs in Canada, the analysis resulted in the development of a framework which proposes that barriers can be categorized into five thematic domains, namely 1) Guideline factors (e.g. underlying evidence), 2) Implementation Process, 3) Characteristics of the health system, hospital, and clinical team, 4) Provider attitudes and beliefs and 5) Patient factors (e.g. underlying disease, nutritional status) (4). To extend its practical application, this framework was used as a template to develop a 28 item questionnaire to assess barriers to the provision of feeding in the ICU and has subsequently been utilized in numerous studies and translated into several languages (5).

**Tailored Interventions:** The purpose of conducting such barrier assessments is to inform the selection of strategies to address them so called tailored interventions. A Cochrane systematic review of tailored interventions concluded that there is evidence to support the effectiveness of this approach (6). However, given the complexity of the tailoring methodology, the PERformance Enhancement of the Canadian nutrition guidelines by a Tailored Implementation Strategy (PERFECTIS) study was conducted to evaluate if a tailored intervention is feasible for nutrition guidelines in the critical care setting (7). Although this study was not powered to evaluate differences in outcomes, a statistically significant decrease in overall barriers, and a non-significant increase in the proportion of prescribed calories received following implementation of the tailored intervention was observed.

**Conclusion:** Auditing nutrition practice, imbedding guideline recommendations in the local system, barriers assessments, and tailoring interventions to identified barriers are key to effectively closing the evidence-practice gap in dietetics. Ensuring that the success of these KT efforts is sustained over time requires updating CPGs and re-auditing nutrition practice, the results of which can inform whether further changes are required; and thus the cycle of improvement continues.

## COMPETING INTERESTS

The authors state that there are no conflicts of interest in preparing the manuscript.

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9 September 2016 | INTERVENTION AREA: WORLDWIDE IMPACT OF DIETETIC PRACTICING. DIETITIAN-NUTRITIONIST IS KEY

ROUND TABLE: WORLDWIDE IMPACT OF DIETETIC PRACTICING. DIETITIAN-NUTRITIONIST IS KEY. DEVELOPMENT AND IMPLEMENTATION OF NUTRITIONAL SCREENING

Lecture Sequence: 4



#### National Assessment of dietary care process in France

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**Aim:** Quality, the highest possible level of client satisfaction (1), is an imperative professional target. Today, recommendations regarding clinical practice are numerous and well disseminated (2). However, only a formalized, routine approach to auditing and self-assessment can allow individual professionals to confront their actual practices to best practices.

**Method:** A questionnaire comprising 38 questions was sent out to all dietitians who carry out dietetic consultations with adult patients. It was based on the quality criteria (3) for assessment and improvement for professional practices, elaborated in collaboration with the High Authority of Health for the guidelines "Dietary consultation with a dietician" (4). The collected data were put on the association's website.

**Results:** 712 dietitians responded to the questionnaire, 38% of whom are self-employed and 62% work in a hospital setting. Independent of the activity type, the nature of the nutritional issue (82%) and the relevant data for the formulation of a dietetic diagnosis (97%) are tracked. In the self-employed sector, the traceability and assessment of the care plan are higher (75-62% vs. 34-25%), however inter professional communication is lower (9% vs. 47%).

**Conclusion:** These results highlight both the divergence between actual practices and best practices as well as differences related to practice settings. This assessment helps identify avenues for improvement for all professionals, with some arrangements depending on the type of practice.

#### COMPETING INTERESTS

The authors state that there are no conflicts of interest in preparing the manuscript.

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## CONFERENCE PROCEEDINGS

9 September 2016 | INTERVENTION AREA: EQUITY AND PROFESSIONAL ETHICS  
WITHIN THE DIETETIC PROFESSIONAL

ROUND TABLE: FOOD SECURITY. "FOOD DESERTS" IN HUMAN ENVIRONMENTS  
WITH DIFFERENT SOCIOECONOMIC SITUATIONS

Lecture Sequence: 1



### Sustainable approaches to food security in remote indigenous communities in Manitoba, Canada

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**Goal:** To promote understanding of the complexities and considerations involved in implementing sustainable food security programs in remote indigenous communities.

**Background:** The Canadian province of Manitoba is situated in the longitudinal centre of Canada. Most of Manitoba's population is clustered in the bottom quarter of the province. The remaining three quarters of Manitoba's land mass, located north of the 52<sup>nd</sup> parallel, is sparsely inhabited with only 80,000 people mostly residing in remote towns and villages. While some of these communities can be accessed through the road system, thirty-one communities in Northern Manitoba can only be accessed by boat or plane for most of the year. For these communities a lack of all-weather road access means that food is very expensive due to transportation costs, perishability and limited retail options (1). The prices for healthy perishable foods such as milk, fruits and vegetables, can be up to three times higher than prices paid in urban centres. For example, a 4 litre carton of milk would cost approximately \$4.69 in Winnipeg (the capital city of Manitoba), yet it costs \$15.49 in the remote northern community of Tadoule Lake. High milk and produce prices have a negative effect on consumption, resulting in poorer diets and contributing to health problems including obesity and diabetes, which are reaching epidemic proportions in some remote Indigenous communities (2). Food insecurity

