

# Canadian Journal of Dietetic Practice and Research

## Revue canadienne de la pratique et de la recherche en diététique

### Summer 2003 Supplement

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Envoi de publication – Enregistrement n° 09797. Tous droits réservés.

ISSN 1486-3847: Issue Date June 2003/Date de parution : juin 2003

# Canadian Foundation for Dietetic Research

## Dietetic Research Event – May 30, 2003



We welcome you to view the research and experience sharing offered to you by your colleagues at this year's conference. The abstracts presented cover a broad range of topics that reflect the diversity of our profession. We hope you will find topics of interest that will provide an opportunity for you to connect with others that share similar interests and challenges. These contacts may take place at the conference or, if you are reading this later, through Dietitians of Canada.

We applaud those who submitted abstracts, and those who are currently working on their own endeavours. It is through efforts such as these, whether it be research, innovation, clarification, or evaluation, that we will make strides within our practice. Advances made by Dietitians/Nutritionists enhance our credibility and help us remain as the experts and leaders in nutrition.

If you are not involved in sharing your practice achievements or research, we encourage you to consider doing so in the future. The broad range of topics presented here may provide ideas that you may wish to pursue and with contacts who could assist you through the process. Everyone benefits from the experience that practice-based research contributes to the body of knowledge of nutrition and to our profession.

I look forward to seeing these posters and presentations taken to the next step, that is, written and published, so that they will become part of the literature for the broader community of health professionals.

On behalf of the membership of Dietitians of Canada I wish to thank the Abstracts Review Committee who took time from their busy schedules to help appraise the abstracts and plan the program: Susan Anderson, Ilona Csizmadi, Sari Czink, Karen Davison, Kelly Ann Erdman, Sandra Follett-Bick, Susan Graham, Holly Knight, Shannon Mackenzie and Joan Silzer. I wish to thank the Canadian Foundation of Dietetic Research for their support of – and for providing a forum for – practice based research in Canada, in particular Susan Morgan and Diana Sheh.

# Canadian Foundation for Dietetic Research

## Dietetic Research Event – May 30, 2003

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

\*Indicates the presenter

[R] = Research abstract

[E] = Experience-sharing abstract

### Community

#### **Multiple strategies used in a community based prenatal program to address food security and nutrition issues**

*L Seguin\*, J Silzer and K McGeary. Best Beginning Program, Calgary Health Region, Calgary, Alberta [E]*

**Purpose:** The Best Beginning Program serves pregnant women and their families who are living on a low income, with the goal of increasing participants' capacity to make healthy choices. Strengthened by a community-based management model and numerous community partnerships, multiple strategies are used to address participants' food security and nutrition concerns.

**Description of Process or Content:** Participants may receive individual service from a team consisting of an outreach worker, nutritionist and nurse, as well as education and support at any one of six weekly group drop-ins throughout the city. Individual services include client-centered nutrition assessment, education and counseling by a nutritionist, as well as the provision of milk coupons or home milk delivery, orange juice coupons, food hampers and prenatal vitamin and mineral supplements. Group-based services include learning about nutrition and healthy eating, preparing and sharing a nutritious, low-cost meal, and selecting perishable foods and non-perishable basic shelf items to take home to supplement their food supply. Co-facilitated by a nutritionist and kitchen coordinator, monthly cooking circles at each of the six group drop-ins devote the entire group time to nutrition education supported by hands-on food preparation and skill acquisition, such as learning about and cooking with basic shelf items. Partnering with various community initiatives allows participants to continue to address food security and nutrition once participation in Best Beginning ceases.

**Project Summary:** Varied levels of community support and involvement enable Best Beginning to address nutrition and food security issues through many different strategies.

**Recommendations & Conclusions:** This provides more comprehensive, more client-centered care to approximately 800 pregnant women per year and their families.

#### **Child nutrition programs in Canada and the United States: lessons learned**

*CJ Henry\*, College of Pharmacy and Nutrition, University of Saskatchewan, Saskatoon, Saskatchewan, AC Garcia, Brescia University College, University of Western Ontario, and D Allison, Faculty of Education, UWO, London, Ontario [R]*

**Objectives:** This paper shares some observations and lessons learned in the evolution, rationale, design and implementation of child nutrition programs in the United States and Canada. It highlights differences in policy, programs, environmental and political features that appear to have influenced their development and growth.

**Methods:** American and Canadian publications were reviewed, including journal articles, government documents, school board policies, institutional archives, and unpublished materials.

**Results:** In the US, the federal government has committed to meeting the nutritional needs of children by ensuring universal access to child nutrition programs, through national, state, and local legislation. A continuous quality improvement model is in place to increase efficiency in meal provision through specialization, cost recovery, and cash cafeteria system. These programs have become part of the safety net and primary resource for alleviating hunger among school-aged children. Not only does Canada lack a national framework for support, child nutrition programs seem to be justified by social welfare and justice arguments. They have not focused on the alleviation of the consequences of poverty such as hunger. Child nutrition programs currently operating are largely ad hoc responses to local needs and initiatives. Many lack stable funding, efficient coordination, specialized facilities/equipment, personnel support, and nutritional guidelines.

**Conclusions:** For child nutrition programs to be successful, widely available and sustainable, there is a need to provide effective support for administrative, financial and infrastructure resources by all levels of government, the schools and the community. The impact of environmental forces and political features in shaping current structures of these programs need to be adequately evaluated.

## **A public health approach to the prevention of childhood overweight**

*Kristyn Hall\*, Mary Flynn, Sandy Clovechok, April Noack, Gwen Speirs, Kathy Mortensen, Ann Naimish, Edwin Enns, Jill Aussant, Jeff Pivnick. Calgary Health Region, Calgary, Alberta [R]*

**Objective:** To develop and pilot test a growth assessment program in the Calgary Health Region that would provide continuous measured data on the prevalence of overweight among pre-school children attending for vaccination and assessment, and promote lifestyle behaviours that help children achieve healthy growth.

**Methods:** Resources were developed to support a three-strategy approach to promote healthy growth (feel good about yourself, have fun being physically active and enjoy healthy eating). A protocol for growth assessment was developed with multidisciplinary input. Public health nurses (PHN) were trained in standardized measurement techniques and resources for families. Children's weight and height measurements were plotted on the CDC Growth Charts (2000) and were used to identify children as overweight ( $\geq 95^{\text{th}}$  percentile), healthy weight ( $\geq 5^{\text{th}}$  <  $95^{\text{th}}$  percentile) or underweight ( $< 5^{\text{th}}$  percentile). Data was analyzed centrally to convert Weight-for-Stature to BMI-for-Age to identify children at-risk of overweight ( $\geq 85^{\text{th}}$  percentile <  $95^{\text{th}}$  percentile). Parent evaluations were conducted to examine the acceptability of the growth assessment. PHN questionnaires were conducted to examine perceptions of the visit and adequacy of resources.

**Results:** Data from 383 children was obtained. Overweight occurred in 8% of children (8% of boys and 8% of girls); 17% were at risk of overweight (22% of boys and 14% of girls) and 2% (1% of boys and 3% of girls) were underweight. Parent evaluations indicated that the majority were either very happy/happy with the information received during the visit. PHN counseling confidence significantly improved.

**Implications and conclusions:** This approach to identifying overweight children appeared satisfactory to families and PHN in an environment with limited resources for treatment of childhood overweight.

## **Activate: A Childhood Overweight Prevention Initiative**

*S Borra, EP Davenport, RB Elder\*, A Esser. International Food Information Council Foundation, Washington, DC [R]*

**Objectives:** Overweight/obesity is a major public health problem, particularly among children. Effective partnerships and communication programs are needed to develop childhood overweight prevention strategies that impact children at home, in school and in the community. ACTIVATE, a unique partnership of the American Academy of Family Physicians, American

College of Sports Medicine, American Dietetic Association, International Food Information Council Foundation, International Life Sciences Institute Center for Health Promotion, and National Recreation and Park Association developed an overweight prevention communications program, [Kidnetic.com](http://Kidnetic.com), targeted to children ages 9-12 and their parents. [Kidnetic.com](http://Kidnetic.com) is an interactive, innovative, educational Web site designed to help children ages 9-12 and their parents work together to begin the process of behavior change.

**Methods:** Two and a half years of unprecedented in-depth consumer research—focus group, ethnographic, in-home interviews and quantitative—was conducted to track consumer knowledge and perceptions of the overweight problem, define appropriate audiences for messages, and develop customized program elements in order to deliver actionable advice for healthy living to children and their families. Based on the findings, [Kidnetic.com](http://Kidnetic.com) was developed and launched in June 2002.

**Implications and Conclusions:** With over 560,000 visits to the site since June, [Kidnetic.com](http://Kidnetic.com) is effectively reaching kids and parents. The preliminary findings indicate a strong interest in the subject of physical activity and nutrition by the target audience. Healthy lifestyle information can be successfully delivered to kids and families through a Web site. [Kidnetic.com](http://Kidnetic.com) is a resource that can be useful for nutrition professionals in the fight against childhood overweight.

## **Reality check: healthy eating and active living in schools**

*H Bates\* MA Yurkiw. Alberta Milk, Edmonton, Alberta [R]*

**Objectives:** Schools are viewed as key environments for reinforcing the importance of healthy eating and active living. Data describing stakeholder perceptions about the role of schools in promoting these behaviors is limited. Our objectives were to gain an understanding of the perceived importance of nutrition and active living initiatives in schools, and to develop insight into the eating and active living practices of youth.

**Methods:** Eight focus groups, involving school principles, parent advisory committee (PAC) members, and youth in grades 7 and 8, were conducted in rural and urban settings in Alberta. Issues explored during the interviews included: Identification of healthy eating and active living initiatives offered in schools; barriers to program implementation; the role of schools in promoting nutrition and physical activity, and youth perspectives on these matters.

**Results:** Perceptions on the role of schools in promoting healthy lifestyles varied. A majority of the principals felt schools were instilling the value of a healthy lifestyle, but they reported being challenged by the lack of time available for such efforts. PAC members recognized a role for schools, but felt the responsibility for teaching positive habits lay with parents. Both groups

acknowledged concerns with allowing vending machines and food-based rewards in schools. Students were aware of the benefits of healthy eating and activity. They sometimes chose not to act on this knowledge due to factors including a taste preference for snack foods, and the “effort required”.

**Implications & Conclusions:** Barriers exist to maximizing nutrition and active living education in schools. Lack of time, the need for closer collaboration between parents and schools, and a lack of desire to change behavior on the part of youth are all barriers worthy of further exploration.

### **Toolbox for community action: promotion of healthy eating and active living in children**

*B Maloff, F Bandali\*, A Smith, R Hovey. Calgary Health Region, Boys and Girls Club Community Services, University of Calgary, Calgary, Alberta. [E]*

**Purpose:** The prevalence of childhood obesity in Canada is on a rise due to changes in social and physical environments that create barriers to good nutrition and physical activity. Individual and family interventions have not been effective in curbing this growing epidemic, creating a need for a community development approach. Our focus is to evaluate a community development approach towards healthy eating and active living in three geographic communities to promote changes in social and physical environments.

**Description of Process:** Phase I: identify and recruit communities based on selection criteria indicative of community interest and readiness. Identify key champions to begin the mobilization process and create an infrastructure. Phase II: use mapping tools to facilitate data gathering around environmental and social factors that contribute to obesity-promoting behaviors by identifying local resources and barriers. This data will provide a visual representation of resources that will be used to facilitate visioning and action planning for community-based initiatives. Phase III: evaluation for usefulness in creating supportive environments.

**Project Summary:** This approach has been developed by a multidisciplinary team and is based on a literature review and framework for community action for the prevention of childhood obesity. Using three diverse communities, this approach will help identify and understand readiness, recruitment and success criteria required for building community capacity and sustainability for an infrastructure that supports healthy eating and active living in children.

