

## Internship Research Abstracts - DC Conference – Toronto June 14-16, 2012

### **Evaluations of serum B12 (cobalamin) status of residential patients at 100 Mile & District General Hospital**

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**Objectives:** To determine whether the serum cobalamin levels of the residential population at 100 Mile & District General Hospital (OMH) were consistent with the levels recommended in the literature.

**Methods:** a retrospective chart review was performed to gather data on all 78 residents in the OMH.

Data elements include serum B12 level, current disease state or co-morbidities, medications associated with lower B12 levels (including proton pump inhibitors, H2 antagonists, and biguanide medications), B12 supplementation status and age at time of data collection. Inclusion criteria for the study included being over the age of 60 (consistent with RDA cut-offs for B12 recommendations) and having a serum B12 level tested between January 2011 and February 2012.

**Findings:** 48 met inclusion criteria. From there the population was split into three categories based on their serum B12 levels. Those with B12 <221pmol/L; 221-300pmol/L; and >300pmol/L the lowest optimal level of serum B12. Of the 48 residents, 22.9% had levels <221pmol/L, 60% had levels >300pmol/L and the remainder fell in the middle range. 45% (n =22) of the population were on at least one medication associated with lower B12 levels, and only 33% (n=16) were taking no medications shown to affect serum B12 levels. 27% (n = 13) were being supplemented with vitamin B12.

**Implications & Conclusions:** The prevalence of 23% at OMH is lower compared to prevalence of deficiency in most literature states a deficiency for residential populations of 30-40% [4]. The lower prevalence may be lower for a number of factors, including discrepancy in defining serum B12 deficiency [1], having a small sample size, or the supplementation practices at OMH and may be determined through further research.

## **Indicateurs pertinents à l'évaluation de programmes de gestion du diabète**

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Il n'y a présentement aucun indicateur pertinent à l'évaluation du programme de gestion du diabète pour les diététistes de la zone 5 du réseau de Santé Vitalité. **Objectif** : La présente étude vise à établir une liste d'indicateurs qui permettra aux diététistes et à l'équipe interdisciplinaire d'évaluer la répercussion de leur enseignement aux clients atteints de diabète. **Méthode** : Les indicateurs ont été ressortis à partir de sondages effectués auprès de différents milieux présentant un programme de gestion du diabète à travers le Canada. Une revue de la littérature a également été effectuée pour repérer des indicateurs. Trente-et-un articles ont été révisés incluant des revues systématiques, des études descriptives et des études analytiques transversales. **Résultats** : Sur un total de 45 sondages envoyés, cinq ont été reçus. Seulement 40% des répondants nous ont affirmés avoir des indicateurs. De ces 40%, les indicateurs qui sont ressortis en commun sont : poids, circonférence de taille, complications médicales et l'activité physique. Pour la revue de littérature, 100% ont ressorti l'hémoglobine glycosylée, 68% la tension artérielle, 65% le profil lipidique, 42% l'examen des yeux, 32% l'examen des pieds, 29% poids et/ou IMC et 26% la glycémie ac et pc. **Conclusion et implication** : Les résultats de cette étude permettront aux diététistes ainsi qu'à l'équipe interdisciplinaire de la zone 5 de ressortir les indicateurs pertinents afin de mesurer l'impact de leur intervention avec les patients atteints de diabète. Tout ce travail sera fait dans le but d'améliorer les services et ainsi de permettre aux patients d'obtenir la meilleure approche possible pour les aider dans leur cheminement avec leur diabète et peut-être diminuer les complications de celui-ci.

## **The efficacy of natural health products for anxiety treatment.**

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**Objectives:** To examine the possibility of using natural health products (NHPs) as anxiolytics for those suffering from generalized anxiety disorder (GAD) and produce a PEN pathway providing evidence-based recommendations on the topic. This pathway will identify the common NHPs used for anxiety relief and report current research to evaluate each method's effectiveness. This pathway will also include questions on the use of kava, an NHP widely thought to be an effective anxiolytic, and will address the important issue of its questionable safety. **Methods:** A literature review was completed using the MEDLINE, Ovid, and Cochrane databases. Articles were graded according to the Practice-based Evidence in Nutrition (PEN) evidence grading checklist and were critiqued and summarized into evidence statements. **Results:** Nine systematic reviews including adult human studies examining mono-therapy interventions were critiqued. Animal studies were excluded and reviews were limited to publication dates from 2001-2011. A wide variety of NHP treatments trialed for anxiety were identified, including passiflora, valerian, blue skullcap, St. John's wort, lysine, magnesium, hawthorn, lemon balm, and kava. However, the majority of research on each NHP lacked enough supportive evidence and so far only theoretical links have been studied. Safety profiles for the treatments must also be determined before they can be recommended as anxiolytics. **Implications & Conclusions:** Main findings from studies with kava concluded that kava was an effective method of treating the symptoms of anxiety. However, kava has been banned in many countries due to concerns over the possible liver toxicity it may elicit. Overall, there is a lack of evidence to support the use of any one NHP as an anxiolytic, therefore recommendations cannot be made. Further research is required to be able to identify any intervention as effective.

## **A comparison of nutritional parameters in St. Paul's Hospital patients before and after In-Center Nocturnal Hemodialysis is established.**

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**Objectives:** Current literature suggests that patients who have switched from conventional to nocturnal hemodialysis have experienced improved blood pressure control, improved quality of life and an opportunity for a more liberal diet. This research study compared nutrition-related parameters before and after the implementation of In-Center Nocturnal Hemodialysis (NHD) at St. Paul's Hospital.

**Methods:** This retrospective chart review utilized two computer-based information systems to gather data. Data was gathered at eight different points in time, 4 monthly values prior to, and 4 monthly values after NHD initiation. Patients who had started NHD at least 4 months prior to data collection qualified for this study (n=15). Data included previous medical history, anthropometrics, routine laboratory measures, and relevant medications/vitamins.

**Results:** Preliminary results suggest a significant ( $p < 0.05$ ) decrease in pre-dialysis urea and creatinine, and an increase in the percent reduction of urea. However, these results did not appear to find a significant change in serum potassium, phosphorus, intact parathyroid hormone, calcium and estimated glomerular filtration rate. Preliminary results further indicated a reduction in the amount of nutrition-related medications that were prescribed such as phosphate binders, antihypertensives and alphacalcitriol. Further analysis is required. **Implications & Conclusions:** There is a significant increase in urea and creatinine clearance in patients after the initiation of In-Center NHD at St. Paul's Hospital. Further research is needed to account for other variables associated with NHD implementation.

## **The prevalence of overweight/obesity and associated health outcomes in adults with cystic fibrosis**

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A high-fat, high-energy diet is standard therapy in cystic fibrosis (CF); however, the spectrum of CF disease severity creates potential for excessive weight gain in individuals with lower energy requirements. Observational evidence suggests that a growing proportion of the adult CF population is becoming overweight/obese. **Objectives:** 1) To determine the proportion of overweight and obese adult CF patients in Toronto each year from 1986 to 2011. 2) To examine relationships between overweight/obesity and CF-related diabetes (CFRD), lung function, bone density, and dyslipidemia. **Methods:** Part 1: In a retrospective cohort study, all adults who visited the St. Michael's Hospital Adult CF Clinic at any time between 1986 and 2011 were classified as underweight (BMI<20), adequate weight (BMI 20-24.9), overweight (BMI 25-29.9), or obese (BMI  $\geq$  30) based on their maximum BMI recorded each year. Part 2: Descriptive statistics were performed to characterize the sample within each BMI category, using the most recent recorded BMI of each patient seen between 2000 and 2011. Documented clinical characteristics included age, gender, pancreatic status, genotype, presence of CFRD, forced expiratory volume in one second (FEV1), bone mineral density T-score, and total cholesterol and triglycerides. Logistic regression analysis was conducted to determine which characteristics predicted increased body weight. **Results:** Preliminary results show that the proportions of overweight and obese CF patients have increased over time and were 21.7% and 5.3%, respectively, in 2011. **Implications & Conclusions:** Overweight/obesity is increasing in the adult CF population. As survival continues to increase in CF, current nutrition recommendations may require modification if increased body weight in CF is associated with poor health outcomes.

## **The impact of exclusivity of human milk feeding (HMF) of very low birth weight (VLBW) infants immediately following hospital discharge on healthcare utilization.**

G Armour, S Gibbins, S Unger, DL O'Connor. The Hospital for Sick Children, Toronto, Ontario.

**Objectives:** To investigate whether exclusivity of HMF of VLBW infants immediately following hospital discharge impacts the amount and type of healthcare resources used from the point of discharge until 6 months corrected age (CA). **Methods:** The data for this study were collected from an ongoing large prospective, randomized controlled trial recruiting infants with VLBW (<1500g) from one of three hospitals in the Greater Toronto Area (The Hospital for Sick Children, Mount Sinai Hospital, Sunnybrook Hospital). Demographics were collected for each infant upon recruitment to the study which began October 2010. In the current sub-study, infants were grouped into one of three categories based on the mother's report of exclusivity of HMF at the point of discharge: (1) predominantly ( $\geq 80\%$ ) HMF, (2) predominantly ( $\geq 80\%$ ) formula fed, (3) both HMF and formula fed. Data on the frequency and type of healthcare utilization from discharge until 6 months CA were collected using monthly telephone surveys. The data collected include the frequency of emergency visits, readmissions to hospital, visits with varying healthcare professionals and visits to walk-in clinics. **Results:** To date 106 infants have reached 6 months CA and will be used for the present analysis. The mean (range) birth weight and gestational age of infants in this cohort is 984 (500-1470) grams and 27.8 (22.9-35.9) weeks, respectively. Data analysis is currently in progress. **Implications & Conclusions:** Provide measurable economic information on varying feeding practices in VLBW infants illustrating an area for substantial savings in the Canadian healthcare system by way of: improved advocacy, support, and affordability of resources for breastfeeding.

## **Canadian dietetic interns' perceptions of the knowledge, skills, and attitudes of dietitian-preceptors**

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**Objective:** The purpose of the research study is to determine Canadian dietetic interns' perceptions of the knowledge, skills, and attitudes of dietitian-preceptors. **Methods:** A survey was adapted from Nasser et al. (submitted 2012) and Bauer et al. (2010) and was electronically sent to English speaking, Canadian dietetic interns completing internship in 2012. Respondents selected the degree to which they agreed or disagreed with statements referring to preceptor knowledge, skills, attitudes and character traits along a 5-point Likert scale. **Results:** Of the 422 English speaking Canadian dietetic interns, 99 responded to the survey for a response rate of 23.4%. Almost all (98%) of interns agreed preceptors should know how to assess and evaluate learners and how to promote learning and skill development in others. All (100%) respondents believe preceptors should have constructive feedback skills and base their practice on evidence. Nearly half (46% and 48% respectively) of interns are indifferent if preceptors read adult education journals or participate in research. The vast majority of respondents want preceptors committed to learners' learning and development (98%) and to understand that learners may be nervous (97%). Most respondents agreed (98%) preceptors should be confident teaching entry-level skills. Interns highly agreed (93-98%) interpersonal traits such as empathy, patience, and being personable are important for preceptors to possess. Respondents also believe preceptors should be knowledgeable and organized (92-96%). Fewer respondents think preceptors need to be innovative (74%), curious (60%), and humble (57%). **Implications & Conclusions:** Preceptors should be skilled and knowledgeable teachers that are receptive to interns' learning needs and build healthy relationships.

## **The nutrition adequacy of the gluten-free diet in Saskatchewan**

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**Objective:** To determine whether adults with Celiac disease (CD) or non-Celiac disease gluten sensitivity (GS), who currently follow the GF diet, are meeting their micronutrient and macronutrient needs according to the Dietary Reference Intakes. **Methods:** Clients of an out-patient Registered Dietitian, seen between 2010 and 2011 for GF diet counseling, were invited to participate. Tools used in this study included a 3-day food record (2 weekdays and 1 weekend day), a questionnaire (including Food Frequency Questionnaire (FFQ)), and a review of participants' medical charts. Nutrition data analysis was conducted using three databases: Canadian Nutrient File, USDA, and Hospitality Database, and also from Nutrition Fact Labels. **Results:** Packages were sent to 117 clients, of which 24 were returned for a 21% response rate. Participants (n=24) had been following the GF diet for an average of 9 months at the time of the study. Thirty-eight percent (9/24) of participants did not meet the AMDR for carbohydrates, while 67% (16/24) of participants did not meet the DRI for dietary fibre. Supplement use assisted more participants to reach the DRI for calcium (17% to 38% of participants), iron (46% to 58%), vitamin D (0% to 42%), and folate (0% to 33%). On average, 50% of participants never or rarely (0-1 time per month) consumed GF alternative grains, pure uncontaminated oats, or GF flours. Eighty-eight percent (21/24) of participants reported taking vitamin, mineral, and herbal supplements. **Implications & Conclusions:** Education should be client-specific and focused on dietary fibre, calcium, vitamin D, iron, and folate. A multi-vitamin and other vitamin and mineral supplements (e.g. calcium, vitamin D, iron, folate) should be recommended to ensure clients are meeting their nutrition requirements.



## **An evaluation of the RQHR adult tube-feeding and drug interaction protocol.**

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**Objectives:** A retrospective chart review was conducted to determine if RQHR's Adult Tube-Feeding and Drug Interaction Protocol was being followed by clinical staff within the RQHR when indicated.

**Methods:** Twenty patient charts from each of the three ICUs in the RQHR in addition to every tenth chart from a list generated by Centricity were reviewed. Charts were included in the study if the patient received oral ciprofloxacin, levofloxacin, moxifloxacin, phenytoin, and/or levothyroxine between January 1, 2010 and September 30, 2011; was on 6 in-patient units and 3 ICUs at 2 hospitals;  $\geq 18$  years of age and received concurrent enteral nutrition-drug therapy. It was noted if patients presented more than one instance for the protocol to be followed or missed because they were on more than one of the medications listed above and/or they transferred wards during their hospital stay.

**Results:** Four hundred and thirty seven charts were reviewed and thirty nine patients were found to have received concurrent enteral nutrition-drug therapy. The protocol was found to have been followed in 40/56 instances (71%). It was most often followed for patients who received phenytoin (95%) and least often for those who received ciprofloxacin (0%). The protocol was followed 75%, 83% and 100% of the time in the ICUs with greater variation amongst the non critical care wards. **Implications &**

**Conclusions:** A review of RQHR's protocol should be conducted by dietitians, nurses and pharmacists to increase awareness of potential interactions between enteral nutrition and oral. A larger prospective study should be conducted to determine if the protocol is followed more often after these educational sessions have been provided for clinical staff.