rates in remote communities are extremely high, ranging from 47-100%, with the highest rates being found in non-road access communities (3). In addition to logistical issues of food supply, there are deep-rooted cultural and political dimensions to food security in these communities. Colonial attitudes and practices disrupted traditional aboriginal ways, including food systems based on hunting, fishing, gathering and traditional agriculture (4). One result was a growing reliance on foods purchased from the market supply. As a consequence, food preferences change, leading to the adoption of characteristic southern dietary habits, including sugar-sweetened soft drinks, and snack foods high in fat, sugar and salt (5).

In response to this situation, several Government and grass roots programs have been implemented in Manitoba.

This session will explore the complexities and considerations involved in implementing sustainable food security programs in remote indigenous communities. In this session we will explore the challenges and barriers involved in conceptualizing and implementing food security programs in remote and Indigenous communities, highlighting the importance of community engagement and capacity building. We will walk the audience through important considerations for designing and implementing sustainable food security programs



and policies; discuss insights gained and lessons learned; and explain strategies on how to approach and involve key stakeholders throughout the process.

As an outcome of this session the audience will better understand:

1. The complexities and challenges involved with food security policy and program implementation.
2. The need for culturally appropriate approaches to food security.
3. The importance of community engagement for directing program design and implementation.

## COMPETING INTERESTS

The authors state that there are no conflicts of interest in preparing the manuscript.

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## CONFERENCE PROCEEDINGS

9 September 2016 | INTERVENTION AREA: EQUITY AND PROFESSIONAL ETHICS  
WITHIN THE DIETETIC PROFESSIONAL

ROUND TABLE: FOOD SECURITY. "FOOD DESERTS" IN HUMAN ENVIRONMENTS  
WITH DIFFERENT SOCIOECONOMIC SITUATIONS

Lecture Sequence: 2



### Harvesting Change: How Three Canadian Registered Dietitians Increased Produce Availability in Remote Communities

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Two Canadian registered dietitians promoted constructive change in 24 of British Columbia, Canada's most vulnerable communities by directing a unique, award-winning initiative to improve the quality and quantity of available vegetables and fruit. These communities face socio-economic challenges, and by virtue of being remote, are also the hardest to reach. A large percentage of the population in these communities are indigenous people.

In remote communities, fresh vegetables and fruit can be hard to find. Geographical barriers to having fresh, good quality produce in these isolated communities included distance from a commercial center, poor transportation routes, inadequate freight handling and poor gardening conditions. Community barriers included a lack of retailers, minimal capacity and skills for gardening and food preservation, and low community engagement (1,2).

This presentation will tell the inside story of the varied roles that dietitians played in making the Produce Availability in Remote Communities Initiative a success. The initiative had three distinct phases and the dietitians used their professional competencies and skills to:

- Develop policy and advocate for the needs of the communities with government ministries

- Assist communities to conduct their own needs assessments
- Manage the project and optimize stakeholder relations to leverage partnerships

The dietitians undertook a variety of untraditional tasks such as:

- Convincing high-level elected officials to change the vision of the initiative
- Engaging grassroots community groups who traditionally don't trust government programs
- Working with agrologists to increase garden yields
- Assisting trucking companies to identify increased efficiencies
- Helping schools overcome obstacles to grow and serve more produce to children
- Finding non-government agencies to deliver ongoing services to ensure project sustainability

Through the guidance of these dietitians, the Produce Availability Initiative grew into a three year, three million dollar initiative. At the outset, it was clear that there was no

magic bullet intervention that could address the complicated, multi-system changes needed. Every aspect of the produce system –from acquisition to distribution to education– needed attention. It was not a simple matter, as was first suggested, of shipping more produce into the remote communities. Instead, the residents wanted the support to become more self-sufficient. They also valued and wanted more sustainable and environmentally friendly solutions. These solutions included projects such as:

- community gardens and greenhouses
- produce hubs with storage facilities
- programs to link local foods and farms with schools and institutions
- a retail merchandising program to stimulate demand for produce
- a hands-on training program to teach preservation skills
- an educational awareness campaign regarding best practices for handling produce for produce carriers
- a toolkit for municipal governments to improve year round availability of produce in their remote communities

This range of solutions to make produce more available was implemented through multiple partnerships. Efforts directly supported residents in planning and implementing actions that increased their capacity to grow, store, distribute, preserve and market produce. Simultaneously the residents' awareness of, and demand for, fresh vegetables and fruit increased. As a result, more fresh local produce is being consumed in 24 remote B.C. communities. Better still, the residents have experienced a renewed sense of hope and increased pride in their ability to be more food self-sufficient and resilient.