**Recommendations & Conclusions:** Our findings from Phase I suggest that existing organizational infrastructures, key contacts, evidence of past actions, interest in project focus, project supports and marketing strategies are essential to community recruitment and readiness.

### **Building a partnership for nutrition & active living messages**

*MA Yurkiw\* and C McConnell. Alberta Milk, Edmonton, AB and Alberta Cancer Board, Calgary, Alberta [E]*

**Purpose:** While there are many credible voices speaking about nutrition, the messages are not consistent from one agency to another. The ALPINE Project (Alberta Partnerships in Nutrition Education) created a Partnership Team of province-wide agencies involved in nutrition education and developed an awareness campaign building upon existing resources and providing Albertans with consistent messages that promote healthy eating.

**Description of Process or Content:** Based on previously expressed interest in cooperative efforts, a number of health and nutrition agencies were invited to join a Partnership Team (Alberta Cancer Board, Alberta Health and Wellness, Canadian Diabetes Association, Dietitians of Canada, Heart and Stroke Foundation of Alberta, Health Canada), which was headed by Alberta Milk. The Project evolved to include an active living agency, the Alberta Sport, Recreation Parks & Wildlife Foundation. Between December 2001 and March 2002, funds were used to design and distribute a newspaper insert in March 2001, choose and air three Public Service Announcements during February and March 2001, develop and disseminate a Healthy Living Kit, and create a website designed to support the Project’s impact. Each component was evaluated separately.

**Summary:** 275,000 copies of the newspaper insert were distributed primarily through three Alberta dailies, there were over 4000 requests for the Healthy Living Kit and more than 111,000 hits on the [www.nutritionfile.ca](http://www.nutritionfile.ca) website. This response was far greater than anticipated by the partners; consequently, all have agreed to work together again in 2003.

**Recommendations & Conclusions:** The results suggest that Albertans were very receptive to our messages, our format, and to having a Partnership of health agencies provide cooperative messaging. Funding for this project was provided by Health Canada.

### **Food and Fitness in Focus Project examines healthy living strategies for diabetes prevention**

*L. McCargar\*<sup>1</sup>, R. Plotnikoff<sup>1</sup>, A. Kennedy<sup>2</sup>, E. Lakusiak<sup>2</sup>. 1) University of Alberta, Edmonton, Alberta 2) National Institute of Nutrition, Ottawa, Ontario [E]*

**Purpose:** The project was designed for a specific target group who are at increased risk of developing diabetes (men and women 35 to 55 years of age, BMI >25 and physically inactive). The goal was to develop appropriate messages that promote and support healthy eating and active living to meet the needs of the target group and to reduce their risk of developing Type 2 diabetes.

**Description of Process:** The project was a joint collaboration of the National Institute of Nutrition,

ParticipACTION, the Canadian Fitness and Lifestyle Research Institute, and Dietitians of Canada. A national advisory committee was consulted during all phases of the project. The project was comprised of three major components: a literature review, focus groups, and two electronic health messaging studies.

**Project Summary:** The literature review identified existing data related to the needs, challenges and barriers of the target group in adopting a healthy lifestyle. Twelve focus groups [(n=55) men; (n=51) women] were conducted with the target audience in 6 urban centres across the country to determine Canadians' perceptions related to healthy lifestyle challenges. Healthy eating and active living messages were developed and disseminated by e-mail and evaluated at worksites (n=2603) and with individual consumers (n=1200).

**Recommendations and Conclusions:** Repeated findings throughout all phases of the project confirmed that consumers want simple, consistent and achievable health guidance; and in particular "action" messages and practical tools to support and maintain behaviour change over the long term. Electronic messages are one way to achieve this objective. (Supported by the National Diabetes Strategy, Health Canada)

### **Effective risk communication? A content analysis of four Canadian newspapers**

*J Matthews\*, J Sheeshka, K Finlay. University of Guelph, Guelph, Ontario [R]*

**Objectives:** Effective risk communication includes journalism in which news articles and opinion pieces are presented through balanced viewpoints, as objectively as possible, and with sufficient information to enable the public to make informed decisions. The purpose of this study was to determine whether differences in the nature and frequency of food-related risk reporting occurred among four Canadian daily newspapers.

**Methods:** One investigator manually searched each hard copy edition of one popular, one tabloid, and two business-oriented newspapers published from June 1 to November 30, 2001 for news articles and opinion pieces on eight topics related to food technology and safety. Relevant items were coded according to prominence (placement, headline size, photograph), tone (reassuring, neutral, alarming), and content (format, writer, sources, number of words, framing, mention of risks, benefits or 'at-risk' groups, risk described as unknown). Intra-coder reliability averaged 82 –100 %; inter-coder reliability averaged 70 - 98%.

**Results:** Ninety-two percent of the 427 news articles and 98% of the 164 opinion pieces were about water contamination, food safety, and biotechnology associated with food production. Striking differences were found for the topic of biotechnology. One national, business-oriented newspaper provided longer, more positive, staff-written news articles (n = 20) and more space on the opinion pages for proponents of biotechnology than any

other paper. Readers of the tabloid received little information about biotechnology in news reports (n = 1) and opinion pieces (n = 0).

**Implications and conclusions:** Different reporting styles suggest that perceptions of the risks and benefits of biotechnology could vary across readership audiences exposed to differing types of coverage. Future research should determine if reporting style has a direct influence on attitudes towards this technology.

### **Capacity building for food security: the experience of a national advisory committee**

*Christine Johnson\*, Patricia Williams, Stephanie Heath. Nova Scotia Nutrition Council; Atlantic Health Promotion Research Centre, Dalhousie University, Halifax, Nova Scotia [E]*

**Purpose:** A National Advisory Committee (NAC), with representation from eight provinces/territories and others involved in policy related food security work formed in November 2001. The NAC came together as a result of the Nova Scotia Nutrition Council's efforts to address food insecurity through participatory research funded by Health Canada's Canadian Diabetes Strategy. An evaluation conducted by an independent consultant within the first six months of the project examined accomplishments, benefits, challenges, and capacities built to influence food security policy as a result of involvement.

**Description of Process or Content:** Fourteen key informant interviews and reflections gathered at a workshop with NAC members were used to evaluate both the process and outcomes of their involvement.

**Project Summary:** During the evaluation period, specific objectives of the NAC included guiding a national scan, developing a national proposal, providing consultation and communication with leaders from various sectors, and positioning the role of the project and its issues within current provincial/territorial and national food security initiatives and structures. Despite the challenges of ambitious objectives within tight funding-dependent timelines, members viewed the NAC as an opportunity for networking and increasing knowledge of food security, policy, and other food security initiatives. Commitment to the issue of food security, the use of participatory approaches, strong leadership, and clear outcomes were seen as key to overcoming challenges.

**Recommendations and Conclusions:** Intersectoral and community representation and continued use of participatory approaches is vital to ensuring continued success of the NAC. The NAC is a vehicle for strengthening collaboration to facilitate application and sharing of project learnings and to build capacity food security action at all levels.

## Food use in adult residents of Prince Edward Island

MacLellan, D\*, Taylor, J, Van Til, L, Sweet, L  
University of Prince Edward Island, Charlottetown,  
Prince Edward Island [R]

**Objective:** The study objective was to assess frequency of use of selected foods among adult residents of Prince Edward Island (18-74y).

**Methods:** A random sample of 1,995 adults were surveyed using home interviews and a peer reviewed standardized protocol. A 43 item semi-quantitative food frequency questionnaire, adapted from that used in other provincial surveys, assessed the consumption of selected food items in the past month. The daily number of portions was compared among age and sex groups using 95% confidence intervals.

**Results:** Fluid milk consumption declined with age, with only young men consuming close to the recommended 2-

4 servings of milk daily. The most common type of milk consumed was 2%. The number of portions of higher fat cheese and ice cream was higher overall than for the lower fat dairy products. Men, particularly those 18-49y, consumed a higher number of daily portions of beef, bacon and luncheon meats than women. Consumption of higher fat vegetables (e.g. french fries) decreased with age, while intake of other vegetables increased and were higher in women compared to men.

**Implications & Conclusions:** Results suggest that adult Islanders, particularly men, are more likely to consume higher fat milk products. These findings are consistent with our earlier findings, which suggest that high total fat intakes are a significant concern. Although some gender differences in food use were observed, future analysis should consider the role of the higher total food intake in men in the interpretation of these results.

## Education and Internship

### Experiences of national dietetic registration exam writers

D Lordly\*. Mount Saint Vincent University, Halifax,  
Nova Scotia [E]

**Purpose:** This study identified factors associated with increased anxiety and resulting coping mechanisms, examined preparation strategies, captured writer's perceptions of the exam writing process, and determined if and how anxiety, coping and preparation strategies and writers' perceptions were related to exam performance.

**Process:** The Nova Scotia, New Brunswick and Ontario Regulatory Bodies assisted with questionnaire distribution to writers at specified exam sittings during 1999 and 2000. Questionnaire responses were tabulated and summarized descriptively. Analysis of the qualitative comments revealed six themes.

**Summary:** The exam process generates anxiety that appears to influence the way beginning professionals view their profession. Results indicate that writers are concerned about: the perceived subjectivity and validity of the exam, how a failure will influence their career, the perceived high cost of the process; and, have varying perspectives about whether the experience is positive or negative.

**Recommendations and Conclusions:** For some writers this experience is the first formal contact with their professional regulatory body. Results can be used to assist in understanding how we can enhance the overall exam process and increase the number of writers positively experiencing the registration process. Specific recommendations offered by these writers to prospective writers may serve to reduce anxiety by offering some first hand insight into their own experiences. These

recommendations have now been incorporated into a yearly registration orientation held for internship graduates at Mount Saint Vincent University.

### Tracking employment trends of graduates and their satisfaction with undergraduate education in foods and nutrition

AC Garcia\*. Brescia University College, University of Western Ontario, London, Ontario [R]

**Objective:** This survey was undertaken determine the internship/employment status of and satisfaction with the undergraduate program in Foods and Nutrition (FN) of 1990-1999 graduates of Brescia / The University of Western Ontario.

**Methods:** A 19-item questionnaire was mailed initially to 199 graduates whose current addresses were available from alumni records with a follow-up mailing after 22 months. Questions included degree completed, internship placement (if any), employment acquisition and status, job fulfilment, satisfaction with undergraduate

education, and knowledge and skills deemed important for the workplace. Data were tabulated using SAS. Chi-square tests of independence and/or Fisher's exact test were used to test whether the responses were related to internship status and time to find the first job.

**Results:** Data for the analysis consisted of 108 completed questionnaires (54% response rate). Of these respondents, 83 completed the 4-year Honors Program and 25 the 3-year program. Of those who received an internship, 83% were employed within six months post-internship compared to 62% of honors graduates who did not obtain an internship (p=.05). While overall

satisfaction with undergraduate education was unrelated to internship status, there was a strong association between whether students received an internship and the level of satisfaction with career opportunities ( $p=.03$ ). First jobs included positions as clinical/community/research dietitians, food service managers, FN program coordinators, teachers, and health care specialists. Knowledge and skills perceived to be important for the workplace included research skills, computer literacy, communication skills, marketing and business management.

**Implications:** Information on satisfaction with the undergraduate program and knowledge about first jobs obtained are critical to curriculum development, course and/or program evaluation, and career planning, especially for those not continuing into dietetics.

### **Toward an integrated internship program in British Columbia**

*KA Traviss, GE Chapman, NC Morley, CE McGuire. University of British Columbia, Vancouver, British Columbia. [E]*

**Purpose:** To address longstanding concerns about the separation of academic and practical aspects of dietetics education in British Columbia, in 2001, The University of British Columbia initiated a process to develop a vision and framework for a revised dietetics program.