## **Trends in availability of caloric beverages for consumption in the last four decades, a comparative study between Canada and the United States**

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**Objective:** To evaluate and compare trends per capita of volume and energy from 1972 to 2010 of four beverages including milk, fruit juice, soft drink, and alcohol between and within Canada and the United States. **Methods:** Per capita food availability and energy data produced by national government agencies was drawn from Canadian and American sources. **Results:** Combined beverage volume increased while energy decreased from 1972 to 2010 in Canada and from 1972 to 2003 in the United States. Milk volume and energy decreased in Canada from 1972 to 2010 by 19 L/year 44 Kcal/day and in the United States from 1972 to 2009 by 39 L/year and 82 Kcal/day. Fruit juice volume and energy increased in Canada and the United States. Soft drink volume and energy greatly increased from 1972 to 2010 by 27 L/year and 22 Kcal/day in Canada and from 1972 to 2003 by 77 L/year and 46 Kcal/day in the United States. Alcohol volume and energy increased from 2000 to 2010 in Canada by 4L/year and 15 Kcal/day and from 2000 to 2009 in the United States by 1 L/year and 7 Kcal/day. **Implications & Conclusions:** Both countries followed similar trends over time. Our data indicates that the magnitude of trend toward soft drink availability may be reversing. Our data showing a downward trend in milk and soft drink, stable level of fruit juice, and increase in alcohol may be used to help address nutrition related health issues in Canada and the United States.

## **Cooking workshop experience of middle and older adults participating in the PREPARE prediabetes lifestyle intervention program.**

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The Prediabetes Research and Education Promoting Activity & Responsible Eating (PREPARE) program offers community-based, healthy lifestyle education for individuals with prediabetes.

**Objective:** To evaluate the acceptability of the PREPARE optional cooking workshops by adults with prediabetes. **Methods:** Middle and older adults diagnosed with prediabetes were referred by their physician to the Diabetes Education Centre of St. Joseph's Health Care London (Ontario). Participants in the 6-month PREPARE program were offered optional monthly cooking workshops promoting healthy eating. Feedback on the cooking workshop experience of participants was collected through a questionnaire completed after the first cooking workshop. **Results:** In 2011, 15 participants (42% of all PREPARE participants) attended at least one cooking workshop and completed the feedback questionnaire. Most participants (93%, n=14) strongly agreed that they enjoyed the cooking workshops. Eighty percent (n=12) of those who attended strongly agreed that they would be willing to try the healthy recipes provided at the cooking workshops. What participants liked most about the cooking workshops was trying different foods, the interaction with the dietitian and students, learning to prepare new foods and the additional education provided during the workshops. **Implications & Conclusions:** The initial feedback of participants to PREPARE cooking workshops was that they enjoyed this experience very much. They reported great interest in the preparation of new foods and were willing to try the healthy recipes provided. Cooking workshops may have the potential to help individuals with prediabetes increase their consumption of healthy foods, assisting in the prevention of Type 2 diabetes. Funded by The Lawson Foundation.

**A retrospective analysis of post-liver transplant outcomes in pediatric biliary atresia patients compared against all other indications for liver transplantation at the Hospital for Sick Children, Toronto.**

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Liver transplantation (LT) has become a widely accepted treatment for end stage liver disease. Biliary atresia (BA) is the most common indication for LT in children. Other indications include metabolic disease, liver cancer, and acute hepatic failure. Malnutrition negatively impacts post-transplantation outcome. Although malnourished individuals have poorer outcomes, it is uncertain whether differences in underlying disease also affects outcome post-transplant at the Hospital for Sick Children (HSC). This study's goal is to determine if a difference exists in post-transplant outcomes between BA patients and all others who have undergone LT. **Objectives:** 1) To retrospectively review the medical records of LT patients and collect data on the outcome variables: growth, infection, rejection episodes and length of stay post-transplant; 2) to compare outcomes between BA patients and those transplanted for other underlying etiologies. **Methods:** This study is part of a larger study examining nutritional predictors of post-transplant outcomes in pediatric LT patients at HSC. In this retrospective descriptive study, medical records of approximately 80 patients who received an LT between January 1999 and December 2008 at HSC will be reviewed. **Results:** Outcomes of BA patients will be compared to all others, using student's t-test and chi-square for continuous and nominal variables, respectively. **Implications and Conclusions:** These findings will guide future research in LT patients at HSC. It will also guide future development of protocols and preventative strategies that focus on improved nutritional management for individual patients.

## **Establishing a consensus definition of "food skills", the primary process in developing a food skills tool**

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There is no consensus definition of the term food skills and there is a wide range of interpretation as to the concepts included in the definition. **Objective:** To use the Delphi process to establish a consensus definition of food skills using the expert perspectives of Hamilton public health nutrition stakeholders.

**Methods:** Non-probability, purposive sampling was applied to solicit the opinions of an experienced and expert local panel. The Delphi technique is a process involving multiple feedback interactions, in this case, via serial emailed surveys using a Canadian online survey tool, FluidSurvey.ca. Respondents will have two days to respond to each round of the survey. Responses will be analyzed using thematic network analysis after each round. The results from the previous round will then inform the next round of survey questions. **Results:** Currently, the first round questionnaire has been received and completed by the participants. This round involved open-ended questions regarding the participant's opinions on the phrase "food skills" and the components involved with this terminology.

**Implications:** After the food skills definition is established it will be used to inform the development of a questionnaire to assess local food skills. The community will benefit from the development of a food skills tool, as the results from using this tool may impact local programming, with the goal of improving food skills.

## **Direct observation of food intake in an elementary school setting is accurate and reliable when conducted by trained undergraduate nutrition students**

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**Objective:** To assess the accuracy and reliability of a food observation method whereby upper-year nutrition students were trained to observe and record packed lunch contents and intake in elementary schools. **Methods:** Recruited students (n=14) received 10 hours of training focusing on visual identification of food and portion size estimation. Accuracy and reliability was assessed in three phases: (i) observation of sample lunches, (ii) observation of volunteer-consumed lunches, and (iii) observation of elementary school student lunches (n=32). Accuracy was assessed based on percent agreement for amount packed and item identification. Reliability of amount consumed was assessed by portion size and nutrient analysis. **Results:** Observers accurately identified 96% and 95% of items in the sample and volunteer lunches, respectively. Similarly, observers accurately reported portion sizes for 86% and 94% of the items in the sample and volunteer lunches. Interobserver reliability for amount consumed, by portion size and macronutrient content, ranged from 0.70 to 0.95 in the volunteer-consumed lunches and 0.78 to 0.86 in the students' lunches. **Implications & Conclusions:** Increased attention has been directed towards the school food environment as children consume important contributions toward their daily food intake while at school. In Canada, most food consumed at school is brought from home; however, there is minimal data on the composition and consumption of these lunches. Results suggested observers with prior nutrition knowledge demonstrated good accuracy and reliability for direct food observation of packed lunches, in an elementary school setting.

## **Nutrition related care issues of gastro-intestinal cancer patients.**

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**Objectives** Oncology dietitians prioritize their clinical workload based on risk of malnutrition. Patients with gastrointestinal (GI) cancers are often at moderate-to-high risk for malnutrition, requiring nutrition intervention. As there is limited research describing the complex nutritional needs of this patient population, the purpose of this study was to gather information on demographic characteristics, symptoms experienced, and nutrition interventions of GI cancer patients referred to Oncology Nutrition at the BC Cancer Agency (BCCA). **Methods** A retrospective chart review, representing one-third of all GI cancer patients referred to BCCA dietitians in 2009, was conducted using an electronic charting system. Frequency distributions were generated from data entered into Excel. Only patients with a cancer along the GI tract from the esophagus to anus were included. All other primary GI cancers were excluded. **Results** Two hundred and fifteen charts met the inclusion criteria. 67% of patients were males and 33% females. Most common diagnoses were rectal (36%) and esophageal (24%) cancers. 50% of patients lost weight between the first oncology consultation and first nutrition appointment. Symptoms most often reported were dysphagia (27%), diarrhea (24%), anorexia (21%), and pain (18%). The majority (74%) were receiving radiation treatment at the time of nutrition intervention. **Implications & Conclusions** These findings will contribute to the body of knowledge guiding nutrition practice of GI cancer patients undergoing treatment. Additional research is warranted to further define the complexity of nutritional care in this diverse group. This work will help guide care plan development, refine nutrition intervention frameworks, and support resource allocation in Oncology Nutrition.

## **Do actual post-discharge feeding practices of very low birth weight (VLBW) infants differ from expert advisory recommendations?**

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**Objectives:** Preterm infant feeding recommendations have been developed to address the unique nutritional requirements of this vulnerable population and to provide direction to clinicians. There is little information available concerning the level of adherence to these recommendations among VLBW infants post-discharge. The objectives of this study, then, are: (1) to investigate if the feeding recommendations for preterm infants are being followed after hospital discharge, defined as exclusive breastfeeding for the first six months corrected age (CA), the introduction of solids at six months CA, and iron supplementation until twelve months CA, and (2) to study the relationship between the socio-demographic characteristics of mothers of VLBW infants and adherence to the feeding recommendations. **Methods:** This project is a sub-study of an on-going double-blinded, randomized control trial entitled Donor Milk for Improved Neurodevelopmental Outcomes (DoMINO). Infants born <1500 g in the Greater Toronto Area will be recruited at birth from Mount Sinai Hospital, SickKids, and Sunnybrook Health Sciences Centre and followed until 18-24 months CA. Data on adherence to post-discharge feeding guidelines will be assessed through monthly telephone calls to parents. Data analysis will use descriptive statistics and Spearman Rho. **Results:** Presently, 106 infants have reached 6 months CA and will be used for analysis. The average (range) birth weight and gestational age of recruited infants in this cohort is 984 (500-1470) grams and 27.8 (22.9-35.9) weeks, respectively. Data analysis is currently in progress. **Implications & Conclusions:** Improved understanding of current feeding practices of VLBW infants, and the role of maternal socio-demographic characteristics in terms of adherence to the recommendations, may assist clinicians to create targeted interventions.



## **Exploring the relationship between increased risk of malnutrition, serum albumin, and carcinoembryonic antigen in colorectal cancer patients.**

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Colorectal cancer (CRC) has been associated with an increased risk of malnutrition which may contribute to poor treatment outcomes. Biomarkers such as low serum albumin (SA) have been accepted as indicators of nutritional status. Low serum albumin and elevated carcinoembryonic antigen (CEA) levels may predict reduced survival outcomes. **Objectives:** To identify CRC patients at increased risk of malnutrition and to investigate the relationship between malnutrition, low SA and elevated CEA. **Methods:** A retrospective chart review of 252 CRC patients admitted to the BC Cancer Agency-Victoria between 2006 and 2008 was conducted. Nutrition screening scores, SA and CEA levels, along with treatment modality and tumor stages were collected. Of these patients, 63 had 3 or more SA and CEA values. A modified Patient Generated Subjective Global Assessment (PG-SGA) tool was used to obtain nutrition scores. Scores  $<4$  identified patients at low risk of malnutrition, and scores  $\geq 4$  identified those at increased risk. The preliminary data were analyzed using descriptive statistics. **Results:** Of the 252 CRC patients, 29% were at increased risk of malnutrition with an average weight loss of 5.1 kg over 6 months. In the subset of 63 patients, there was a median decrease in SA from 39 g/L to 38 g/L, and median increase in CEA from 2.1 ug/L to 2.4 ug/L. **Implications and Conclusions:** Understanding the relationship between malnutrition, SA and CEA will contribute to the evidence questioning the reliability of such biomarkers in nutritional assessment. The significance of factors such as weight loss in determining increased risk of malnutrition will be a secondary outcome of this research.

## **Iron supplementation in post-cardiac surgery patients; tolerance, compliance, and haemoglobin levels**

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Oral iron supplementation is routinely ordered following many cardiac surgeries with the rationale of treating surgery-associated anemia secondary to blood loss and to address the prevalence of pre-operative anemia among cardiac patients. While iron supplementation is often effective in treating iron deficiency anemia in the general population, studies have failed to find significant benefit of its use in the treatment of surgery-associated anemia. Furthermore, iron supplementation post-operatively places patients at risk for the side effects of iron supplementation, potentially impacting patient rehabilitation and lengthening hospital stay. The practice of iron supplementation post cardiac surgery in Ontario varies widely. **Objectives:** to assess tolerance and compliance of iron supplementation in post cardiac surgery patients, to determine the proportion who experience side effects, and the proportion who have iron supplementation held or discontinued as a result. The second objective is to determine the proportion of cardiac surgery patients who have normal hemoglobin levels post-operatively. The final objective of this study is to summarize current post surgical iron supplementation practice in Ontario. **Methods:** data related to iron administration, side effects, lab results and transfusion information was collected retrospectively for 150 male and female adult inpatients who underwent cardiac surgery requiring sternotomy. An email survey, which included questions regarding institution-specific iron supplementation practices, was sent to Registered Dietitians working in Cardiac Surgery at hospitals across Ontario. **Results:** are currently being analyzed. **Implications:** the findings from this study will describe iron supplementation tolerance and compliance in post-cardiac surgery patients and iron supplementation practice post-cardiac surgery across Ontario. This may provide a basis for further intervention studies and will help clarify iron supplementation practices in Ontario.

## **Alcohol Liver Disease: Are Dietary Interventions Effective?**

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**Objective:** Nutrient deficiencies among patients with Alcohol Liver Disease (ALD) are common due to reduced food consumption, with alcohol comprising the majority of their caloric intake. Improved nutritional status may help treat co-morbidities of ALD, and prevent ALD progression. This review identified and evaluated evidence using dietary interventions in the treatment of ALD and its co-morbidities (Protein Energy Malnutrition, hepatitis, cirrhosis, osteoporosis, and obesity). Results will be published in Dietitians of Canada PEN (Practice-based Evidence in Nutrition) knowledge translation database. **Methods:** A comprehensive literature review was completed (EBSCOhost, ERIC, ProQuest, Medline databases). Articles reviewed investigated the dietary treatments that have been considered to treat symptoms of ALD. Relevant articles (N=35) were assessed for scientific quality and critically appraised using a defined set of criteria. Articles were summarized into key practice recommendations, and based on the supporting evidence statements were graded using the PEN evidence scale of A to D. **Results:** Several dietary interventions were identified. Findings revealed fair to limited (B to C) evidence of their efficacy in the treatment of ALD. This was mainly attributed to the limited evidence available for each treatment, or conflicting evidence. Alcohol abstinence and adequate nutrition in ALD had the most evidence to support their benefits in the treatment of ALD and its co-morbidities. **Implications & Conclusion:** Current evidence suggests promising outcomes of specific nutrient treatments in ALD. More research is required to help support these treatments, including larger sample sizes, longer study duration to determine long-term effects, and separating the effects of each treatment from patients who continued to drink and those who were abstinent. It is important for dietitians to counsel ALD patients on the importance of abstinence and adequate nutrition in their treatment plan.

## **Are the directional statements used in Canada's Food Guide followed and understood by Canadians?**

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**Objectives:** The purpose of this research was to determine if the directional statements used in Eating Well with Canada's Food Guide (CFG) are effective and whether including health benefit or nutrient information along with the statements would provide a greater incentive for Canadians to follow the messages. **Methods:** A total of 50 males and females between the ages of 19 to 50 participated in focus groups and were asked their perceptions about the directional statements used in CFG. The results were then transcribed and analyzed using a comparative method. Participants also filled out a questionnaire about their lifestyle and previous knowledge of CFG. **Results:** Preliminary findings indicate that participants would like to understand the rationale behind these statements. Participants had more difficulty understanding the statements related to the grain products and milk and alternatives food groups compared to the other food groups. Other gaps in understanding the directional statements included confusion about the terminology used for the statements such as "whole grain" or misinterpreting the word "prepared". Older participants were interested in the link between the statements and health benefits while younger participants were interested in the health benefits and nutrient information. **Implications & Conclusions:** The directional statements in their current form were considered 'vague' by many participants and did not provide enough reasoning for participants to follow these messages. It appears that participants would like more information about the health benefits and possibly even the nutrient gains achieved by meeting these recommendations. Participants also mentioned that it would be helpful for these statements to appear in the media to enforce their importance and to act as reminder about eating healthy.

