

# Canadian Foundation for Dietetic Research

## Dietetic Research Event – May 27-28, 2010

Welcome to Montreal and the 2010 *Dietitians of Canada Annual Conference* Research Event. This year will be quite exciting with nearly 70 high quality research and practice presentations. Topics are varied and include: public health nutrition, food service management, food production, nutrition friendly environments, clinical and applied nutrition, and dietetic practice in various settings, such as schools, community centers, hospitals, health centers, etc. The innovation this year will be the *Poster Tour* that will allow each presenter to discuss the highlights of his/her research under the guidance of one of the abstract review committee members or a dedicated nutritionist or graduate student.

Judging abstracts was a difficult task considering the variety of topics and the large number and high quality abstracts received this year. Members of the Committee had a wide spectrum of expertise and collaborated to share their knowledge and set strict criteria for abstract selection. They also assisted in finalizing the oral and poster presentations schedules.

On behalf of the membership of *Dietitians of Canada*, I would like to thank the Abstracts Review Committee members who took time from their busy schedules to provide their expertise to review these abstracts: Drs. Katherine Gray-Donald and Hugues Plourde from McGill University; Drs. Irene Strychar and Marie Marquis from the Université de Montréal and Dr. Maria Kalergis from the Dairy Farmers of Canada.

Join me in celebrating Canadian Dietetic Research by attending the poster sessions on Thursday and Friday (May 27 and 28) and the oral presentations on Friday May 28 in the afternoon.

Dr. Marielle Ledoux  
Abstract Review Committee Chair, 2010

**Canadian Foundation for Dietetic Research  
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*These abstracts represent research projects of dietitians that were accepted through a peer-review process for presentation.*

\*Indicates the presenter      [R] = Research abstract      [E] = Experience-sharing abstract

**POSTER RESEARCH PRESENTATION ABSTRACTS  
THURSDAY MAY 27 & FRIDAY MAY 28, 2010**

## **Vulnerable Groups**

### ***Power4Bones* positively affects bone-health knowledge and behaviours**

*H Boyd\*<sup>1</sup>, A Skeoch<sup>1</sup>. <sup>1</sup>Dairy Farmers of Canada, Mississauga, Ontario [R]*

**Objectives:** *Power4Bones* is a bone-health education program for grade 5 students. The objectives of the program are to increase students' knowledge of bone health and to support behaviour change that contributes to healthy bone development. To determine if *Power4Bones* is positively affecting students' bone-health knowledge and behaviours, and whether those changes are retained post program, a questionnaire was completed by students before, immediately after and six months after completing the program. **Methods:** A standardized self-administered online questionnaire was used to collect data. Teachers who were participating in *Power4Bones* were approached about having their students involved in three rounds of data collection. Teachers arranged for their students to complete the questionnaire before teaching the program in their classroom and again following program completion. Parents were contacted six months after students completed the program to have their child complete the survey the final time. **Results:** 106 classes were offered participation in this study and 33 classes participated in all three phases of the research. Of those completed, 696 pre-program questionnaires, 479 post-program questionnaires and 133 six-month-post-program questionnaires qualified for the study. Students showed improved knowledge of bone-healthy foods and activities, including what the best foods and activities are for building bones. This knowledge was retained post program. These students also showed improved understanding of the importance of building bones at their age; this knowledge was also retained. Positive changes in bone-healthy behaviours were also seen in these students and these behaviours were retained at six months. **Implications & Conclusions:** This study indicates that *Power4Bones* has been successful in achieving its objective of improving grade 5 students' bone-health knowledge and behaviours, which can positively influence their current and future bone health.

### **Calcium, phosphate, magnesium and alkaline phosphatase laboratory reference ranges for preterm infants**

*T R Fenton\*<sup>1</sup>, A W Lyon, S M Rose, M Antunes, <sup>1</sup>Alberta Health Services, Calgary, AB [R]*

**Background:** Expert committees recommend that preterm infants maintain normal concentrations of nutrients in the blood and tissue, based on the fetus, however, only small studies to date exist to inform reference ranges for preterm infants. **Objectives:** The objectives of our study were to determine

gestational age specific reference ranges for serum bone minerals (calcium, phosphate, magnesium) and alkaline phosphatase, and to assess whether the values differed by gestational age. **Methods:** Informed consent was obtained from the parents to analyze their infant's blood sample and review the chart for gestational age. Babies were excluded if the mother was given magnesium sulfate before delivery. Serum biochemistry tests were analyzed on a Hitachi 917 (Roche Diagnostics) using the manufacturers reagents and calibrators. The relationship between gestational age and the serum bone minerals was examine using a linear regression model which accounted for the lack of independence between twins and triplets.

Gestational age (weeks)	n	Calcium (mmol/L)	Phosphate (mmol/L)	Magnesium (mmol/L)	Alkaline Phos (units/L)
23 to 27	56	2.0 to 3.0	1.5 to 2.7	0.64 to 0.99	77 to 335
28 to 31	140	2.0 to 3.1	1.4 to 2.6	0.59 to 0.99	60 to 328
32 to 34	203	2.1 to 3.1	1.5 to 2.5	0.60 to 0.93	66 to 281
35 to 36	125	2.1 to 3.1	1.4 to 2.6	0.58 to 0.93	56 to 273
All preterm	525	2.1 to 3.1	1.4 to 2.6	0.59 to 0.95	60 to 301
Term	54	2.5 to 3.0	1.4 to 2.3	0.63 to 0.92	62 to 256
p-value		< 0.001	< 0.001	< 0.01	< 0.001

**Results:** While phosphate, magnesium and alkaline phosphatase decreased with gestational age, calcium increased slightly. **Implications:** The term infant may not be a good source of reference ranges for preterm infants since these more mature infants are in a different phase of development.

**Conclusions:** Bone mineral reference intervals for laboratory monitoring, developed from cord blood samples of preterm infants, vary by gestational age.

## Dietetic Practice and Education/Training

### Mindful eating: a new counselling strategy knowledge pathway in PEN

*N Spencer, B Armour\*. Dietitians of Canada, Practice Based Evidence in Nutrition (PEN). [E]*

**Purpose:** The purpose of the PEN knowledge pathway is to share evidence-based information about mindful eating as a counselling strategy for practice. **Content:** In addition to a question, the pathway includes a background document with a definition of mindful eating, a literature review and a list of professional resources. **Project summary:** Mindful eating is defined as paying attention to an eating experience with all our senses (seeing, tasting, hearing, smelling, and feeling); witnessing, without judgment, the emotional and physical responses that take place before, during and after eating. The focus is more on how to eat, and less on the traditional focus of what to eat. In practice, mindful eating can be used when providing education sessions or counselling with groups or individuals. It can be incorporated as a segment of education or as the main focus during counseling. Using mindful eating strategies does not require any specific training. There are numerous books and resources available on mindful eating and used by dietitians and other health professionals in practice. The titles are designed for use with a variety of populations including eating disorders, diabetes and weight loss. Authors' credentials include dietitians, psychologists and physicians. Positive outcomes, such as reduced binge eating and anxiety levels, have been found from small, research trials, however, there is a lack of large, randomized studies. The Journal of the American Dietetic Association indicated in a recent article that several U.S. studies on mindful eating are in progress, with noted positive preliminary results.

**Recommendations and Conclusions:** Mindful eating is an expanding area within dietetics that appears to be a worthwhile counseling strategy to use in practice.

### Dietitians' perception of the impact of clinical practice documents on dietetic practice

*T Cividin\*, I Borges, R Lung. Vancouver Coastal Health, Vancouver, BC. [R]*

**Objectives:** To assess dietitians' perceptions and use of clinical practice documents (CPDs) and resources at Vancouver Coastal Health (VCH). Specifically, to explore the efficacy of the CPDs and resources in supporting practice by determining if they support dietetic practice needs. **Methods:** An online survey containing both closed and open ended questions was sent to dietitians at four VCH sites. Descriptive statistics were used to analyze answers to closed-ended questions. Open-ended questions were grouped by similarity of responses. **Results:** Of 60 dietitians, 28 (47%) responded to the survey. 54% of participants reported practicing for five years or longer. Almost all participants (96%) have accessed the CPDs in the past year. Of the 13 CPDs available, dietitians reported referring to "Tube Feeding: Care and Management" most often. Almost all participants (96%) agreed that the CPDs are useful in supporting their practice. Most participants (86%) agreed that CPDs enable them to obtain information efficiently, easily and provide them with information making their practice more consistent with accepted standards. They reported that use of CPDs could be better optimized if they were available as pocket-sized short documents and through better communication and education of the resources available. Most participants accessed PEN and the VCH Diet Writing Guidelines at least a few times per month as additional practice resources. When asked what other topics they would like to see covered in CPDs, the most common suggestion was CPDs related to dysphagia management, liver disease and renal failure. **Implications & Conclusions:** Dietitians perceived the CPDs to be useful tools in supporting safe, consistent and evidence-based practice, but improvements could be made in communicating the availability of the resources.

### **Dietitian Perceptions of the Nutrition Care Process and International Dietetics & Nutrition Terminology**

*C Basualdo-Hammond<sup>\*1</sup> and M Atkins<sup>1</sup>, Nutrition Services, Alberta Health Services, Edmonton, AB [R]*

**Objectives:** Implementation of Nutrition Care Process and International Dietetics and Nutrition Terminology (NCP/IDNT) in the Edmonton Area began in 2007. This study aimed to identify benefits, barriers, training and resources required for implementation of NCP/IDNT. **Methods:** An e-survey (Zoomerang) was administered to RDs at two stages of the NCP/IDNT implementation process. Survey 1 was sent 4 months into implementation and survey 2 was sent 12 months into implementation. The survey was sent to all acute care inpatient and ambulatory care RDs in the Edmonton area. Quantitative survey data was analyzed using SPSS. Qualitative data was analyzed for themes and frequency of themes was compared between surveys. **Results:** Response rates for survey 1 and 2 were 74 % (n=88) and 75 % (n=95) respectively. The number of respondents using NCP/IDNT increased from 14 % to 79 % (p=0.000). Respondents felt significantly more knowledgeable about NCP/IDNT (39% to 61%) (p=0.009) and comfortable implementing (21% to 53%) NCP/IDNT (p=0.000). Benefits included a consistent structure and framework for nutrition care, common vocabulary, and improved communication during transfer of care. Potential barriers included decreased productivity, concern about whether physicians would read nutrition diagnosis (PES) statements, and difficulty determining what PES statements to use. Since initial implementation, perceived barriers have declined; however, change management and further training is needed. **Implications & Conclusions:** Surveying RDs early and later on in the implementation process assisted with identification of RDs concerns and supported the change management process. Training and providing resources (e.g. new assessment forms, cheat sheets) achieved implementation of NCP/IDNT within a large group of RDs practicing in various settings.

### **Changing landscapes: facilitating entry to practice for IEDs in Ontario**

*B Brockest<sup>\*1</sup>, L Buscher<sup>\*1</sup>, J Chappell<sup>1</sup>, N Israel<sup>1</sup>, P Schalm<sup>1</sup>, M Wyatt<sup>2</sup>. <sup>1</sup> Ryerson University, Toronto, Ontario. <sup>2</sup> Dietitians of Canada, Toronto, Ontario. [E]*

**Purpose:** Numerous barriers to licensure have historically limited the ability of qualified internationally educated dietitians (IEDs), who have immigrated to Ontario, to bridge to practice. The Internationally Educated Dietitians Pre-registration Program (IDPP) was designed to address many of these barriers, and to provide opportunities for IEDs to bridge to practice. **Process or Content:** Professionals often

immigrate to a new country with the expectation of practicing in the area(s) in which they were educated and/or trained. In Canada, dietetics is a regulated profession. This means IEDs face the challenge of demonstrating equivalency of their credentials and competencies. For most IEDs this process has historically been time-consuming, expensive and one that has not resulted in significant numbers gaining licensure. The IDPP was launched in 2005, supported by numerous partners within dietetics. The program focuses on providing opportunities for IEDs to successfully make the transition to a new practice environment. It includes curriculum and practicum components focused on dietetics within the Canadian context, as well as other supports. Five cohorts have completed the IDPP. Graduates have been very successful in gaining registration; passing the qualifying examination; and obtaining employment. An overview of the program components will be shared, as will licensure and employment outcomes.

**Project Summary:** The opportunity for IEDs in Ontario to successfully make the transition to dietetics practice has significantly improved as a result of the IDPP, resulting in an expansion of the total number of dietitians becoming licensed in the province annually. **Recommendations and Conclusions:** The availability and accessibility of supports to help IEDs successfully bridge into dietetics practice environments in Canada are essential.