**Description of Process:** With the direction of an advisory group, a three-member dietitian team (2 hired consultants, one hospital-sector representative) undertook a needs assessment which included document review (e.g., university planning documents, descriptions of other health discipline programs at the university and dietetics programs in Canada, dietitian human resources data reports) and broad consultation with key stakeholders (e.g., dietitians presently involved in training, current internship directors, faculty members, contacts from dietetic and other health discipline training programs). The team produced a report in 2002 including a summary of findings and details of a proposed program.

**Project Summary:** Stakeholders identified several issues of concern with the current approach to dietitian training and most supported system reform. Although there wasn't one specific vision for this reform, several guiding principles emerged, including: graduate "practice-ready" dietitians; use a single approach for the province; establish the program as a working partnership between the university and current internship coordinators; use multi-faceted program admission criteria; offer a "2+3" program (admission to the program after second year university); increase exposure to practice concepts and settings during academic studies; retain majority of practicum experience toward the end of the program.

**Conclusions:** Working together, internship directors and faculty members are using the project report as a starting point for detailed program planning. The university plans

to recruit a program coordinator (2003) with the goal of admitting students to the revised program in September 2004.

### **Experience developing a diet technician training program**

*DE (Boyko) Wildish, L Hirano. ARAMARK Canada Ltd. at Toronto Rehabilitation Institute, Toronto, Ontario [E]*

**Purpose:** The need for a training program was identified to enable diet technicians to better assist dietitians in direct patient care. Since such a program was not readily available, dietitians at Toronto Rehab pioneered its development.

**Description of Process or Content:** Beginning in 2001, a policy and procedure was developed for diet technician documentation in the patient health record. To ensure diet technicians have the required skillset to perform their new role, a self-directed learning approach was envisioned. It affords learners the flexibility to choose when and where learning will occur, the appropriate pace and time for reflection. Although this learning program was originally developed for in-house purposes, external feedback indicated that other facilities would be interested in purchasing the program.

**Project Summary:** Three self-directed learning modules were developed in PowerPoint, encompassing: patient visitation, nutritional intervention, and documentation in the patient health record. Written exercises aim to challenge diet technicians, while the answer keys serve to extend their knowledge base. A user guide was developed to ensure both preceptors and learners have the essential background for undertaking the training program. Finally, new skills are practiced under the supervision of the preceptor, to ensure the diet technician has mastered the required competencies.

**Recommendations & Conclusions:** The success of this initiative depended upon teamwork. Five dietitians with varied professional backgrounds participated in revamping the training program to suit any adult health care setting with a focus on concepts that would endure over time. A partnership was developed with both information management and public relations to incorporate hospital approved marketing approaches, advertise on the hospital website, copyright the material, develop a legal disclaimer, and e-mail an electronic package to customers.

### **Filling post-secondary education and employment gaps in the food and nutrition industry in Alberta**

*L Cramb\*, E White\* and Innovative Learning Unlimited Inc. Southern Alberta Institute of Technology (SAIT), Calgary, Alberta. [E]*

**Purpose:** The purpose of this project was to carry out a comprehensive review of the Food and Nutrition Management Technology (FNMT) Diploma program at

SAIT and an environmental scan to determine employment gaps in the food and nutrition industry in Alberta.

**Description of Process:** Internet-based surveys and assessment of program admission, graduation, employability trends, and learner satisfaction were conducted between October 2001 and May 2002 with program alumni and the following industry sectors: (i) health care food services, (ii) fitness/wellness organizations, and (iii) food processors and suppliers. Competitive programs and opportunities for articulation and partnerships were also examined. Results were validated with joint Advisory and Steering Committee input and direction.

**Project Summary:** The FNMT program required a significant shift in focus toward concentrated program streams, including: (i) Nutrition and Wellness, (ii) Food Science/Technology, and (iii) Operations Management. A ten-month certificate program entitled "Nutrition for Healthy Lifestyles" is planned for the fall of 2003. This program will fill current employment and service gaps for basic nutrition and wellness education allowing Registered Dietitians to focus on higher-level nutrition issues. Investigation of a food technology/processing program is currently under way to meet the employment needs of Alberta's fastest growing industry.

**Recommendations & Conclusions:** Our findings suggest that concentrated program streams will fill the identified gaps in post-secondary education programs, employment opportunities, and services within the food and nutrition industry in Alberta. These initiatives will complement culinary programs at SAIT and support the expertise of Registered Dietitians. Furthermore, they meet the SAIT mandate for equipping learners with relevant, skill-oriented education to compete successfully in the changing world of work.

### **A model dietetic internship program focusing on First Nations health**

*BC Davidson, M Wyatt, and L Doran\*. First Nations and Inuit Health Branch (FNIHB), Health Canada, Ottawa, Ontario. [E]*

**Purpose:** In October 2002, Health Canada (FNIHB) funded Dietitians of Canada to undertake a pilot project in two Northern Ontario sites, Sudbury and Thunder Bay. The purpose of the pilot is to provide relevant training for dietitians to practice in First Nations communities, promote dietetics as a career choice for First Nations students, and improve access to service by recruiting dietitians to northern, rural, and First Nations communities.

**Description of Process or Content:** The project involves the development, implementation and evaluation of a dietetic internship program that is intended to serve as a model that could be replicated in other communities with a significant First Nations population. This unique internship provides the

opportunity for four dietetic interns (two at each site) to acquire and develop competence in First Nation health issues. Leadership is provided with the on-site support of experienced preceptors under the guidance of site coordinators and a remote program coordinator.

**Project Summary:** The pilot program will be evaluated at various stages to determine that competent, entry level dietitians graduate from the program; the program's cultural component is relevant; the program provided adequate support to the interns; the stakeholders were satisfied with the administration and value of the program and; that the operational aspects of administering a "remote" internship program can be reproduced. The pilot runs until August 2003.

**Recommendations and Conclusions:** Preliminary findings indicate that staff working in these communities is willing to act as mentors and provide internship training opportunities; that using a partnership model is a viable approach for internship programming in the North; and that travel and accommodation issues do not present significant operational barriers.

### **Learning together to work together: interdisciplinary modules in undergraduate education**

*L Williams\*, M Lyons, T Smith, P Jones, S Capra. Faculty of Health, University of Newcastle, Australia [E]*

**Purpose:** Dietitians contribute to patient care as members of a multi-professional team, yet undergraduate education tends to be discipline specific. Topics of relevance to all health professions provide an opportunity for interdisciplinary education of undergraduate students.

**Description of Content:** This poster will describe the development, implementation and evaluation of an interdisciplinary learning module on ethical health care delivered to undergraduate health students.

**Project Summary:** In 2002, 18 final-year undergraduate students from the disciplines of dietetics, medical radiation science, medicine and occupational therapy were on practicum in the rural centre of Tamworth. A module on health ethics in clinical practice was delivered to this student group over a three-week period in October 2002 by University academics in each of the four disciplines. The module aimed to increase participants' understanding of ethics and values embedded in the clinical practice of various health professions involved in managing a complex patient. Local hospital staff from the disciplines of Dietetics, OT, Radiography, Nursing, Speech Pathology, Physiotherapy, and Social Work participated in the module and acted as a resource for students. Process and impact evaluation surveys were administered to participating students at both sessions.

**Recommendations and Conclusions:** The majority of students were satisfied or very satisfied with the delivery of the module. Knowledge of the role of other health professionals in patient care was more detailed and specific after the module. Awareness of the complexities

of ethical judgment by individual disciplines also increased. This module will be revised and extended for implementation in 2003. Learning in interdisciplinary teams can enhance understanding of the potential contribution of each health disciplines to patient care.

### **Innovative education in foodservice management: placing students at correctional facilities and youth detention centres in Queensland Australia**

*S Capra\*, and M Hannan-Jones. Queensland University of Technology, Queensland, Australia [E]*

**Objectives:** The Queensland University of Technology (QUT) needed to locate sites that provide students with an array of experiences and appropriate level of complexity for professional practice.

**Methods:** Over a 10 year period, 6-8 students per year were placed within public and privately operated correctional centres and youth detention centres in Queensland as part of their professional practice program. Student competence was evaluated to national standards.

**Results:** Students who undertake placements at these sites achieve the required foodservice management competencies and can draw upon an array of examples when reporting their achievements. Feedback from students identify a high level of personal and

professional satisfaction with the challenges provided. Aspects within correctional centres and youth detention centres that contribute to the learning paradigm from a dietetic perspective include: highly restricted budgets; prisoner/detainee preferences and demand for less healthy food choices; community expectations of prisoner/detainee food; large scale cooking (with up to 600 people in some facilities); long stay of prisoners, and nutritional consequences of dependence on foods provided; limited cooking skills with prisoner/detainee labour used in the majority of kitchens; limitations with some foods and packaging due to misuse by prisoners/detainees; high energy requirements; multiple food safety issues; and complex food delivery systems.

**Implications and Conclusions:** Work at these sites requires a high level of organisational skills, professionalism and commitment to ethics. Students are confronted with their own personal beliefs and biases when working with prisoner/detainee groups and have to consider and demonstrate their commitment to ethics in achieving the task.

**Reference:** Ash S, Phillips S. What is dietetic competence? Competency standards, competence and competency explained. *Aust J Nutr Diet* 2000;57:147-151.

## **Institutions and Food Service**

### **Development of financial benchmarks for decision making in patient food services**

*G. Lemieux\*, M. Mueller and D. McKinley. London Health Sciences Centre, London, Ontario [E]*

**Purpose:** Patient Food Services (PFS) at London Health Sciences Centre (LHSC) has developed detailed costs and financial benchmark indicators for decision making, based on production, driven by inpatient and outpatient food service needs.

**Content:** LHSC is an acute care facility located on three sites. PFS has a central tray assembly, central warewashing and retherm site of 202 beds and two satellite retherm sites of 300 and 274 beds respectively. PFS relies on a Balanced Scorecard approach to decision making, utilizing financial indicators, customer satisfaction, internal processes and innovation and growth quadrants. CBORD™ automation provides financial indicators for decision making. An initial indicator called the Tray Day Factor (TDF) representing the total number of inpatient trays produced, is weighted against the actual inpatient day statistic, and provides a high level indicator of efficiency to produce the TDF. LHSC aims for the industry benchmark TDF of 2.6. The LHSC annualized TDF for 2001/02 and 2002/03 is 2.77.

Other statistics assist in establishing benchmark standards for cost assessment and contract negotiations. Benchmark costs for uniforms, transportation, chemicals and the operation of satellite sites are established against tray production and inpatient days. Non-tray costs, such as bulk/ward stock and inventory are tracked using CBORD™ to determine a central tray assembly waste factor of 10%. Comprehensive outpatient and emergency costing is tracked and invoiced to specific patient care programs.

**Project Summary:** Detailed impact analysis utilizing established benchmarks provide a vehicle to assess proposed changes prior to implementation. This preliminary analysis provides opportunity to adjust implementation plans to meet budget targets and project goals.

**Recommendations & Conclusions:** All financial benchmarks should be considered within a Balanced Scorecard method of decision making.

## Development of corporate core menu standards for capital health

*MJ Taylor\* and S MacIntosh. Capital Health, Halifax, Nova Scotia [E]*

**Purpose:** A district-wide merger of the major health care centres in Capital Health (CH), Nova Scotia, provided the opportunity to standardize menu and diet order practices.

**Description of Process or Content:** Prior to 2001, each of the five major health care centres – Dartmouth General Hospital, Nova Scotia Hospital, Queen Elizabeth II Health Sciences Centre, Tri-Facilities and Hants Community Hospital had unique diet formularies, menu standards and menus. The first step was to standardize the Core Menu Standards. District-wide teams of clinical dietitians reviewed and developed sixty-seven menu standards using the American Dietetic Association/Dietitians of Canada, 2000 Diet Manual as the major reference. The standards were adopted by the District Menu Planning Committee, supporting a major food service consolidation process that occurred in the Fall of 2002. Simultaneously, Food and Nutrition Services worked with Information Technology Services to update the Diet Orders data base used by the three major sites to electronically communicate all diet orders. All sites are now using the standardized Diet Orders format. A document defining Diet Formulary/Orders was posted on the CH Intranet and linked to the on-line Diet Order Entry Instruction Manuals.