## **Ethics of participatory action research on food security related projects: Experiences and lessons learned**

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**Objectives:** This project seeks to examine ethical issues in participatory food security-related work as well as to identify strategies to address these issues. It builds on an identified need by the UREB at Mount Saint Vincent University (MSVU) for University Research Ethics Board (UREB) guidelines specific to Participatory Action Research (PAR). **Methods:** The study used qualitative methods, specifically in-depth semi-structured interviews, to capture community and academic researchers' experiences with food security-related PAR initiatives. The following research questions were addressed: What were the ethical challenges inherent in PAR processes, and what were the strategies to overcome those challenges? Interviews were transcribed verbatim, data were managed using NVIVO 7 software, and a phenomenological method of inquiry was used, which is based on the premise that reality consists of lived experiences. Open coding was used to identify specific themes that were then compared with the theoretical framework of Israel and colleagues (1998). **Results:** By using this process, it was possible to capture themes both within and external to the framework, including the challenges related to partnership, sustainability, confidentiality, dissemination, consent, and REB forms and processes. Strategies identified to address these issues included: the need for face-to-face interactions; emphasis on process; appropriate communication; creating a body of knowledge; clear expectations regarding project sustainability; and support and education for researchers and REBs. **Implications & Conclusions:** The results of this research will help to inform the development of guidelines for ethical practice for UREBs by bringing in the voices and lived experience of those who work in this field.

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## **A scoping review of acute hospital mealtime processes and interventions to improve food intake.**

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**Objective:** Malnutrition is common in acute care hospital patients. This review aimed to determine the current breadth of knowledge on general mealtime processes and dietary interventions in acute care hospitals to improve food intake. **Methods:** Following the framework published by Arksey and O'Malley (2005), PubMed, ProQuest, and CINAHL were searched. Key Words/Boolean Terms: "hospital mealtime process", "hospital nutrition care process", "malnutrition in hospital", "hospital nutrition intervention", "mealtimes in hospital", and "hospital foodservice". Inclusion criteria: published in English and in the last 10 years; adult population; acute care hospitals. Exclusion criteria: palliative care; children; hospital care other than nutrition; enteral/parenteral nutrition; oral nutritional supplements. Both published and unpublished primary studies were included (not method-specific), as well as theses, editorials, commentaries, reports, periodicals, and conference or workshop abstracts. **Results:** Fifty-four articles were analyzed, categorized into mealtime (37.04%; n=20), foodservice (25.93%; n=14), dietary (18.52%; n=10), and observational studies (18.52%; n=10). Study methodologies were diverse with cross-sectional studies (24.07%; n=13); audits and prospective studies (11.11%; n=6 each) being most common. Most studies (68.52%; n=37) were conducted in Europe, with only five in North America (9.26%). Studies that were successful in improving patient food intake utilized individual nutrition interventions, staff education, and ensured active involvement of all staff in the interventions. Studies that were not successful in improving food intake found that a lack of communication between health disciplines as well as low nursing staff priority for nutrition care were barriers. **Implications & Conclusions:** There has been much effort in recent years to develop strategies to treat and manage malnourished patients, however success is mixed. Further efficacy and cost-effectiveness research on feasible approaches is needed.

## **A descriptive survey of home enteral nutrition practices and resources across Canada**

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Significant numbers of Canadians receive home enteral nutrition (HEN). In 2005, the yearly incidence of HEN in northern Alberta was 150 patients per million population. Dietitians are well positioned to provide HEN education/care. However, literature reveals lack of best practice guidelines and resources to direct HEN practice. **Objectives:** To describe the current practice for HEN education, follow-up care, and resources currently used. **Methods:** An electronic survey was developed and pilot tested. Dietitians from the BC Clinical Nutrition Leaders Forum and Dietitians of Canada (DC) Clinical Nutrition Manager and Oncology Networks were invited via email to participate. They were then asked to forward the invitation to other dietitians involved in HEN care. Frequency distributions were generated for descriptive data and thematic analysis for qualitative data. **Results:** Fifty-seven dietitians responded to the survey (BC=39, ON=9, AB=4, NB=4, SK=1). Ninety-six percent (N=55) were involved in initial HEN education/care as part of a team. Of these respondents, 60% (N=33) worked in an inpatient hospital setting and 84% (N=46) felt patients were adequately prepared for discharge. Eighty-one percent (N=46) of respondents were involved in follow-up education/care. Frequency of follow-up varied depending on the client's medical status. Consistency in dietetic practice was noted. Sixty-eight percent (N=39) of respondents reported using hospital or health authority developed education materials, yet only 40% (N=23) reported having access to best practice guidelines. Availability of funding varies across Canada; 72% (N=41) reported that clients have inadequate funding support for HEN supplies. **Implications and Conclusions:** Dietitians are involved in HEN and practice is consistent. However, respondents reported that equitable access to funding, HEN practice guidelines, and community care are areas that warrant future attention.

## **Neighbourhood deprivation and potential spatial access to food retailers in Leeds, Grenville & Lanark (LG&L) district**

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Nutritious food is a contributing factor to health. Access to healthy food is an important public health concern. Socially deprived communities and neighbourhoods with poor access to healthy food have been described as *food deserts*. Many studies use inaccurate or incomplete methods to measure access to food retailers that do not reflect the geographic area of Leeds Grenville and Lanark (LG&L).

**Objectives:** 1) To assess if areas in LG&L exceed a 20-minute drive time to food retailers; 2) To identify if gaps in access to food retailers correlate with areas of high deprivation. **Methods:** Geographic Information Systems (GIS) based Euclidean and drive time distance measures were used and compared to measure accessibility to 75 food retailers in and surrounding LG&L. A 20-minute drive time (analogous to 16km) from each food retailer was used to determine the shortest path. Overlays of the Deprivation Index, Euclidean distance, and drive time to food retailers were analysed to determine if gaps in coverage correlate with areas of high deprivation. **Results:** Gaps in access to food retailers exist using Euclidean and drive time measures. Gaps associated with neighbourhood deprivation were more prevalent in the southeast portion of LG&L, and the southeast and northeast portion of Lanark County. **Implications & Conclusions:** This exploratory study demonstrates a novel method to measure spatial access to food retailers in rural areas. Results may enhance LG&L Health Unit staff's awareness of the accessibility to food in LG&L. Future studies should include multiple measures of access to better outline the correlation between *food deserts* and deprivation.



## **How the 'Make Meals at Home' resources can be used to affect public health clients' menu planning knowledge, attitudes and behaviours.**

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**Objectives:** 1) To assess how public health clients in the Kingston, Frontenac and Lennox & Addington (KFL&A) area use and interpret the 'Make Meals at Home' workbook and planning calendar (MMAH resources) when read independently. 2) Develop recommendations for future distribution and use of MMAH resources. **Methods:** Two questionnaires (pre=11-items, post= 32-items) including likert

scales and qualitative questions were developed and based on literature reviews. Public health adult clients with children living at home were recruited in person at public health clinics, where they completed the pre-questionnaire and were provided with the MMAH resources to read and use at home. Clients were contacted three to six weeks later via phone to complete the post-questionnaire.

**Results:** The sample of participants (n=9, 22% male, mean age 32.25 yrs) reported improved confidence in ability to prepare healthy meals, increased menu planning, use of grocery lists, and rated the importance of menu planning higher after reviewing the MMAH resources at home independently. No change was reported in confidence to plan weekly menus, use of pre-prepared food items, or number of dinners made from scratch. Participants reported an increased frequency of eating away from home or getting takeout, forgetting to buy items when grocery shopping, and rated higher stress levels associated with deciding what to make for dinner. Participants reported the planning calendar and 'shopping' workbook section as most useful. Only the male participants had no plans to continue using the resources. Participants reported hands-on workshops and the internet were preferred learning resources for further menu planning education. **Implications & Conclusions:**

Results indicate the MMAH resources may have a positive impact on menu planning attitudes but the effect on menu planning confidence and behaviours is unclear. Despite limitations in sampling and the subjective nature of self-reported data, this project suggests the need to investigate ways to use educational menu planning resources in multifaceted interventions to support public health clients in planning and preparing meals at home, and therefore increasing capacity to eat healthy and reduce chronic disease risks.

## **The effects of omega-3 fatty acid supplementation in children and young adults**

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**Objectives:** To provide health professionals with evidence-based answers to the following questions for inclusion in PEN (Practiced-based Evidence in Nutrition): 1) Does omega-3 fatty acid supplementation in healthy children (2-18 years) improve cognitive development and function? 2) Does omega-3 fatty acid supplementation reduce aggression in children and young adults? PEN is Dietitians of Canada's evidenced-based knowledge translation tool. **Methods:** The evidence-based cycle: assess, ask, acquire, appraise and apply was utilized. Once the topic was determined and the questions formulated, a literature search was conducted using EBSCO CINAHL, PUBMED and Google Scholar databases and included the reference lists of recent articles. Thirteen articles from 1996 to 2010 were selected. Each research study was critically appraised using guidelines from the Centre for Health Evidence. The evidence was summarized into key practice points or recommendations and each was assigned a grade in accordance with Dietitians of Canada's PEN guidelines which grades the evidence from good to limited or expert opinion. **Results:** There is limited evidence supporting a beneficial relationship between omega-3 supplementation and improved cognitive development and function in children. Similarly, there is limited evidence to support that omega-3 fatty acid supplementation reduces aggression in children and young adults. **Implications & Conclusions:** Due to the inconsistent evidence, the use of omega-3 fatty acids as a supplement to enhance cognitive development and reduce aggression in children and young adults remains uncertain. Health professionals should continue to support the recommendations for fatty fish consumption made by Health Canada and illustrated in Canada's Food Guide. Evidence suggesting a relationship between omega-3 supplementation and improved cognitive development and reduced aggression warrants further investigation.

## **Nutritional adequacy of vulnerable adolescents in Prince George licensed youth Residential Care Homes.**

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**Objectives:** Little is known about the dietary intake of youth (between the ages of 9-18) in licensed Residential Care Homes (RCHs). This population is unique; youth often arrive into care with behavioural issues that negatively impact their nutritional status and create the need for specialized menu planning. This cross-sectional study was performed to determine the nutritional adequacy of Prince George RCH menus. **Methods:** Questionnaires handed out to facility managers of 11 RCHs were used to determine demographics of youth residing in RCHs. Age and gender were used to establish which Canada Food Guide (CFG) recommendations would be used for analysis. Four week seasonal menus were obtained from 11 RCHs. Menu items were scored as number of servings from CFG food groups. Average servings per food group were compared to CFG recommendations. Menus were compared to Residential Care Regulations for nutritional adequacy associated with menu planning. **Results:** 3 of 11 (27%) of the RCH menus are meeting CFG recommendations specific to the residing population. Out of the 11 menus examined 3 provided enough vegetables and fruit (27%), 3 provided enough grain products (27%), 4 provided enough milk and alternatives (36%), and 6 provided enough meat and alternatives (55%) according to CFG recommendations. **Implications and Conclusions:** RCH menus do not follow the Menu Planning section of Residential Care Regulations. Nutritionally inadequate menus suggest the need for further research and menu planning intervention within Prince George RCHs. Registered Dietitians are key to successful intervention as they possess unique skill sets and are ideally positioned to create resources and plan menus that meet recommendations.

## **Preliminary data on breastfeeding intentions and practices of overweight/obese and normal weight women**

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**Objective:** To assess breastfeeding intention of overweight/obese and normal weight women compared to their breastfeeding practices at 2 months postpartum. **Methods:** Twenty-one overweight/obese (OW/OB) and 18 normal weight (NW) women from London (Ontario) were asked to complete a 2-month postpartum breastfeeding questionnaire and an infant feeding questionnaire.

**Results:** OW/OB and NW women were 31.9±4.7 (mean±SD) and 32.0±4.8 years of age, respectively. OW/OB women had a BMI of 32.8±5.8 kg/m<sup>2</sup> and NW women 22.6±1.8 kg/m<sup>2</sup>. Eleven OW/OB and 14 NW women had a previous child and breastfed exclusively for 5.8±5.1 months and 5.4±3.2 months, respectively. During their recent pregnancy, most OW/OB (21/21) and NW (16/18) women planned to breastfeed, exclusively or supplement with infant formula. Two NW women had no intention to breastfeed as they were taking medications preventing them from breastfeeding. About half OW/OB women wanted to either breastfeed for ≥6 months (6/21) or as long as possible (7/21), whereas more than half NW women (12/16) wanted to breastfeed for ≥6 months. At 2 months postpartum, over half OW/OB (12/21) and NW (11/18) women were exclusively breastfeeding, many were supplementing with formula (OW/OB:5/21; NW:4/18) and some offered formula only (OW/OB:4/21; NW:3/18). Many women providing formula only (OW/OB:4/4; NW:1/3) indicated they did not breastfeed for as long as they intended. **Implications and Conclusions:** Our preliminary results suggest that these OW/OB women would have possibly benefited from more support soon after delivery given that 24% of women who planned to breastfeed their infant did not breastfeed for as long as they intended. Funded by CIHR and Rx&D Health Research Foundation.

## **Measuring the influence of a Healthy Lifestyle Education Kit on vegetable and fruit intake in parents and their preschool children attending a French daycare in London, Ontario**

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**Background:** Health Canada recommends that preschool-aged children consume 4 servings of vegetables and fruit (VF) per day. However, up to 70% of Canadian children are not consuming the recommended amount. Among other environmental factors influencing the preschool child's eating behaviour, parents' dietary habits have been shown to reflect in their children's. This highlights the importance of modeling healthy behaviours, including VF consumption. However, for busy parents, finding time to learn about current dietary recommendations is a significant barrier. **Objectives:** To assess VF intake of children attending a French daycare and whether provision of a *Healthy Lifestyle Education Kit* to families would influence intakes of VF of children and parents. **Methods:** Families of children 1-5 years were recruited from a French daycare in London, Ontario. Information on VF intake of children (n=12) and parents (n=12) were obtained from questionnaires at baseline and 6 months after kit distribution. **Results:** Children were 3.1±0.5 years (means±SD). Parents completing the questionnaires were 92% female, 75% university-educated, and 50% primarily French speaking. Children were consuming 5.09±2.09 servings/day of VF at baseline and 5.83±2.43 at 6 months. Their parents were consuming 6.04±1.93 servings/day at baseline and 5.71±2.90 at 6 months. **Implications & Conclusions:** A kit containing credible resources for hands-on education of parents and preschool children may help informing busy parents about the health benefits of VF intake. More research is needed to determine if this tool influences VF intake of parents and children. (Funded by Brescia University College and the London Child and Youth Network)

## **Registered dietitian intervention rates for long length of stay patients at Kelowna General Hospital: A retrospective chart review.**

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**Objectives:** 1) To determine if there is a significant difference in hospital length of stay (LOS) between patients with and without a documented RD intervention, and to compare subject demographic data in these two groups. 2) To provide a basis for future research at Kelowna General Hospital (KGH).