### **Exploring awareness of the Core Competencies for Public Health in Canada among dietitians at Toronto Public Health**

*T Brown<sup>\*1</sup> and A Fox<sup>2</sup>. <sup>1</sup>Toronto Public Health Toronto, ON; <sup>2</sup>University of Toronto, Toronto, ON [R]*

In 2007, the Public Health Agency of Canada launched core competencies to guide the practice of all disciplines working in public health. **Objective:** The Dietetic Practice Council (DPC) at Toronto Public Health (TPH) sought to explore the awareness of these competencies among TPH dietitians and to identify opportunities for practice enhancement. **Methods:** Ten focus groups were conducted with a total of 52 participants who represented dietitians, nutrition promotion consultants, managers and directors at Toronto Public Health. The sessions were audiotaped, transcribed and coded using NVIVO software. Transcripts were analysed thematically. **Results:** Dietitians indicated widespread support of the competencies but requested more opportunities to actively engage with them. The competencies were viewed as a useful tool for skill development and performance evaluation, a potential device for showcasing the unique strengths of dietitians working in public health, and a mechanism for facilitating interdisciplinary collaboration. The DPC was seen as a valuable structure and a potential vehicle for providing these development opportunities. **Implications/conclusion:** Workforce enhancement has become a major focus of many disciplines involved in public health practice. As one of the largest employers of dietitians in Canada, Toronto Public Health is uniquely positioned to support dietetic practice enhancement through promotion of the core competencies for public health. The DPC is viewed as an important mechanism for communicating, educating and enhancing practice. The DPC, in partnership with the dietetic and other staff at TPH, has the potential to positively impact public health nutrition practice in Canada through innovation and evaluation of practice enhancement initiatives.

### **A train-the-trainer approach to preceptor education**

*L Buscher<sup>\*1</sup>, T Brown<sup>2</sup>, C Eisenbraun<sup>3</sup>, M Traynor<sup>4</sup>, M Wyatt<sup>5</sup>. <sup>1</sup>Ryerson University, Toronto, ON. <sup>2</sup>Toronto Public Health, Toronto, ON. <sup>3,5</sup> Dietitians of Canada, Toronto, ON. <sup>4</sup> Kingston, Frontenac and Lennox & Addington Public Health, Kingston, ON. [E]*

**Purpose:** Providing training and support for current and potential dietetics preceptors has the potential to enhance dietetics practicum education. A “Train-the-Trainer” approach to preceptor training was piloted throughout 2009-2010 in Ontario. **Process or Content:** A national working group of dietitians developed and delivered a *Focus on Feedback* workshop for preceptors, aimed at the further development of feedback skills, at the 2008 Dietitians of Canada conference. This interactive workshop utilized resources

and case studies specific to dietetics. Based on the session's success, a smaller working group developed a roll-out strategy for the workshop in Ontario based on a "Train-the-Trainer" approach. A "Train-the-Trainer" session was developed and delivered in March 2009 to a group of 21 dietitians, representing various geographic areas and diverse dietetics practicum education programs. Those being trained to become workshop facilitators agreed to deliver at least two *Focus on Feedback* sessions within the year. Facilitators participated as a group in a follow-up teleconference session six months after the training session. An evaluation of the roll-out strategy was piloted to collect preliminary information about the reach of the peer-led workshops to preceptors around the province (i.e. numbers of preceptors reached; geographic distribution of workshops); and to determine next steps in the evaluation process. **Project Summary:** Insights gained about the use of a "Train-the-Trainer" model of preceptor education, and future recommendations, will be shared. **Recommendations and Conclusions:** Dietetics practicum education programs may consider collaborating on a "Train-the-Trainer" approach to preceptor education.

### **Canadian dietitians' attitudes and beliefs regarding peer education as a model for nutrition education.**

*J Wammes\*, PDN Dworatzek. Brescia University College, London, ON. [R]*

**Introduction and Objectives:** Peer education (PE) is a strategy that has been used effectively in nutrition education; however research examining dietitians' attitudes regarding PE is lacking. This survey investigated dietitians' attitudes regarding PE and assessed differences by practice area. **Methods:** An online survey was developed, pretested, and sent using a modified Dillman method, to a systematic random sample of 1198 Members of Dietitians of Canada, from a total sample of 4453. Descriptive statistics were calculated and RMANOVA was used to test significance within question groupings. **Results:** The response rate of 19% (n=229) provided a representative sample of dietitians by practice area and location. The mean overall attitude score (ATS) was 225±26 out of an absolute maximum of 295. Community/public health dietitians had significantly higher ATSs compared to clinical dietitians (233.95±22.75 vs. 220.87±26.99, respectively; p=0.028). Dietitians believed PE to be most useful in community settings, with cultural groups or adolescents, and for healthy eating program goals. The barrier to PE implementation that was most often identified was limited financial resources; while the recognized benefits were social support and experience/employment, for participants and peer educators, respectively. Overall, 59% of respondents agreed or strongly agreed that PE should be used more often in nutrition programming. **Implications and Conclusions:** Canadian Dietitians have a positive attitude towards PE; however this varies according to practice area. Dietitians believe PE is more useful with specific target populations and particular program goals/strategies, and they identified several benefits and limitations. This data will provide dietitians with useful information in the development of PE programs; however, more research will continue to be needed to elucidate best practices for PE models.

### **Planning a baccalaureate nutrition program in Benin, West Africa: perceptions of health professionals regarding the role of future graduates and competencies required**

*IA Ogouma<sup>1-2</sup>, I Strychar<sup>1-2</sup>. <sup>1</sup>Département de Nutrition, Faculté de Médecine, Université de Montréal, Montréal, QC, <sup>2</sup>Centre de Recherche du Centre Hospitalier de l'Université de Montréal (CRCHUM), Montréal, QC.[R]*

Changes observed in recent decades in developing and transition countries in nutrition have forced stakeholders to re-examine training of health professionals. The lack of a specialised workforce in nutrition in Benin is a barrier to nutrition disease management, including both malnutrition and chronic diseases. To face these challenges, a baccalaureate nutrition program is being planned for the francophone West Africa region. **Objectives:** To determine perceptions about the functions of future graduates and perceptions about knowledge-skills-competencies to be developed as part of the curricula.

Hypothesis: Because of the newness of the program, competencies for future graduates will be expressed in term of objectives rather than competencies as describes by Lasnier. **Methods:** Four focus groups and nineteen individual interviews (n=28) were conducted in Cotonou, Benin. Participants included health professionals from university departments, ministries, hospitals, and non-government organisations. Analyses of interview transcripts were conducted using the QDA Miner program. **Results:** Overall, the program was viewed positively and needed to combat nutrition problems in West Africa. Participants viewed future graduates' job functions as those of a community nutritionist, nutritionist adviser, research nutritionist, teaching nutritionist as well as clinical nutritionist. Participants identified that future graduates would require knowledge of basic nutrition concepts in food sciences, chronic diseases, and communication. The terms knowledge, skills and capacities were used interchangeably. The key capacities mentioned included evaluating nutritional status, developing and evaluating nutrition programs, mastering communication and prevention skills. **Implications and Conclusions:** Information provided by participants will serve as key elements for planning the program in Benin. Funded by CIDA.

### **The lived experience of University students' with type 1 diabetes: Implications for diabetes education.**

*S Hill<sup>1</sup>, JR Gingras\*<sup>1</sup>, E Guccardi<sup>1</sup>. <sup>1</sup>Ryerson University, Toronto, ON, [R]*

**Objectives;** This study explored the lived experience of Canadian university students with type 1 Diabetes Mellitus (T1DM). In doing so the study aimed to capture the student perspective on the challenges of living and coping with T1DM in the university environment. **Methods;** This study was a qualitative design using van Manen's phenomenological approach to understand the essence of the participating students' experiences. Data was collected from nine participants in a two-part focus group using open-ended questions based on a prior literature review. The transcripts were thematically analyzed using an open coding approach. Data analysis was guided by a framework analysis as described by Ritchie and Spencer. Emergent themes were triangulated for validity. **Results;** Three main themes emerged from the data: 1) the influences and challenges of the built environment and social structures within the university setting; 2) the internal personal struggles regarding self identity; and 3) the implications of anonymity in the student environment. These themes had an impact on the students' ability and motivation to participate in the self-management of their diabetes. **Implications & Conclusions;** These results illustrate some of the unique challenges faced by university students with T1DM that interfere with diabetes management, learning processes, as well as quality of life factors related to the overall enjoyment of the university experience. Findings will inform diabetes educators and other health care practitioners regarding some of the confounding factors that may interfere with optimal diabetes care in university students with T1DM.

## **Nutrition and Health Education / Public Health Nutrition**

### **The Health Check™ program prompts sodium reduction in Canadian food products**

*J Dummer\*, Heart and Stroke Foundation of Canada, Ottawa, ON (R)*

**Objectives:** This study was conducted to identify the impact of the current Health Check™ criteria in prompting sodium reduction in products made by manufacturers in the Health Check™ program from 2004 to 2008. Secondary to the current criteria, the impact of the new Health Check™ criteria (implementation effective November 2010) was explored. **Methods:** This study approved by the Canadian Shield Ethics Review Board involved a questionnaire. Over a three month period, 14 Health Check™ program licensees (participants remained anonymous) representing 371 products were interviewed in person or on the telephone. The answers to eight questions were recorded electronically

(or by pen and paper). The data was collected, reviewed and compiled by the researcher. The participants verified the data collected post interview. **Results:** A total of 150 products had sodium reduced to meet the current Health Check™ criteria with a total reduction of 322,065 kg of sodium. Overall, 200 existing Health Check™ products (current criteria) already meet the new Health Check™ criteria. **Conclusions:** The Health Check™ program has had an impact on the participants to reformulate existing products or formulate new products to meet the criteria for sodium. All of the participants agreed the new Health Check™ criteria will impact them. **Implications to Practice:** Health care practitioners, particularly dietitians need to be aware of current nutrient recommendations and food label information to allow for informed choices. This will enable RDs to counsel their patients about the health risks of excess sodium and how to reduce consumption of it from packaged foods.

### **Antioxidant health messages in Canadian women's magazines and on food products in grocery stores: results of content analyses**

*A Steinberg, S Zogheib\*, J Paisley. Ryerson University, Toronto, ON [R]*

**Objectives:** Antioxidant messages are ubiquitous in Canadian media and grocery stores. Nearly half of Canadians look to magazines, newspapers, and books for nutrition information and 67% of women rely on magazines for health information. Two-thirds of Canadians read food product labels for information about disease/nutrient relationships. This study examined the prevalence, content, and accuracy of antioxidant messages in Canadian women's magazines and on vegetable and fruit products and tea in Greater Toronto Area (GTA) grocery stores. **Methods:** A systematic content analysis strategy was used to identify the antioxidant-related messages present in 2008 issues of the three highest circulation Canadian women's magazines (Reader's Digest, Canadian Living and Chatelaine). Using a purposive sample of three GTA grocery stores, a screening tool and systematic content analysis were used to obtain vegetable, fruit, and tea product packaging conveying antioxidant messages for analysis. Data were analysed using specific content analysis protocols. **Results:** Seventy percent of articles (n=56) named a specific antioxidant compound. Overall, 71% of articles reported positive health effects related to antioxidant consumption. Many articles overstated the potential health effects of antioxidants and did not accurately convey current scientific evidence. Eighty-two percent of product labels (n=96) conveyed an allowable diet-related health claim, 23.9% had other health claims and 21% contained antioxidant compound content claims. Implied health claims were present on 20% of food labels, many of which conveyed information of questionable use to consumers that is not allowable under the Food and Drug Act. **Implications & Conclusions:** Our findings raise concerns about the accuracy of antioxidant statements made in magazines and on food labels. Nutrition education can help consumers decipher messages concerning antioxidants and health.

### **An assessment of the information on calcium, vitamin D, iron and folate geared towards women: Is it reflective of Canadian Nutrition Policy?**

*MJ Cooper\*<sup>1</sup>, L Zalot<sup>1</sup>, L Wadsworth<sup>2</sup>, Nutrition Research Division, Health Canada, Ottawa<sup>1</sup>, ON, St. Francis Xavier University, Antigonish, NS<sup>2</sup> [R]*

**Objectives:** According to recent data from the Canadian Community Health Survey (CCHS 2.2-Nutrition), the prevalence of inadequate intakes was 16.8-18.8% and 18.3-19.6% for iron and folate, respectively for females aged 19-50. The mean intake of calcium and vitamin D was shown to be below the Adequate Intake (AI). Research in assessing the food and nutrient messages that may, or may not, be reaching this target age/gender group is scarce. The objectives of this study were to compare the congruency of messages in magazines (Canadian Living, Chatelaine, and Homemakers) with Canadian Nutrition Policies and to assess the accuracy, quantity, and format of calcium, vitamin D, iron and folate messages.

**Methods:** Utilizing content analysis methodology, an electronic coding sheet and codebook were created to capture various elements of messages related to calcium, vitamin D, iron and folate using a stratified sample of a constructed year of magazines (n=33) from 2003-2008. Some of the criteria used to define a message included: the nutrient, the format, what the nutrient was presented in relation to, the accuracy of the content, and congruence to Canadian Nutrition Policies. **Results:** The most number of messages was for calcium, followed by folate, then iron and finally vitamin D.. Overall, most messages were coded as accurate (83%) and congruent with Canadian Nutrition Policies (90%). Most messages were found in advertisements (48%) and articles (38%). **Implications and Conclusions:** This research demonstrated that the majority of messages were accurate and reflected Canadian Nutrition Policies. Further work will focus on examining messages related to these nutrients in French magazines.