**Project Summary:** Standardization of Core Menu Standards supports consolidation of patient food service for three of the five major health centres in CH.

**Recommendations and Conclusions:** Standardization of clinical diet practice facilitates consistent patient experience, seamless transfer of patient diet information between levels of care and clarifies appropriate use and interpretation of diet formulary for health care professionals.

## Suitability and nutritional content of pureed foods offered in acute care facilities

*SL Jensen, JL Lynchuk\*, WJ Dahl and S Keeler. Saskatoon Health Region, Saskatoon, Saskatchewan [R]*

**Objectives:** The objectives of this study were to assess the nutritional content and textural characteristics of pureed diets offered in acute care facilities, and also to assess the pureeing ability of equipment used for pureed food production.

**Methods:** Nutritional analysis of a standard pureed diet was determined using calorie count books from the acute care centers. Viscosities and particle size were determined for random pureed samples collected from the acute care centers. The Brookfield viscometer and the spoon test were used to test the viscosity of pureed foods. A wet sieving method, with screens of 1 mm<sup>2</sup> and 212 µm<sup>2</sup> was used to assess the particle size of the pureed

foods. In addition, four different machines (Braun® hand blender, household food processor, Robot Coupe® and Hobart® HCM62 food processor) were evaluated for the ability to puree five menu items (Shepherd's Pie, chicken casserole, peas, ground beef and pineapple). The ability to puree was judged by the resulting size of particulate matter.

**Results:** The average pureed diet provides 1422 kcals, 63 g of protein, 138 g of carbohydrate and 62 g of fat per day. Particle size (range: 0-37% > 1 mm<sup>2</sup> and viscosities (range: 2900 – 26000 cP) were found. The Hobart® HCM62 food processor produced pureed food with the smallest average particle size.

**Implications and Conclusions:** Large variations of particle size and viscosities were discovered, which poses a possible danger to dysphagic individuals. The results suggest that standard methods of pureed food preparation and appropriate equipment selection may be required to improve the textural quality of pureed food resulting in a safer product for dysphagic individuals.

## Acceptability of regular and inulin-fortified thickened beverages.

*WJ Dahl\*, SJ Whiting, T Isaac and CJ Arnold. College of Pharmacy and Nutrition, University of Saskatchewan and Saskatoon Health Region, Saskatoon, Saskatchewan [R]*

**Objectives:** The objectives of this study were to evaluate the acceptability and sensory characteristics of thickened beverages and determine if there was a sensory difference between inulin-fortified and traditional modified starch-thickened beverages.

**Methods:** Staff and students of the University of Saskatchewan (n=20, n=21, n=21) completed discriminative preference, triangle tests and descriptive sensory evaluation of regular and inulin-fortified thickened apple and orange juice beverages. Dysphagic and non-dysphagic residents of Parkridge Centre special care home (n=14; n=9) completed preference of regular and inulin fortified thickened apple juice and descriptive evaluation of commercial versus facility thickened apple juice. A five point Likert-like scale was used to determine sweetness, flavor, mouthcoating, mouthwetting and overall acceptability for descriptive testing.

**Results:** Panelists were unable to detect a sensory difference between modified starch and inulin-fortified thickened beverages. For sensory descriptors as well, there were few differences in ranking between modified starch thickened and inulin-fortified apple juice (sweetness, 3.0:3.1; flavor 3.0:3.0; mouthcoating 3.8:4.0; mouthwetting 3.3:2.8; overall acceptability 2.8:2.6) and orange juice (sweetness 2.7:2.6; flavor 3.6:3.8; mouthcoating 3.6:3.7; mouthwetting 3.4:3.1; overall acceptability 2.8:2.8). Special care home residents ranked mouthwetting (4.1) and overall acceptability (3.7) of thickened apple juice higher than university panelists.

**Implications & Conclusions:** Thickened beverages are acceptable, and inulin can be used to enhance commercial beverages with no effect on sensory characteristics. Inulin supplementation of thickened beverages may be a convenient method of fibre-enhancing dysphagic diets. Supported by the Canadian Foundation of Dietetic Research and Private Recipes Ltd., Brampton, Ontario.

### **Évaluation des impacts nutritionnels de l'alimentation spécialisée de l'Hôpital Sainte-Anne lors du traitement de la dysphagie chez la personne âgée institutionnalisée**

*I Germain\*, K Gray-Donald, T Dufresne et al. Hôpital Sainte-Anne et Université McGill, Montréal, Québec [R]*

**Objectifs :** La dysphagie touche de 35% à 60% des personnes âgées institutionnalisées. Les objectifs de cette étude étaient d'évaluer l'apport nutritionnel de personnes âgées, institutionnalisées, dysphagiques et frêles et de mesurer l'impact de l'alimentation spécialisée Sainte-Anne (HSA) sur leur état nutritionnel et leur poids.

**Méthode :** Les 93 individus de plus de 65 ans d'un centre de soins de longue durée montréalais étaient éligibles pour cette étude clinique randomisée de 12 semaines s'ils étaient dysphagiques et frêles (IMC < 24 ou perte de poids de > 7,5% en 3 mois). Dix-sept sujets furent sélectionnés. Le groupe traité ( $n_t = 8$ ;  $82,5 \pm 4,41$  ans; Poids :  $55,9 \pm 12,1$  kg; IMC :  $21,2 \pm 2,31$  kg/m<sup>2</sup>) a reçu les aliments hachés ou purée reformés HSA accompagnés, lorsque nécessaire, de breuvages épaissis HSA. Le groupe contrôle ( $n_c = 9$ ;  $84,6 \pm 3,81$  ans; Poids :  $54,3 \pm 7,49$  kg IMC :  $22,4 \pm 3,93$  kg/m<sup>2</sup>) a maintenu son alimentation habituelle.

**Résultats :** L'augmentation de  $3,9 \pm 2,3$  kg du poids moyen et de  $1,63 \pm 1,01$  kg/m<sup>2</sup> de l'indice de masse corporelle moyen pour le groupe traité fut supérieure aux variations observées chez le groupe contrôle (Poids :  $-0,79 \pm 4,18$  kg; IMC :  $-0,27 \pm 1,46$  kg/m<sup>2</sup>) ( $p < 0,05$ ). La variation des apports en énergie, protéines, lipides, calcium et vitamine D du groupe traité fut significativement plus importante ( $p < 0,05$ ).

**Conclusion :** Ces résultats suggèrent que des personnes âgées, frêles et dysphagiques peuvent atteindre un poids santé par une alimentation orale modifiée en texture, variée, appétissante et répondant à leurs besoins nutritionnels.

### **Dysphagia diet purees and fluids: how many categories are needed?**

*L Kirste, D MacGarvie\*, L Durkin, R Martino. University Health Network, Toronto, Ontario [R]*

Alterations in food and beverage viscosity are prescribed for managing dysphagia. Puree and fluid viscosities provided to patients are not standard between healthcare institutions.

**Objectives:** 1. To derive opinion from speech-language pathologists (S-LP) on the number, along with their descriptors, of the puree and fluid viscosities required for adult patients. 2. To determine S-LPs' acceptance of the dysphagia diet fluid and puree categories as published in the Manual of Clinical Dietetics, Sixth Edition, 2000.

**Methods:** Seventeen S-LPs were recruited into two focus groups. The first group was asked to generate scenarios regarding the number of puree and fluid categories potentially required. The second group was asked to reach consensus on which of these scenarios was most appropriate. Participants in the second group were asked to compare their level of acceptance of the categories and descriptors generated during the focus groups with those published, through discussion and, individually using a visual analog scale (VAS).

**Results:** Good support was generated for the fluid categories as published. The participants concluded however, two puree categories are indicated. Participants rated their individual opinion on the differences between the categories generated to those published. For fluids they tended towards no difference (VAS=0.6/10) but for purees, they tended towards a relatively greater difference (VAS=7.5/10). These opinions were significantly different. They also rated their individual preferences for the categories generated to those published. For fluids they tended towards a moderate preference (VAS=5.5/10) but for purees, they tended towards a relatively strong preference (VAS=9.5/10). These opinions were significantly different.

**Implications and Conclusions:** S-LPs agree on the categories of fluid and puree viscosities required for managing adult dysphagia, and provided good support for four fluid categories. Standardization to two categories of purees may need to be considered to better meet patient needs.

### **Is there any harm in increasing meal flexibility for hospitalized renal patients?**

*AY Matsuno\* and A Lau. Department of Clinical Nutrition, Foothills Medical Centre, Calgary, Alberta [R]*

**Objectives:** Traditional centralized tray service was replaced with a staffed unit hot cart to improve meal service to hospitalized renal patients with hopes that increased patient contact with service staff and increased meal flexibility would improve nutritional intake without detriment to electrolyte balance.

**Methods:** Nutrient intakes of patients admitted to the renal unit and on restricted diets were monitored for 5 day periods pre- and post implementation of the bulk hot cart. Laboratory data was collected pre- and post-implementation on hemodialysis patients admitted to the renal unit during the months that nutrient intake data was collected. Data was analyzed using the Student's t-test,  $p \leq 0.05$ .

**Results:** Preliminary analysis showed significantly more dietary sodium ( $884.4 \pm 62.4$  mg vs.  $721.2 \pm 42.5$ mg,  $p=0.03$ ), potassium ( $551.8 \pm 32.1$  mg vs.  $430.8 \pm 22.7$  mg,  $p=0.002$ ) and phosphorus ( $285.96 \pm 19.5$  mg vs.  $205.2 \pm 12.3$  mg,  $p=0.0004$ ) consumed at the lunch meal post-implementation, but no significant difference in total energy intake ( $1690 \pm 103.8$  kJ/ $403.9 \pm 24.8$  kcal vs.  $1559 \pm 88.2$  kJ/ $372.5 \pm 21.1$  kcal,  $p=0.33$ ). No significant differences were found pre- and post-implementation for serum potassium ( $4.6 \pm 0.17$  vs.  $4.2 \pm 0.19$  mmol/L,  $p=0.16$ ), phosphorus ( $1.58 \pm 0.14$  vs.  $1.43 \pm 0.08$  mmol/L,  $p=0.35$ ) or urea ( $18.6 \pm 1.46$  vs.  $15.6 \pm 1.68$  mmol/L,  $p=0.2$ ).

**Implications & Conclusions:** Despite the increase in intakes of sodium, potassium and phosphorus at lunch overall serum electrolytes were not affected and remained at acceptable levels. These preliminary findings suggest that a more flexible approach to nourishing hospitalized renal patients does not significantly improve energy intake and is not harmful.

### Food Services – ‘Back to the Future’

*LC Martin\*, Riverview Hospital, Food and Nutrition Services, Coquitlam British Columbia [E]*

**Purpose:** To identify, pilot, and decide on a new and improved patient meal service.

**Description of Process:** That change was required and inevitable was obvious to the Food and Nutrition Services Department of Riverview Hospital, B.C.’s only tertiary mental health facility for the seriously mentally ill. With an aging centralized cold-plated tray system and a new building that did not materialize, a project was approved to determine and test a new food service style to meet the diverse population of the then 808-bed hospital.