**Methods:** Conducted a retrospective chart review of 100 patients at KGH to collect demographic and treatment data. Study population included patients 19 years of age or older with a LOS greater than or equal to 10 days, who were discharged from the KGH medical and surgical units during a two-month time period. Descriptive and inferential statistics were used to analyze data with SPSS statistical software. **Results:** The study population had a mean age of 70.5 years. 37% of the sample had an RD intervention: there was no significant difference in LOS compared to those who did not ( $p=0.054$ ).

Patients with a BMI less than 25 were more likely to have an RD intervention than those with a BMI 25 or greater ( $p=0.005$ ). **Implications & Conclusions:** A larger sample size may have shown a significant difference in LOS between patients with and without a documented RD intervention. Given the average age of 70.5 years, patients in the normal weight range could be considered underweight for their age, but this is difficult to assess as there is no consensus on the practice standard regarding a healthy BMI range for the elderly. Further research could investigate: the effect of RD intervention on nutritional status and LOS, effectiveness of nursing nutritional screening practices, and whether time standards for RD intervention documentation are being followed.

## **Photographic food records compared to written food records in overweight children: which method captures the clearer picture of dietary intake?**

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**Objectives:** The objective of the investigation is to determine how photo food records compare with written food record diaries in overweight and/or obese pediatric outpatients in relation to accuracy measured by; portion size estimates, food descriptions and omissions, and level of completion.

**Methods:** The study design is a quantitative, cross-sectional, survey. Children were recruited into the study based on a screening questionnaire that met the inclusion criteria. Recruitment took place at monthly pediatric healthy eating workshops at NYGH and the pediatric outpatient clinic at NYGH. Participants were given a package that included a standardized plate, laminated ruler, a 3-day food diary log, and instructional summary handouts on both food recording methods to use as references at home. Participants were asked to record their dietary intake for three consecutive days from the time they returned home from school until bedtime, using a camera in addition to writing down estimated food portions in the food diary provided. Submission of photos is done through a food record analysis email address. Photo food records will be analyzed for accuracy by each dietetic intern using photographs of measured food portions as an objective reference tool.

## **Evaluating glycaemic index education, acceptability and application in men and women living with type 2 diabetes mellitus.**

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**Introduction:** A large body of evidence exists linking a low-glycaemic index (GI) diet with improved outcomes in individuals living with type 2 diabetes mellitus, including decreased postprandial blood glucose levels. Despite this, many Registered Dietitians are reluctant to teach the GI concept due to perceived concept complexity and lack of access to educational tools and resources. **Objectives:** To: 1) Evaluate an introductory GI-education session according to Kirkpatrick's Theory of Effective Education Evaluation. This evaluation will include: assessing participant reactions, GI-knowledge, and acceptance and application of the low-GI diet. 2) Validate a GI-checklist designed to assess low-GI diet adherence. **Methods:** In this prospective, comparative pre- and post-test study design, participants (n =29) will attend a one hour group GI-education class. The Glycaemic Index Questionnaire (GIQ) will be administered pre-class, immediately post-class, and at 1 and 4 weeks post-class. Three day diet records (3DDR) will be completed at baseline, and at 1 and 4 weeks post-class. A paired t-test will assess dietary GI and GI-knowledge score pre- and post-education. The McNemar test will determine the effect of GI-education on food choice and change in GI-knowledge. Dietary GI, collected via 3DDR, will be compared to data collected via the GI-checklist. We are interested in assessing if the checklist can detect a change in dietary GI between the CDA categories of low, medium and high GI. **Results:** Recruitment and data collection is ongoing. **Implications & Conclusions:** This study is expected to provide new Canadian data demonstrating the effectiveness of group GI-education and point to where improvements are needed. Furthermore, the GI-checklist is expected to be validated for future use.



## **Baseline physical activity characteristics from the *PREPARE* intervention: Preliminary findings.**

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**Objectives:** To assess whether the physical activity (PA) component of *PREPARE*, a community-based lifestyle intervention, can increase PA levels in participants. **Methods:** Adults ( $\geq 30$  years) newly diagnosed with pre-diabetes were recruited to take part in the program. The PA component included education to increase knowledge of PA, practical sessions to increase skill building and self-efficacy toward PA, and use of pedometers for self-monitoring and goal setting. Outcome measures included a Lifestyle Belief Questionnaire to assess mediators of behaviour change and a PA log and the International Physical Activity Questionnaire (IPAQ) to assess PA levels. Height and weight were also measured to calculate BMI. Baseline data is reported here (average  $\pm$  SE). **Results:** To date, 85 intervention (INT) and 25 control (CON) participants have been recruited. Baseline BMI was similar ( $p > 0.05$ ) between INT and CON ( $33.1 \pm 0.6$  and  $30.9 \pm 1.3$  kg/m<sup>2</sup>, respectively). According to IPAQ, 28% and 40% of INT and CON had low PA levels ( $p > 0.05$ ). Average kcal spent through PA was also similar between groups ( $4800 \pm 780$  and  $4080 \pm 1000$  kcal/week for INT and CON respectively), with 30% and 44% not meeting the recommended  $\geq 1000$  kcal/week. Average steps/day ( $n=53$ , INT only) were  $4567 \pm 380$ , with 92% of INT not meeting the recommended 10,000 steps/day. Self-efficacy toward PA was higher in the INT vs. CON ( $61.5 \pm 0.8$  vs.  $48.4 \pm 1.6$ ;  $p < 0.0001$ ). **Implications & Conclusions:** Participants had similar baseline characteristics and levels of PA to those previously published for this population. The higher self-efficacy toward PA in the INT may indicate a higher stage of readiness and the reason why these individuals self-selected to participate into the program. Funded by The Lawson Foundation.

## **Partnerships in best serving the high risk prenatal population.**

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Food for You, Food for Two – Kingston (FFY:FFT), a project of the Canada Prenatal Nutrition Program, is interested in developing partnerships with organizations providing similar services, to best serve high risk prenatal populations. **Objectives:** Phase One: determine enablers and barriers to successful partnerships; determine how investigators, groups or agencies define “partnership”; identify potential partners in best serving the high risk prenatal population in Kingston, Frontenac, Lennox & Addington (KFL&A); and clarify the role partnerships play in benefiting or hindering positive outcomes for high risk prenatal clients. Phase Two: develop questions on partnerships to be posed to potential partners. **Methods:** In phase one, a literature review related to partnerships was completed using EBSCO databases of articles published 2000-2012. Literature from reference lists and that recommended by informed colleagues was reviewed, as was grey literature. Informed colleagues were also surveyed. An environmental scan determined potential partners for FFY:FFT. In phase two, three to six questions regarding partnerships will be developed based on the information gathered during phase one and piloted with internal colleagues. **Results:** Phase one showed commonalities among enablers to the success of partnerships, the most predominant being open communication, clearly defined common goals and objectives, having a clear vision and decision-making processes. Literature and informed colleagues’ responses revealed no clear, universal definition for partnerships. The environmental scan revealed many potential partners in the KFL&A region. Phase two results will identify the best methods to reach potential partners and best questions to elicit information from them. **Implications & Conclusions.** Findings suggest potential partners must first come together to outline elements of the partnership such as goals, objectives, mission and/or vision, communication channels and decisions making processes before proceeding with a partnership.

## **A description of the frequency and type of nutrition diagnosis statement written by clinical dietitians in Fraser Health**

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Patient care may be influenced by information documented in the patient record, thus the use of standardized language has become imperative. Standardized language facilitates interdisciplinary communication, which aims to optimize patient outcomes. As such, the documentation of a standardized nutrition diagnosis, known as a problem, etiology, signs and symptoms (PES) statement, within the nutritional care process (NCP) was implemented in Fraser Health (FH) in December 2009 to improve the documentation of nutrition therapy by dietitians. To date, research has not been conducted to examine current practices regarding the use of nutrition diagnosis statements.

**Objectives:** (1) To describe the completeness and frequency of use of nutrition diagnosis (PES) statements; (2) To determine which nutrition diagnosis domain is used most often; (3) To identify which areas of practice require additional support in the use of nutrition diagnosis (PES) statements; (4) To determine the readiness of dietitians to implement the next step of the NCP. **Methods:** A retrospective chart review was conducted on reports documented by FH dietitians. A data collection tool was used to collect and evaluate nutrition reports (N=862) recorded over a one week period in 2011. Data collection included the hospital name, area of specialty, completeness of the PES statement, specific nutrition diagnoses and domains used, and the charting template used. **Results:** 862 nutrition reports were reviewed. 69.9% of the charts included a PES statement, however only 62.7% of PES statements were complete. PES statements were used most frequently (83%) by dietitians working in the older adult programs. The intake domain was used most frequently (71.5%).

Almost two thirds of charts reviewed included complete PES statements. **Conclusions:** Education provided to dietitians in the area of nutrition diagnosis (PES) statements thus far, may be insufficient. Further training may be needed prior to introducing the next step in the NCP.

## **The perceived meanings surrounding the role of being a mother and a dietitian, and their translation into parental practices concerning food and eating.**

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**Background:** To date, there is a variety of literature that discusses children's eating behaviours. Parental is the strongest influence, and in particular the role of the mother emerges as the most significant influence. Confounding this, dietitian mothers assume the dual role of the nutrition professional, as well as the role of mother. According to the theory of symbolic interactionism, the meanings that these individuals give to their role of mother-who-is-also-a-dietitian will influence their parental practices surrounding food and eating. **Objectives:** To explore female dietitians' past and present experiences as mothers, focusing on the meanings that they associate with being a mother-who-is-also-a-dietitian. To determine how these meanings translate into parental practices surrounding food and eating. **Methods:** A qualitative research design known as Interpretative Phenomenological Analysis was utilized. Three dietitians were recruited from the full and part-time faculty of a university nutrition department. They participated in individual, semi-structured interviews that were voice-recorded and transcribed. Data were thematically organized. **Conclusion:** As data analysis is still ongoing, no conclusions can be offered at this time. However, as no research has been conducted specifically on the experiences of dietitians as mothers or on the children of dietitians, this work will provide partial groundwork for further study.

## **Attitudes and practices regarding milk products among Canadian dietitians.**

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**Context:** A growing body of scientific evidence indicates that milk products are associated with several benefits including a healthy weight and reduction in risk for several conditions such as hypertension, type 2 diabetes and cardiovascular disease. **Objectives:** To determine the attitudes and practices among Canadian dietitians regarding milk products. **Methods:** A self-completion survey was mailed to a random sample of 1,000 dietitians across Canada on September 2010. A total of 299 responded, distributed regionally as follows: 34 from British Columbia, 42 from Prairies, 88 from Ontario, 106 from Quebec, 29 from Maritimes. Results from this survey are weighted to compare to previous distributions of similar surveys conducted in 1993, 1997, 2001, and 2006. **Results:** Fifty percent of dietitians were inclined to limit milk products for patients with Coronary Heart Disease (25% for cheese, 17% dairy products in general and 16% milk). This percentage has doubled since 2001. In terms of other conditions: 37% of dietitians limit milk products for patients who were overweight or obese, 33% for patients with type 2 diabetes, and 20% for patients with hypertension, all conditions for which milk products may be beneficial. There was a general tendency that dietitians from Maritimes were more inclined to limit milk products (twice as much than Quebec for type 2 diabetes). **Implications & Conclusions:** A significant proportion of Dietitians are inclined to limit milk products for conditions in which adequate or higher milk product consumption may be beneficial. Continuing education efforts may be needed regarding the role of milk products in health and prevention of disease.

## **A pilot study of the effect of the Craving Change program on the eating self-efficacy scores of participants.**

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An individual's perceived control over their eating habits, often referred to as eating self-efficacy, has been associated with a greater success in overcoming problematic eating. Craving Change (CC) is a group program led by a trained professional that uses a cognitive behavioural approach to help people who struggle with problematic eating. **Objectives:** To determine if the CC program increases the eating self-efficacy (ESE) scores of its participants and could therefore be used as an alternative to individual counselling for some people to help them overcome problematic eating. **Methods:** A previously validated survey, Eating Self-Efficacy Scale (ESES), was distributed to Craving Change participants at the first and last sessions of the program. Only participants who gave informed consent and were 19 years of age or older were included. Participants were excluded from the study if they were absent for more than one session or had previously attended the CC program. A paired t-test for dependent means was performed to determine if a significant difference existed between the participants' scores prior to the program versus after completion of the program. **Results:** When the two programs are analysed together, the results showed a statistically significant improvement in ESES scores ( $t(11)=2.896, P=0.015$ ). **Implications & Conclusions:** Participants demonstrated a significant improvement in ESES score after completion of the program, therefore CC is meeting its goal of increasing the ESE of its participants. Based on the results of this pilot study, CC is a viable, cost-effective alternative to individual nutrition counselling with a dietitian to improve ESE and to help overcome problematic eating for some people.

## **The effectiveness of natural health products for the treatment of depression in adults.**

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**Objectives:** Similar to statistics on individuals having reported the use of antidepressants, approximately 11% of people with depression claim to use natural health products (NHPs) for treatment. This project developed a Practice-Based Evidence in Nutrition (PEN) knowledge pathway with recommendations on the effectiveness of specific NHPs for the treatment of depression.

**Methods:** Using the five components of the evidence-based cycle: assess, ask, acquire, appraise and apply, nine practice questions based on nine NHPs: essential fatty acids (EFAs), vitamin D, zinc, inositol, S-adenosylmethionine (SAME), tryptophan, B vitamins (B6, B12, folate), St. John's Wort and other herbs (saffron, lavender, Echinium and Rhodiola) were answered. A comprehensive literature review was conducted using PubMed, Scopus, Medline, CINAHL and Google Scholar. Twenty-three peer-reviewed articles published between 2008 and 2012 on the use of NHPs to treat depression in adults ( $\geq 18$  years) were critically appraised and graded according to PEN guidelines from Dietitians of Canada. **Results:** There is fair evidence to support the use of zinc as an adjunct to antidepressants and St. John's Wort and saffron as a sole therapy for depression. Limited evidence is available to support the use of folate as a sole or adjunct to antidepressants, and EFAs, vitamin D, inositol, tryptophan and SAME as sole therapy for depression. Studies and evidence on the effectiveness of lavender, *Echinium* and *Rhodiola* are extremely limited. Supplementation with vitamins B6 and B12 does not appear to be effective for treating depression. **Implications & Conclusions:** There are several NHPs used by people with depression; the evidence supporting their effectiveness is fair to limited. Further studies are needed to determine the efficacy and safety of NHPs for the treatment of depression.