### **Knowledge, attitudes, and behaviours of Canadian consumers toward dietary sugars**

*N.T. Glanville, E. Horne\*, Department of Applied Human Nutrition, Mount Saint Vincent University, Halifax, NS. [R]*

Sugars, whether intrinsic or added, contribute to the functional properties of food including taste, colour, texture, and stability. Although sugars consumption contributes to energy intake and glycemic load, the Dietary Reference Intake Macronutrient Panel concluded that the evidence linking sugars intake to risk of obesity, cancer, diabetes and hyperlipidemia was insufficient to set a Tolerable Upper Level. Despite this uncertainty, media messages often focus on negative aspects of sugars intake especially consumption of added sugars. **Objectives:** The Canadian Sugar Institute commissioned a national research firm to survey consumers' perceptions of sugars from 1998 to 2007. The objective of this research is to analyze this database for temporal trends and predictors of consumer perceptions of sugars intake. **Methods:** A 33-item questionnaire was administered by telephone to consumers residing in central and western urban locations of Canada biennially between 1998 and 2006 and in 2007. Questions were grouped into categories, assessed for internal consistency, and index scores were developed to provide a summative measure of knowledge, attitudes and behaviours. **Results:** Using 2006 as a reference year (n=304), the median index scores were: knowledge - 18 (range 11-26; maximum score=27; correct response); attitude - 32 (range 22-50; maximum score=60; positive attitude); and behaviour - 7 (range 4-11; maximum score=12; taking no steps to limit sugars intake). Typically consumers indicated they were limiting sugars intake for health and for weight control. **Implications & Conclusions:** Preliminary analysis indicates that consumers were generally knowledgeable about dietary sugars yet had mixed perceptions regarding its role in health and whether intake should be limited.

### **Consumer Perceptions Regarding the Vitamin D Content of Milk Products**

*M. Kalergis\*<sup>1</sup>, M.A. Lefebvre<sup>2</sup>, J. Hovius<sup>3</sup>, A. MacDonald<sup>3</sup>  
<sup>1</sup>Dairy Farmers of Canada, Montreal, QC; <sup>2</sup>School of Dietetics and Human Nutrition, McGill University, Montreal, QC; <sup>3</sup>Research Management Group, Toronto, ON. [R]*

**Objective:** To determine the proportion of Canadian adults who believe that milk, cheese and yogurt contain vitamin D. **Method:** An online survey was administered to a national sample of 1,021 adults aged 18 and older (440 men and 581 women). The survey consisted of 9 questions (unaided as well as aided), regarding the perceived content of various components in milk, cheese and yogurt including Vitamin D. The data was weighted by age and gender to ensure population representativeness. **Results:** More women than men perceived vitamin D as a component in milk (64% vs. 50%) cheese (38% vs. 23%) and yogurt (45% vs. 31%). More women than men were also likely to perceive vitamin D as a component of any milk product (70% vs. 57%) and as a component of both milk and any other milk product (49% vs. 31%). However, a small minority in both groups were similarly likely to perceive vitamin D as only found in milk (17% of women and 20% of men). **Conclusions and Implications for Practice:** A significant minority of men and about 1 in 2 women perceive other milk products such as yogurt and/or cheese as

containing vitamin D. This may have important implications as milk is currently the only consistent source of vitamin D in this category. This mistaken perception may potentially have a negative impact on vitamin D and fluid milk intake. Based on these perceptions, yogurt and cheese may be good candidates for consideration regarding future vitamin D fortification efforts.

### **Perceived barriers and facilitators of vegetable & fruit consumption within a population with prediabetes in London Ontario**

*V Coates\*<sup>1</sup>, J Mathysen<sup>2</sup>, J Speziale<sup>2</sup>, I Giroux<sup>3</sup>,<sup>1</sup> The University of Western Ontario, London ON, <sup>2</sup>St. Joseph's Health Care, London, ON, <sup>3</sup>Brescia University College, London ON [R]*

**Objective:** To assess barriers and facilitators for the consumption of vegetables and fruit from individuals within a prediabetes population. **Method:** In 2009-2010, 63 individuals (29 males, 34 females, aged 35-79, average BMI = 32.9±7.4) attended two educational sessions on prediabetes, and completed a questionnaire prior to the start of their second session. Participants were asked to self-select barriers and facilitators from a list by determining if each statement was a barrier, facilitator or not applicable in their intake of either vegetables or fruits. Space was also provided to allow participants to add barriers/facilitators. **Results:** Top barriers for both vegetable and fruit intake included the mood of the participant as well as daily routines and habits. Top facilitators included the knowledge on the benefits of eating vegetables and fruits and the advice from health care professionals. Participants in the study did not see allergy or intolerance to certain fruit and vegetables as applicable nor did they feel access to transportation was an issue in their consumption of these foods. Results were further examined based on age and gender. **Implications and Conclusion:** These results provide insight into the perceived barriers and facilitators of vegetable and fruit consumption within this sample population of individuals with prediabetes. Those providing prevention education to individuals with prediabetes will be able to use these results to tailor educational messages to help increase individuals' vegetable and fruit consumption. Further studies are warranted to confirm these preliminary findings.

### **Strengthening the Forces with Nutritional Wellness**

*G Charbonneau\*<sup>1</sup>, M Graham<sup>1</sup>, DJ Reid<sup>1</sup>. <sup>1</sup>Department of National Defence, Directorate of Force Health Protection, Strengthening the Forces, Nutritional Wellness Health Promotion Program, Ottawa, ON. [E]*

**Purpose:** Nutritional Wellness is one of four core programs within Strengthening the Forces (STF), Health Promotion program. The objectives of this program are to 1) increase the number of Canadian Forces (CF) personnel who eat the recommended daily intake of vegetables & fruit, 2) promote healthy eating, 3) promote healthy weights, and ultimately, 4) optimize operational readiness. **Process or Content:** The STF Nutritional Wellness mandate is 1) program development, implementation and evaluation, 2) training of others, 3) nutrition subject matter expertise to the CF, and 4) policy review and development. Program direction is guided by the CF Health and Physical Fitness Strategy (2008), the CF Health and Lifestyle Information Survey, the Ottawa Charter of Health promotion, together with the knowledge and experience of the Nutrition Advisory Committee. Further, all initiatives are developed in consultation with a Nutrition Working Group mostly comprised of Health Promotion Delivery Staff representatives from CF bases and wings. **Project Summary:** Nutrition programs presently offered through trained Health Promotion Delivery Staff are 1) Top Fuel for Top Performance, and 2) Weight Wellness Lifestyle Program. Further, Set your Sights on Healthy Eating is an ongoing point of choice campaign in collaboration with the CF food services. A Vegetable and Fruit campaign and a Vending Machine Project will also be launched fall 2010. **Recommendations/Conclusions:** Creating supportive environments and developing personal skills are essential in promoting healthy lifestyle choices, more specifically, healthy nutrition and health weight. Further, developing and sustaining collaborative partnerships and networks with groups within and outside the CF will be a priority over the next years.

## Canadian Forces Weight Wellness Lifestyle Program: Development to Delivery

M Graham\*<sup>1</sup>, G Charbonneau<sup>1</sup>, DJ Reid<sup>1</sup>. <sup>1</sup>Department of National Defence, Directorate of Force Health Protection, Strengthening the Forces, Nutritional Wellness Health Promotion Program, Ottawa, ON. [E]

**Purpose:** The 2008/9 Health and Lifestyle Information Survey (HLIS) reveals that 23.5% of Canadian Forces personnel are obese, a 3% increase since 2004. The 2004 HLIS already indicated that 52% of men and 28% of women were overweight. Further, 22% men, 13% women are obese. For men, these rates were higher than a comparable Canadian male population (2008/2009 data to come). The weight situation of CF has deteriorated since the 2000 HLIS. Knowing that obesity affects health, fitness and CF operational readiness, a health promotion Weight Wellness Lifestyle Program (WW) was developed to improve lifestyle behaviours thereby achieving healthier weights. **Process or Content:** WW is a 16 hours program delivered over 8 weeks. The program takes a safe, practical and realistic approach in three key areas: healthy eating, active living and behaviour change. WW components include facilitator and participant resources, facilitator training and promotional materials. WW was developed using consultative processes, pilot testing, evaluation, and further revisions before implementation. 7 WW pilot sites delivered 17 programs for a total of 200 participants (50% sex distribution; 57% CF personnel). WW pilot evaluation integrated facilitator and participant feedbacks, telephone interviews and site visits.

**Project Summary:** WW development to delivery was completed over 20 months. The process incorporated collaborative consultations, pilot testing, and qualitative and quantitative evaluations.

**Recommendations and conclusions:** In the framework of health promotion, consultative processes are essential for successful program development. Further, an ongoing evaluation process is critical for any program delivery. WW could be enhanced by the implementation of tracking systems to monitor weight, lifestyle behaviours and health outcomes over time.

## School Nutrition / Children and Youth

### An online tool that supports the school community to implement nutrition guidelines

J Macdonald\*<sup>1</sup>, K Birkenhead<sup>2</sup>. <sup>1</sup>Dietitians of Canada, Victoria, BC, <sup>2</sup>Dietitian Services, HealthLinkBC, Burnaby, BC. [E]

**Purpose:** To develop resources to support implementation of the *Guidelines for Food and Beverage Sales in BC Schools* (Guidelines). **Process:** During 2006, an in-depth consultation process took place with health authority staff and education stakeholders to determine what supports would help most in the implementation of the provincial government's Guidelines. One tool that was repeatedly identified as needed was an easy-to-use, online brand name food list that categorized foods and beverages according to the Guidelines. Based on the results of the consultation process, funds were secured from the BC Healthy Living Alliance by May 2007 to develop this tool plus other supports. **Project Summary:** The Brand Name Food List - an online tool that categorizes foods according to the Guidelines and provides users with customized feedback on the situation in their school - was launched in October 2007. By December 2009 the Brand Name Food List ([www.brandnamefoodlist.ca](http://www.brandnamefoodlist.ca)) had 4100 foods and more than 6500 registered users. The secured funding also allowed for a full time dietitian to be hired to maintain the Brand Name Food List and support users. **Recommendations & Conclusions:** This resource has reduced the workload of community nutritionists around the province who were called on regularly by school personnel and vendors to assess foods. Early evaluation results reveal that 100% of community nutritionists who responded to an online survey were satisfied with the Brand Name Food List and 100% indicated that it made their job easier. Several food companies have reformulated their products to meet the Guidelines. It is critical that a tool like this have dedicated staffing and adequate funding to support updates, maintenance and users.

## Communicating school nutrition policies in Manitoba

J Rutherford\*<sup>1</sup>, P Fieldhouse<sup>1,2</sup>, E Seyidoglu<sup>1</sup>, A MacDonald<sup>1</sup>. <sup>1</sup>University of Manitoba, Winnipeg, MB. <sup>2</sup>Healthy Living, Youth and Seniors, Winnipeg, MB. [R]

**Objectives:** To determine the extent to which schools are complying with provincial requirements to communicate their school nutrition policies [SNP] to their constituents. **Methods:** A systematic scan of all Manitoba school division (36) and individual school websites (688), including home pages, newsletters, policy manuals, school plans, community reports and parent council minutes, was conducted. Occurrences of actual nutrition policy documents were recorded, as well as links or references to such documents, and other discussions of nutrition policy. Subsequently a content analysis of unique SNPs was carried out to identify the frequency with which discrete policy components were mentioned. **Results:** The majority of school divisions [75%] had a divisional SNP posted prominently on their websites. In contrast, few individual schools [<10%] featured a nutrition policy on their own website, although approximately half provided a link to their division website, and sometimes directly to the divisional SNP. Schools websites included a variety of documents such as newsletters, policy manuals, community reports, meeting minutes, school plans and school newspapers. Few mentions of SNP were found in any of these documents, but were most likely to occur in a school 'Report to the Community'. Fewer than 10% of policies contained stipulations regarding communication of nutrition policies. **Implications and Conclusions:** Communication about school nutrition policies to the whole school community, and especially parents is important in ensuring that there is a common understanding of and support for nutrition changes at the school level. Improvements need to be made to ensure that the provincial requirement for reporting school nutrition policy is being followed, and schools should be encouraged to share information about their SNP more widely.

## Manitoba school nutrition survey 2009

E Seyidoglu\*<sup>1</sup>, P Fieldhouse<sup>1,2</sup>. <sup>1</sup>University of Manitoba, Winnipeg, MB, <sup>2</sup>Manitoba Healthy Living, Youth and Seniors, Winnipeg, MB. [R]

**Objectives:** To document changes in school nutrition environments and practices as a measure of the impact of the Manitoba school nutrition policy initiative. **Methods:** A quantitative self-administered questionnaire was sent to all publicly funded schools in Manitoba (n=688). Based on a similar baseline survey conducted in 2006, the questionnaire was designed to obtain information about school food-service facilities and arrangements, the types of foods sold in schools through cafeterias, canteens and vending machines and the status and content of school nutrition policy [SNP] development. **Results:** A high response rate [78%] was achieved. Results indicate that there has been significant development of SNPs throughout Manitoba over the past 3 years. 56% of schools now have a comprehensive policy in place at the division level and a further 29% have policies at the school level. The number of schools with nutrition and/or health committees has almost doubled to 65%. School food programs including milk, breakfast, snack, and hot lunches, continue to be an important element in school food provision. Significant changes were seen in fundraising practices, with chocolate decreasing in frequency and hot dog days almost disappearing as a fundraiser. **Implications & Conclusions:** The Manitoba approach to implementing school nutrition policy has resulted in significant changes in school food environments and practices. Documenting and sharing these successes with schools and education authorities is important in validating past efforts and encouraging continuing attention to nutrition.

## School food standards: how do Ontario's proposed nutrition guidelines compare with those from the United States Institute of Medicine?