Though only in 24 communities, this initiative, was a pioneering effort and has great learning potential for dietitians nationally and internationally. There was a strong commitment to evaluation, with 10% of the budget dedicated to evaluation. Due to the challenges of communicating with and getting to the remote communities, a variety of evaluation techniques was used to provide rich quantitative and qualitative data. Most

importantly, the stories from each community were captured through voice and images (3,4).

The Produce Availability in Remote Communities Initiative showed that three common factors facilitated the process regardless of the type of activity or intervention. These factors were: community engagement, building infrastructure and capacity, and the need for a multi-year funding commitment. The Initiative also showed that powerful qualitative changes in the communities, such as changes in community relationships, augmented strength, pride and resiliency in their community and their hopes for a better future were perceived as most important and became the celebrated successes.

The funding for the initiative has ended, however, this work continues in many of these communities. The legacy includes continued expansion of remote and rural indigenous community gardens and strong Farm to Community programs. As well, new funding partners continue to support this work to make produce more available creating new synergies in capacity development.

## COMPETING INTERESTS

The two authors, Margaret Yandel and Kristen Yarker declare that they have no potential conflicts of interest.

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Lecture Sequence: 3



#### Representations of state agents about Qom and ensuring the right to food

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Initially this work describes the representations about indigenous people, Qom (Toba), during the past century (1) and the last years in the media and between the state agents of plans and programs (2).

The analysis of the interviews of state agents allows a current analysis of these agents about them. The description of the representations (3) of state agents in the provincial and local levels in Chaco to interpret the representations and ideas that lie behind practices that decide the allocation of resources and attention from the basic services provided by the State as a contribution to the guarantee of the rights of Indigenous Communities in managed from the Ministries of Health and Social Development programs.

This work inquires about the current representations of state agents in relation to Qom (Toba) people respect mainly: social participation, consumption or use of resources and the role of the environment, work concept, reciprocity, sharing and accumulation conducts, political rights guarantee, state capacity (administrative, technical and political). Additionally describes and analyzes the life trajectories and training of such agents (4).

It is understood the state as a body whose different arms, the plans and programs, take different forms given by the nature of the state agents involved in them. Two initial analysis models are described: one, formed by rights and welfare guarantee, and other emerging in the analysis of the interviews

a new model of "Charitable assistance" developed by the life trajectories of the agents of the State, that neither the training nor the intra-job training seems achieve to change.

This model of "Charitable assistance" interferes in the allocation of resources and attention from the basic services provided by the State (Ministries of Health and Social Development programs) in the Indigenous Communities, especially in the right to food, water and health.

#### COMPETING INTERESTS

The author states that there are no conflicts of interest in preparing the manuscript.

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Lecture Sequence: 4



#### Developing a transcultural tool for the nutrition counselling of pregnant Tamil migrants with gestational diabetes

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With an increasing number of migrants in Switzerland, consultation of foreign patients has become an important part of dietitians' and other healthcare personals' everyday practice.

A large migrant group in Switzerland since the 1980s are the Tamils from Tamil Nadu, a South Indian state, as well as the Eastern part of Sri Lanka (1). Today, about 50'000 Tamil citizens live in Switzerland, which is home to one of the largest Tamil diaspora worldwide (2). Looking closer at this population group, it is clear that the Tamil tend to have some diverging views and beliefs when it comes to health and disease as compared to the perspectives of the indigenous Swiss population (1). These differences can develop into barriers in what could be otherwise successful prevention measures in the healthcare setting.

Besides diverging beliefs, and the obvious language barrier, the healthcare personal has often too little experience dealing with migrants. Such challenges impede a successful communication, which eventually stands on the way to an adequate therapy for the patients.

One of the important health concerns among Tamil migrants is the high prevalence of diabetes mellitus (1). Gestational diabetes, or the diabetes which develops during pregnancy, is no exception. Among this at-risk population, close to 18% of all pregnant women are affected (3). In comparison, the prevalence of gestational diabetes among the general population is at about 5 to 10% (4). While genetics play a role

to a certain extent, lifestyle changes when migrating into the Western culture have a determining impact as well (4). Therapy measures in case of gestational diabetes are often successful with help of an adequate nutrition readjustment (5).

To date in Switzerland healthcare settings, there is a limited amount of resources and tools that consider eating and physical activity habits of the migrant populations. The project 'NutriGeD' (Nutrition Gestational Diabetes, 2014-2015) aims at closing that gap and encourages a collaborative process, where the patients become active allies in their therapy. The project focuses on the development of a so called 'MigMapp<sup>®</sup>' (Migration folder), serving as a convenient tool during counseling of pregnant migrants with gestational diabetes (GD) on one hand and on the other hand giving a simple and clear structure for health care professionals working with this particular population group. This first initiative focuses on the migrant population of Tamil origin.