## **Feeding enterostomy placements in Fraser Health.**

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**Objective:** To describe current practices around placement of feeding enterostomies (FE) in Fraser Health (FH), including communication prior to, and indication for placement. **Methods:** This study used pre-existing quality improvement data regarding FE placements in FH hospitals recorded by dietitians over a ten month period. The frequencies of reported reasons for FE, and the presence or absence of communication prior to placement were calculated. **Results:** Dietitians reported data on 129 FE placements. The most common indication for FE placement was dysphagia. In 25% of placements, a family conference involving the interdisciplinary team, education regarding FE placement, and an explanation of the risks and benefits were provided to the patient and/or family. In 33% of cases, either no form of communication took place, or the dietitian was unaware of the degree of communication that took place. A dietitian was consulted prior to 83% of FE placements. **Implications & Conclusions:** The results from this study reveal gaps in communication between the physician, patient and/or family, and dietitian. There should be a standard protocol to help ensure that all of these individuals are involved in the development of the patient's nutrition care plan, including whether or not it is appropriate to insert a FE. Limitations of this study include the inability to evaluate the appropriateness of FE placement, reliance on data collected with a non-validated tool, and the potential for missing data. However, information regarding most FE placements in FH sites was recorded, which increases the generalizability of results to FH patients. Further research should be conducted to develop a standardized educational resource for patients and families, which includes the risks and benefits of FE and their long-term implications.



## **Development and cognitive testing of a First Nation school food survey for Manitoulin Island.**

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The First Nation (FN) population are at higher risk for some chronic diseases; healthy eating habits may help to reduce this risk. A healthy school nutrition environment can positively impact children's eating behaviour by offering safe, healthy foods in school. In fall 2011, an environmental scan of evaluation tools concerning healthy school nutrition environments revealed a lack of FN-specific surveys. **Objective:** To develop and cognitively test a school food survey about the foods offered for free and sold for profit, and the nutrition policies in FN on-reserve schools on Manitoulin Island.

**Methods:** A three-part school food survey was developed based on a comprehensive literature review, an environmental scan of pre-existing tools, and input from professionals experienced in FN culture. The survey was distributed (March 2012) to three consenting schools following ethics approval from the Manitoulin Anishinaabek Research Review Committee. The survey will be completed collaboratively by the school principal/education director and one staff member knowledgeable in the school's nutrition practices. Survey responses will be entered into Excel (Microsoft, 2007) for frequency analysis. Cognitive testing will be performed with survey participants through a 30-minute interview using a modified standardized interview guide. Interview responses will be analyzed for common themes. **Results:** Pending data collection. **Implications and Conclusions:** Cognitive testing will provide suggestions for survey refinement and future use. Survey responses will inform Noojmowin Teg Health Centre dietitians about each school's food and nutrition strengths and priority areas. Survey results may also improve access to nutritious school food choices by linking community resources to each school.

## **A systematic literature review of iron supplementation for post roux-en-y gastric bypass patients**

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Bariatric surgery is the most effective long term treatment for morbid obesity. The American Society for Metabolic and Bariatric Surgery report iron deficiency after Roux-en-Y gastric bypass (RYGB) to be 14-16% but according to the literature the frequency varies from 15-74%. Due to the lack of quality research there are no standardized iron supplementation guidelines. **Objectives:** To conduct a systematic literature review of the current evidence regarding iron supplementation post RYGB, and to recommend supplementation guidelines to prevent and treat iron deficiency. **Methods:** Electronic searches were conducted from December 2011 to March 2012 using PubMed, EbscoHost, MEDLINE, Google Scholar, and university library catalogues. Search terms included iron, supplementation, deficiency, recommendations, and RYGB. Sixteen articles met the inclusion criteria. **Results:** A standard multivitamin containing 8-18 mg of iron was insufficient in preventing iron deficiency across all patient groups. Populations at increased risk include patients that are menstruating, have peptic or anastomotic ulcers, are iron deficient prior surgery, or experience high blood loss from surgery. Additional oral iron supplementation was inconsistent in preventing and treating iron deficiency. Iron sulfate was the most common form of iron used and the dose ranged from of 320-1300 mg daily. There is some evidence to support that vitamin C increases iron absorption. Oral supplementation was not sufficient in correcting deficiencies in some patients. Intramuscular and parenteral iron administration was consistently shown to be effective in correcting deficiency. **Implications & Conclusions:** The evidence is inconclusive regarding the exact dosage required to prevent and treat iron deficiency in post RYGB patients. High quality research designs that control for confounding variables are needed to establish iron supplementation recommendations.

## **Identifying effective healthy weights interventions in Aboriginal children and youth: A systematic literature review**

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**Objective:** To identify through a systematic literature review, effective interventions promoting healthy weights in Aboriginal children and youth. **Methods:** In January 2012, a search of the literature using MeSH and keywords was conducted with PubMed, PsychINFO, Medline, Cochrane Database of Systematic Reviews, ERIC and Web of Science. Only 22 relevant articles were identified and entered into RefWorks (Version 2.0, 2011). Five articles published prior 2000 were excluded; then a modified appraisal tool from the National Collaboration Centre for Methods and Tools was used to determine applicability and generalizability of eight interventions. **Results:** Three promising interventions were identified: two school-based and one home-based. The Sandy Lake diabetes prevention program aimed to change dietary behaviours through classroom sessions and environmental modifications in a remote Northern Ontario Aboriginal school while Action Schools! BC focused on increasing both physical activity and opportunities for healthy eating. Both were multifaceted, targeting school, family and community environments. The home-based intervention (SWITCH) aims to reduce screen-time and increase physical activity of New Zealand overweight/obese children through home visits and parent education. **Implications & Conclusions:** More research is necessary to further investigate healthy weights interventions in Aboriginal children and youth. While the overall objectives of the school-based interventions were not met, both programs have been sustained in those communities. The SWITCH evaluation is incomplete but could complement similar Canadian initiatives (e.g.; SCREEN SMART) with adaptation for Canadian Aboriginal communities. Investments are needed to evaluate the promising interventions to determine their effectiveness.

## **Identifying nutrition knowledge gaps of Greater Sudbury parents regarding their preschooler or toddler**

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Two parent nutrition knowledge questionnaires (toddler and preschooler versions) have been developed at the University of Guelph and are undergoing validity and reliability testing. Currently there is no valid and reliable questionnaire available. A sample of Greater Sudbury parents participated in reliability testing in early 2012. **Objectives:** To identify nutrition knowledge gaps of parents regarding their preschooler or toddler; to identify if there is a relationship between parent demographics and parent nutrition knowledge; and to identify differences in knowledge between parents of preschoolers and toddlers. **Methods:** Parents were recruited from five *BestStart* Hubs to complete the draft parent nutrition knowledge questionnaires twice, 2-4 weeks apart. Data was entered into Microsoft Excel (mac2011) and analyzed from the first test occasion. **Results:** Of the 40 participants, 39 were English speaking, Canadian-born mothers, and one was a grandmother. More than half (53%) reported annual household incomes over \$60 000 and most (79%) had attended or graduated from college or university. About half the children were preschoolers (52.5%) and male (52.5%). Few children had a medical condition (8%). Average score on the questionnaire was 75%; mothers of toddlers scored higher (78%) than mothers of preschoolers (72%). Overall scoring was not affected by maternal education level, income or age. Most common questions answered incorrectly (by at least 50% of mothers) involved topics such as: snacking, number of food groups per meal and per day. **Implications & Conclusions:** While nutrition knowledge was relatively high in this small sample, knowledge gaps exist and a valid and reliable questionnaire can help identify key topics for parent education as well as evaluate nutrition education strategies. Questionnaire refinement will take place in spring 2012.

## **Nursing feedback on patient food service delivery system**

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Expressly For You (EFY) is a spoken-menu concept focused around Patient and Family Centered Care. The system has been shown to improve patient satisfaction by offering customized meals and providing personalized interaction throughout the day. **OBJECTIVE:** To determine nurses' satisfaction by measuring their knowledge and perceptions of the Nutrition and Food Services department delivery system post-implementation of EFY at Thunder Bay Regional Health Sciences Centre (TBRHSC). **METHODS:** This is a two part project. Part one examined nursing attitudes and beliefs at baseline (prior to implementation) using a 13 item survey administered through Survey Monkey™, an online survey-generator. Three questions were added to revise this survey for Part 2 in order to collect more specific data on nursing satisfaction post-implementation, giving a total of 16 questions. The survey will open fall of 2012, approximately 6 months post-implementation. The study population will consist of all male and female nursing staff working as RN and RPN (excluding ward clerks) on all inpatient units at TBRHSC. A convenience sampling method will be used to recruit from the pre-existing nursing listserve of approximately 1300 nurses, and stratified sampling via filter request on Survey Monkey™ will be used to capture those participants working 50% or more in direct patient care. **RESULTS:** Results pending upon survey implementation and analysis, fall 2012. **IMPLICATIONS & CONCLUSIONS:** If nurses are more satisfied with EFY food service delivery system, then this should result in increased patient satisfaction, supporting EFY's potential for benefit to TBRHSC. Although this study is specific to TBRHSC, these results can be used as a guide for other facilities or organizations who are considering implementing a spoken-menu.

## **Impact of Craving Change™ program on eating self-efficacy**

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Craving Change™ uses a cognitive behavioural approach to help clients build on their eating self-efficacy and self-management skills. **Objectives:** 1) Determine if Eating Self-Efficacy Scale (ESES) scores improved from baseline to post-program and were sustained at 3-months post-program; 2) Identify demographic trends and compare to ESES scores; 3) Identify areas for program improvement.

**Methods:** Participants attended three, two-hour workshops. The ESES was completed pre-, post-, and 3-months. The Craving Change™ Evaluation form was also completed 3-months post-program. Quantitative data analysis included frequencies and cross-tabulations using Microsoft® Excel 2000 and STATA (version 12), respectively. Thematic analysis was used for open-ended responses. The Lakehead University Research Ethics Board approved this study. **Results:** Fifty-three participants completed the workshops; 94% were female. Average BMI ( $\text{kg/m}^2$ ) was  $35 \pm 7.65$ . The average pre-program ESES score was  $116 \pm 25.4$  and decreased to  $99 \pm 28.2$  post-program. To date, 3-month follow-up ESES average scores are  $85.3 \pm 24.32$  ( $n=19$ ). Common positive themes from the Craving Change™ Evaluation included a group setting, learning environment, course material, and the facilitators. Many participants expressed that they would prefer more than three, two-hour sessions.

**Implications & Conclusions:** While complete results are pending, the decreasing trend in ESES scores suggests the Craving Change™ workshop can improve individuals' eating self-efficacy. Successful outcomes and positive program evaluations support the continuation of local Craving Change™ workshops. The workshop provides professionals with an alternative approach to addressing problematic eating with their clientele and supports cognitive behavioural therapy training for interested dietitians.

## **Patient satisfaction with meal service and its effect on nursing attitudes towards Patient Food Services at Royal Victoria Regional Health Centre (RVH).**

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Nursing attitudes and beliefs have been shown to be correlated with patient satisfaction. This project aimed to gather information from the nursing population at RVH. **Objectives:** (a) Establish baseline data regarding nursing's attitudes and beliefs about Patient Food Services (b) Determine patient satisfaction from the nursing staff's perspective, through their interactions during and after meal service (c) Identify quality improvement opportunities **Methods:** Following a review of the literature, a 21-item survey was developed and distributed electronically. Inclusion criteria for data analysis were wards where nonselective food service systems were implemented. **Results:** The response rate was 12.6% (N=115 nurses). The majority of respondents (76.6%) reported spending over 76-100% of their time in direct patient care. They identified that when confronted with diet-related questions, dietitians were most frequently accessed for information. Variety and selection were most frequently identified (58.3%) as a means of improving satisfaction with Patient Food Services. Nurses reported that patients often commented on flavour (30.6%) and variety (28.6%). Many nurses (53%) agreed that the 7-day menu rotation was not fitting for an acute-care hospital. Only 32.7% felt that patients were generally satisfied with the food received at meal service. However, 44.9% of nurses indicated that they were satisfied with Patient Food Services. They perceived that patients' trays were delivered in a friendly and timely manner to the correct patient. **Implications & Conclusions:** Results indicate that nurses are generally satisfied with Patient Food Services at RVH. However, they have expressed concerns about patient satisfaction with the food provided. This feedback will be used to implement changes to Patient Food Services, contributing to RVH's continual improvement.

## **Evaluating the efficacy of a metabolic syndrome intervention for mental health patients**

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Metabolic syndrome (also called Syndrome X and insulin resistance syndrome) is characterized by a cluster of risk factors that increase risk of coronary heart disease, stroke and type 2 diabetes. Its prevalence is increasing worldwide and those with mental illness are predisposed to metabolic dysfunction. This population tends to have less healthful lifestyle behaviours and is less prone to seek medical care. **Objectives:** The purpose of the study is to evaluate the efficacy of an 11-week multidisciplinary metabolic syndrome program attended by patients at Waypoint Centre for Mental Health Care Outpatient Services in Midland, Ontario. The study will examine changes in anthropometric and laboratory data related to metabolic syndrome at specific intervals. **Methods:** This study is a prospective non-randomized control study. It will follow three groups of patients who attend the metabolic syndrome program in 2012 and compare changes in health factors related to metabolic syndrome to a control group of similar size. All participants in the study have a mental illness, metabolic syndrome or related risk factors for metabolic syndrome. The goal of this research project was to collect and examine the results from phase one of the project. For phase one of the study, data were collected for both the control (n=12) and treatment group (n=9) prior to starting the program (January) and at the end of the program (April). It will also be collected at a 6 month follow up appointment. **Results:** Pending. **Implications & Conclusions:** Currently there is no standard treatment for metabolic syndrome; therefore, the results of this research study will be an important step forward in determining how to best treat patients with metabolic syndrome.



## **Perceptions of how the Hamilton Prenatal Nutrition Project (HPNP) experience strengthens and supports the participants and their families.**

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Prenatal care is important in promoting health for mothers and their families. It is known to have several benefits including preventing poor birth outcomes. Low income and ethnic minority women are more at risk for poor birth outcomes, making community-based programs to reach this population especially important. The Hamilton Prenatal Nutrition Project provides prenatal care and support at prenatal groups that are spread throughout the city of Hamilton. Each group session allows pregnant women to share their experiences, participate in educational activities, and have a healthy snack.

**Objectives:** To explore the effects that the Hamilton Prenatal Nutrition Project (HPNP) has on the participants of the program, specifically in terms of how it strengthens and supports the participants and their families. **Methods:** Study participants will be recruited by the Public Health Dietitian/Community Dietitian and/or the Public Health Nurse through reading a recruitment script at each of the 9 HPNP program weekly sessions across Hamilton. Two participants from each of the 9 program sessions will be selected for a maximum of 18 participants. Researchers will interview the participants during the HPNP program sessions in order to determine their perceptions of the HPNP. The interviews will be recorded and reviewed. Thematic analysis will be used to identify themes in participant responses. **Results:** Data collection is in progress. **Implications & Conclusions:** The results of this study will provide a better understanding of how the program provides support to participants and their families. This will lead to a clearer understanding of how the program addresses some of the social determinants of health and may potentially lead to program change.