M Dick\*<sup>1</sup>, J Sheeshka<sup>1</sup>, B Jeffery<sup>2</sup>. <sup>1</sup>University of Guelph, Guelph, ON, <sup>2</sup>Centre for Science in the Public Interest, Ottawa, ON. [R]

**Objectives:** Increasing rates of childhood obesity and detection of chronic disease symptoms in increasingly younger individuals underscore the importance of childhood nutrition. This study evaluated the potential strengths, weaknesses, and ambiguities of two different approaches to school nutrition policy by fully describing the acceptable foods according to each set of standards. **Methods:** A previous draft of Ontario's proposed school nutrition standards were compared with those recommended by the US Institute of Medicine (IOM) by applying the criteria of each to the Canadian Nutrient File (2007b). **Results:** When compared to the IOM standards, Ontario's standards were less stringent (39.8% versus 25.1% "Always Acceptable" foods) and more difficult to apply. Using Ontario's guidelines, foods had to be separated into 48 food categories, each with different criteria. Because these categories were not exhaustive and the criteria were not exclusive, 25.6% of foods could not be classified as "Always", "Sometimes", or "Never" permissible in schools. In comparison, only 0.06% of foods were unclassifiable using the IOM standards. Furthermore, due to the complexity of the standards, it took almost four times longer to understand and accurately apply those from Ontario than those from the IOM (25.75 hours and 7 hours, respectively). **Implications:** To be an effective means of improving childhood nutrition, nutrition standards should represent sound nutrition principles and be easily understood by those who will implement them. **Conclusions:** As policies become increasingly comprehensive and complex, they also become harder to understand, implement and enforce. This research emphasizes the importance of balancing theory and application to create helpful, healthful policies that can affect positive change.

### **Pratiques alimentaires des responsables de services alimentaires en milieu scolaire**

*MA Roy<sup>\*1</sup>, P Morin<sup>2</sup>. <sup>1</sup>Centre de santé et de services sociaux – Institut universitaire de gériatrie de Sherbrooke, Sherbrooke, Québec, <sup>2</sup>Université de Sherbrooke, Sherbrooke, Québec [R]*

**Objectifs :** Décrire les pratiques alimentaires des responsables des services alimentaires en milieu scolaire. **Méthodes :** Une entrevue dirigée a été réalisée avec tous les responsables des services alimentaires (n=20) des écoles publiques de Sherbrooke. Les questions traitaient de la formation du responsable ainsi que des orientations en matière de saine alimentation et des méthodes de préparation des aliments en vigueur au service alimentaire. **Résultats :** Trente pourcent des responsables détenaient un diplôme professionnel en cuisine d'établissement tandis que 30 % ne détenaient aucun diplôme. Plusieurs orientations en accord avec une saine alimentation étaient adoptées par la majorité des responsables (ex. : élimination de la friture et des boissons gazeuses, offre de mets composés des quatre groupes du Guide alimentaire). Plusieurs méthodes de cuisson visant à diminuer le contenu en gras des aliments étaient également utilisées par la majorité des responsables. Cependant, peu de responsables limitaient l'offre de desserts riches en sucre et/ou en gras ou évitaient de servir des aliments contenant des gras saturés et/ou trans. Le shortening d'huile végétale était utilisé dans la préparation des aliments par 70 % des responsables. Trente pourcent de ceux-ci incluaient des produits de grains entiers dans l'offre alimentaire. **Implications & Conclusions :** La majorité des responsables des services alimentaires des écoles de Sherbrooke a entrepris un virage santé. Toutefois, ceux-ci entretiennent des pratiques qu'ils pourraient modifier en vue d'améliorer la qualité de l'offre alimentaire faite aux élèves. Les diététistes pourraient être mises à contribution dans la formation du personnel des services alimentaires, notamment en ce qui concerne le contenu en sucre et en gras des aliments.

### **Food Service / Management Issues / Patient Issues**

#### **An internal and external examination of the responsibilities of a dietitian assistant**

*S Herd\*, S Tran, M Keith, J McLaughlin, H Fletcher. St. Michael's Hospital, Toronto, ON. [E]*

**Purpose:** Ongoing pressures to improve patient services and increase registered dietitian (RD) efficiency led to a re-evaluation of the role of the Dietitian Assistant (DA) at St. Michael's Hospital (SMH). An internal and external review of the DAs' role and duties was conducted to determine if DAs could take on a greater role in direct patient care. **Process:** SMH DAs and clinical leader managers (CLMs) were interviewed and a focus group with RDs was conducted to learn about the current and potential role/responsibilities of the DA. In addition a web-based questionnaire was sent to US and Canadian hospitals to determine tasks performed by DAs. **Project Summary:** DAs at SMH spend much of their time ensuring compliancy of patient meals, entering menu selections, and coordinating community food programs, which limits time available to support RDs in direct patient care. RDs and CLMs recognized benefits to having increased DA support, including patients' increased sense of 'control' and satisfaction with food. Questionnaire respondents (n=55) stated that DAs dealt with low-risk patients and performed tasks including entering preferences, conducting meal rounds, entering menu selections, conducting calorie counts, checking tray tickets for allergies, providing individual education, recommending/implementing supplements, and screening. **Recommendations & Conclusions:** The external survey results indicated that DAs at other hospitals completed similar tasks but were more involved in direct patient care. To increase DA direct patient care, recommendations include: 1)Reallocate DA supervision of community food programs; 2)Increase DA time spent on patient preferences, food satisfaction, and oral supplement follow-ups; 3)Initiate RD working group to help establish priorities for DA support. Increased face-to-face interaction with hospital staff may improve patients' overall experience in the hospital.

### **Consultation and evaluation supports the implementation of a trans fat reduction policy in Calgary food service operations**

*B Friesen, B Maloff, R Musto, S Gudmundson, M Fehr, J Aussant, C Johnston. Alberta Health Services, Calgary, AB. [E]*

**Purpose:** High levels of industrially produced trans fats in Canadian diets pose significant risk for heart disease and stroke. Studies estimate a 12 – 20 % risk reduction in coronary heart disease with replacement of healthier fats (Mozaffarian & Clarke, 2009). Health Canada established trans fat limits for the food supply in 2005 that have not been enforced. **Process:** Consultation with key national and local stakeholders and a 2007 survey of Calgary food service operators revealed a readiness to use low trans fat oils, margarines and shortenings. The Calgary Health Region Board created a policy to restrict levels of trans fats served by local food service operations to a maximum of 2% trans fat in margarines, oils and shortenings used for frying, cooking or spreading. **Project Summary:** Survey data before and after policy implementation indicated a statistically significant reduction in the number of deep-frying, cooking and spread products with  $\geq 2\%$  trans fat. In January 2008, health inspectors began monitoring compliance and by November 2008, 99.1% of food service operators were compliant with the trans fat limit. Margarine with  $\geq 2\%$  trans fat was the most common policy violation. Most (73.9%) of food service operators reported "no problem" when asked about using low trans fat products. Cost was a barrier among 11.5% of respondents. Food permit holders also identified useful sources of information and valuable resources for policy implementation. **Recommendations and Conclusions:** The Calgary experience provides an example of a successful population based trans fat reduction policy. Consultation with stakeholders is essential for successful implementation. Continued support and communication with food service operators regarding policy guidelines and implementation tools is essential.

### **Clinical Research (including Outcomes of Intervention)**

**An examination of vitamin D intake among women with and without gestational diabetes mellitus.**

*A Thompson\*<sup>1</sup>, I Giroux<sup>1</sup>, J Nairn<sup>1</sup>, MF Mottola<sup>2</sup>, R McManus<sup>3</sup>*

<sup>1</sup>Brescia University College, at <sup>2</sup>The University of Western Ontario, <sup>3</sup>St. Joseph's Health Care London, ON [R]

Low circulating levels of vitamin D may play a role in insulin resistance and the incidence of gestational diabetes mellitus (GDM). **Objectives:** Our objectives were 1) to estimate and compare the dietary intake of vitamin D among women with and without GDM and 2) to examine the components of vitamin D intake. **Methods:** Healthy pregnant women (n=6), women at risk for GDM based on BMI>25 and other risk factors defined by the Canadian Diabetes Association (n=16) and women with GDM (n=16) completed a two-day food intake record. Dietary intake was estimated using ESHA Food Processor including the Canadian Nutrient File. **Results:** Eighty-seven percent of participants met the Adequate Intake (AI) of 5 mcg of vitamin D per day and there was no significant difference in total vitamin D intake between groups (p>0.05, average 13.13±5.93 mcg/day). Food sources alone made up an average of 6.49±3.64 mcg/day with no significant difference between groups (p>0.05). In all groups the greatest contributor to vitamin D intake from food was milk. There was a significant difference in percent vitamin D from milk between women with GDM and healthy women (19.70±17.31% versus 53.85±25.14% respectively, p<0.05) but no significant difference in average vitamin D intake from fish, milk substitutes, other fortified foods or supplements between any of the groups (p>0.05). **Implications and Conclusions:** The current study did not show a significant difference in total dietary vitamin D intake between women with and without GDM, however a significant difference in vitamin D intake from milk was observed suggesting that this assessment should be reproduced in a larger sample of women with and without GDM. Continued research is needed to further describe the possible relationship between dietary vitamin D intake and GDM.

#### **The relationship between risk factors, risk awareness and diabetes screening rates among women with Gestational Diabetes Mellitus living in London and Perth County, Ontario**

J MacLellan\*<sup>1,2</sup>, A Watt<sup>1,3</sup>, R McManus<sup>2</sup>, I Giroux<sup>1</sup>. <sup>1</sup>Brescia University College, London, ON, <sup>2</sup>St. Joseph's Health Care, London, ON, <sup>3</sup>Huron Perth Healthcare Alliance, Stratford, ON. [R]

**Objectives:** To evaluate the relationships between risk factors for Gestational Diabetes Mellitus (GDM), GDM screening, maternal risk factor awareness, and postpartum diabetes (DM) screening rates. **Methods:** A sample of 103 women with GDM completed a written questionnaire between 9 and 38 weeks gestation in 2008-2009. A follow-up telephone questionnaire was administered after 6 months postpartum, with a follow-up response rate of 56%. **Results:** The majority of women who had multiple risk factors for GDM (85% (33/39)) were not screened for GDM during their first trimester, as recommended by the 2008 Canadian Diabetes Association Clinical Practice Guidelines (CDA CPGs). Time of screening for GDM was 13.9±4.2 weeks after the first trimester. Further, 47% (25/60) of study women were not aware of their risk for developing GDM, despite having ≥1 CDA-recognized risk factor. Obesity was the only GDM risk factor that was independently correlated with subject risk awareness (R=0.35, p<0.01). Only 7% (4/57) of participants had been screened for DM by 6 months postpartum, as recommended by the CDA CPGs. No significant correlations were observed between postpartum DM screening and the most significant risk factors for development of DM: insulin use in pregnancy, increased BMI and older age. **Implications and Conclusions:** These preliminary results suggest that CDA CPG recommendations for GDM and postpartum DM screening were not implemented in those individuals at highest risk. Intensive translation of CDA CPG recommendations to both primary care providers and women at risk for GDM and DM should be a focus for active clinical research.

#### **Impact of early energy provision in premature infants on body weight and composition in adolescence**

H Ludwig-Auser\*<sup>1</sup>, M Erlandson<sup>2</sup>, L Sherar<sup>2</sup>, C Arnold<sup>1</sup>, A Baxter-Jones<sup>2</sup>, K Sankaran<sup>1</sup>  
<sup>1</sup>Saskatoon Health Region, <sup>2</sup>College of Kinesiology, University of Saskatchewan, Saskatoon, SK [R]

Low birth weight and early nutrition are associated with metabolic programming, which influences adult health status (increased risk of chronic disease, such as obesity, hypertension, coronary heart disease

and type II diabetes in adulthood). **Objectives:** To investigate effects of early energy provision in premature infants on body composition in adolescence. **Methods:** 48 subjects (27 males; 21 females) were evaluated early in life and at 15 years of age and grouped by feeding status from birth to 8 days; underfed (<70 kcal/kg/day; n=30) or overfed (>70 kcal/kg/day; n=12) and by size for gestational age; small (SGA) (<10<sup>th</sup> centile) or appropriate (AGA) (>10<sup>th</sup> centile). In adolescence (average age 15 yrs) body composition (DXA) was assessed. Data were analysed by Pearson correlation and ANCOVA (covariates sex and age), significance was set as p <0.05. **Results:** When groups were combined there was a positive significant relationship between days to regain birth weight and adolescent weight (r=0.40) and lean tissue mass (r=0.37). No differences were found in adjusted heights, weights or body fat at 15 years of age (p>0.05) between feeding groups or gestational age groups (p>0.05). **Implications and Conclusions:** These findings suggest that total parenteral nutrition and total energy intake early in life have no negative effects on body composition in adolescence. Striving for appropriate energy provision in early life of premature infants is recommended.