**Project Summary:** Consultation with patients, family, and staff established a preference to ‘return to the past’ of cafeteria style service with patients being able to make a choice. Options were investigated and it was decided to pilot cafeteria style service from small satellite ‘serveries’ using cook-chill and procured food with retherming (using high-powered microwaves and combination convection microwave ovens) at service level. Two target populations were chosen: adults (average age 20-40, ambulatory, general diets) and geriatrics (average age 70-80, ambulatory or wheelchair, general to pureed diets). Both had lengths of stays up to one year. A Master Menu was developed based on the existing non-selective tray service menu to minimize the complications of operating two distinct food service operations. The menu was further enhanced using procured foods to add an alternative choice and then customized to meet the needs of each target group.

**Recommendation and Conclusions:** The pilots ‘went live’ spring of 2000. Survey results and antidotal comments strongly indicated that patients and care staff considered the meal servery system to be a major

improvement. This success resulted in a decision to roll out hospital wide. Four additional serveries have been completed with another two currently under construction.

### A bedside cart as an alternate food service for acute and palliative oncological patients

*P. Pietersma, S. Follett-Bick\*, B. Wilkinson, N. Guebert, and J. Pereira. Foothills Medical Centre, Calgary, Alberta [E]*

**Purpose:** Palliative cancer patients and oncology patients frequently experience problems with eating, including anorexia, food aversions, nausea, xerostomia and early satiety. Present food services, which involve advanced menu selection and decentralized tray service, often fail to meet specialized needs of these patients. Bedside food selection at point of service from a mobile hot food cart was tested on a combined palliative oncology and acute medical oncology unit to determine if patient needs would be met more successfully.

**Process:** During a two-week period in January 2002, meals at lunchtime were delivered to patients using a food cart. A variety of food choices based on the regular hospital menu were sent in bulk form on a heated mobile serving cart and delivered to patients at the bedside by a food service aide. During suppertime, meals were delivered on a centrally assembled thermal tray system. Patients were asked to evaluate their lunches and suppers separately by means of short surveys.

**Summary:** 22 patients completed both a lunch and supper survey. Patients preferred the food cart over the trays with respect to the following aspects: appeal of meal, appropriateness of cold food types, appropriateness of portions, and appropriateness and variety of food choices. Responses were statistically significant.

**Recommendations and Conclusions:** Bedside food service provides a more flexible and appropriate method of food delivery to in-patients in oncology and palliative units. Further studies should look at whether this translates to increased caloric intake, improved patient satisfaction and decreased food wastage.

## New Roles For Dietitians

### **Win-win-win and win: Three-way collaboration for excellence in patient feeding**

*J Payne\*, S Follett-Bick, M Wylie and B Whitmore  
Calgary Health Region, Calgary, Alberta [E]*

**Purpose:** The departments of Nutrition and Food Service, Nursing, and Clinical Nutrition each play an important role in feeding acute care patients. The project goals were to clarify the roles and expectations of each department, identify and collaborate on common concerns and close communication gaps.

**Description of process:** The project team designed surveys to gather information regarding the knowledge of roles, communication links, and issues affecting patient feeding. Survey results were used to analyze issues. Collaboration was used to design and test strategies to address these issues on a pilot patient care unit.

**Project summary:** Interdepartmental communication, role definition, care of longer stay patients and allergy patients were the issues identified. A binder on patient feeding was compiled. The binder includes information on food service process, role definitions, as well as tips for nurses to aid in nutrition screening and strategies for improving the intake of patients with common feeding issues. These tactics will help to focus the dietitian consults. A binder was determined as the handiest communication for the staff nurse at this time. Inservice from Nutrition and Food Service as well as Clinical Nutrition accompanied the introduction of the handbook. A survey of the satisfaction and feeding issues of long stay patients was conducted and a trial of technician visits after 14 days was initiated as a pilot.

**Recommendation and conclusions:** A collaborative project team was successful in identifying common patient feeding issues and gaps in communication between departments on a pilot unit. The project tested strategies for allergy and long stay patients. Communication processes that reduced the ambiguity of department roles around patient feeding were initiated.

### **The role of the registered dietitian within the Hamilton Health Services Organization Nutrition Program**

*Wendy Gamblen\*, J. McGregor, A. Crustolo, N. Kates.  
Hamilton Health Services Organization Nutrition  
Program, Hamilton, Ontario [E]*

**Purpose:** It has been well documented that nutrition is a key factor in the prevention and treatment of disease. The purpose of the Hamilton HSO Nutrition Program is to provide timely nutrition interventions and counseling services for both acute and chronic illnesses in the primary care setting.

**Description:** The Hamilton HSO Nutrition Program promotes a shared care model, integrating six full-time dietitians into 87 family physicians' practices among 46 sites across Hamilton, a region of 460 000 people in southern Ontario.

**Project Summary:** Since the integration of the program in 2000, there continues to be greater than 4000 referrals to the dietitians per year. Reasons for referral include diabetes, dyslipidemia, obesity, impaired glucose tolerance, celiac disease, crohn's disease, irritable bowel syndrome, ulcerative colitis, diverticular disease, reflux disease, constipation, anemias, cancer, osteoporosis and other illnesses. Service delivery methods include one on one personal sessions, educations with patients and family members and group sessions. The Program works in partnership with other nutritional services in the community to allow for smooth patient transition between primary and secondary levels of care. A visit satisfaction questionnaire (VSQ) was introduced to measure patient satisfaction with access to care and care received. An 85% return rate revealed patient satisfaction exceeded targeted benchmarks provided with the questionnaire. The family physicians and the dietitians complete satisfaction surveys at regular intervals. Both groups are very satisfied with the nutrition program, the style of practice and the support provided within the program.

**Conclusion:** Registered dietitians can be well integrated into the primary care setting. A broad range of clinical problems are addressed. Nutrition services are more accessible for patients and family physicians remain actively involved in patient care.

### **Dietitians working in primary health care: prevention of end stage renal disease in diabetes and hypertension**

*L Gareau\* and D Listoe\*. Calgary Health Region,  
Calgary, Alberta [R]*

**Objectives:** Alberta Health, in recognition of the increasing prevalence of diabetes and hypertension and the associated escalating costs of renal replacement therapy has invested in innovative strategies to prevent the development of end stage renal disease. The Calgary Health Region received funding to implement, over three years, three models of care involving dietitians, nurses, medical specialists and family physicians. This project is centered with family physician practices and its goal is to prevent End Stage Renal Disease through a collaborative and multidisciplinary approach directed at enhancing individual and family capacity to effectively manage living with diabetes and hypertension.

**Methods:** Fifty-six family physicians are involved and to date, 374 patients have been seen by dietitian/nurse teams. The qualifications and experience of the dietitian/nurse teams, their level of involvement with patients and the role of medical specialists differ in the three models. In all models, family physicians identify patients likely to benefit from a multidisciplinary team approach. Dietitian/nurse teams have virtual offices traveling from one family physician's office to another. The dietitian/nurse team can also refer patients to a social worker, psychologists, and an exercise specialist. Details of dietary practices for all program participants before and after intervention are obtained through food frequency records, 24-hour recalls and a nutrient analysis computer program.

## Nutrition Interventions and Education

### Traditional versus stages of change diet teaching: Which method is more effective in reducing dietary fat?

*SL Cook\*, KD Dorsch, RA Nasser, ML Classen, DK Larsen and RG Haennel. Clinical Nutrition Services, Regina Qu'Appelle Health Region, and Faculty of Kinesiology and Health Studies, University of Regina, Regina, Saskatchewan [R]*

**Objective:** Encouraging dietary fat reduction is the first step in treating hyperlipidemia, a key risk factor for the development of cardiovascular disease. The purpose of this study was to compare the effect of a Stage of Change approach to a traditional teaching approach in reducing dietary fat intake of individuals with hyperlipidemia.

**Methods:** Sixty-seven men and 73 women between the ages of 21-75 were recruited through the Regina Lipid Clinic to participate in a 40-week study to reduce dietary fat and serum lipids. Individuals were randomly assigned into an experimental or control group. The experimental group was provided with tailored dietary activities based on their level of readiness to reduce dietary fat as measured by Stage of Change questionnaires, whereas the control group was provided with a traditional approach to dietary management of hyperlipidemia. Four education sessions were provided over a one-month period with follow-up every six weeks. Outcome measures were assessed at baseline, 4, 16, 28 and 40 weeks and included serum lipids, anthropometrics and dietary data.

**Results:** Total cholesterol, triglycerides, body weight, body mass index, energy and percent calories from fat decreased significantly over the 40-week study period ( $p < 0.05$ ) for both groups. However, there were no significant differences between the two groups for any of the outcome measures.

**Implications and Conclusions:** The Stages of Change model is as effective as the traditional approach in decreasing dietary fat intake and serum lipids.

**Results:** Data on clinical, biochemical, behavioral and process outcomes for Phase I are available.

**Implications and Conclusions:** Evaluation will involve assessing the impact of the three models of service provision on clinical processes and outcomes, patient quality of life, health care provider quality of work life and will identify components of a sustainable service delivery system.

### The missing food group: an expanded guide for eating disorders

*T LaVallee\*, S Osher\*, L Hoffman. Toronto General Hospital Eating Disorder Program, Toronto, Ontario. [E]*

**Purpose of the Project:** To create a revised food guide that supports the incorporation of all foods to normalize the eating of people with an eating disorder (ED).

**Content:** Trying to achieve normal eating is one of the most terrifying and perplexing aspects of recovering from an ED. Normal eating has been described by the National Eating Disorder Information Center as having three main characteristics: "proper spacing between meals; eating a variety of foods, including those considered to be 'fattening' foods; and eating an appropriate quantity of calories". Thinking of food as "good" or "bad" is an underlying force for ED behaviours(1). Tools such as Canada's Food Guide do not provide guidance around how to specifically incorporate all foods.

An important goal of nutrition therapy for people with an ED is to expand the range of acceptable food items. Structured meal and snack times that incorporate "bad" foods are used to normalize portions, eating patterns, food behaviors and variety. In order to remove negative stigmas from foods, new terms were selected to redefine them. For example, "fat" is referred to as the "satiety nutrient"; "dessert" is replaced with "satisfying food". An additional "food group" was also added to help patients include foods that are not clearly defined in Canada Food Guide. This group, which includes foods such as ice cream and candy, adds flexibility to meal plans.

**Recommendations & Conclusions:** This expanded food guide provides people recovering from an eating disorder with guidelines for incorporating "bad" foods. The dietitian must be aware of her own biases towards these foods so that she may objectively challenge ED thoughts

and behaviours.

1. American Dietetic Association. Position of the American Dietetic Association: Total diet approach to communicating food and nutrition information. 2002; 102 (1): 100-108.

### **Nutrition programming within a chronic pain setting**

*T. Riege\**. Calgary Chronic Pain Centre, Calgary, Alberta [E]

**Purpose:** To describe a triage intervention model for the chronic, non-cancer pain population which improved the utilization of limited nutrition program resources.

**Description of Process:** Nutrition intervention progressed from a team referred, individual counseling model, which aided in determining the most common nutrition diagnoses in the population, to a triage intervention model involving patient-initiated referrals, group counseling and individual follow-up.

**Project Summary:** In a large group education setting, patients were introduced to the relationship between nutrition and chronic pain. Interested patients then initiated a referral to the nutrition program or were team-referred as part of their management plan. This referral, coupled with a chart review, channeled patients appropriately into smaller group workshops or into individual counseling. Post-workshop, those with more specific nutrition concerns continued with individual counseling. The triage intervention model reduced the required nutrition program resources (dietitian time)/patient by greater than 50%. In an individual counseling model, it took approximately two hours/patient to assess and provide basic nutrition education prior to specific dietary concerns being addressed. With the triage intervention model, the same level of assessment and education was achieved in approximately 45 minutes/patient.

**Recommendations & Conclusions:** The practitioner/patient time ratio improved by using the triage intervention model. Nutrition programming could be further streamlined by offering advanced workshops that would address the specific dietary concerns currently dealt with on an individual basis. In addition, the development of a nutrition screening tool specific to the chronic pain population would facilitate self- and team assisted referrals into the appropriate workshop stream.