The Migmapp<sup>®</sup> contains a collection of appealingly designed information and tools that help healthcare professionals work efficiently with their migrant patients, while understanding their preferences and needs. This tool will sensitize nutritionists, dieticians, diabetes consultants as well as other employees in the healthcare system to the special needs of the migrant populations in order to promote a culturally competent treatment. It is expected that the healthcare-patient communication will be optimized with this tool. The healthcare personal will be among others acquainted with socio-economic

and cultural aspects of this group of migrants with Tamil origins and will therefore gain a better understanding of the multi-faceted connections between these factors and the barriers to a successful therapy. With help of the documents that will be specially tailored to their needs, the clients will feel their cultural background is well acknowledged, which should increase their motivation in the management of their diabetes and lead to higher patient compliance and satisfaction. This project is being realized with an interdisciplinary healthcare team including nutrition scientists, dietitians, doctors, nurses, midwives, as well as with the Swiss Diabetes Association and the Tamil association of Northwestern Switzerland. This project participates in the development of the concept of transcultural dietetics. The developed tool should be tested for its efficacy in practice, and if proven successful, further folders could be realized for other migrant groups following a similar approach.

### COMPETING INTERESTS

The authors state that there are no conflicts of interest in preparing the manuscript.

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9 September 2016 | INTERVENTION AREA: THE POWER OF DIETITIANS NUTRITIONISTS TO MAKE A DIFFERENCE IN SOCIETY

ROUND TABLE: THE POWER OF DIETITIANS-NUTRITIONISTS TO MAKE A DIFFERENCE IN THE SOCIETY

Lecture Sequence: 1



### What is the role of dietitians in public health and nutrition policies?

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Dietitians apply the science of nutrition to the feeding and education of groups of people and individuals in health and disease (1). Dietitians work in a variety of settings and have a variety of work functions. The European Dietetic Benchmark Statement indicates mainly the three areas of specialization as; administrative, clinical and public health or community dietitian. Public Health or Community Dietitian is directly involved in health promotion and policy formulation to improve or maintain nutritional health (2). So, dietitians are dedicated to the promotion of health and prevention of diseases in communities and populations.

Scientific evidence has placed community nutrition (CN) among the front line strategies in health promotion. CN has been defined as the group of activities linked to Applied Nutrition within the context of Public Health, whose main goal is to tailor individual and population food patterns according to updated scientific knowledge, with a final aim of health promotion (3). CN encompasses a broad set of activities designed to provide access to a safe, adequate, healthful diet to a population living in a particular area. These activities include nutritional epidemiology, nutrition education and health promotion, food industry, surveillance of food chain, food and nutrition policy etc. Ideally, CN involves four interrelated steps; assessment to identify the problem(s), planning to meet the community nutrition needs, implementation to develop systems to reduce the problem and evaluation to see if the problem has been

ameliorated or solved. Leadership of community nutrition efforts is usually provided by a public health dietitian, leaders in promoting health (4). Dietitians working in CN: a) know how to promote food choices among individuals, groups and communities and increasing awareness of the link between nutrition and health; b) understand how epidemiological studies can be used; c) know the role of dietitian in the promotion, assessment of need, planning, directing, coordinating and evaluating the nutrition component of public health policies; d) knowledge of economic, political, social and psychological aspects of nutrition and health promotion initiatives (2).

It is well known that, malnutrition, in all its forms, including undernutrition, micronutrient deficiencies, overweight and obesity and diet-related diseases, not only affects people's health and wellbeing, also poses a considerable public health and economic burden. Malnutrition increasingly exist side by side across the world, caused by inadequate, excessive or unbalanced diets and sedentary lifestyles (5,6). In the Second International Conference on Nutrition (ICN2) it was reported that causes of and factors leading to malnutrition are complex and multidimensional and coordinated action among different actors, across all relevant sectors at international, regional, national and community levels, needs to be supported through cross-cutting and coherent policies, programmes and initiatives and sustainable food systems should be promoted and nutrition policies should promote a diversified, balanced

and healthy diet at all stages of life (5). All of these approaches overlap with the dietitians' roles and responsibilities on CN and public health. Dietitians, as experts and leaders in human nutrition, are uniquely qualified to develop and implement strategies to prevent, identify and manage malnutrition. They have a key role in the development of policy and guidance, inter-disciplinary working, evidence-based food and nutrition management and nutrition education of carers, health and social care professionals (7).

Food and nutrition policy is defined as a set of coordinated actions, based on a governmental mandate, to ensure the nutritional quality and safety of the food supply, affordable and properly labelled food to all population groups, to promote health and improve dietary habits (8). Development of a food and nutrition policy is mainly based on health and nutrition status assessment and surveillance. Depending on the results, daily recommended dietary allowances and food-based dietary guidelines are prepared. Again, depending on the problems and priorities, planning and implementation activities of food and nutrition policy are distinguished in mainly three measures as; availability of foods, knowledge about foods and nutrition, quality and safety of foods (8).

As a conclusion, people have a right to access to a supply of food that is safe, reasonably priced and of good quality; and healthy eating habits should be promoted as a prerequisite of health. Dietitians are the only qualified health professionals that assess, diagnose and treat diet and nutrition problems at an individual and public health level. Dietitians are specialized in translating theory into action and research into practice. Dietitians play a key role in providing the necessary technical support and are the important actors in the planning, development and implementation of national food and nutrition policies (8).