## **The effect of the consumption of foods and beverages containing intense sweeteners on body weight, appetite and the caloric intake of adults.**

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**Objectives:** To develop a PEN pathway providing accurate and current evidence-based information regarding the effect of consuming foods and beverages containing intense sweeteners on body weight, appetite and the caloric intake of adults. Five intense sweeteners were studied; saccharin, aspartame, acesulfame-K, sucralose and neotame. **Methods:** Literature search was restricted to English articles with adult human subjects in OVID Network PubMed, CINAHL Database, Academic Search Premier, Knowledge Ontario Database and the Cochrane Database. No restrictions were placed on publication date to ensure all relevant studies were retrieved. Search terms included “artificial sweeteners”, “sweetening agents”, “intense sweeteners”, “sugar substitutes”, “weight gain”, “increased body weight”, “increased BMI”, “increased adiposity”, “overweight”, “increased appetite”, “appetite stimulant”, and “increased caloric intake”. **Results:** Eight appropriate studies were located, appraised and summarized into evidence statements used to develop key practice points. These key practice points were supported by evidence with a grading of B or C, using PEN evidence grading guidelines. The research demonstrated that intense sweeteners can help to reduce caloric intake when used in place of sucrose. Using foods and beverages sweetened with intense sweeteners, rather than sucrose, may facilitate long-term maintenance of a reduced body weight and prevent further weight gain. Intense sweeteners do not increase caloric intake or ratings of hunger. **Implications & Conclusions:** The use of foods and beverages sweetened with intense sweeteners, rather than sucrose, is likely beneficial for adults trying to lose weight or maintain a healthy body weight. The use of intense sweeteners is not associated with an increased body weight, appetite or caloric intake compared to the use of foods and beverages sweetened with sucrose.

## **Recipe texture modification project**

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**Objectives:** Texture modified foods (TMF) are recommended for residents suffering from dysphagia with the goal of providing foods and liquids in a safe consistency, thus minimizing the risk of aspiration and choking, and maintaining or improving residents' nutrition and hydration status. The purpose of the project was to develop a protocol for preparation of TMF, ensuring standardized language used to describe TMF, and including methods to improve visual presentation. **Methods:** A literature review for best practices for preparation of TMF was conducted. Facility practises were observed and compared with best practice standards. A protocol was developed describing step by step process for pureeing and mincing, pictures of appropriate TMF, and tips for visual presentation. In-services were provided to cooks and other staff. **Results: a) Facility practices:** Quantity of the food for process of texture modification was estimated by the cooks. Water was commonly used for puréeing and mincing most food items. Some cooks used water more often whereas others used milk, broth, or juices. Most recipes lacked specificity for what liquid to add while modifying texture, its quantity and the amount of the thickener. Errors were observed for serving TMF using the incorrect serving utensils. **b) Protocol:** Cooks reported it was easy to follow. Commercial food processor with sharp blades, moulding trays for re-forming the TMF, and squeeze bottles to garnish using sauces and gravy, were suggested for preparing and serving visually appealing TMF **c) In-service:** In-service was found to be helpful in improving current skills of the staff for preparation of TMF. **Implications & Conclusions:** Implementing the protocol helps staff prepare nutrient dense and flavourful TMF. Its effect on oral intake and nutritional status of the residents needs to be further studied.

## **A systematic review and meta-analysis of fructo-oligosaccharides and serum LDL-cholesterol.**

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**Background:** Fructo-oligosaccharides are a group of soluble non-digestible oligosaccharides that act as a prebiotic. They occur naturally in asparagus, Jerusalem artichokes, and bananas, but are also manufactured commercially for use as a sweetener. Studies generally support the use of fructo-oligosaccharides (FOS) to reduce serum cholesterol levels and cardiovascular disease risk. However, there is debate about the degree of cholesterol reduction caused by such soluble fibres, as several small trials have shown either positive or no effect on serum low-density lipoprotein (LDL) cholesterol levels. **Objective:** To conduct a systematic review and meta-analysis to quantify the effects of dietary FOS on serum LDL-cholesterol levels in humans. **Methods:** We searched MEDLINE, EMBASE, Cochrane and CINAHL databases through October 2011 for clinical trials of FOS lasting  $\geq 2$  weeks. Data were pooled using the generic inverse variance method using random effects weights and the outcome was expressed as mean difference with 95% confidence interval. Heterogeneity was assessed ( $\text{Chi}^2$ ) and quantified ( $I^2$ ). Risk of bias was assessed using the Cochrane Risk of Bias Tool. **Results:** Of the 801 citations found, 23 trials ( $n = 580$  participants) met the inclusion criteria. Diets supplemented with FOS significantly lowered serum LDL-cholesterol levels compared with isocaloric control diets (MD= -0.13 [95% CI: -0.23, -0.04]), however, there was appreciable between-studies heterogeneity ( $I^2=89\%$ ). Post-hoc subgroup analyses to explore sources of heterogeneity are pending. **Conclusions:** As most Canadians do not meet the daily recommended intakes for fibre (28-35g/d), new dietary sources of fibre are of great clinical importance. The findings of this systematic review and meta-analysis support the inclusion of FOS, a soluble fibre, as part of a heart-healthy diet to lower serum LDL-cholesterol levels.

## **'Group Visit Appointment' Model of Care: An emerging trend**

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**Objectives:** 'Group Visit Appointment (GVA) is a unique client care model emerging as a possible approach to the rising demand for dietary intervention for chronic illness. In response to high-volume follow-up appointments and increased wait-times, Registered Dietitians at Access Alliance have begun planning a GVA model for hypercholesterolemia referrals. **Methods:** Quality Improvement and Innovation Partnerships (QIIP) frameworks were used to track and record dietitians' third-next-available appointment times. A literature review and consultations with community agencies were conducted to determine Best Practice Guidelines for GVA. Client dietetic referral patterns were analyzed; hypercholesterolemia was selected for GVA intervention. Through consultation with a multi-disciplinary team, preliminary assessment, and planning for the hypercholesterolemia GVA model's implementation and evaluation was completed with respective practitioner roles identified. **Results:** Dietetic third-next-available appointment times were found to be longer than established benchmarks and in need of improvement. The literature review and consultation highlighted different models of GVA; no 'gold standard' group appointment model could be ascertained. A preliminary, tailored 4-week hypercholesterolemia GVA program with protocol and logistics for implementation and evaluation was created. Program planning also considered synchronising time utilization of each practitioner and contingency plans for anticipated challenges. Tools for qualitative (client satisfaction surveys, debriefs) and quantitative (lipid profiles) evaluation were developed. Clients of the pilot program will be Ambassadors for future programs. **Implications & Conclusions:** A study by Bartley and Haney (2010) indicates a reduction in wait-times by 43% for first-time appointments and 40% for follow-up encounters. Implementation of the GVA model has potential to reduce wait-times and improve access to dietetic services. The model may serve as a pilot-research study comparing dietary intervention outcomes of one-on-one vs. GVA; planning to further develop this potential continues.

**PREPARE: A pre-diabetes lifestyle intervention based on Social Cognitive Theory. Preliminary baseline assessments of nutrition-related knowledge, outcome expectations, and self-efficacy.**

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The PREPARE program is a community-based six-month lifestyle intervention based on Social Cognitive Theory (SCT), for adults with pre-diabetes. **Objective:** To assess baseline differences in SCT mediators between self-selecting participants and controls. **Methods:** A Lifestyle Beliefs Questionnaire was developed to evaluate participant's outcome expectations, knowledge, self-efficacy, and perceived behaviour. **Results:** To-date, there are 85 participants and 21 controls. Both participants and controls consider diabetes to be a very serious disease ( $89\pm 20$ , based on an 11-point scale of 0-100). However, they did not believe they were highly susceptible to developing diabetes ( $61\pm 25$  vs.  $49\pm 32$ , participants vs. controls respectively); with controls having a lower perception of susceptibility ( $p=0.07$  for trend). While the controls had a higher level of agreement ( $3.5\pm 1.3$  on a 5-point scale) that they ate the recommended number of vegetable and fruit servings each day vs. participants ( $2.8\pm 1.1$ ;  $p=0.01$ ), they had less knowledge of this recommendation ( $14\pm 36$  vs.  $31\pm 46$  % correct, controls vs. participants, respectively, although it did not reach significance at  $p=0.14$ ). At baseline, participants had a higher self-efficacy than controls that they could consume vegetables and fruit ( $68\pm 18$  vs.  $58\pm 20$ , respectively  $p=0.03$ ), and low-fat items ( $65\pm 19$  vs.  $54\pm 24$ , respectively,  $p=0.03$ ) in difficult situations. Participants had a greater total self-efficacy for healthy eating behaviours than controls ( $73\pm 13$ ,  $65\pm 21$ , respectively  $p=0.03$ ). Situations related to family support, expenses, and eating away from home appeared to be stronger barriers for the controls. **Conclusions:** People with pre-diabetes perceived they have a moderate susceptibility to developing diabetes. Those that self-select for a pre-diabetes intervention have higher self-efficacy ratings for healthy eating than controls. Funded by The Lawson Foundation.

## **Retrospective chart review and physician survey of early versus late enteral nutrition and association with clinical outcomes in post-operative thoracic and abdominal aortic surgery patients in the cardiovascular intensive care unit**

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**Objectives;** 1. To assess early versus late enteral nutrition and associated clinical outcomes of morbidity and mortality in post-operative thoracic and abdominal aortic surgery patients in the cardiovascular intensive care unit (CVICU) since the 2003 publication of Canadian clinical practice guidelines for nutrition support in critically ill patients. 2. To characterize the enteral feeding practice in this patient population. 3. To survey our vascular surgeons and CVICU staff intensivists on their practice of initiating enteral nutrition in this patient population. **Methods;** A retrospective chart review will be conducted on adult patients  $\geq 18$  years old admitted to CVICU after open and/or endovascular repair of thoracic, abdominal, or thoracoabdominal aortic aneurysms, or aortobifemoral bypass graft for non-aneurysmal occlusive aortic disease from 2004 to 2011. A paper survey of staff vascular surgeons and CVICU staff intensivists will also be conducted. Percentages, means, and correlation statistics will be used to summarize data from the retrospective chart review and survey. Percentages of surveyed physicians' responses and patient traits will be calculated. **Implications;** Results will help to fill a gap in the literature by shedding light on the enteral feeding practice in critically ill post-operative thoracic and abdominal aortic surgery patients. This study will examine associations between early enteral nutrition and clinical outcomes of morbidity and mortality in this patient population. Results from this study will allow benchmarking of practice with current clinical practice guidelines, identify potential barriers with respect to early enteral nutrition in this population, and explore potential strategies for improving enteral feeding practice.

## **Effectiveness of nutrition nudging on purchases of fruits and vegetables in a Saskatchewan grocery store – Pilot Study**

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**Objective:** To determine if placing a poster with a nutrition message in the front of shopping carts will 'nudge' consumers into purchasing fruits and vegetables. **Methods:** In January/February 2012, posters were placed in the shopping carts at a grocery store in Battleford, Saskatchewan. The amount of produce sold in January/February 2011 and 2012 was obtained from the manager of the store and then compared. The data was used to determine whether or not the posters had an impact on the amount of fruit and vegetables purchased. A survey was conducted after the poster trial to see if consumers noticed and changed purchasing patterns because of the message on the poster. **Results:** There was no change in the amount of fruits and vegetables sold between January 2011 and 2012. There was a 3% increase in the amount of fruit and vegetables sold in February 2012 as compared to February 2011. Based on survey results, less than half of customers (n=14) noticed the poster in their cart and 14% (n=5) thought the poster influenced their fruit and vegetable purchases. **Implications & Conclusions:** Because the increase in fruits and vegetables purchased was minimal, the current study was unable to determine whether the increase was due to the posters or other external factors. Although a large increase in purchased fruit and vegetables was not seen in this study, it is believed that nudging is a viable health promotion strategy to promote fruit and vegetable intake and more research needs to be completed in this area.



## **An evaluation of PEN<sup>®</sup> on the practice of Dietitians and Dietetic Interns in the Saskatoon Health Region.**

L Edmonds<sup>1</sup>, S Hill<sup>1</sup>, L Rieger<sup>1</sup>, N Haskey<sup>1</sup>, B Armour<sup>2</sup>, J Thirsk<sup>2</sup>, N Leydon<sup>1</sup>. <sup>1</sup>Saskatoon Health Region, Food & Nutrition Services, Saskatoon, Saskatchewan. <sup>2</sup>Dietitians of Canada.

**Objectives:** To evaluate how PEN<sup>®</sup> is being utilized by dietitians and dietetic interns in the Saskatoon Health Region (SHR). Frequency, limitations, barriers to usage and the impact of PEN<sup>®</sup> on practice/internship were investigated. **Methods:** A survey, previously validated by PEN<sup>®</sup>, was adapted and distributed to 79 dietitians and dietetic interns in the SHR. **Results:** Response rate was 49% (n=39). Thirty-two (82%) respondents used PEN<sup>®</sup> to answer practice questions, twenty-nine (74%) used PEN<sup>®</sup> to answer clients'/colleagues' questions, and thirty-four (87%) used the teaching materials for clients/colleagues. Forty-nine percent (n=19) of respondents stated they were very likely to use PEN<sup>®</sup> to answer practice questions, 56% (n=22) indicated they usually needed to consult another source of information over-and-above PEN<sup>®</sup>. Sixty seven percent (n=26) used PEN<sup>®</sup> either daily or weekly. One hundred percent (n=39) stated that PEN<sup>®</sup> was a valuable/useful tool for practice/internship. Limitations to PEN<sup>®</sup> included a need for more consumer/client handouts on topics not already available on PEN<sup>®</sup> (n=27), more detailed advanced materials (n=19) and more nutrition assessment/screening tools (n=19). Overall, 76% (n=29) agreed that they were able to find an acceptable answer to their questions on PEN<sup>®</sup> and 100% (n=39) of respondents stated that PEN<sup>®</sup> enables them to make evidence-informed decisions. **Implications & Conclusions:** Based on the results collected in the SHR PEN<sup>®</sup> survey it is evident that PEN<sup>®</sup> is a valuable resource to the dietitians and dietetic interns working within SHR. This value can be seen through the frequency of use, perceptions of quality, reports of value, impact on practice and opinion that PEN<sup>®</sup> enables evidenced-informed decisions.

## **The impact of community markets on individuals living in a Saskatoon food desert.**

K Noyes, M Thompson, T Condie, N Haskey MSc RD, R Hartl RD & Janice Sanford Beck. University of Saskatchewan, College of Pharmacy & Nutrition, Professional Practice 4 Program, Saskatoon Health Region, Saskatoon, Saskatchewan.

**Objective:** To determine how three Saskatoon community markets offered by CHEP Good Food Inc. impact the community and its members. The community markets are designed to offer affordable and nutritious foods in Saskatoon's food deserts.

**Methods:** Community members and key informants involved in Pleasant Hill School, W.P. Bate School, and St. Thomas Wesley Church community markets were surveyed. Qualitative data was collected, reviewed, and compiled into common themes.

**Results:** Forty community members and seventeen key informants completed surveys. Of the community members surveyed 78% (n=31) had previously attended and utilized a community market while 22% (n=9) of the community members surveyed had not. Six common themes arose from the survey responses; the community markets have increased access to fresh vegetables and fruit, increased vegetable and fruit intake, improved nutrition knowledge, increased child immunization rates, and promoted community capacity building. Limitations to the community markets were the need for more market locations, the need for increased quantity and variety of produce, the need for improved marketing of the community markets and concerns regarding future sustainability.