### **Peer education in nutrition for students**

*A Zok\* and AC Garcia\**. Brescia University College and Hospitality Services, University of Western Ontario, London, Ontario [E]

**Purpose:** The Peer Education in Nutrition for Students (PENS) was developed in response to an expressed need from students living in residences. Its purpose is to educate students about the importance of making healthy food choices and the means of doing that as well as

providing Foods & Nutrition (FN) students opportunities to improve their education and communication skills.

**Description of Process:** Training of peer educators and planning is done in July and August for educational sessions conducted September through March. Two sessions are conducted each month in two of the seven residences, with FN students providing information and food demonstrations. Promotional literature and notices in the university/student newspapers and website inform students of times and locations. Each session participant completes an evaluation questionnaire and the entire program is evaluated in May and June.

**Project Summary:** The program, directed primarily to Year I students, is based on 15 modules contained in a resource manual. Each module covers the most frequently asked nutrition-related questions with information based on Canada's Food Guide and the Nutrition Recommendations. The nutrition manager, residence managers and chefs, FN coordinators and faculty members collaborate in implementation.

**Conclusions:** The participants' evaluations indicate the program has been well received and the nutrition information provided is quite useful. Since 1998, the increase in attendance (50%), additional requests for PENS sessions (from zero to five) and number of FN volunteers (from two to 35) attest to the success of the program. Increased requests for one-on-one counseling by residence students and demand for healthy alternatives (e.g., several more vegetarian dishes now offered) are further evidence that students appreciate the need for healthier food choices.

### **Developing a vegetable and fruit social marketing campaign in Alberta**

*C McConnell\**. Alberta Cancer Board, Calgary, Alberta [E]

**Purpose:** While diets high in vegetables and fruit are recommended generally for overall health and specifically for cancer prevention, a 1999 Alberta Cancer Board (ACB) study identified that only 25% of Albertans eat the recommended minimum of 5 servings daily. To encourage Albertans to eat more vegetables and fruit, the ACB developed the Simply Healthy Vegetable and Fruit campaign.

**Description of Process or Content:** A Nutrition Knowledge, Attitude and Behaviour study completed in 1999 provided baseline information on Albertans vegetable and fruit intake and guided the development of the campaign. Next steps involved market research, including a literature review, case study research and market analysis. When developing the marketing plan, media objectives, target audience, timing, media reach, other campaigns and budget were considered. This resulted in a 4-pronged strategy including paid advertising, media relations, community relations (focussing on hands-on support for health professionals)

and partnerships. Focus testing was done with the target audience to select messaging and the creative strategy.

**Summary:** Phase 1 of the campaign ran during 2002. Preliminary advertising tracking indicates the messages are breaking through to our target audience. Research shows that the ads were believable, relevant and useful to the target audience. Building upon this research, the creative and messages will be adjusted for Phase 2 of the campaign.

**Recommendations and Conclusions:** Continual research and evaluation is essential to an effective social marketing strategy. Building on strengths of a national campaign while being responsive to needs of local health promoters is a unique feature of Simply Healthy that contributes to its success. With the successful introduction of Phase 1, the campaign will continue for an additional two years. Funding is provided by the Alberta Cancer Foundation.

### **Hepatitis C: Canadian nutrition guidelines**

*S. Conrad\*. Consultant to Dietitians of Canada, Ottawa, Ontario [E]*

**Purpose:** Hepatitis C is a driving force behind the increasing prevalence of chronic liver disease. Up to 85% of persons infected with the hepatitis C virus (HCV) develop chronic liver disease. Nutrition plays a critical role in its management. However, there has been little evidence-based guidance regarding appropriate nutrition care. Canadian nutrition guidelines for health care providers are intended to bridge this gap.

**Description of Process:** Guidelines were approved by an advisory committee representing leading national organizations. Based on the best information available at the time of publication—scientific evidence and best-accepted practice—they comprise Practice Essentials, primer on hepatitis C, healthy lifestyle overview, nutrition intervention, assessment of nutritional status, symptoms and treatment side effects, alternative therapies, nutritionally at-risk groups and skills for healthy eating; practical appendices; and links to other resources. Guidelines are supported by patient handouts and an online course.

**Project Summary:** Subtle nutritional deficits may not be obvious in early stages of HCV infection. Ideally, nutrition and healthy lifestyle should be discussed early to promote well-being and quality of life. More specialized advice becomes important as the disease progresses. Nutrition care guidelines aim to promote optimal nutritional status, prevent or treat malnutrition or deficiencies in specific nutrients and potentially hinder progression of the disease. Generally, persons infected with HCV do not require specific dietary restrictions unless they have advanced liver disease or other conditions such as diabetes that require dietary modification.

**Recommendations & Conclusions:** Nutrition is important through all stages of HCV infection. Nutrition

care should be included in the total health care provided to persons infected with HCV. Health care providers should be aware of and implement these new Canadian guidelines, available on Dietitians of Canada website, [www.dietitians.ca](http://www.dietitians.ca).

### **Hepatitis C: Developing Nutrition Guidelines**

*Susan Morgan\*. Consultant, Dietitians of Canada, Toronto, Ontario [E]*

**Purpose:** Hepatitis C is the most common cause of chronic liver disease. Its prevalence is increasing, it is the leading reason for liver transplant in Canada. The need for evidence based nutrition guidelines, for health care professionals and persons infected with the virus, was identified in a needs assessment and literature review. (2000)

**Description of process:** Health Canada awarded funding to Dietitians of Canada (DC) for development of the guidelines. An Advisory Committee (AC) comprising of HCV stakeholders was created. Stakeholders included Canadian Association for the Study of the Liver, Canadian Liver Foundation, Canadian Hemophilia Society, Canadian Association of Hepatology Nurses, Canadian Association for the Study of the Liver and Hepatitis C Society of Canada. An author was contracted to write the material.

**Summary:** The AC approved an outline and content for supporting education fact-sheets. The AC as well as DC members, working with HCV patients, participated in the review process. Supporting education fact-sheets were tested, across Canada, through focus groups with persons infected with HCV. An on-line education course, developed from the guidelines, is available on the DC website. A communications strategy, including a media release, was developed. The strategy will inform a wide audience of the availability of the guidelines and the supporting material. The media release will be circulated to both internal and external stakeholders of the AC organizations.

**Recommendations & Conclusions:** The role of nutrition in the management in all stages of hepatitis C infection cannot be underestimated. Dissemination of these guidelines will be an essential element in making health care providers aware of the guidelines. Applying them to their practice will support persons infected with the virus. All information will be available on the DC website [www.dietitians.ca](http://www.dietitians.ca).

### **Attitudes, beliefs and application of the Glycemic Index among dietitians in Ontario**

*C Andersons\*. University of Toronto, Ontario. P Duxbury and M Feldt TriDEC. Sunnybrook and Women's College Health Sciences Centre, Toronto, Ontario [R]*

**Objectives:** The Glycemic Index (GI) as a research tool has stimulated interest amongst dietitians in recent years.

Are dietitians ready to use it in practice? This study assessed dietitians' attitudes, beliefs and application of the GI, in order to recommend strategies and resources to support dietetic practice.

**Methods:** This pilot study used a systematic random sample of 20 of the 270 Ontario dietitians registered in the 2000-2001 DES Directory. Data was collected using a self-administered questionnaire composed of closed and open-ended questions, and attitudes measurements. Quantitative data was analyzed using SPSS. **Results:** Seventy four percent of dietitians (n=14) believe in the scientific validity of GI, however only 21% (n=4) use it routinely in their practice. They consider it appropriate for management of Type 1 (69%), Type 2 (68%), pregnancy and diabetes (69%), gestational diabetes (63%) and impaired glucose function (59%) but only 5% (n=1) find it easy to teach to patients. They report that development of teaching resources, continuing education to enhance understanding about GI, as well as more research into the benefits of the GI in diabetes management, would encourage them to use the GI more frequently. **Implications and Conclusions:** Since dietitians believe the GI is appropriate for the nutritional management of diabetes, these findings suggest that there is a need for the development of teaching tools and continuing education in order to reduce some of the barriers to using the GI and facilitate its application. Similarly, more research on the clinical benefits of GI in diabetes management may improve dietitians' confidence to use it in practice.

### **A community-based and culturally-sensitive diabetes intervention program in partnership with Indo-Asian communities in Calgary, Alberta, Canada**

*S Davachi\*, M Flynn, A Edwards. Calgary Health Region / University of Calgary, Calgary, Alberta [R]*

**Objectives:** Type 2 diabetes is highly prevalent among Indo-Asians. Current services for diabetes care in Canada do not meet the cultural needs of this population. To address this issue, in 2001, Calgary Health Region, in partnership with Indo-Asian communities of Calgary, piloted a culturally-sensitive diabetes risk factor screening initiative. The objectives of this program were: to engage Indo-Asian communities in addressing the challenge of diabetes, and, to describe prevalence of risk factors for diabetes in order to generate relevant intervention strategies.

**Methods:** A total of 920 adults were screened during religious gatherings in temples and mosques. To overcome cultural barriers, screening procedures were performed by trained community volunteers and delivered in Punjabi, Gujarati and Hindi languages. Data was compiled through interviews, anthropometry, blood glucose tests and dietary assessments.

**Results:** Major risk factors for type 2 diabetes including potential glucose intolerance, genetic susceptibility,

obesity, abdominal adiposity, physical inactivity and dietary factors were highly prevalent in this community. These findings suggested that collaborative efforts are needed to initiate appropriate actions on diabetes. In response, a culturally-sensitive diabetes intervention pilot program was devised and is in operation since 2002.

**Implications & Conclusions:** This program may have important practice implications for health professionals serving this, and other minority groups in Canada. Dietitians and nutritionists in particular, are encouraged to find effective strategies to help members of minority groups to overcome physical, cultural and social barriers that make it difficult to comply with dietary and other health related recommendations. The most critical lesson learned from this work has been the importance of cultural appropriateness for success and acceptability of the health promotion.

### **Adherence to a very low-fat diet in a cardiac rehabilitation reversal program: a descriptive study**

*J Holley\*, PM Smith, J Goyder, and RM Hanning. University of Waterloo, Waterloo, Ontario [R]*

**Objectives:** This cross-sectional survey described adherence to a very low-fat (10%) near-vegan diet in individuals who participated in a cardiac rehabilitation reversal program in Southwestern Ontario.

**Methods:** A single survey and 3-day food records were mailed to 252 individuals who participated in the program since its inception November 1993 through November 1999. Average dietary fat intake (% of energy) was analyzed as a measure of dietary adherence. Standardized survey scales with published psychometrics measured perceived social support, trust in physician, eating self-efficacy, exercise status, medication and supplement status, stress management, and demographics.

**Results:** Respondents (n =84) were similar to non-respondents in age ( $61 \pm 6y$ ) and gender (83% male). Total fat intake averaged 16% ( $\pm 7\%$ ) of energy with 30% of respondents (n= 25) adhering to a diet with  $\leq 10\%$  total fat. Factors significantly related to consuming a lower % of energy included longer length of time in the program ( $p < 0.001$ ), younger age ( $p < 0.001$ ), higher trust in physician ( $p < 0.01$ ), higher eating self-efficacy ( $p < 0.01$ ), and higher perceived social support ( $p < 0.05$ ).

**Implications & Conclusions:** Previous research has demonstrated the efficacy of extreme dietary fat restriction in cardiac rehabilitation. Results of this study indicated that adherence to a very low-fat diet was possible and acceptable for a subset of the cardiac rehabilitation population. Ongoing follow-up may be a key factor in sustained dietary behaviour change.