## COMPETING INTERESTS

I state that there are no conflicts of interest in preparing the manuscript. During the EU projects period, I received reimbursement of my travel and accommodation costs for attending the meetings and received an honorarium from ILSI Europe for my participation in BRAFO publication.

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9 September 2016 | INTERVENTION AREA: THE POWER OF DIETITIANS  
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**Lecture Sequence: 2**



### The nutritionist dietitian's role within the national Diet and Nutrition policies in France

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For 15 years, diet and nutrition have been at the heart of the government concerns in France.

The stakes are high:

- Political: Is our food system viable/sustainable?
- Environmental: Are food agri-industry interests consistent with the French population's health?
- Health issue: What is a healthy diet? Does diet contribute to reducing health inequalities?

Dietitians account for 1% of the 13 paramedical professions (2011 data), that is 7168 dietitians out of the 710 000 paramedic. The profession has a future whose positioning evolves in all areas: clinical, prevention, catering, research... For 15 years dietitian have been involved in health policies for the French population and contribute to major projects: the creation of clinical nutrition units in healthcare facilities, the school meals regulation, the management of malnourished patients in hospitals, the implementation of diet and nutrition committees in hospitals. They also contribute to the elaboration of many recommendations. A big project about the nutritional management of the coordinated health care system "city-hospital" is underway.

### COMPETING INTERESTS

The author states that there are no conflicts of interest in preparing the manuscript.



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Lecture Sequence: 3



#### Strengthening Dietetic Practice With Evidence-based Toolkits – Protocols to Keep Dietitians on the Cutting Edge of Practice

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Dietitians need to think critically and have immediate access to evidence-based tools they can use for each of the variety of dietetic situations they encounter (1) to effectively and efficiently practice and be a force for sustainable change within the health care system. Dietitians also need to be confident that the information that they are using and the recommendations that they are providing their clients are current. Yet many dietitians face barriers to using research in their daily practice, such as lack of time, staffing and funding (2).

PEN: Practice-based Evidence in Nutrition® Toolkits (3) were developed to meet these practice needs. Toolkits provide quick access to evidence-based practice tools and information related to a particular health condition or disease. They are created by dietitians, for dietitians across the globe. Toolkits are structured around the Nutrition Care Process and Terminology (NCPT). This provides the framework for dietitians to assess, diagnose and intervene on food and nutrition related concerns (4). As an online interactive tool, toolkits are dynamic and responsive to changing practice recommendations and new approaches to client teaching. Toolkits cover a wide range of clinical and professional topics that fit under four categories within the PEN database: Population Health/Lifestyle; Health Condition/Disease; Food/Nutrients; and Professional Practice and cover areas such as complementary feeding for infants, critical illness, caffeine and healthy literacy.

Toolkits are organized to present evidence-based practice guidance for nutrition care. Sections are broken into the Nutrition Care Process (NCP) categories: Nutrition Assessment, including links to professional tools and calculators; Nutrition Diagnosis, including information on PES (problem, etiology, signs and symptom) statements; Nutrition Intervention, including nutrition prescription with additional subsections on goals, key findings and recommendations that are key for the practice guidance; and Nutrition Monitoring and Evaluation, providing key guidance for the practitioner to use to monitor and evaluate outcomes of nutrition management. In addition to NCP guidelines, toolkits provide direct access to client resources and tools that dietitians can use to help their clients make informed food and nutrition choices. These include PEN developed client handouts, many of which are translated into a number of different languages, and resources from external sources that are consistent with the evidence in PEN. Tools and resources for professionals to use include interactive calculators such as BMI for adults, BMI for children, metric converters; and energy assessment and international practice guidelines (where available).

This evidence-based, dynamic toolkit format for guiding dietetic practice produces confident practitioners that are current, critical thinkers and responsive to the needs of the situation. The PEN toolkit provides complete information in

one accessible place that can be used in everyday practice and in counseling clients; resulting in better informed clients who are able to manage their health.

## COMPETING INTERESTS

The authors state that there are no conflicts of interest in preparing the manuscript.

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Lecture Sequence: 4



### Cost-benefit analysis of dietary treatment

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As dietitians we are convinced about the effectiveness of our treatment in malnutrition, obesity, diabetes etc. It's important to have benefits as higher quality of life for patients, treatment of illnesses, improving physical health and productiveness (work related). Nowadays, besides result-driven, we also have to be cost-driven to convince our government, health insurance companies, management, referrals and even patient groups.

Although the positive effects of dietary advice are well described in the scientific literature, the total (monetary) benefits of specialized dietary treatment are barely calculated.

Due to economic pressure the Dutch Association of Dietitians decided in 2012 to give order to SEO ecomisch onderzoek (Social Economic Research, Amsterdam) to calculate the social costs and benefits (1) of the treatment by the dietitian in primary care based on scientific literature.