### **Knowledge, perceptions and beliefs about nutrition in patients with inflammatory bowel disease: Preliminary results.**

*N Haskey<sup>1</sup>, J Jones<sup>2</sup>, M Cameron<sup>1</sup>, D Herauf<sup>1</sup> and K Nairn<sup>1</sup>. <sup>1</sup>Saskatoon Health Region, Food and Nutrition Services, Saskatoon SK. <sup>2</sup>University of Saskatchewan, Department of Medicine, Saskatoon, SK [R]*

**Objective:** To evaluate the knowledge, perceptions and beliefs of patients with inflammatory bowel disease (IBD) regarding their understanding of how nutrition (diet) impacts their condition. **Methods:** Patients referred to the Saskatoon Health Region IBD clinic completed a self-administered questionnaire (n=30). **Results:** Seventy-three percent of patients indicated that they had received nutrition information from their physician, their family (60%), the internet (57%) and a dietitian (53%). The most common methods of treatment used to treat IBD were medications, diet modifications, vitamins/minerals and exercise. Patients indicated that stress (80%) and diet (67%) were the two most common factors affecting their IBD. Fifty percent of patients felt that food caused a worsening of their IBD-related symptoms. Fast food, alcohol, milk and spicy foods were foods that patients identified as increasing their symptoms. The majority of patients (63%) believed that patients with IBD should avoid dairy products and sugary foods. Seventy-seven percent of patients noted that they would be interested in learning more about nutrition and IBD and 70% indicated that nutrition education would help them manage their IBD. The top three topics patients would like to discuss with a dietitian were 'Diet for IBD', 'Vitamin and Mineral Supplementation' and 'Fiber'. **Implications & Conclusions:** Patients with IBD perceive that diet plays a role in IBD management and have distinct beliefs about the affect specific dietary components have on their disease process which could lead to unnecessary and unhealthy dietary restriction. There is a demonstrated need for a diet education in order to provide reliable, accurate nutrition education and counselling to patients living with IBD in the Saskatoon Health Region.

### **Practice Implications from Feeding Tube Placement Outcomes in ALS Patients**

*K Beggs\*, M Choi and A Travlos, G.F. Strong Rehabilitation Centre, Vancouver, BC [R]*

**Objectives:** Amyotrophic Lateral Sclerosis (ALS) is a degenerative neuromuscular disease characterized by motor cell death and a terminal prognosis. Insertion of a feeding tube can facilitate better nutritional status when ALS patients are faced with increased dysphagia and fatigue. This study reviewed feeding tube placement outcomes in 69 ALS outpatients seen at an outpatient interdisciplinary ALS clinic in British Columbia with the objective of determining the point at which the risks outweigh the benefits of tube placement by comparing outcomes against parameters of respiratory function, nutritional status and speech and swallowing deterioration. **Methods:** This study was a retrospective review of tube placements between January 2000 and 2005, analyzing data on respiratory function, weight change from usual body weight and speech-swallowing deterioration at time of tube placement against successful and

unsuccessful feeding tube placement outcomes. **Results:** Results show a statistically significant association between nutritional status and successful tube placement outcomes ( $p = 0.003$ ), and none between respiratory status, speech-swallowing variables, or number of deteriorated variables in each patient. The only study variable that predicted successful tube placement outcome was a body weight greater than or equal to 74% UBW at time of tube placement. **Implications & Conclusions:** Several significant practice implications resulted from these results. Focus is placed on obtaining ongoing measures of weight and respiratory status, to assist in decision making for safe timing of tube placement. Early counselling, education and print materials are provided to patients and other health care providers around the risks and benefits of feeding tube placement. Admission and screening protocols were also developed and now used for PEG placement at our centre.

### Implementation of a water protocol in a rehabilitation setting

*C. Carlaw<sup>1</sup>, H. Finlayson, K. Beggs\*, T. Visser, C. Marcoux, D. Coney, C. M. Steele, <sup>1</sup>Fraser Health Authority, Surrey, BC [R]*

**Purpose:** A water protocol is a set of guidelines, allowing oral water intake for selected clients with thin liquid dysphagia in order to improve hydration and quality-of-life (QOL). It is recognized that it is difficult for patients to meet fluid requirements when only consuming thickened fluids. It was hypothesized that participants on the G.F. Strong (GFS) water protocol (WP) would have increased fluid intake, improved quality of life and satisfaction with their diet without any adverse effects. The presentation will describe the implementation of a water protocol in a rehabilitation facility, and outcomes for patients randomized to different levels of water access. The GFS WP prescribes interdisciplinary plans of care for free or supervised access to oral water intake. It includes head-of-bed posters and a pamphlet outlining water access rules, and an oral care protocol. Policy guidelines identify the roles of the interdisciplinary team. **Methods:** Sixteen participants were enrolled in the study; 7 were randomly assigned to the control condition (no water); 9 received water. Six control participants were subsequently crossed-over to water access. All participants had confirmed dysphagia for thin liquids on videofluoroscopy. Measures of fluid intake (ml; % daily requirements and % oral water) and quality of life (Swal-QOL; satisfaction questions) were taken at baseline and at 2 weeks. **Results:** None of the participants experienced adverse events (pneumonia, acute-care hospitalization). A significantly greater proportion of participants assigned to water intake experienced increased fluid intake of a minimum 10% ( $p=0.01$ ). Improved QOL in fear and symptom reporting was captured on the SWAL QOL. **Implications & Conclusions:** GFS algorithm facilitates decision-making for patient inclusion in the water protocol and may be a useful tool in settings where there is some resistance to introduction of a safe water protocol. Results of this trial suggest that water protocols can be safely implemented in rehabilitation settings, with positive outcomes in hydration and quality-of-life.

### The effect of vitamin D enriched bread on serum 25-hydroxyvitamin D in adults with suboptimal status.

*L Foster\*<sup>1</sup>, B Langkamp-Henken<sup>1</sup>, WJ Dahl<sup>1</sup>. <sup>1</sup>Food Science and Human Nutrition Department, University of Florida, Gainesville, FL, USA. [R]*

Vitamin D deficiency is a serious concern due to inadequate sunlight-induced vitamin D combined with low dietary intakes. Increased fortification levels, widespread supplementation or novel food sources of vitamin D are required to increase intakes. **Objectives:** The objective of this study was to determine the impact of consuming bread baked with vitamin D<sub>2</sub> enriched yeast on serum levels of 25-hydroxyvitamin D [25(OH)D] in adults at risk for insufficiency. **Methods:** Participants ( $n = 52$ )(18-56 y), who were screened as at-risk, (based on skin color, sun avoidance and supplement use less than 1000 IU/d of D<sub>3</sub>) were enrolled in a 4-week study and randomly assigned to the control group, usual diet plus 40 g of white bread, or the treatment group, usual diet plus 40 g of white bread enriched with 1000 IU D<sub>2</sub> from yeast. Pre and post serum 25(OH)D, and degree of tanning (measured by skin colorimetry) were assessed. **Results:** The screening protocol proved to be effective as 50 participants (96%) had serum 25(OH)D at less than optimal levels (<100 nmol/L), 35% fell into the insufficiency range of <50 nmol/L and none as deficient (<12.5 nmol/L). No significant differences were found between baseline and treatment 25(OH)D

(n = 26) (57.5 ± 20.0 nmol/L; 61.7 ± 19.8 nmol/L) or baseline and control (n = 22)(58.2 ± 16.5 nmol/L; 60.4 ± 14.1 nmol/L). **Implications & Conclusions:** The provision of 1000 IU/d of D<sub>2</sub> enriched yeast bread was not adequate to increase in serum 25(OH)D in individuals with suboptimal or insufficient status. Future research, should evaluate higher levels of D<sub>2</sub> for repletion. Funding provided by Lallemand Inc.

### **Providing better diabetes care follow up: Using technology to support 'self-management'**

*L Hoard\*, S Staley, C Jones, D Calnan-Kerr, H Cluett, Prince Edward Family Health Team, Sandbanks Medical Centre, Wellington, ON. [E]*

**Purpose:** Tailoring follow up care for people with diabetes should support the overall goal of self-management. Patients attending follow up appointments have been motivated, well controlled individuals rather than those with the greatest need. A new system to provide education and guidance to the struggling 'self-managers' was needed. **Process:** The Prince Edward Family Health Team, as part of the first collaborative of Ontario's Quality Improvement and Innovation Partnership (QIIP) used quality improvement methodology, including *Plan-Do-Study-Act* cycles, *process mapping* and *monthly reporting of measures*, to refine our diabetes follow-up care. **Project Summary:** Patients are seen through physician referral, patient-prompted appointments or electronic medical record (EMR) reports. Monthly reports are done to identify patients with A1Cs >7% or those without A1Cs done in > 6 months. Reports are also used to identify people 'at risk' and in need of screening. After patients receive initial appointments with the RN and RD, follow-up options are: a) book appointment in next 3 months; b) date for follow-up reminder recorded in EMR; c) no follow-up planned and patient directed to book appointment when support is required. Invitation for further follow-up can be triggered by the monthly reports while patient-prompted appointments still ensure timely access for those seeking support. The measures of success have been i) fewer patients lost to follow-up and ii) RN/RD having focussed attention on those in greatest need. **Recommendations:** Technology has the potential to positively support our work with patients and improve health outcomes while respecting the 'self-manager' model of care. Although the process can be frustrating in the original set up, it is well worth the effort!

### **Implementing a nutrition Med Pass program in an acute care facility**

*A Lee\*, T Rai. Grey Nuns Community Hospital, Covenant Health, Edmonton, AB. (R)*

**Objectives:** Malnutrition is common in older hospitalized patients. It is challenging to engage the geriatric patients to consume sufficient calories. The Nutrition Med Pass program provides concentrated nutritional supplement (2kcal/ml) to patients at high nutrition risk by nursing during medication rounds. The benefits of Nutrition Med Pass have been documented in long term care facilities but not in acute care. The Grey Nuns Community Hospital implemented the Med Pass program in 2008. The present study outlines the implementation, tracks nursing adherence and patient consumption. **Methods:** Nutritionally high risk patients were prescribed a nutritionally dense supplement in liquid or pudding consistency depending on swallowing ability. 60 mLs of a supplement was prescribed 3-4 times daily at medication rounds. Nurses were instructed to record supplement provided to and consumed by the patient in a Med Pass record. Age, BMI, consumption rates and intakes were recorded. **Results:** 27 patients were enrolled with an average age of 82, average admission BMI of 21.7. Patients were on the program for 19.2 days with a 59% consumption rate. Average daily consumption from supplement was 224 calories and 7.8 grams of protein. Eleven patients (41%) were supplemented with pudding and they consumed 40 calories and 5 g protein less than those consuming the liquid. Improvement in prealbumen was noted as a general trend. **Implications & Conclusions:** Med Pass program is prescribed appropriately to patients at nutrition risk. Consumption rate, caloric and protein intakes were lower than expected, especially for the dysphagia group. Further education to nursing to improve adherence and switching the pudding to a higher density will be considered.

## Diet order entry by registered dietitians results in fewer error rates and time delays compared to other health professionals

*K Imfeld<sup>\*1</sup>, M Keith<sup>\*1</sup>, L Stoyanoff<sup>1</sup>, D Cass<sup>1</sup>, H Fletcher<sup>1</sup>, S Miles<sup>1</sup>, J McLaughlin<sup>1</sup>. <sup>1</sup>St. Michael's Hospital, Toronto, ON. [R]*

**Objectives:** Document the numbers and types of errors, order transcription time delays, and number of missed patient meals that occurred in the period immediately prior to and following the implementation of registered dietitian (RD) diet order entry into an electronic order entry system. The aim was to determine if there was a difference between RDs and other care providers in these parameters. **Methods:** Retrospective, observational chart review of 672 nutrition-related orders before and 633 orders after implementation of RD order entry on high-risk in-patient units. **Results:** Error rates of nutrition-related orders decreased by 13% after RD order entry ( $p < 0.01$ ). Prior to RD order entry access, the rate of errors increased with increasing diet order complexity. After RD access was granted, this error rate was significantly reduced ( $p = 0.04$ ). Time delay of orders electronically entered was reduced by 39% (9.2 to 5.6 hours,  $p < 0.01$ ), therefore reducing the average number of patients' missed meals from 0.9 to 0.6 meals per patient ( $p = 0.02$ ). **Implications & Conclusions:** Granting RDs access to electronic order entry has improved overall timeliness of nutrition-related orders, and improved patient safety by decreasing error rates of all nutrition-related orders. This study provides evidence that RDs are the most knowledgeable professionals at accurately entering nutrition-related orders for patients they provide care for. This has implications for improving patient safety and treatment in the healthcare system. Ongoing education for all health professionals involved in diet order entry is required to further improve error reduction and time delays.

## Community-based Nutritional Care

### Charitable food programs in Victoria, BC

*E Bocskei<sup>1</sup>; A Ostry<sup>2</sup>. <sup>1</sup>Salvation Army Addiction and Rehabilitation Centre, Victoria, BC. <sup>2</sup>University of Victoria, Victoria, BC. [R]*

**Purpose:** Few authors have investigated the institutional character of charitable food programs and their capacity to address food security in Canada. **Methods:** We surveyed food program managers at charitable agencies in Greater Victoria, British Columbia. We discuss the structure of the "system" of charitable food provision; the value of sourced food, types of services provided, demographic profile, and the estimated healthfulness of meals served. We also describe the proportion of major food types purchased and donated to agencies. **Results:** Thirty-six agencies served approximately 20,000 meals a week to about 17,000 people. Food valued at \$3.2 million dollars was purchased or donated; approximately 50% is donated, mainly from corporations. The largest value of food purchased and donated was from meat and meat alternatives (40.9%) and non-perishable food items (16%). Dairy made up the smallest share of donated foods. **Conclusions:** Charitable food programs in Victoria depend on food donations. The proportion of dairy and produce is low, which raises questions about the healthfulness of foods currently fed to homeless and poor people in the city.