## **Assessment of diet knowledge, practices and barriers to diet adherence among adult South Indian cardiac patients and their care-givers**

*N Jesudason\*, M Alex, DB Prasanna, D Anuradha, N Sugirtham. Madras Medical Mission – Institute of Cardio-Vascular Diseases, Chennai, Tamil Nadu, India. [R]*

**Objectives:** The purpose of this study was to assess the diet knowledge, practices and barriers to diet compliance in South Indian cardiac patients and their care-givers, as there is little information on which interventional strategies for this population may be based.

**Methods:** A convenience sample of 276 adult South Indian cardiac patients and care-givers was surveyed using a questionnaire on diet knowledge, practices, barriers to diet adherence, dietary misconceptions, sources of diet information and demographics. Diet practices were classified using a Likert scale. Descriptive statistics and Pearson's Chi-square tests were used to analyze the data.

**Results:** Only 3.6% of the participants had in-depth diet knowledge (>75% correct answers). The knowledge score was significantly higher ( $p=0.000$ ) and number of misconceptions lower ( $p=.013$ ) when the source of information was a dietitian. Several misconceptions such as 'Curry leaves will reduce blood cholesterol' and 'Potatoes will raise blood cholesterol' were found to be widely believed. Good dietary practices (>75% score) such as avoiding fried snacks were reported by 43.9% and were significantly related to the source of information being the physician ( $p=.001$ ) or the dietitian ( $p=.002$ ). Interestingly, good knowledge did not correlate significantly with good practice ( $p=.658$ ). Around 45% of participants identified four barriers to diet compliance – having to avoid favorite foods, having no voice in menu selection, traditional home foods being disallowed and entertaining guests at home often.

**Implications & Conclusions:** An understanding of the level of knowledge, unique misconceptions and barriers to diet compliance in this population is necessary for dietitians to formulate effective intervention and counseling strategies.

## **Heart Health promotion in practice: an exploration of dietitians' experiences and perceptions**

*CA Watters\*, KD Raine. University of Alberta, Edmonton, Alberta [R]*

**Objectives:** Cardiovascular disease remains the number one cause of death in Canada. Considerable time and resources have been spent in research and developing guidelines. This study explores, using a qualitative approach, the experiences and perceptions of dietitians in the practical application of heart health promotion.

**Methods:** Dietitians working in the Edmonton region in heart health at both the provider and management level

were identified and recruited after ethics was obtained. Using focus groups, participants were asked about factors that facilitated and which factors limited their capacity to implement heart health promotion activities. Data collection continued until data saturation occurred at 20 participants. Data from the recorded focus groups were transcribed and thematic content analysis was used.

**Results:** Dietitians were aware of the importance of guidelines and the opportunity to demonstrate intervention outcomes using guidelines in their practice. Education sessions, community resources, patient referrals and patient education materials facilitate guideline implementation. Lack of follow-up with patients, inconsistent messages from other health professionals, patients' unwillingness to change and need for supportive environments were barriers to guideline implementation. Suggested strategies to overcome the barriers included having more detailed guidelines, dietitians involved in guideline development, physician education, developing skills for dietitians in motivational interviewing and behavior change and advocating for public policy change.

**Implications & Conclusions:** The methods by which guidelines and recommendations are disseminated in the future should consider how dietitians use this information in their practice.

## Nutritional Risk and Nutrition Support

### A nutrition support protocol improves the proportion of patients reaching enteral nutrition targets in the adult intensive care unit

*S Mackenzie\*, DA Zygun, SM Hameed. Departments of Clinical Nutrition, Critical Care Medicine, and Surgery, Calgary Health Region and University of Calgary, Calgary, Alberta [R]*

**Objectives:** Enteral nutrition is the standard of care for nutrition support in the adult intensive care unit (ICU). Despite the reported benefits of enteral nutrition, intake is often well below goals set by the dietitian. The purpose of this study was to determine if enteral nutrition delivered to ICU patients was improved by the development and implementation of an evidence-based nutrition support protocol.

**Methods:** A nutrition support protocol was developed after a review of existing feeding practices in 30 ICU patients, a review of the literature, and analysis of input from dietitians, intensivists, surgeons, nurses and pharmacists. ICU patients > 16 years of age who were enterally fed >24 hours or who were admitted to the unit for > 72 hours and were eligible for enteral nutrition were included in the evaluation of this protocol. Sixty-one consecutive, eligible patients prior to protocol-implementation and 62 patients post-protocol-implementation were studied prospectively. Primary endpoint was proportion of patients who met > 80% of enteral nutrition goals over their ICU stay. Secondary endpoints included time to initiation of enteral nutrition.

**Results:** Twenty percent of the pre-implementation group compared to 60 percent of the post-implementation group received at least 80% of their estimated energy requirements during their ICU stay ( $p < 0.001$ ). There was no difference in time to initiation of enteral nutrition between groups (1.76 days pre- vs 1.44 days post-protocol implementation,  $p=0.9$ ).

**Implications & conclusions:** The development and use of an evidence-based nutrition support protocol improves attainment of enteral feeding goals in the adult ICU.

### The relationship of nutritional status to postoperative outcomes of infection in older cardiac patients hospitalized post elective coronary bypass surgery

*R Elias\*, R Udayasekaran, and M Kasenda. University Health Network and Cardiac Program, Toronto, Ontario [R]*

**Objectives:** The purpose of this prospective study was to investigate the relationship of preoperative nutritional status to postoperative clinical outcomes of incidence for developing pneumonia; and sternal wound infections post elective coronary bypass (ACB).

**Methods:** Older cardiac patients (ages 60-80 years;  $n=110$ ) were screened for nutrition risk during pre-

admission (1-2 weeks pre-operatively in the cardiac care clinic). All patients were followed prospectively to assess frequency of developing postoperative infections (pneumonia and sternal wound infection). A multiple regression model was developed using variables suggested by univariate analysis and those supported by the literature. Predictors in the model for pneumonia included nutrition status, age, and nutrition intervention (pre and post-op). Predictors in the model for sternal wound infection included nutrition status, gender, diabetes, age, obesity, nutrition intervention and complications (surgical reexploration of mediastinum, use of bilateral internal thoracic grafts, transfusion of blood products). **Results:** Univariate analysis showed a significant association between incidence of pneumonia and nutrition status ( $p<0.0001$ ); obesity and sternal wound infections ( $p<0.005$ ); and pneumonia and those receiving postoperative nutrition intervention ( $p<0.05$ ). Multiple regression analysis indicated nutrition status to be an important factor with the incidence of pneumonia ( $p<0.001$ ). The prevalence of obesity was related to sternal wound infections ( $p<0.01$ ).

**Implications and conclusions:** Nutrition status and obesity may be related to postoperative clinical outcomes of pneumonia and sternal wound infection in this population. An increase in patients with adverse outcomes would be needed to increase the end power of this relationship. Further research is needed to validate the role of preoperative nutritional screening and assessment in this older cardiac patient population before elective ACB.

### Evaluation of three methods of cleaning gastrostomy feeding equipment in a home setting

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**Objective:** To assess the bacteriological safety of three cleaning methods for gastrostomy feeding equipment in a home setting.

**Methods:** Gravity tube Feeds of Nutren® 1.5 unflavored (Nestle®) were simulated in a home setting three times daily five days per week for four weeks. Each cleaning method was used for a period of four weeks and was tested in quadruplicate. Method 1 was the standard used by BC Cancer Agency outpatient dietitians. Methods 2 and 3 were simplified versions of method 1. Cultures were taken using Oxoid Dipslides (Oxoid Inc. 1926, Nepean, ON) after each of the three daily feeds for the first week to detect variations during the day. Cultures were taken for morning feeds only for the remaining three weeks. Bacterial growth was

compared to standards for potable water and pasteurized milk in the absence of standards for gastrostomy feeding equipment. Data were statistically analyzed comparing each method to the these standards.

**Results:** Bacterial growth was within acceptable range for all cleaning methods for two weeks. Growth for all methods was unacceptable beyond two weeks of use.

**Implications and Conclusions:** Patients using tube feedings at home are advised to change feeding equipment every two weeks, and to use cleaning method 3, the simplest of the three tested.

### **Sensitivity and specificity of dietitian screening methods in an acute care hospital**

*AN Godfreyson\*, JA Hutcheon, DL Parsons, KJ Schnick and KV Yarker. Royal Columbian Hospital, Fraser Health Authority, New Westminster, British Columbia [R]*

**Objectives:** It is well documented that protein energy malnutrition (PEM) has significant negative implications in the hospital setting, both for patient well-being and health care costs. Nutrition screening is used to identify which patients are at risk for PEM. This study determined the sensitivity and specificity of the current nutrition screening process used at Royal Columbian Hospital, which is based on dietitians' clinical judgement.

**Methods:** Subjective Global Assessment (SGA) was used to determine the nutritional status of all newly admitted patients to acute care wards (n=147). Dietitians recorded which patients they had identified as being at risk through their screening and whether intervention was required.

**Results:** Thirty-five percent of the sample was moderately to severely malnourished (SGA score B or C) and therefore appropriate for dietitians' screening and intervention. Chi-square analysis revealed that nutrition risk was positively associated with dietitians' screening and intervention ( $p < 0.005$ ). Sensitivity and specificity of screening were determined to be 80% and 55% respectively. Positive predictive value of screening was 49%. It is acknowledged that dietitians screen and intervene with patients for reasons other than PEM, such as education and micronutrient deficiencies, which may have contributed to the low specificity. Of the 6 individuals classified as severely malnourished (SGA C), only 1 received nutritional intervention.

**Implications & Conclusions:** The current screening method is sensitive to detection of PEM, but it is not specific as a tool to identify and prioritize patients. Screening methods should be improved to ensure that patients at highest risk are not missed.

## **Research**

### **Dietary regulation of nitric oxide synthesis in the neonate**

*DL Wilkinson\*, RFP Bertolo, JA Brunton, AK Shoveller, PB Pencharz and RO Ball. University of Alberta, Edmonton, Alberta, Hospital for Sick Children, Toronto, Ontario and University of Toronto, Toronto, Ontario [R]*

**Objectives:** Arginine is a precursor for nitric oxide (NO) synthesis which is critical for immune and vascular function. Impaired NO production is associated with neonatal diseases such as persistent pulmonary hypertension of the newborn and necrotizing enterocolitis. The purpose of this study was to test if the level of dietary arginine alters whole body NO synthesis in healthy neonates.

**Methods:** Ten neonatal piglets were intragastrically fed an arginine adequate (1.80g/kg/d) or deficient (0.20g/kg/d) diet for five days. Blood samples were collected daily for the determination of plasma NO, blood urea nitrogen (BUN), and plasma ammonia levels.

**Results:** Plasma ammonia levels were significantly greater ( $p < 0.05$ ), and BUN significantly lower ( $p < 0.04$ )

in piglets receiving the arginine deficient diet. Arginine deficient animals demonstrated a trend toward lower NO production ( $p < 0.09$ ).

**Implications & Conclusions:** These data confirm that 0.20g/kg/d is a deficient arginine intake for the neonatal piglet. Dietary arginine deficiency may impair NO synthesis from arginine in healthy neonates, thereby predisposing to the development of neonatal disease. The reformulation of enteral and parenteral nutrition solutions to include more arginine may have a substantial impact on neonatal health and survival.

## Adaptation of the National Cancer Institute's (NCI) Dietary History Questionnaire and nutrient database for Canadian populations

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**Objectives:** Differences exist between US and Canadian nutrient fortification standards and practices. The purpose of this study, was to adapt the US Dietary History Questionnaire (DHQ) and nutrient database to reflect Canadian foods and their nutrient profiles.