As also the funding of dietary treatment in the hospital is under pressure, the head of the dietetic departments of the Academic hospitals together with the Dutch Association of Dietitians decided in 2014 to do a cost effectiveness study to portray the social value of their work.

In this presentation these 2 cost benefit studies by SEO (Social Economic Research, Amsterdam) are presented:

1. Costbenefit analysis of dietary treatment (2): The treatment of patients with obesity and obesity-related diseases creates benefits. For every € 1, spend on dietary

counseling of these patients, society gets a net € 14 –to € 63– in return.

2. The value of dietetics in malnourished patients in the hospital (3): In the study the social cost en benefits in dietetics are studied in two groups of patients, malnourished oncology, and malnourished elderly patients. As a result of this analysis we see that the total benefits of treatment of malnutrition is € 4-€ 42 million in gastro-intestinal or longcancer, € 1,5-€3,8 million in head-neck cancer and € 15-€ 78 million in elderly patients.

To have data on the efficacy of dietary treatment from a financial point of view, gives dietitians arguments for their added value to different kind of decision makers as government, management and insurance companies.

### COMPETING INTERESTS

The authors state that there are no conflicts of interest in preparing the manuscript.

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ROUND TABLE: MULTICULTURALISM OF A GLOBAL SOCIETY. FROM GLOBAL TO LOCAL. SUSTAINABLE DIETARY PATTERNS: FEASIBLE AND POSSIBLE

Lecture Sequence: 1



### The benefits of a Prudent dietary pattern

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A Prudent dietary pattern is a posteriori data-driven dietary pattern. It is assessed through a factor analysis with principal components that were based on correlations between predefined food groups. The factor score for each pattern is calculated by summing observed frequencies of food groups consumption weighted by their factor loadings. Factor loadings represented correlation coefficients between food groups and particular patterns, where positive loadings mean positive correlations, and negative loadings mean inverse correlations. The validity and reproducibility of this method was evaluated in the cohort of Health Professionals Follow-up Study in 1999 (1).

One of the first groups of researchers that used this data-driven approach to identify dietary patterns was from the Harvard School TH Chan Public Health using two large American cohorts: the Health Professionals Follow-up Study and the Nurses' Health Study. They identified two main dietary patterns, namely the "Prudent" dietary pattern characterized by fruit, vegetables, fish, whole-grain products and low-fat dairy, whereas they identified a second dietary pattern namely "Western" dietary pattern characterized by red and processed meats, French fries, desserts and sweets, high-fat dairy and refined grains (2).

The Prudent dietary pattern has a healthy profile. It was associated with lower risk of total mortality (3), type 2 diabetes (4), gestational diabetes (5), obesity (6), coronary heart disease (7), Parkinson disease (8), and chronic obstructive pulmonary

disease (9), among others. By contrast, in the vast majority of the above diseases and conditions a Western dietary pattern was a risk factor for developing them.

A healthy dietary pattern for the population is also a healthy dietary pattern for the planet. Regarding sustainability plant-based dietary patterns, such as a Prudent diet, have been suggested the best dietary patterns in terms of health environment sustainability. By contrast, higher consumption of animal-based foods, mainly meat, was associated with a greater impact on the environment (10). For example, one calorie from beef requires 40 calories of fuel, whereas one calorie from grains can be obtained from 2.2 calories of fuel (10).

A dietary pattern approach, such as the used in the Prudent dietary pattern, has major strengths: the method captures the relationship between the overall diet and its constituent foods, beverages, and nutrients. It considers the inherent interaction between nutrients and foods in promoting health. Because food are consumed in combination, it is difficult, if not impossible, to determine their separate effects on health. However, the data driven approach has also several limitations: because they represent what was consumed by the study population, it is difficult to compare across other patterns and populations. Thus, it is difficult to draw conclusions. This is probably one of the reasons why in the last years the nutritionist researchers prefer to use in combination a priori dietary patterns such as alternate Healthy Index (AHI-2010), Dietary Approaches to

Stop Hypertension (DASH), Mediterranean Diet Score (MDS), or alternate Mediterranean Diet score (aMED).

## COMPETING INTERESTS

The author states that there are no conflicts of interest in preparing the manuscript.

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# 17th International Congress of Dietetics

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9 September 2016 | INTERVENTION AREA: MULTICULTURALISM OF A GLOBAL SOCIETY

ROUND TABLE: MULTICULTURALISM OF A GLOBAL SOCIETY. FROM GLOBAL TO LOCAL. SUSTAINABLE DIETARY PATTERNS: FEASIBLE AND POSSIBLE

Lecture Sequence: 2



### Nordic Diets: a sustainable approach to healthy diets?

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**Introduction:** Nordic Diets (ND) have been introduced as a concept of a dietary pattern that is healthy, palatable, environmentally friendly, and based on foods originating from the Nordic region, covering Denmark, Finland, Iceland, Norway and Sweden. The objective of this overview is to review the scientific evidence for ND as a sustainable approach to healthy diets.