### The cost of healthy eating in Saskatchewan, 2009: impacts on food security

*C. Abrametz<sup>\*1</sup>, L. Gilmour-Kessler<sup>2</sup>, K. Golightly<sup>3</sup>, T. Keenan<sup>4</sup>, J. Marko<sup>4</sup>, J. Miller<sup>5</sup>, L. Vance<sup>6</sup> and B. Wright<sup>7</sup> <sup>1</sup>Athabasca Health Authority, Keewatin Yatthe & Mamawetan Churchill River Regional Health Authorities, La Ronge, SK, <sup>2</sup>Prince Albert Parkland Health Region, Prince Albert, SK, <sup>3</sup>Food for Thought Project, Prince Albert, SK, <sup>4</sup>Saskatoon Health Region, Saskatoon, SK, <sup>5</sup>Prairie North Health Region,*

North Battleford, SK, <sup>6</sup>Regina Qu'Appelle Health Region, Regina, SK, <sup>7</sup>Sun Country Health Region, Estevan, SK. [E]

**Purpose:** To calculate food costs for a healthy basket of food for Saskatchewan residents. **Process:** Food costing was conducted in June 2009 using Health Canada's 2008 National Nutritious Foods Basket. The tool was used to collect the prices of 63 representative food items sold in Saskatchewan grocery stores. Grocery stores were selected through a stratified random selection process. Data was averaged by food item and summarized by municipality size and geographic categories. **Project Summary:**

Ninety-six stores participated in the survey. The average cost of a nutritious food basket for a family of four was \$205.02 per week in the southern part of the province and \$252.27 per week in the northern section of the province. **Recommendations & Conclusions:** The 2009 Cost of Healthy Eating in Saskatchewan report supports food security advocacy in Saskatchewan. The report can be used to build policies that address food security and poverty such as income supplement allowance and therefore improve the health in the population.

### **EatRight Ontario Dietitian Advisory Service evaluation**

H Haresign<sup>1\*</sup>, H Kerr<sup>2</sup>, J Legare<sup>3</sup>. <sup>1</sup>Dietitians of Canada, Toronto, ON, <sup>2</sup>Ontario Ministry of Health Promotion, <sup>3</sup>Evaluation Consultant, Vancouver BC. [R]

**Objectives:** EatRight Ontario (ERO) is a pilot program funded by the Ontario Ministry of Health Promotion and managed by Dietitians of Canada. It has three service components (toll-free call centre, email feature and website [www.ontario.ca/eatright](http://www.ontario.ca/eatright)) that provide Ontarians with access to nutrition information from Registered Dietitians. This evaluation examined caller feedback to inform directions needed to enhance ERO impact. **Method:** Evaluation findings were based on telephone interviews with 420 consumers who had used the service during summer-fall of 2009. **Results:** The intent of the evaluation was to get a better understanding of how well ERO was meeting user needs, what clients do with information they receive from ERO, and how ERO might further facilitate caller behaviour change. Overall, healthy eating, chronic disease, weight management, digestive and children's nutrition are the most common reasons for accessing ERO. Survey results confirm that ERO delivers information that is considered useful by its callers, delivers on what has been requested by callers, and increases, at least in the short term (e.g. one to two weeks from call to service), the confidence of callers to make healthy eating choices. Over 90% of callers self-reported a change to improve their eating, improve their health, and reduce their risk of disease. This self-reported data provides baseline indicators regarding outcomes achieved through the ERO telephone service. **Implications & Conclusions:** There is strong support for ERO service and its potential to help change eating habits. Program impact can be strengthened through enhancements to service delivery that support client goals, motivation, learning and change. Additional ways to personalize the information to the caller was identified as one key area to improve service delivery.

### **Collaboration of six health organizations<sup>1</sup> to promote healthy eating that's fun and culturally appropriate to minimize the risk of and to better manage chronic diseases in the Chinese Canadian population**

A K H Hui<sup>1\*</sup>, H L M Poon<sup>2</sup>, <sup>1</sup>South Riverdale Community Health Centre, <sup>2</sup>Heart and Stroke Foundation of Ontario, Toronto, ON [E]

**Purpose:** The main goal of the *Healthy Eating for Life Project* is to reach out to caregivers, chronic disease patients, and social service providers, and encouraging them to embrace healthy and enjoyable eating habits. **Process:** Chronic diseases encompass a variety of conditions such as heart disease, diabetes, and kidney disease. Individuals with chronic conditions sometimes don't enjoy food, because of

the need to make dietary modifications. The *Healthy Eating for Life Project* is a collaboration among six health organizations<sup>1</sup> to promote healthy eating for chronic disease management. **Project Summary:** The *Healthy Eating for Life Project* produced 60 healthy recipes in both Chinese and English - recipes friendly to heart health, diabetes, kidney disease, bone health, family and geriatric nutrition. Between June and December, 2009, two recipes were published every Wednesday in *The Gourmet Guide*, Sing Tao Daily Newspaper (affiliated with Toronto Star). All recipes included an ingredient lists, cooking methods, nutrient analysis and a dietitian's healthy eating messages. This project was well received among the Chinese community, and health care providers, who used the recipes as a health resource for their clients. These recipes will be made available online to increase the general public's access.

**Recommendations & Conclusions:** With a strong collaborative effort, the audiences are able to enjoy culturally appropriate healthy foods, and helping them to manage and reduce the risk of developing chronic disease in the first place. <sup>1</sup>Heart and Stroke Foundation of Ontario, The Kidney Foundation of Canada, Canadian Diabetes Association, South Riverdale Community Health Centre (SRCHC), Carefirst Seniors and Community Services Association, Yee Hong Centre for Geriatric Care

### **Assessing Implementation of an Elementary School Nutrition Policy in Prince Edward Island**

*J Taylor<sup>1</sup>, J Caiger<sup>1</sup>, D MacLellan<sup>\*1</sup>, K Hernandez<sup>1</sup>. <sup>1</sup>University of Prince Edward Island, Charlottetown, PE. [R]*

**Objectives:** 1) to assess elementary school principal's perceived level of adherence to a school nutrition policy (SNP) in Prince Edward Island one and two years after policy adoption (2007, 2008) and 2) to assess the proportion of foods offered at school which were consistent with the SNP over the same time period. **Methods:** A descriptive survey was used to assess principal's (n=44) perceived adherence to key SNP components in 2007 and 2008. Principals reported foods sold at school lunch programs, vending machines, and canteens; these were assessed to determine if they were consistent with the SNP food lists. **Results:** Implementation of SNP components varied, with most principals reporting that they used healthy foods/non foods for fundraising (78%) and provided foods which were allowed by the policy (88%); fewer (27%) reported involving students in planning food choices or pricing foods to encourage healthy food consumption. There were few differences in reported adherence between time periods, except for a modest increase in the number of schools allowing 20 minutes for lunch (88 to 98%; p<0.09). More than 2/3 of foods offered at lunch were found to be consistent with the SNP; this was higher for foods in vending machines (94%) or canteens (75%). **Implications/Conclusions:** This study provides much needed Canadian data on SNP implementation, which is essential for policy evaluation. Results indicate that schools are successful in implementing some aspects of the policy, but continue to offer foods which are not allowed by the SNP. There were few differences in the level of implementation over a two year period, suggesting that schools require more time and support to adjust to SNP.

### **Nutritional Assessment / Dietary Intake**

#### **A Brief Intervention: How to start a conversation around vegetables and fruits intake**

*J Chan<sup>1</sup>, L Lach<sup>1</sup>, I Verduyn<sup>1</sup>, R Wangsawidjaya<sup>\*1</sup>. <sup>1</sup>Community Nutritionist Vancouver Coastal Health, Vancouver, BC [E]*

**Purpose:** All clinicians are regarded as experts in good health and are well-positioned to influence healthy behaviour changes. Clinicians may not have the skills to discuss behaviour changes that are outside of their profession. The Brief Intervention is an effective tool for clinicians, regardless of their professional practice, to discuss behaviours that lead to positive changes with their clients. This tool has been used for tobacco cessation and hazardous alcohol drinking, but has not been used to support or promote healthy eating behaviour changes. **Process/Content:** An education program was developed to provide training on the Brief Intervention for all clinicians in the Adult/Older Adult program within

Vancouver Coastal Health. The purpose is to increase awareness of the Brief Intervention and increase its use in clinicians' practice to discuss and promote adequate consumption of vegetables and fruits.

**Project Summary:** The program will be implemented at four different Community Health Centres. The program consists of a PowerPoint presentation, demonstration video, role playing, and resource package. The attendees' awareness of the Brief Intervention and likelihood of using the tool was evaluated after the in-service. They are surveyed in 2 and 4 weeks thereafter to determine actual use of the Brief Intervention to promote the conversation around adequate consumption of vegetables and fruits.

**Conclusion/Recommendations:** Two in-services have been completed thus far. It was determined that attendees improved their awareness of the Brief Intervention and will likely use this tool in their practice to discuss consumption of vegetables and fruits. Such findings conclude that clinicians are likely able to discuss eating behaviour changes when provided with the tools and support to do so.

## ORAL RESEARCH PRESENTATION ABSTRACTS - FRIDAY MAY 28, 2010

### Vulnerable Groups and Their Nutritional Needs

#### What's in those lunches? Nutrition composition of elementary school student's lunches

*J Caiger<sup>1</sup>, J Taylor\*<sup>1</sup>, D MacLellan<sup>1</sup>, K Hernandez<sup>1</sup>, P Veugelers<sup>2</sup>. <sup>1</sup>University of Prince Edward Island, Charlottetown, PE <sup>2</sup>University of Alberta, Edmonton, AB [R]*

**Objective:** Although there has been increasing interest in the role of school nutrition policies in children's dietary intakes, we know little about the nutrient composition of foods that Canadian children consume while at school. The objective of this study was to assess the nutritional quality of lunchtime food consumption among Grade 5 and 6 children in Prince Edward Island.

**Methods:** Students (n=2005) completed a validated lunch time food record during an in-class survey conducted in 2007 as part of a larger study evaluating school nutrition policies. Nutrient intakes were generated using CANDAT nutrient analysis system. Dietary adequacy was assessed by comparing micronutrient intakes with one third of the EAR or median intakes with the AI; macronutrient intakes were compared to the Acceptable Macronutrient Dietary Intakes. Chi-square analysis was used to assess differences in the number of children with intakes meeting recommendations according to grade and sex.

**Results:** Median intakes of potassium, zinc, vitamin A and vitamin E fell below recommended levels.

Sodium intakes exceeded the AI (931 mg) and 44% of children had sugar intakes which exceeded recommendations. Lunches were high in carbohydrate (59% above AMDR), moderate in protein (67% within AMDR range) but low in fat (78% below AMDR). Boys had significantly higher intakes of energy, protein, fat, carbohydrates, iron, calcium, vitamin D, thiamin, riboflavin, niacin, sugar and sodium than girls (p<0.05). Two thirds of the food consumed by the students came from home.

**Implications and Conclusions:** The overall nutritional quality of lunches was poor. That the majority of foods consumed at lunch were brought from home suggests a need for parental supports and education.

#### Sociocultural food choice motivations in Quebec (1960-1990)

*S Hamadeh \*<sup>1</sup>, M Marquis<sup>1</sup>. <sup>1</sup>University of Montreal, Montreal, Quebec. [R]*

**Objectives:** The purpose of this study is to explore the continuity and/or rupture in food motivations as revealed from documents issued from "Châtelaine" in 1960/61, 1970, 1980 and 1990. **Methods:** A historical content analysis was used to explore the food motivations in *Châtelaine*. Fifty one issues were read and all documents referring to food and nutrition were photocopied except for advertisements.

Variables were associated to each document than grouped into four themes: health and diseases, food and nutrition, body, and society. Descriptive statistics were conducted using SPSS (version 10.1, 1999).

**Results:** the content analysis has indicated that food and nutrition is the dominant motivation (n= 430) followed by health and disease (n= 292), society (n= 71) and body concerns (n= 70). Each decade was associated to major sub-themes. In brief, 1960 is the year of food, family and tradition; 1970 is the transition year; 1980 is the year of knowledge, culpability and environment; 1990 is the nutritional education year. **Limitations/implications:** Study done using the first year of each decade and in a single magazine can't be generalized. Moreover these results are specific to a French Canadian context. Further research on other media could provide more insight into some of the relationships explored in this study. **Conclusion:** Our findings suggest that the dominant motivations are projecting in a different way from one year to another. These results support the need to take into consideration the role of media in shaping women's food preferences and the evolution of these motivations over time.