**Implications & Conclusions:** Community markets in Saskatoon's food deserts are a successful community initiative as perceived by the community members. The community members value the community markets and hope to see the markets expand to provide an increased variety of foods. The community markets provide fresh vegetables and fruit to areas that otherwise lack access to healthy and affordable foods in Saskatoon.

## **Exploring the impact of co-morbidities and medications on food intake in the general internal medicine population**

R Brown, K Hipwell, S Piper, S Schaeffer, S Rothberg, D Fierini, D MacGarvie, J Madill. University Health Network Dietetic Internship Program, Toronto Ontario.

Risk factors for malnutrition in hospitalized patients include age, BMI of  $<18.5\text{kg/m}^2$ , unintentional weight loss and reduced food intake for at least seven days prior to admission. **Objective:** To determine if an association exists between food intake of general internal medicine (GIM) patients and the number of co-morbidities they have or medications they take orally. **Method:** Data was collected during a standardized, one-day cross-sectional audit of four GIM wards at University Health Network (UHN). We conducted the study following the nutritionDay (nD) protocol approved by UHN's Research Ethics Board. nD questionnaires collected descriptive data (demographics, anthropometrics, past medical history, diagnosis, medications, food and beverage intake, factors affecting intake, etc.) from the patients, their charts and electronic medical records. We used the Canadian Nutrient File to calculate total calories and protein consumed and total calories and protein provided by the hospital meal. This was compared to patient's estimated energy requirements (Harris Benedict) and estimated protein requirements. **Results:** Sixty-six patients, 35 male and 31 female, were recruited from four GIM wards. **Conclusions:** Data analysis is pending. We expect to see an inverse relationship between food intake and number of medications or co-morbidities. **Implications:** Streamlining nutrition intervention strategies in hospital could help improve patients' nutrition status, thereby decreasing length of stay and healthcare costs. More research is necessary to develop and implement effective protocols to care for patients with multiple co-morbidities or medications.

## **Does taking multiple medications or having multiple co-morbidities have an effect on food intake in the general surgery population?**

A Masliwec, K Ho, S Kasman, V Tong, D MacGarvie, D Fierini, S Rothberg, J Madill. University Health Network Dietetic Internship Program, Toronto, Ontario.

**Objectives:** Malnutrition has been a longstanding challenge in the effective treatment of hospitalized patients. The detrimental effects of malnutrition are exacerbated in surgical patients, who require an optimal nutritional status to promote wound healing and functional recovery. Research consistently reports poor oral intake as a primary cause of malnutrition. The 2006 nutritionDay study reported decreased food intake as an independent risk factor for hospital mortality. Subsequently, it is important to determine relative risk factors for poor oral intake for effective nutrition screening and treatment of surgical patients. Taking multiple medications and having multiple co-morbidities are two unexplored risk factors for inadequate intake. **Methods:** A cross-sectional audit of patient consumption of a single meal was collected using the nutritionDay standardized survey across two hospital sites for patients who met the study's inclusion criteria. A chart review was conducted to obtain details of the patient's surgery, medical history, the patient's bed location, the number of days the patient was instructed not to eat, if the patient was followed by a Registered Dietitian or Diet Technician, and the details of any surgeries in the year prior. Chi square analysis will be performed using SPSS v.17.0. **Results:** Information has been collected for 43 participants. Data analysis is pending. **Implications & Conclusions:** The results of this study could impact current protocols for nutrition screening by relating oral intake to a patient's total number of medications and number of co-morbidities. We expect that taking multiple medications and having multiple co-morbidities are both associated with decreased oral intake in hospitalized general surgery patients.

## **Évaluation et développement d'outils pédagogiques utilisés auprès de la clientèle pédiatrique obèse de l'Hôpital régional Chaleur.**

C Lagacé. Réseau de santé Vitalité, partenaire du Programme d'internat intégré de l'Université de Moncton, Bathurst, Nouveau-Brunswick.

**Objectifs:** 1) Évaluer le matériel pédagogique utilisé auprès de la clientèle pédiatrique obèse de l'Hôpital régional Chaleur; 2) Développer, au besoin, des outils pour améliorer l'enseignement. **Méthode :** Les données ont été recueillies par observation sur le terrain, pendant les interventions diététiques auprès de la clientèle pédiatrique souffrant d'obésité. De plus, une entrevue semi-dirigée a été effectuée avec la diététiste de la clinique à l'aide d'un questionnaire. **Résultats :** Quatre outils étaient utilisés par la diététiste pour l'enseignement aux parents et aux enfants. Deux de ces outils, soient le plan alimentaire et les modèles d'aliments étaient utilisés avec chaque patient. Les deux autres, un diagramme de digestion et un jeu associe-aliment, étaient moins utilisés, mais tout de même pertinents. Un des outils principaux, le plan alimentaire, comportait des lacunes. Une liste d'outils requis a été créée selon les besoins identifiés lors de l'entrevue avec la diététiste. Sept de ces outils sont considérés à besoin élevé. Les sept outils ont été créés à la fin du projet de recherche, selon le besoin des patients et de la diététiste. **Conclusion :** Cette recherche a permis de confirmer le besoin d'outils pédagogiques pour la clientèle pédiatrique obèse de l'Hôpital régional Chaleur pour assurer un enseignement diététique satisfaisant aux besoins de chaque patient et de leurs familles.

## **Évaluation des absences et des annulations de rendez-vous dans les services externes de nutrition de la Zone 5 du Réseau de santé Vitalité**

M Bernard. Réseau de santé Vitalité, partenaire du Programme d'internat intégré de l'Université de Moncton, Campbellton, Nouveau-Brunswick.

**Objectif** : Investiguer les raisons des absences et des annulations des rendez-vous (RV) dans les cliniques externes de nutrition de la Zone 5 et proposer des solutions. **Méthode**: Soixante-neuf clients qui ont annulé ou qui ne se sont pas présentés à leur RV entre janvier et la mi-mars 2011 ont été rejoints par téléphone pour les inviter à répondre à un questionnaire permettant d'identifier les raisons de l'absence ou de l'annulation de leur RV. De plus, un questionnaire a été envoyé par courriel au réseau des diététistes gestionnaires des Diététistes du Canada (DC) et aux cinq gestionnaires des autres départements de la zone 5 dans le but de connaître leurs processus de gestion de RV, incluant leurs mesures préventives des absences et des annulations. **Résultats** : Soixante-neuf patients ont répondu au questionnaire (40%). Les trois principales raisons de leurs RV manqués/annulés sont: maladie ou hospitalisation (21%) ; date/heure du RV qui ne convenaient pas (19%); et conflit d'horaire (17%). Sept membres des DC ont répondu au questionnaire ainsi que deux gestionnaires de département. Les méthodes les plus utilisées pour la gestion des RV et la prévention des absences/annulations sont : les rappels téléphoniques ; les blocs de thérapies (nombre de semaines de traitement déterminé avec le client); et de cédule les RV seulement une semaine à l'avance. **Conclusion** : Certaines solutions pourraient aider à la gestion des RV: 1) donner un RV seulement si le patient accepte de recevoir une consultation; 2) offrir une flexibilité aux clients pour le choix de la date et l'heure du suivi.

## **Privilèges cliniques des diététistes relatifs à la prescription de régimes et de textures d'aliments**

M-E English. Réseau de santé Vitalité, partenaire du Programme d'internat intégré de l'Université de Moncton, Campbellton, Nouveau-Brunswick.

**Objectif:** Évaluer le besoin d'une directive médicale permettant aux diététistes d'acquérir le privilège clinique de prescrire des régimes et/ou des textures d'aliments aux patients. **Méthode:** 1) Évaluer le nombre de changements de prescription de régimes et de textures nécessaires sur une période de 20 jours; 2) Évaluer, à l'aide d'un questionnaire posté aux médecins de la zone 5, la perception des médecins envers la compétence de la diététiste à prescrire un régime et une texture et leur intérêt à ce qu'une directive médicale soit développée en ce sens; et 3) Évaluer, à l'aide d'un questionnaire envoyé par courriel au Réseau de gestionnaires en Nutrition clinique des Diététistes du Canada, la perception des diététistes œuvrant au Canada sur leur compétence à prescrire des régime et des textures. **Résultats:** Deux des huit diététistes de la Zone 5 ont recueilli des données sur les besoins de changements de diète ou de texture. En 20 jours, 18 besoins de changements ont été recensés. Vingt-neuf diététistes et neuf médecins (41%) ont répondu aux questionnaires. Tous les médecins (100%) et 84% des diététistes répondantes acquiescent l'implantation d'une directive médicale donnant le privilège clinique aux diététistes de prescrire les diètes et les textures. De plus, 78% des médecins répondants perçoivent les diététistes compétentes à prescrire les régimes et/ou textures, alors que le 22% restant relatent le besoin de définir des contre-indications (NPO, post-chirurgie). **Conclusion:** Une directive permettant aux diététistes de prescrire des régimes et des textures est perçue comme étant positive dans la zone 5 du Réseau de santé Vitalité.

## **Pratiques d'allaitement et d'alimentation des bébés nés de mères ayant participé aux cours prénataux à l'Hôpital régional d'Edmundston.**

F Langford. Réseau de santé Vitalité, partenaire du Programme d'internat intégré de l'Université de Moncton, Edmundston, Nouveau-Brunswick.

**Objectif :** Identifier l'impact des cours prénataux sur les pratiques d'allaitement et d'alimentation des nourrissons nés de mères ayant suivi les cours prénataux à l'Hôpital régional d'Edmundston entre 2008 et 2009. **Méthodes :** Un questionnaire fut développé afin de mener une entrevue téléphonique. L'initiation de l'allaitement, sa durée totale, sa durée exclusive et ses barrières, ainsi que l'âge et l'ordre d'introduction des aliments solides ont été évalués. Les données recueillies ont été comparées aux recommandations émises lors des cours prénataux. **Résultats :** Quinze mamans ont répondu au questionnaire, pour un taux de participation de 30%. L'allaitement a été initié chez 93% des participantes et 43% de l'échantillon total ont allaité pendant 6 mois ou plus. L'allaitement exclusif jusqu'à 6 mois fut pratiqué chez 21% des participantes. La moitié des mamans ont eu recours à l'allaitement mixte qui, en moyenne a débuté vers la onzième semaine de vie. Les principales barrières identifiées à l'allaitement exclusif jusqu'à 6 mois sont: la fréquence des boires/bébé gourmand (45%), production insuffisante (18%), et mauvaise technique (9%). Le tiers des mamans ont introduit les solides à l'âge recommandé de 6 mois et 27% ont suivi l'ordre recommandé en commençant par des aliments riches en fer. **Conclusion :** Quoique le taux d'initiation de l'allaitement est élevé (93%), moins du quart des participantes a respecté la recommandation d'allaitement exclusif jusqu'à 6 mois. Seulement le tiers des participantes ont introduit les aliments à l'âge recommandé et environ le quart a respecté l'ordre d'introduction recommandé. Les résultats permettront de réviser le contenu des cours prénataux afin de mieux outiller les mamans aux défis principaux.



## **Création, mise en place et évaluation d'un programme d'information nutritionnelle pour les clients des hôpitaux de la zone 4 du Réseau de santé Vitalité.**

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**Objectif :** Créer, mettre en place et évaluer un programme d'information nutritionnelle pour les aliments offerts dans les machines distributrices et les aliments pré-emballés offerts dans les cafétérias des trois hôpitaux de la zone 4. **Méthodes :** L'intérêt des usagers pour la mise en place d'un programme d'information nutritionnelle au point d'achat a été évalué par un questionnaire mis à la disposition de tous les clients. Un programme d'information nutritionnelle a ensuite été créé et introduit par un comité mixte régional. Un mois après sa mise en place, un questionnaire post-intervention a mesuré l'utilisation, la compréhension et la satisfaction des usagers envers le programme. **Résultats :** Deux cent douze questionnaires ont été recueillis pour connaître l'intérêt des usagers à un programme d'information nutritionnelle. Quatre-vingts pourcent des gens ont répondu qu'ils utiliseraient un tel programme et 77% ont appuyé un système imitant les feux de circulation. Un mois après l'implantation du programme, des copies du questionnaire post-intervention ont été mis à la disposition des usagers. Cent soixante-deux questionnaires ont été retournés. Environ la moitié des répondants connaissent le nouveau programme (52%). De ceux-ci, 98% se disent satisfaits du programme; 90% disent comprendre la signification des couleurs et 86% sont en mesure d'identifier l'étiquette d'un choix santé. Des 48% qui n'ont pas utilisé le programme, la majorité affirme qu'il l'utiliserait dans l'avenir (87%). **Conclusion :** Quoique la quasi-totalité des usagers du programme en soit satisfaite et que la majorité en ait une bonne compréhension, des efforts supplémentaires pourraient encourager l'utilisation auprès d'un plus grand nombre de clients.

## **L'évaluation subjective globale (SGA) comme outil de dépistage nutritionnel chez la clientèle hémodialysée du Centre hospitalier universitaire Dr Georges-L.-Dumont (CHUGLD).**

M. Bossé, Réseau de santé Vitalité, partenaire du Programme d'internat intégré de l'Université de Moncton, Moncton, Nouveau-Brunswick.

**Objectif** : Évaluer l'efficacité de la méthode SGA pour l'évaluation du risque nutritionnel chez les patients hémodialysés du CHUGLD comparativement à la méthode de dépistage actuelle. **Méthode** : L'analyse du risque nutritionnel de 89 patients hémodialysés a été faite selon les deux méthodes étudiées : le SGA et l'albumine sérique. Le questionnaire SGA et l'examen physique ont été complétés lors du traitement d'hémodialyse par le chercheur principal. La variation du poids sec et les valeurs de l'albumine sérique ont été recueillies au dossier médical. Les sujets ont été classés dans trois degrés de risque nutritionnel (faible, modéré, sévère) selon les deux méthodes. **Résultats** : Cinquante-quatre pour cent des sujets ont été classés dans le même degré de risque nutritionnel en utilisant l'une ou l'autre des deux méthodes de dépistage; 75% de ceux-ci étaient classés avec risque nutritionnel faible et l'autre 25% étaient classés à risque nutritionnel modéré. Parmi les 46% des sujets classés dans des degrés de risque nutritionnel différents selon les deux méthodes, 84% d'entre eux présentaient un risque nutritionnel moins sévère selon la valeur de l'albumine qu'avec la méthode SGA. De plus, la méthode SGA nécessite environ 19 fois plus de temps à effectuer que l'analyse du taux d'albumine sérique. **Conclusion** : Cette étude a permis de démontrer que l'outil SGA décele davantage de patients à risque nutritionnel modéré et sévère que le taux d'albumine sérique chez la population étudiée. Le SGA s'avère plus sensible que la méthode présentement utilisée. Or, le temps nécessaire pour compléter le SGA constitue la contrainte majeure à son implantation.

## **Élaboration d'un algorithme décisionnel pour l'intervention nutritionnelle en présence de risques de malnutrition au Centre hospitalier universitaire Dr Georges-L.-Dumont (CHUGLD).**

C Huot. Réseau de santé Vitalité, partenaire du Programme d'internat intégré de l'Université de Moncton, Moncton, Nouveau-Brunswick.