The dietary principles of ND are that the amounts of plant foods are increased at the expense of animal foods and in particular rely on foods produced in the Nordic region, such as e.g. whole grains, root vegetables, cabbages, legumes, fresh berries, nuts and seeds, wild fish and game, potatoes, herbs and rapeseed oil. As no universal definition of 'Nordic diets' has been agreed upon, most studies have introduced their own definition.

**Previous Investigations:** Several randomized controlled trials (RCTs) and cohort studies have investigated Nordic diets in relation to health and other outcomes. Among the RCTs, the results from the 6 wk NORDIET RCT with 88 mildly hypercholesterolaemic subjects (avg BMI 26.5) randomly assigned to an *ad libitum* ND or control diet (subjects' usual diet) showed that compared with the control diet, the ND improved the blood lipid profile and insulin sensitivity and lowered blood pressure at clinically relevant levels (1). In the 18-24 wk multicentre SYSDIET RCT it was found among 175 participants (mean age 55 years; BMI 31.6) with the metabolic syndrome that the ND resulted in an overall improved lipid

profile and had a beneficial effect on low-grade inflammation compared with the control diet (2).

The OPUS (Optimal well-being, development and health for Danish children through a healthy New Nordic Diet (NND)) study was a large multidisciplinary study on a NND diet and a number of outcomes. In a 26 wk random parallel OPUS intervention study in 147 centrally obese adults (mean age 42 years; BMI 30.2) assigned to receive an *ad lib.* NND or an Average Danish diet (ADD), the NND diet resulted in greater weight loss and blood pressure reduction compared with the ADD diet (3).

In a 3 month cluster-randomised, controlled, non-blinded, cross-over OPUS trial with 765 apparently healthy children (age 8–11 year) at nine schools receiving freshly prepared NND school lunch and snacks or usual packed lunch from home (ADD=control), dietary intake, physical activity, cardiometabolic markers and body composition were assessed at baseline and after each dietary period (4). Compared with the ADD period, the NND period resulted in no difference in mean energy intake, a significant increase in energy from protein and a reduction in energy from fat and a higher intakes of micronutrients, in particular vitamin D and iodine (5). The NND diet did not affect the MetS score but led to small improvements in blood pressure, TAG concentrations and insulin resistance counterbalanced by slight undesired effects on waist circumference and HDL-cholesterol concentrations (4).



The environmental sustainability studied in a plate waste sub-study showed no differences in edible plate waste between the two dietary periods but differences between individual NND menus (6). Self-reported likings were negatively associated with percentage plate waste.

Among the cohort studies, the Danish Diet, Cancer and Health cohort study consisting of 57,054 Danes aged 50-64 years found at the 12 y follow-up that a 1-point higher index score based on traditional Nordic foods was associated with a significantly lower mortality rate ratio for both men and women (7). Whole grain rye bread intake was the factor most consistently associated with lower mortality in men. In a meta-analysis of three Finnish cohort studies (n=11,928) the association between adherence to the Baltic Sea Diet Score and cardiometabolic risk factors was equivocal (8). In the Norwegian Mother Child cohort (n=72,072) a high adherence with the New Nordic Diet (NND) score was associated with a lower relative risk of preeclampsia and of spontaneous preterm delivery among nulliparous women and a higher relative risk of preterm delivery among multiparous women (9).

**Discussion and conclusion:** Comparisons of studies on ND are challenged by the lack of a universal definition of ND. However, most studies on ND describe a composition of their ND that is generally in accordance with the principles laid down for healthy diets according to the Nordic Nutrition Recommendations (10). RCTs on ND in healthy children and at risk adults have convincingly shown that following the ND principles can be a favourable approach to a healthy diet with a generally high dietary adherence, suggesting a high palatability. Cohort studies have suggested consistency between adherence to NDs in some but not all health outcomes. Environmental sustainability in relation to ND still has to be further explored. In conclusion, current scientific evidence suggests that ND can be considered a dietary sustainable approach to a healthy diet.

## COMPETING INTERESTS

The authors state that there are no conflicts of interest in preparing the manuscript.

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ROUND TABLE: MULTICULTURALISM OF A GLOBAL SOCIETY. FROM GLOBAL TO LOCAL. SUSTAINABLE DIETARY PATTERNS: FEASIBLE AND POSSIBLE

Lecture Sequence: 3



### Sustainability of Vegetarian Diets

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To maintain a safe operating space for humans, we must limit the use of Earth's resources within finite boundaries (1). Our dietary choices account for a substantial use of resources and in turn make a large contribution to climate change (2), which threatens human health through reducing food yield in some regions, reducing access to water, weather extremes, and increasing the spread of infectious disease (3). Technological changes can achieve significant resource savings, however to obtain the necessary levels of efficiency, changes to dietary choices are essential (4). We explore the environmental sustainability of vegetarian diets, in terms of their resource requirements and impacts, and for context, make comparisons with other diets. Vegetarian foods generally require fewer resources and incur fewer adverse environmental impacts in comparison to non-vegetarian foods. For example, producing 1kg of protein from beef requires approximately 18 times more land, 10 times more water, 9 times more fuel, 12 times more fertilizer, and 10 times more pesticide in comparison to producing 1kg of protein from kidney beans (5). Vegetarian diets generally require less resources and are thus more environmentally sustainable in comparison to non-vegetarian diets. For example, on a weekly basis vegetarian diets (as consumed by real life people from a prospective cohort) use 10,252 liters of water, 9,910kJ of energy, 186g of fertilizer and 6g of pesticides less than non-vegetarian diets (6). Dietary