### **Faisabilité du dépistage nutritionnel chez les aînés dans les établissements de santé au Nouveau Brunswick (N.-B)**

*L. Villalon<sup>1\*</sup>, M Laporte<sup>2</sup>, N Carrier<sup>1</sup>, I Caissie<sup>1</sup> École de sciences des aliments, de nutrition et d'études familiales, Université de Moncton, Moncton., <sup>2</sup>Hôpital Régional de Campbellton, Campbellton, N.-B. [R]*

**Objectifs :** Identifier si les conditions requises à la mise en œuvre d'un programme de dépistage nutritionnel (DN) chez les aînés ( $\geq 65$  ans) sont existantes dans les hôpitaux et foyers de soins de longue durée (FSLD) et connaître les barrières au DN. Étude en deux phases : 1) Enquête auprès des médecins, infirmiers et diététistes afin d'identifier leur perception sur la problématique de la malnutrition et la pratique du DN dans leur milieu; 2) Étude de faisabilité à l'implantation d'un programme de DN chez un échantillon représentatif d'hôpitaux et FSLD du N.-B. **Méthodes :** Phase 1 : questionnaire distribué aux professionnels de la santé; Phase 2 : application des outils de DN de Laporte et al. dans les milieux et répertoire de la disponibilité des paramètres pour dépister et motifs de leur absence. Des analyses statistiques descriptives, de variance et chi-carré ont été réalisées. **Résultats :** 5/8 hôpitaux (62,5%) et 45 FSLD (68,8%) de la province ont participé à l'enquête et 158 médecins (16,3%), 230 infirmières (41,4%) et 69 diététistes (49,6%) ont complété le questionnaire. Les médecins et infirmiers sous-estiment la prévalence de la malnutrition à 10-20%. La perception sur l'importance de faire du DN diffère significativement entre les professionnels. L'utilisation d'un outil de DN est peu fréquente (24,6%); la perte de poids est la méthode la plus rapportée (87,4%). D'autres résultats seront présentés. **Répercussions et conclusions :** Davantage de sensibilisation à la problématique de la malnutrition est requise. L'implantation d'un programme de DN standardisé dans ces milieux favorisera un dépistage plus régulier et uniforme.

### **Improving on Childhood Anaemia and Growth Markers through Nutrition Intervention and Greenhouse Infrastructure in Himachal Pradesh, India.**

*S. Brkanovic<sup>\*1</sup>, L. Chng, K. Giang, E. Hendren, A. Lam, T. Ngai, S. Rose, S. Skitch, M. Suen, N. Taha, G. Tansley, L. Bornn. Advisor: V. Kapoor MD, <sup>1</sup>Vancouver General Hospital, Vancouver, BC [R]*

Munsel-Ling boarding school is located in Rangrik, a remote village in the Indian Trans-Himalayas. Short growing seasons and snowfall leave Rangrik cut-off from fresh food for seven months per year. Additionally, government funding for school meals remains less than 10\$US monthly per student. This year the school has asked for our team to oversee the production of six additional greenhouses (one greenhouse was constructed in 2008) and to identify the nutritional inadequacies of the school meal program. Methodology: Using anthropometric measurements (based on WHO standards), clinical signs and symptoms and a Hemocue B analyzer, the population was assessed for stunting/wasting, micronutrient deficiency and anaemia. A nutrition analysis of the school meals was conducted using a Computrition Analysis program and food stock data. Results: The nutrition/health screen found that 20% of the population has micronutrient deficiency, 43% is stunted, and 72% is anaemic. The dietary assessment showed student meals are inadequate in dietary fat, HBV (high biological value) protein, iron

and B12. Relevance: Crops from seven greenhouses will help mitigate iron deficiency anaemia through year round iron rich vegetable availability (previously impossible in the community). Stunting prevalence, a broader nutritional issue, must be curbed through additional school meal funding. As a result, a nutrition and health report was written for advocating for government funding. These nutritional issues are not unique to Munsel-Ling. While some factors remain geographical, this interdisciplinary model combining health, nutrition and policy work can be highly effective in increasing food security any marginalized community.

## Nutrition Education

### The democratic classroom

*D Lordly\*, Mount Saint Vincent University, Halifax, NS [E]*

**Purpose;** To create a classroom learning environment where power structures are minimized and collaborative and individual learning is maximized. **Process;** The assumption is that effective learning is not a top down process. University learners have or can obtain the necessary knowledge, and through the journey of reflection, networking, collaborative thought and learner directed activities, to transform the classroom for themselves and others into a meaningful area of practice. Learners in a senior level professional practice course decide what topics will be covered over a 13 week period. The course facilitator guides teams of students through several initial interactive discussions structured to introduce them to useful tools and the confidence required to proceed. **Project Summary;** One such journey involved tackling a difficult practice question related to eating disorders and disordered eating amongst students and the larger dietetic profession. Within the teaching/learning environment created, learners explored and came to understand a topic that is rarely spoken of, on their terms. Through engaging academic and professional literature, networking with dietetic practitioners, the production of a video and an accompanying presentation, the thoughts, feelings, and concerns of these learners were brought to the classroom and shared in a poignant and moving way. Course facilitator, audience and peer evaluations created an effective feedback mechanism. **Recommendations & Conclusions;** Learners who are given the opportunity to take ownership for their learning in a responsible and safe environment become confident in their own, sometimes previously hidden abilities and professional roles. University course facilitators can implement innovative teaching strategies that involve a redistribution of classroom power. The learning outcome(s) of this experience have transcended the classroom to the broader university community and beyond.

### Le menu en services de garde : conception et préoccupations des cuisiniers.

*M Marquis\*<sup>1</sup>, S Côté<sup>1</sup>, J Deschamps<sup>1</sup>, M Duplessis-Brochu<sup>1</sup>, E Gelin<sup>1</sup>, P Grand<sup>1</sup>, MJ LeBlanc<sup>1</sup>. Extenso, Université de Montréal, Montréal, Québec. [R]*

**Objectif :** Étudier les motivations et préoccupations de responsables de cuisine lors du développement des menus en service de garde. **Méthodes :** Un questionnaire auto administré fut destiné aux responsables de cuisine de 106 services de garde du Québec accueillant plus de 50 enfants. Il incluait 17 facteurs sous jacents à la conception du menu et 11 besoins reflétant des préoccupations susceptibles de rejoindre les cuisiniers lors du développement des menus. Une échelle en 5 points fut utilisée (en accord, en désaccord). Leur profil (formation, expérience) fut documenté. **Résultats :** Tous les responsables (n=106) ont complété les instruments. Plus de la moitié (54%) possède un diplôme professionnel en cuisine d'établissement. Ils cumulent en moyenne  $7,1 \pm 6,7$  ans d'expérience dans leur milieu. Les facteurs identifiés par plus de 90% comme influençant la conception du menu sont: le respect du Guide alimentaire canadien, les attentes de la direction, la possibilité de varier les saveurs et textures et la disponibilité des fruits et légumes. L'origine culturelle des enfants et les attentes des éducateurs

furent retenues pour 70% d'entre eux. Au nombre des préoccupations, les cinq plus importantes sont : le besoin d'un avis professionnel sur l'équilibre alimentaire du menu, le souci d'inclure suffisamment de fibres alimentaires, de réduire le sucre, le gras et le sel. **Répercussions et conclusions** : Les données supportent le besoin des cuisiniers en informations culinaires et nutritionnelles personnalisées. Via le projet *Offres et pratiques alimentaires revues dans les services de garde du Québec* des ressources électroniques à l'intention des cuisiniers seront intégrées sur le portail Web [www.nospetitsmangeurs.org](http://www.nospetitsmangeurs.org) et le centre d'appels électronique *Infocuisine* leur étant aussi destiné sera popularisé.

### **Diabetes prevention strategies for Caribbean and Latin American communities of the Greater Toronto Area**

*D Renouf\*<sup>1</sup>, M Halenko<sup>1</sup>, M Hylton<sup>1</sup>. <sup>1</sup>Live Free...Prevent Diabetes, New Heights Community Health Centres, Toronto, ON. [E]*

**Purpose:** **Live Free...Prevent Diabetes** (LFPD) is a diabetes prevention project that aims to assess diabetes risk and assist at-risk individuals in making healthful lifestyle behavioural changes. **Process or Content:** Diabetes incidence is on the rise in Caribbean and Latin American communities, with genetic predisposition, obesity, and sedentary lifestyle cited as major predictors. The LFPD forms partnerships with community organizations in order to: (1) Conduct diabetes risk screening clinics (DRSC), using CANRISK diabetes risk assessment questionnaire; (2) Provide the *Back on Track* workshop series, which focus on skill-building and knowledge sharing to foster behavioral change. All participants are invited to attend workshops, which are offered at various community locations in Toronto. In addition, referrals to individualized nutrition counseling, primary care, and community services are also provided as appropriate. **Project Summary:** Participants of four consecutive *Back on Track* workshops are recruited from DRSC. Workshops encompass the following: (1) Diabetes prevention and goal setting; (2) Nutrition; (3) Cooking skills; and, (4) Physical activity. Participants submit evaluations, as well as a knowledge pre- and post-test. To date, 224 individuals have been screened. Of those, 61 participants have completed workshops. Of participants, 93% were able to specify one goal set, as well indicate achieving or partly achieving a goal during the series. Participants experienced up to 30% increase in knowledge of topic areas. **Recommendations and Conclusions:** Although screening identifies those at risk for diabetes, direct and intensive interventions are essential for the adoption of sustainable, healthful behavioral changes. Successful diabetes prevention endeavours rely on a combination of outreach efforts and direct interventions.

*The authors acknowledge funding from Toronto Central Local Health Integration Networks.*

### **Fitness professional and client perspectives on nutrition education resources developed for the fitness community**

*B McVeigh, L Underhill\*. Dairy Farmers of Canada, Mississauga, ON. [E]*

**Purpose;** To address a previously identified gap in nutrition education for fitness professionals (FPs) and their clients and to develop a better understanding of the ideal resource characteristics that will best meet the needs of these audiences. In addition, this research was designed to inform the development and implementation of a planned series of nutrition education initiatives. **Process;** Draft resources on the topic of hydration for physical activity were created based on a previous needs assessment. Eight ninety-minute focus group sessions in two geographic locations were conducted. Participants were organized into four groups; female FPs, male FPs, female clients, and male clients, respectively. Participants provided feedback on content, layout, imagery, and overall impression of the resources and answered questions related to sources and types of nutrition information they utilized, effective distribution methods for educational materials, and topics of interest for future resources. **Project Summary;** Valuable information was collected on target audience preferences related to content, layout, imagery and tone of

the draft resources. Some differences were observed between fitness professionals and clients. On the topic of hydration, no differences were observed between males and females in either group. The observations collected in these focus groups were used in the creation of two resources on the topic of hydration; one for fitness professionals and one for clients. Findings will also be applied to future initiatives related to these target audiences. **Recommendations and Conclusions;** This research reinforces a previously identified gap in the nutrition knowledge of these audiences as well as the need for credible nutrition education resources. It is essential to explore the specific preferences of target audiences to ensure relevance and effectiveness of educational initiatives.

### **Healthy Measures – Early Years Project: Focus Groups with Parents on Self-esteem and Body Image**

*M Sena-Balestra\*, E Manowiec, A Birks, J Hogg-Devine. Toronto Public Health, City of Toronto, Toronto, ON [R]*

The Healthy Measures initiative promotes a three-pronged approach to achieving healthy weights and better health by being active, eating well and fostering positive self-esteem and body image. This research focuses on one specific component of the project that aims to explore the topic of self-esteem and body image with parents of children 0 to 6 years old. **Objectives:** (1) Identify how parents view self-esteem and body image. (2) Identify parents' experiences in dealing with their child's self-esteem and body image. (3) Explore what resources or supports parents need to assist them in building positive self-esteem and body image in their children. **Methods:** Six focus groups were conducted with 72 participants. Participants were parents with children between the ages 0-6 years of age registered at one of the partner agencies (child care and early year centres). Participants were recruited by partner agencies. Selection criteria were utilized to assist in an unbiased selection process. Audiotapes were transcribed and data analyzed through standard qualitative, thematic analysis. **Results:** Themes emerged regarding body image and self esteem: internal and external components exist; self-esteem implies positive associations while body image implies negative; self-esteem situations arise at a younger age than body image situations; open communication and teach-able moments; people seen as learning resources; usefulness of printed material, also made available online; value of parenting classes from a trusted and professional source. **Implications & Conclusions:** The findings provide valuable information in planning, developing and delivering of programs/supports that incorporate the needs of parents, as it pertains to building positive self-esteem and body image in their children, and achieving the best possible health outcomes.

### **The SPARC guide (supporting partnerships to advance results of collaboration)**

*J Brady<sup>1</sup>, A Farrell<sup>2</sup>, L Fleming<sup>3</sup>, A Liu<sup>2</sup>, D Smith<sup>4</sup>, L Dejonge<sup>5</sup>, JR Gingras<sup>2</sup>, <sup>1</sup>Sick Kids Hospital, Toronto, ON, <sup>2</sup>School of Nutrition, Ryerson University, Toronto, ON, <sup>3</sup>University of Western Ontario, London, ON, <sup>4</sup>Ottawa Hospital, Gatineau, Quebec, <sup>5</sup>Hamilton Health Sciences, Hamilton, ON. [E]*

**Purpose:** The student-created SPARC Guide employs individual and collective strategies that support sustainable teamwork in the classroom with potential for use in other inter/professional learning arenas. It enables collaborative approaches to resolving emergent challenges by constructively addressing issues that commonly arise in group work before they become problematic. **Content:** The Guide is a "how to" workbook with two main sections — one for team members and one for facilitators. For members we include handouts regarding: self assessment, a team-based preparation activity, task planner, and team accord. Read-only pages include instruction on theoretical and practical applications of debriefing and annotated bibliography providing evidence for excellent teamwork. The facilitator section highlights a one-hour lesson plan and a team evaluation form. **Project Summary:** I will reflect on my own experience with using the Guide and the theories it draws upon. Session participants will receive their own copy and leave with strategies that support team learning, which will: 1) motivate team assets; 2) support struggling members; and 3) evaluate team-based learning outcomes. The Guide is intended for widespread adaptation. **Recommendations & Conclusions:** The SPARC Guide contextualizes the importance of early engagement and proactive communication to support collective efficacy and successful teamwork.