**Objectif** : Adapter l'algorithme décisionnel pour l'intervention nutritionnelle en présence de risques de malnutrition préalablement développé afin d'en optimiser son efficacité et son utilisation auprès des diététistes du CHUGLD. **Méthode** : Le format et le contenu de l'algorithme ont été révisés à l'aide de l'outil MUST et d'entretiens sur le sujet avec un groupe de diététistes du CHUGLD. L'ébauche du nouvel algorithme fut présentée aux diététistes du CHUGLD et mise à l'essai. Un questionnaire visant à évaluer la pertinence du nouvel outil leur fut distribué. **Résultats** : Six diététistes ont répondu au questionnaire. L'outil proposé fut utilisé auprès de seize patients. Les résultats de l'évaluation indiquent que l'outil est facile à utiliser (100%) et que son format est convenable (50%). L'ordre des interventions proposé est logique (100%). De façon générale, les données anthropométriques nécessaires à son utilisation sont facilement disponibles (66%). L'algorithme répond aux besoins des diététistes interrogées en termes d'évaluation nutritionnelle et d'élaboration de plans de soins nutritionnels (100%). Selon elles, il constitue un excellent guide mais ne semble pas avoir d'influence sur leurs interventions pratiques actuelles (50%). **Conclusion** : L'algorithme sera donc modifié conséquemment aux résultats tirés de l'enquête et constituera une référence en matière d'évaluation de la malnutrition protéino-énergétique et d'élaboration de plans de soins nutritionnels.

## **Preschool children from non-western immigrant families have lower vitamin D levels than children from western families: a TARGet Kids! Study**

J Omand, P Daring, P Parkin, C Birken, J Maguire. St. Michael's Hospital, Toronto, ON. [R]

**Objectives:** The purpose of the study was to determine if preschool children from non-western immigrant families have lower serum 25-hydroxyvitamin D levels than children from western born families and to examine which biological, ethnic, demographic and environmental factors influence this relationship. **Methods:** The study was a cross sectional analysis using data from the TARGet Kids! cohort of healthy children ages 1-5 years recruited during routine primary care in Toronto. For the primary analysis, 25-hydroxyvitamin D levels of children from non-western immigrant families were compared to children from western families. Linear regression was used to identify factors that might influence this relationship. **Results:** 1235 children enrolled in TARGet Kids! had measured 25-hydroxyvitamin D and were included in the analysis. Children from non-western immigrant families made up 29% of the population. The mean age was 35 months (SD 18), 51% were male, 83% had 'light' skin pigmentation (Fitzpatrick scale I, II or III), 57% took vitamin D supplements and average milk intake was 437ml/day (SD 304). Mean 25-hydroxyvitamin D level was 88.5nmol/L (SD 32). Univariable analysis revealed that children from non-western immigrant families had 5nmol/L lower 25-hydroxyvitamin D than children from western families ( $p=0.0046$ ). Linear regression modeling revealed that this is primarily influenced by cow's milk intake ( $p<0.0001$ ), vitamin D supplementation ( $p=0.0001$ ) and season ( $p=0.0021$ ). After adjusting for these variables the residual 25-hydroxyvitamin D difference was no longer significant. R squared analysis revealed that vitamin D supplementation explains most of the originally observed difference. **Implications & Conclusions:** Vitamin D supplementation represents a modifiable target for future intervention studies to increase 25-hydroxyvitamin D in this vulnerable population.

(Supported by the CIHR priority announcement Nutrition and Dietetic Research (SHOPP) in partnership with CFDR)

## **Increasing the capacity of the Haliburton, Kawartha, Pine Ridge District Health Unit's (HKPRDHU) Public Health Food Workers (PHFWs) in providing opportunities for food skill development.**

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The *2008 Ontario Public Health Standards* states that opportunities for skill development shall be provided for food and healthy eating practices for priority populations. **Objectives:** To determine a priority population for food skill development within HKPRDHU; identify agencies that service the priority population willing to partner with the health unit; and identify strategies that the PHFWs could use for food skill development. **Methods:** An environmental scan with other health units and literature search were conducted to determine effective strategies for providing food skill development. Interviews with key stakeholders were conducted with four HKPRDHU staff members and, nine community agencies. **Results:** Literature, environmental scan and stakeholder interviewees supported a standardized food skills program as a means of building the PHFW's capacity. Specifically the program must: target youth (ages 12-24 years), be grounded in youth engagement principles, and address barriers such as low socioeconomic status and limited literacy. Eight out of the nine community agencies indicated their willingness to partner with the Health Unit. **Implications & Conclusions:** A food skills program used by other health units was adapted for use by the HKPRDHU's PHFWs in partnership with community agencies. The adaptation ensures the program: incorporates youth engagement principles; includes simple, easy-to-follow, inexpensive recipes; and includes resources to aid the facilitator in answering questions falling outside their scope of knowledge. An evaluation of the program will be conducted with the PHFWs who will pilot test the program with youth. The results will direct future adaptations to the food skills program.

**Examining the experiences of child care staff during the implementation of the *Standards for Food and Nutrition in Regulated Child Care Settings*: the first three months.**

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On July 1, 2011, the *Standards for Food and Nutrition in Regulated Child Care* settings were implemented and became mandatory for all regulated child care settings. The standards set more rigorous nutritional guidelines for the foods served in these settings. **Objective:** To examine the experiences of child care staff in the implementation of the *Standards for Food and Nutrition in Regulated Child Care Settings*. **Method:** Data was collected through an online survey completed by the staff of child care centres in the Central Region (Halifax Regional Municipality). Participants were recruited through an invitational email sent to all centres on the email list kept by Early Childhood Development Services, Department of Community Services. Results were compiled and analyzed for common themes amongst the experiences of child care staff. **Results:** Three common themes emerged through analysis: 1) Challenges with regard to special occasions, as many staff felt as if less nutritious foods should still be allowed on special occasions and in moderation. 2) Challenges with regard to food wastage, as some children in care did not care for or eat the new foods served to them. 3) Many centres served nutritious foods prior to introduction of the standards, so little or no changes to the menu were necessary. **Implications & Conclusions:** Knowledge of the specific challenges faced by child care workers with regard to the food and nutrition standards can help to provide supports in the most needed areas, thus improving adherence to and effectiveness of the standards.

## **Determining energy requirements of adults with a body mass index of 35 or greater**

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Energy requirements of obese, immobile patients have not been studied. Currently, there is no predictive energy equation validated for use in this population. This poses difficulties for dietitians to accurately estimate caloric requirements of this patient population and minimize the risk of complications related to over- or underfeeding. **Objectives;** (1) To determine the resting energy expenditure (REE) of obese class II and III mobile and immobile participants using indirect calorimetry (IC) (2) To explore the accuracy of four predictive energy expenditure equations, using three weight factors, in estimating REE in both study groups (3) To determine the correlation between lean body mass (LBM) and REE. **Methods;** This is a cross-sectional descriptive study on immobile in-patients at St. Michael's Hospital and mobile control participants ages 18 – 65 years, with a Body Mass Index of  $\geq 35 \text{ kg/m}^2$ , who do not have major systemic injuries or infections. REE is measured using IC and calculated using selected predictive energy equations with three weight factors - actual body weight, adjusted body weight, and ideal body weight. LBM is assessed using bioelectrical impedance analysis. Bland-Altman plots will be used to compare REE measurements from IC and from predictive equations. Spearman correlation will be used to assess the relationship between REE and LBM. **Results;** Data collection is ongoing. **Implications & Conclusions;** This study will provide new descriptive information on energy requirements and body composition of mobile and immobile obese class II and III individuals. It will also identify the most accurate predictive energy equation for the two populations, which will allow dietitians to optimize their nutritional care.

## **Removal of feeding tubes: Defining assessment criteria used by dietitians practicing within acute care settings across the Vancouver Coastal Health (VCH) Authority**

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**Objectives:** To identify the assessment criteria VCH dietitians in acute care settings use to assess readiness for feeding tube removal and which measures are reviewed to verify criteria are met.

**Methods:** A literature review helped to identify criteria to consider when assessing readiness for feeding tube removal. Recommendations include considering adequate oral intake, ability to swallow safely, tolerance of solid foods, and hydration status (3,4,7,9,10). The VCH Practice Guideline entitled “Transitional Feeding – Tube to Oral” was also reviewed (2). Based on this research, a four-question qualitative telephone survey was developed. VCH clinical practice leaders and hospital managers contacted a total of 86 dietitians through electronic mailing lists. Dietitians included in the study were registered with Restricted Act A (to design, compound or dispense therapeutic diets where nutrition is administered through enteral feeds), and working in acute care settings with enterally-fed patients.

Surveys were conducted between February 28 and March 31, 2012. **Results:** There were two respondents in total. Both consider all criteria identified in the literature as well as non-clinical factors such as patient and caregiver wishes. One difference between respondents is the degree of involvement of the dietitian in the decision to remove the feeding tube. **Implications and**

**Conclusions:** Results from this study cannot be generalized to the broader population of acute care dietitians due to a small sample size. For any replication of this study, it is recommended that methodology be modified to increase participation. A larger sample size may help generate a reference list of assessment criteria and measures which could be used to develop practice guidelines for feeding tube removal.



## **An investigation of the barriers to completion of a nutrition screening tool for hospitalized elderly in a Canadian hospital: nurses' perceptions, views and experiences.**

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A previous study conducted at North York General Hospital (NYGH) in the spring of 2011, revealed that the Nutrition section of a geriatric screening tool known as SPPICES was not being filled out completely and accurately by nursing staff. **Objectives:** To determine the reasons behind incomplete and inaccurate documentation of the Eating and Nutrition section of the SPPICES screening tool by nursing staff. **Methods:** A qualitative study design technique was used, including retrospective focus groups, to examine nurses' knowledge, skills and attitudes in regards to completing the Eating and Nutrition section of the SPPICES screening tool. Audio recordings of the focus groups were transcribed verbatim to identify key themes related to the issue. **Results:** Documentation of the Eating and Nutrition section of the SPPICES screening tool was limited by patients' cognition, age, and language, as well as their families not being by the bedside as a resource. Furthermore, nurses' skills in using the tool were imperfect, as it was difficult for them to document patient height/weight, and consequently BMI. As a result, having lack of information was often noted as a barrier. Some nurses applied individual judgment rather than a tool to assess malnutrition. It was also noted that the nutrition section of the SPPICES form was often missed on admission, implying that time was a barrier to efficient screening. **Implications & Conclusions:** There is a need for education and increased feedback to nurses regarding screening practice. This will improve nutrition knowledge and comfort-level surrounding the tool, and consequently increase compliance.

## **Barriers and facilitators to local food procurement for institutional buyers in London, Ontario**

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**Objectives:** Large institutions are viewed as useful settings to help build local food infrastructure due to their consistent and substantial purchase of food. Provincial and municipal government procurement policies also expect institutions to increase local food purchases for economic, environmental, or food sovereignty reasons. The goal of this study was to explore barriers and facilitators to institutional procurement of local food in London, Ontario. **Methods:** Thirteen buyers, suppliers, and distributors were purposively sampled to represent educational, health, and long-term care sectors. Hour-long interviews were audio-recorded and transcribed verbatim. Transcripts were coded line-by-line and respondents' answers were grouped according to barriers and facilitators. **Results:** Preliminary findings suggest that common barriers to procuring local food include higher price, insufficient quantity, lack of local food processing, and inflexible supplier contracts. Additional barriers include the challenge of defining "local", insurance requirements on food purchased, lack of information from suppliers, long-term care menu standards, and insufficient provincial food manufacturing facilities. The most common facilitators were high customer awareness/demand, competition among suppliers, positive publicity, and guidance documents such as London's Food Charter. **Implications & Conclusions:** For many large institutions in the city of London, barriers to procuring local food overshadow the facilitators that would support such action. While provincial legislation was considered the most effective way to reduce the barriers, it was also seen as unfairly punitive to institutions. Given that these institutions serve thousands of meals every day, dietitians and other healthcare professionals have an important role to play in guiding institutional food procurement policies as they can have substantial impacts on the environment, the local economy, and overall public health.

## **IS there a change in fruit and vegetable intake after participating in a Cardiovascular Rehabilitation Program (CRP) with concurrent nutrition education?**

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**Objectives:** The American Heart Association and American Association of Cardiovascular and Pulmonary Rehabilitation agree that a cardiovascular risk reduction program's (CRRP) core components should include risk factor management, physical activity counseling, exercise training, and nutritional counseling. The primary aim of this study was to determine the relationship between changes in daily fruit and vegetable intake and nutrition counseling before and after participation in St. Paul's Hospital's Healthy Heart CRRP. **Methods:** A convenience sample was collected via a retrospective chart review of patients who completed the 16-week CRRP. Data collected included daily fruit and vegetable intake, lipid profile, weight, gender, and age. Excel was used for statistical analysis. Descriptive, summary statistics, and paired t-tests were utilized to define population characteristics and assess findings. **Results:** Data from 85 patients showed a significant increase in average daily fruit and vegetable intake of 1.65 servings ( $p < 0.05$ ). On average, males increased by 1.64 servings ( $n=57$ ,  $p < 0.05$ ) and females by 1.67 servings ( $n=28$ ,  $p < 0.05$ ). Divided into age groups, those aged 40-49 years showed the largest increase of 3.5 servings ( $p < 0.05$ ). Except for those aged 19-39 years, all groups had a significant increase in daily servings. For the entire population, increases in fruits and vegetables was associated with improved levels of serum LDL-c, HDL-c, and total cholesterol:HDL-c ( $p < 0.05$ ). **Implications & Conclusions:** Participation in the SPH CRRP with nutrition counseling appears to be an effective approach in producing a significant increase on fruit and vegetable intake and assists in improvements to the lipid profile.

## **A comparison of fatty acid profiles among commonly consumed forms of red meat in the Manitoba area**

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Red meat is a significant source of dietary lipids including saturated fat and cholesterol; excessive intake of these fats can contribute to chronic diseases. Although Health Canada has recommended a reduction of red meat intake, it is still the most commonly consumed protein source among Canadians.

**Objectives:** The purpose of this study is to determine the fatty acid composition, total cholesterol and triglyceride levels of various types of Manitoba red meat (beef, pork and bison).

**Methods:** Meat samples were purchased from three local grocery stores; additionally, samples from specialty stores were examined (free-range, antibiotic free, organic and grass-fed) to differentiate the impact of livestock husbandry practices on the quality of red meat lipids. Lipid extraction was conducted using the standard Folch method, and fatty acid profiles were determined through gas chromatography procedures.

**Results:** Preliminary analysis between lean ground bison (LGB) and lean ground pork (LGP) have shown that LGP was significantly higher in n-6 fatty acids ( $p=0.03$ ). There was also significant differences in the n-6:n-3 fatty acid ratio between LGP and LGB samples (9.4:1 versus 4.1:1 respectively,  $p=0.00007$ ). The ratio of PUFA:SFA was also statistically greater in LGP ( $p=0.009$ ).

Total SFA was significantly ( $p=0.006$ ) higher in LGB (47%) compared to LGP (40%).

**Implications & Conclusions:** This study is currently in progress to obtain information on other Manitoba red meats.

Data from this study will help consumers choose red meat cuts according to their health status and desire for prevention of chronic diseases