patterns consumed by real life people from a prospective cohort have also been compared in terms of their contribution to climate change and at the same time, associated mortality. Greenhouse gas emissions resulting from vegetarian diets were 29% lower than non-vegetarian diets, and mortality rates were 5.56 in comparison to 6.66 deaths per 1000-life years for non-vegetarian diets (7). This demonstrates the human health and environmental sustainability advantages of a vegetarian diet.

### COMPETING INTERESTS

Joan Sabaté have received Research/grant support from: California Walnut Commission; Soy Lab Technology; International Nut and Dried Fruit Council; American Egg Board; Soy Nutrition Institute.

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ROUND TABLE: MULTICULTURALISM OF A GLOBAL SOCIETY. FROM GLOBAL TO LOCAL. SUSTAINABLE DIETARY PATTERNS: FEASIBLE AND POSSIBLE

Lecture Sequence: 4



### Mediterranean Diet as a sustainable dietary pattern

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Dietary patterns are defined as the quantities, proportions, variety or combinations of different foods and beverages in diets, and the frequency with which they are habitually consumed. Suboptimal quality in dietary patterns currently represents the leading global, modifiable cause of morbidity and mortality. Dietary patterns represent the current state of the art in nutritional epidemiology because the assessment of overall dietary patterns instead of focusing on single nutrients or foods is able to capture interactions, synergies or antagonisms between dietary exposures. In addition, the use of dietary patterns preempts confounding by other dietary factors and increase statistical power. In fact, the isolated effect of a nutrient is very likely to be too small to produce strong associations with disease risk, but the cumulative exposure to a variety of dietary elements increases the effect.

In this context, large observational prospective epidemiological studies with adequate control of confounding and two large randomized trials support the benefits of the Mediterranean dietary pattern to increase life expectancy, reduce the risk of major chronic disease and improve quality of life and well-being. The Mediterranean diet is an overall food pattern characterized by high consumption of plant-based foods (vegetables, fruits, nuts, legumes, and unprocessed cereals); low consumption of meat and meat products (with special avoidance of red and

processed meats); moderate to high consumption of fish, and low consumption of dairy products (with the exception of yogurt and the long-preserveable cheeses). Alcohol consumption is included, in moderation and in the form of wine and, as a rule, during meals. Total intake of lipids can be high (around or in excess of 40% of total energy intake), but the ratio of the beneficial monounsaturated to the non-beneficial saturated lipids is high, because of the high monounsaturated content of liberally used olive oil, which is a hallmark of the MedDiet and is its main culinary fat.

Environmental aspects should be considered when assessing the advantages or disadvantages of dietary patterns because they may differentially influence the consumption of resources and the environmental impact, including greenhouse effect, agricultural land use, energy consumption and water consumption. Provegetarian or plant-based diets are more sustainable than diets rich in animal products because they use fewer natural resources and are less likely to cause harms to the environment regarding these footprints. Thus, a better conformity to the Mediterranean Diet is likely not only to improve human health but also the environment.

It has been shown that better conformity to the Mediterranean Diet exerts a marked beneficial impact on every one of the

above – mentioned footprints. Increasing adherence to the Mediterranean Diet in Spain was reported to reduce greenhouse gas emissions (72%), land use (58%) and energy consumption (52%), and water consumption (33%).

## COMPETING INTERESTS

The authors state that there are no conflicts of interest in preparing the manuscript.



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WITHIN THE DIETETIC PROFESSIONAL

PLENARY SESSION

Closing Lecture



### ICDA Progress and Plans for Advancing the Profession 2016-2020

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This presentation, on behalf of the Board of Directors of ICDA, will recap the input received from official Representatives and from those who attended the nine ICDA Workshops held during the 2012 International Congress of Dietetics in Sydney, Australia and will look at how this input has been used by Board of Directors to support national dietetics associations and their members, beyond national and regional boundaries, through international standards work, leadership for promoting evidence-based nutrition and dietetics practice, an integrated communications system for networking and professional development and by promoting the role of nutrition and dietetics professionals in enhancing health, supporting human

development, and reducing disease. ICDA accomplishments since the last Congress will be reviewed. Immediate insights from feedback obtained during six ICDA Workshops hosted by Board members during the 2016 Congress will be highlighted in relation to ICDA's priorities and plans for advancing the profession over the next four years, as we prepare to convene again at ICD 2020 in South Africa.

### COMPETING INTERESTS

The authors state that there are no conflicts of interest in preparing the manuscript.