This tool is being used in classrooms across many faculties at Ryerson University in Toronto to great acclaim, as both educators and students have expressed a need for guidance when learning and working in teams.

## **Dietetic Practice and Education: Innovative Approaches**

### **Going green in healthcare foodservices: A survey of beliefs, attitudes and behaviours regarding environmentally-friendly practices.**

*ED Wilson\*, AC Garcia, J Matthews. Brescia University College, London, ON [R]*

**Objectives:** Sustainability and the environment are issues with global impacts. A hospital/healthcare foodservice facility consumes large resources; therefore, efficiencies in its operation can address sustainability. This study explored beliefs, attitudes and behaviours about environmentally-friendly practices, and facilitators and barriers to implementing green initiatives in hospital/healthcare foodservices. **Methods:** Questionnaires incorporated green initiatives related to building and equipment (BE), waste management (WM), food (F) and non-food procurement (NP) issues. Participants included foodservice managers, clinical dietitians, dietary aides, food technicians and senior leaders of hospitals in London, Ontario. Data analysis, using SPSS, included correlation analysis and descriptive statistics. **Results:** Of 68 participants (19% response rate), the average scores for environmentally-friendly beliefs were high in building and equipment (90%), waste management (94%) and non-food procurement (87%) and lower in food-related initiatives (61%). The food-related initiatives included buying locally, buying organic foods, buying sustainable fish products and reducing animal proteins. Average positive scores for environmentally-friendly behaviours were lower overall than beliefs but were positively correlated overall (WM:  $p = .001$ , F:  $p = .000$ , NP:  $p = .002$ ) except for building and equipment (BE:  $p = .068$ ). Average positive scores for attitude regarding implementing the initiatives in healthcare were: BE: 74%, WM: 81%, NP: 70% and F: 36%. **Implications and Conclusions:** The noteworthy difference in food-related beliefs, behaviours and attitudes indicates that further education is needed on the environmental impacts of food choices. Further research is warranted to determine barriers and facilitators to implementing green strategies in Canadian healthcare facilities. Foodservices can make positive differences to the environment by adopting green practices. Dietitians, in their role as food experts, can take a lead in education, policy making and championing the change process.

### **Investigating strategies to increase the sustainability of retail food procurement at St. Michael's Hospital**

*J Gammon\*, B Cowan, M. Keith, L. Pacheco, J Kerr and H. Fletcher. St. Michael's Hospital, Toronto, ON. [E]*

**Purpose:** There is growing interest towards the development of sustainable food systems that can help redefine healthy food to include the health of the environment, social communities and the overall food system. Therefore, this project explored opportunities for increasing the sustainability of retail procurement of produce, coffee and seafood. Increasing the use of sustainable food products supports St. Michael's Hospital's (SMH) vision, core values and greening strategies. **Process:** An online literature review and personal contact with non-governmental organizations (NGOs) supported the development of definitions for sustainable procurement of produce, coffee and seafood. Internal, external, logistical and cost analyses were completed to determine opportunities for increasing sustainable procurement of SMH's retail food services. **Project Summary:** Challenges to the incorporation of sustainable food procurement strategies were identified. Prior to this project, SMH was not requiring vendors to declare if their products were certified sustainable produce, coffee and seafood, which made assessment of current products difficult. As well, the price premiums associated with organic produce are difficult to absorb in a profit and loss operation. However, local produce can be cost competitive and is seasonally available from current and prospective vendors. Fair Trade Organic coffee can be purchased at a modest price

increase for Catering Services and a larger price premium for retail Marketaria. **Recommendations & Conclusions:** It is logistically and financially feasible for SMH to increase procurement of local produce. The next step for SMH will be to make a formal commitment to sustainable procurement of produce by setting sustainability goals, measuring progress as well as highlighting the use of sustainable products to customers.

## Enhancing Dietetic Practice and Professional Development

### The role of the registered dietitian in Canadian ALS Clinics: a follow-up survey

*E. Cawadias\*, The Ottawa Hospital Rehabilitation Centre, Ottawa, ON [R]*

**Background:** Nutrition management in ALS is accepted as an important aspect of patient care.

- Nutritional status is an independent prognostic indicator of survival.
- 16-21% of patients develop malnutrition
- 70-80% of patients develop dysphagia.
- for many patients artificial nutrition support (ANS) will be recommended and implemented.

**Objectives:** To determine the involvement of registered dietitians (RDs) in Canadian ALS clinics

**Method:** The 18 ALS Clinics on the ALS Canada website were contacted. A 5-question survey was sent to the 5 clinics with no RD. A 27-question survey covering RD service, nutritional assessment, interventions, ANS and research was sent to the 13 RDs identified. Results were compared with the 2006 study. **Results:** *RD survey:* Response 12/13 (92%). Average FTE allowance decreased. Average caseload doubled. Average experience increased. Methods for assessing nutritional status, intake and fluid requirements were consistent. Advice was still given most frequently for increasing calories, protein and commercial supplements and least frequently for weight reduction and vitamin/mineral supplements. Most reported giving advice on texture and fluid modifications. 33% are members of DC DAT-N.

Indicators for discussion of ANS changed. RD participation in research is very limited. *Clinics with no RD survey:* Response 3/5 (60%). Most frequent reason given for no RD was lack of funding. Most indicated that given funding they would have an RD on the team and that patients would benefit from RD services.

**Implications and Conclusions:** Dietitians in Canadian ALS Clinics have more experience, greater patient load but smaller FTE allocation than previously observed. Few participate in research. 30% of clinics do not have an RD. Considering the key role RDs play in the care of ALS patients, these results are surprising.

### Emerging role of government dietitians in healthy public policy and healthy eating regulations.

*L.Cramb\*, .L. Forster-Coull. Ministry of Healthy Living and Sport, Victoria, BC. [E]*

**Purpose:** Most of the work of provincial government dietitians has been related to nutrition education and providing dietetic expertise for evidence informed decision-making in public health programs. More recently, provincial government dietitians have been working cross government and cross sector to advance healthy eating promotion. This presentation will describe the exciting new roles that government dietitians can play in healthy public policy and regulations for the prevention of nutritionally related chronic diseases. **Process:** In February 2008, the BC Government made a commitment to restrict industrially produced trans fat in BC food service establishments in time for the 2010 Olympic Games. This resulted in the development of the very first healthy eating regulation in BC under the *Public Health Act*. Provincial government dietitians worked closely with Health Canada, Heart and Stroke Foundation of BC & Yukon, the food industry and health authorities to develop and implement trans fat restrictions in September 2009. The trans fat restrictions were consistent with the National Trans Fat Task Force recommendations released in 2006. **Project Summary:** BC became the first province in Canada to regulate industrially produced trans fat in all food service establishments. Provincial government dietitians took a leadership

role in managing the initiative, including the development and implementation of the regulation, support services, resources and training of public health inspectors to enforce the regulation.

**Recommendations & Conclusions:** Many provinces are working to influence the food environment by setting standards for foods available in schools, workplaces and community settings. The framework and lessons learned to develop and implement the trans fat regulation can be considered for future healthy eating regulations in an effort to reduce nutritionally related chronic diseases.

## ÉVOLUTION des discours des organismes de santé au Québec en matière de gestion du poids

*PG Duhamel<sup>\*1</sup>, J Collin<sup>1</sup>, Faculté des études supérieures, département de sociologie, Université de Montréal, QC (R)*

L'augmentation de la prévalence du surpoids et de l'obésité au Québec comme ailleurs inquiète les gouvernements et les autorités médicales. Afin de contenir ce qui est décrit comme une pandémie d'obésité, ces organisations proposent différentes recommandations, dans un contexte d'inefficacité des interventions cliniques de gestion de poids et de stratégies de prévention dont l'efficacité et la sécurité à long terme restent encore à démontrer. **Objectifs :** Caractériser le discours des organismes de santé au Québec en matière de gestion du poids afin de leur évolution. Puis, identifier s'il y a une moralisation à l'œuvre dans ces actions et dans l'affirmative, déterminer ce que cela révèle de nos sociétés modernes. **Méthode :** Décrire l'évolution du discours des organismes officiels de santé au Québec en matière de gestion du poids par l'analyse de contenu de plus de 160 documents produits au cours des 60 dernières années par les gouvernements, les autorités professionnelles et les médias. **Résultat et discussion :** Le discours s'inscrit dans trois continuums : le pathologique (une gradation, une inflation étymologique du sens qui est donné au poids problématique); la surveillance (avec l'établissement de critères rationnels, la surveillance d'abord individuelle est devenue collective et s'est institutionnalisée); la responsabilisation (la responsabilité du poids s'est déplacée de l'individu vers le collectif puis vers le social). Ces continuums illustrent un déplacement de la manière de concevoir le poids de la sphère privée vers la sphère publique Elle révèle aussi qu'il y a à l'œuvre un exercice disciplinaire propre à une moralisation qui s'appuie sur la prémisse que l'augmentation de la prévalence touche toute la population de manière égale. Or, il n'en est rien.

## Prevalence of burnout among Ontario dietitians

*JR Gingras<sup>\*1</sup>, LA deJonge<sup>2</sup>, N Purdy<sup>1</sup>. <sup>1</sup>Ryerson University, Toronto, ON, <sup>2</sup>Hamilton Health Sciences Centre, Hamilton, ON. [R]*

**Objectives;** Burnout is the result of unmanaged stress that has been shown to affect those working in the healthcare professions. Although much research has been conducted on burnout among nurses, physicians, and other health professionals, there is limited data from dietitians. The study's aim was to establish the prevalence of burnout among dietitians in Ontario, determine demographic variables associated with burnout, and compare these results to burnout data for other healthcare professionals.

**Methods;** English and French versions of the Maslach Burnout Inventory-Human Services Survey along with a demographic questionnaire were emailed to dietitians registered to practice in Ontario. **Results;** Of the 2900 dietitians registered, 405 completed the entire survey. The respondents experienced a moderate amount of emotional exhaustion (EE) (mean=19.96), a low level of depersonalization (DP) (mean=4.31), and a moderate sense of personal accomplishment (PA) (mean=38.61). Statistically significant relationships were found between years as a dietitian and PA ( $r=.16$ ;  $p=0.05$ ), age and PA ( $r=.15$ ;  $p=0.01$ ), hours worked per week and EE ( $r=.17$ ;  $p=0.01$ ), and hours worked per week and DP ( $r=.14$ ;  $p=0.01$ ). There were no significant differences in mean burnout scores across the five areas of practice. Over 57% of dietitians in this study indicated moderate to high levels of burnout overall. **Implications & Conclusions;** While dietitians have lower levels of burnout compared to other health care professionals, moderate levels of emotional exhaustion and personal accomplishment are indicative of workplace issues worth further exploration. Given the negative consequences of burnout on health and job performance, this study reveals that creating conditions to prevent or minimize burnout among dietitians is important not only for dietitians but the clients they serve and the organizations in which they are employed.

## MORGAN MEDAL AWARD RECIPIENT ABSTRACT

*Kira Schan was awarded the Morgan Medal by the Canadian Foundation for Dietetic Research. This award is presented to a dietetic intern or student who demonstrates excellence in a practice-based research project*

### **The development of a key informant survey to identify barriers and facilitators of recruitment and retention of Registered Dietitians in Northern Ontario**

*K Schan\*, C Hubbard, D Raftis. Northern Ontario Dietetic Internship Program. Thunder Bay, ON.*

There is a longstanding shortage of Registered Dietitians (RDs) in Northern Ontario. Limited research exists on factors that affect recruitment and retention of RDs. **Objectives:** To construct and pilot two key informant surveys directed at Registered Dietitians and their employers. To identify whether questions in the survey tools need to be altered to reflect understanding and clarity. **Methods:** Two key informant telephone surveys were developed with open-ended questions on recruitment and retention issues of RDs in Northern Ontario. The research design was structured in two phases: 1) pretesting and 2) piloting of a survey to a convenience sample of RDs and employers. Pretesting and piloting were conducted with RDs (n=3, n=8 respectively) and employers (n=1, n=6 respectively) in the Local Health Integration Networks 13 & 14. During each phase of testing, the respondents were asked a series of four cognitive testing questions after completing the surveys to assess the overall effectiveness of the survey. Audio taped transcripts were analyzed for understanding and clarity. **Results:** Eighty percent of RDs (n=8) and 60% of employers (n=6) responded. Recommendations to aid in clarity, understanding and conciseness of survey tools were presented. Results from the RD and employer surveys suggested improvements to the wording of certain questions and length of the survey. **Implications & Conclusions:** These results will be used to revise the survey for implementation. Future Dietetic Interns will administer the survey tools to a larger sample of RDs and employers to collect data on recruitment and retention in Northern Ontario. The data collected when the survey is administered will aid in future advocacy for Registered Dietitians in Northern Ontario and assist with Health Human Resource planning initiatives.