**Methods:** A modified DHQ was created and evaluated for face validity to ensure that it captured foods commonly available and consumed in Canada. The DHQ nutrient database was derived from 5506 individual foods consumed by adults in the US 1994-96 Continuing Survey of Food Intakes by Individuals (CSFII). Foods in the CSFII nutrient database most likely to differ in nutrient profile between the US and Canada were identified. In collaboration with the NCI, an appropriate match was sought for these foods in the Canadian Nutrient File (CNF) based on food name and description with the aim of substituting the Canadian nutrient profile for the existing US profile where appropriate.

**Results:** 2411 of 5506 foods represented in the CSFII database were identified as most likely to differ between countries. Acceptable CNF matches were found for 35% of these foods for which Canadian nutrient values were substituted. Selected Canadian nutrients were substituted in 25% of foods. US nutrient profiles were retained for foods with minimal impact on estimated intake (10%), and in cases where suitable CNF matches were not found (29%). Nutrient differences between US and Canadian foods occurred most frequently for folate, calcium, zinc, iron and vitamin A.

**Implications and conclusion:** The Canadian version of the DHQ and corresponding nutrient database provides researchers with an instrument that better represents dietary intake in Canadian populations.

## Vegetarian status of adolescents: consistency between two self-report measures

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**Objective:** The purpose of this study was to determine if a single question could be used to accurately identify vegetarians in an adolescent population.

**Methods:** Two methods were used to categorize 622 grade 9 survey respondents as either vegetarian or omnivore. Self-reported vegetarian status was

determined from responses ("yes", "sometimes" and "no") to "Do you consider yourself to be a vegetarian?". Responses to a 19-item food frequency questionnaire (FFQ) were also used to classify individuals as lacto-ovo (LOV) or semi vegetarian (SV) based on reported consumption or exclusion of animal flesh foods. Agreement between these two self-report methods was then assessed.

**Results:** Among the 15 individuals who responded "Yes" to the question "Do you consider yourself to be a vegetarian", 66.7% were FFQ-categorized as either LOV or SV. The remaining third reported red meat consumption and so were FFQ-categorized as omnivore. Agreement for LOVs improved from 60.0% to 72.7% when vegetarianism was qualified by duration (vegetarian for more than 1 year) and to 69.2% when only females were considered. Of those responding as "sometimes" vegetarian, 84.6% consumed red meat. 99.2% of self-categorized omnivores were also categorized as omnivores by the FFQ.

**Implications & conclusions:** A single question accurately identified almost all FFQ-categorized omnivores and two thirds of vegetarians. Accuracy was higher among females and among longer-term vegetarians but these issues should be verified using larger samples of vegetarians. Future research should investigate the effect of including an operational definition of vegetarian, including duration, when a single question is used.

## An Evidence-based Approach for the Development of Public Health Nutrition Guidelines: Filtering the Literature

MJ Cooper\*, SH Zlotkin. Division of Gastroenterology/Nutrition, Program in Metabolism, Research Institute, The Hospital for Sick Children, and Department of Nutritional Sciences, University of Toronto, Ontario [R]

**Objectives:** Our research group is exploring the use of an evidence-based approach for the development of nutrition guidelines. This approach includes three steps: (i) Literature retrieval; (ii) Literature filtering; and (iii) Appraisal of research evidence. Our broad research question is whether 'non-experts' can reliably filter literature on a topic before 'experts' meet to develop guidelines. Filtering is the process of removing articles that are not relevant to a review. Our *specific objective* for this study was to evaluate inter-rater agreement on title and abstract filtering by 'non-experts'.

**Methods:** Inter-rater agreement was assessed using Kappa Statistics (K) and percentage agreement for 3 pairs of dietitians (RDs) and 3 pairs of nutrition students (Grads). Filtering decisions were initially performed independently and then revised after a 'consensus meeting' between raters. Applying pre-selected inclusion/exclusion criteria, 185 titles and 90 abstracts

were assessed on the topic of dietary fat and heart disease risk in children.

**Results:** Fair-moderate agreement was achieved within RD pairs [K=0.39, 0.55, 0.36, respectively; 66-74% agreement within pairs] and moderate-good agreement was achieved within Grad pairings [K=0.60, 0.63, and 0.57, respectively; 77-80% agreement within pairs] for title filtering. Moderate-good agreement was achieved within RD pairs [K=0.60, 0.53, 0.55, respectively; 77-81% agreement within pairs] and within Grad pairs [K=0.59, 0.53, 0.57, respectively; 77-80% agreement within pairs] for abstract filtering. There was no significant difference between groups for within group disagreements ( $p>0.05$ ) after the consensus meeting.

**Implications and Conclusions:** Given pre-selected criteria and a discussion on disagreements, both RDs and Grads were comparable in their agreement on title and abstract filtering.

### **The role of ready-to-eat cereal in the diets of U.S. children**

*CK Good\*, AM Albertson, AL Eldridge, SJ Crockett. Bell Institute of Health and Nutrition, General Mills, Inc. Minneapolis, Minnesota, USA. [R]*

**Objectives:** Breakfast is an important contributor to the nutrient intakes of children, and ready-to-eat (RTE) cereal is commonly consumed at this meal. This study examined the impact of RTE cereal consumption on the diets and body weights of 4-12 year old children using the Bell Institute of Health and Nutrition Dietary Intake Study. **Methods:** Fourteen-day diet records were collected from a nationally representative sample in 1998-00 ( $n=1,138$  children 4-12). Subjects were classified as frequent or infrequent RTE cereal eaters based on their reported consumption in 14 days. Heights and weights reported by the primary caregiver were used to calculate body mass index (BMI).

**Results:** RTE cereal was a significant source of essential vitamins and minerals for children including iron and folate. Frequent cereal consumption had a significant impact on the nutrient intakes and BMI of children in this study. The vast majority of children (92.6%) reported consuming RTE cereal at least once in 14-days. Children who frequently consumed RTE cereal had diets significantly lower in cholesterol and dietary fat ( $p<0.001$ ). They also had an increased consumption of iron, folate, calcium, and 8 other essential vitamins and minerals, and were less likely to fall below the recommended intake levels for these nutrients. Frequent cereal eaters were less likely to skip breakfast and were more likely to have a healthy body weight ( $p<0.001$ ).

**Implications and Conclusions:** A pattern of frequent cereal consumption was related to lower body mass index and risk for overweight in children 4-12 years old. These data illustrate the significant contribution RTE cereal has on the diets and nutrient consumption of children.

### **Effect of processed vs fresh fruit on net acid excretion and urinary calcium loss**

*J Bell\*, SJ Whiting. College of Pharmacy and Nutrition, University of Saskatchewan, Saskatoon, Saskatchewan [R]*

**Objectives:** Foods promoting net acid excretion (NAE) may cause bone loss, as increased calcium loss is seen with high NAE. The purpose of the study was to determine if fruit intake (a dietary source of alkalinity) would lower NAE and urinary calcium excretion.

**Methods:** A crossover, acute load study was designed to investigate the effect of fruit on NAE and furthermore, to consider if processed fruit was similar in this respect to fresh fruit. Fifteen volunteers completed 3 dietary treatments on 3 different days. A fasting urine sample was collected before consuming one of the following 3 isocaloric high protein treatments: control (C), sugar and protein; fresh (F), apples, sugar and protein; and processed (P), applesauce and protein. Fruit treatments each provided 9 mmol of potassium. Urine was collected at 1.5 h, 3 h, and 4.5 h. NAE was measured as the sum of titratable acidity (TA) minus bicarbonate plus ammonium ( $\text{NH}_4$ ).

**Results:** The mean NAE at 3 h was (mmol/mmol creatinine): C,  $3.66 \pm 2.18$ ; F,  $2.05 \pm 2.05$ ; and P,  $1.63 \pm 2.56$ , ( $p = 0.069$ ), showing a trend for lower NAE with fruit. The change in calcium excretion at 3 h was (mmol/mmol creatinine): C,  $0.239 \pm 0.20$ ; F,  $0.126 \pm 0.11$ ; and P,  $0.079 \pm 0.21$ , ( $p = 0.048$ ). Post hoc LSD test indicates significant difference between C and P ( $p = 0.017$ ) and C and F ( $p = 0.085$ ) treatments.

**Implications & Conclusions:** Fruit, either fresh or processed, does reduce urinary calcium loss, and may be considered an important dietary factor in preventing osteoporosis.

### **A web-based approach to assessment of food intake and behaviour of school children and adolescents**

*R.M. Hanning\*, L. Jessup, I. Lambraki, C. MacDonald, L. Minaker, L. McCargar. Health Behaviour Research Group, University of Waterloo, Waterloo, Ontario and University of Alberta, Edmonton, Alberta [E]*

**Purpose:** A web-based survey of food intake and behaviour will be described along with experience in developing, validating and implementing the tool with grade 6-10 students in Ontario and Alberta.

**Description of Content:** An electronic survey was designed to collect data on 24-hour food recall, intake frequency of selected foods, food consumption behaviours (e.g. what meals, where and with whom students eat), physical activity, knowledge and attitudes regarding food groups, information sources and self-reported height and weight. The web-based approach permits immediate feedback on food group intake, direct

data transfer to University of Waterloo and direct download of food intake data for nutrient analysis (ESHA).

**Project Summary:** Initial review of the survey's face and content validity (n=20 dietitians or methodologists, n=232 students) and comparison with dietitian-administered 24-h recalls (n=22 grade 6-8 students), lead to an expanded food list (>400 foods), more photo images for portion estimation, prompts for beverage and topping selection and opportunity to review choices. With the revised site, comparison of lunch intake by direct observation versus next day web-based recall (n

=15, grade 9,10) yielded 87% agreement in number of food items. Nutrient intakes from web versus subsequent dietitian interview recalls were not significantly different and had interclass correlation coefficients of >0.5 for energy and key nutrients (n=16 grade 8 girls). In surveying >2000 students, technical problems were rare and student feed-back positive.

**Conclusions:** The web-based survey is a feasible, valid, efficient and user-friendly approach to assessment of student populations. (Supported by DFO, BIC, CBRPE and LHI endowment)

## Senior

### **Bringing Nutrition Screening to Seniors on the North Shore of Vancouver: A Community Partnership**

*S. Hostetler Miller\*. North Shore Keep Well Society, North Vancouver, British Columbia [R]*

**Objectives:** Dietitians of Canada and Professor Heather Keller, University of Guelph, received funds from Health Canada for a collaborative three year project, "Bringing Nutrition Screening to Seniors in Canada." The project objectives were to: 1) Enhance appreciation and understanding of the importance of nutrition as a key factor in healthy aging amongst community living seniors and their caregivers. 2) Strengthen the commitment and capacity of communities to identify nutritional risk in seniors and identify the capacity of current community resources to address identified nutritional risk. The North Shore of Vancouver was one of the five demonstration sites selected for the purpose of determining ethical nutrition screening models for their community.

**Methods:** Community volunteers and organization staff were trained to complete nutrition screening using the SCREEN© document. Between January and April 2002, 308 seniors from the North Shore of Vancouver from 25 organizations at 31 settings completed the 15-question nutrition-screening questionnaire.

**Results:** Age range was 51 – 96 years; average age was 75; 77% female; 53% lived alone; 35% with a spouse; 12% with others. 20% had less than high school education. Over 36% were considered to be at nutritional risk. At risk questions included: weight change, frequency of eating inadequate servings of fruits/vegetables, cooking, shopping, chewing and swallowing difficulties. 44 referrals were made to dietitians and approximately half had been seen by the time of follow-up. Common barriers to the referred services were long waiting lists, cost of visiting a dietitian or dentist and lack of transportation. 56/ 112 at risk seniors refused services. Future action involves continued screening, approaching

industry to provide "Senior Friendly" grocery store programs, evening "Meals on Wheels", nutrition seminars and displays.

**Implications and Conclusions:** These findings suggest advocacy for additional services and resources are necessary. The implementation plan will act as a model for other communities.

### **Enhancing seniors nutrition – guidelines for community initiatives**

*H Reisch\*, L Homer, K Staden, J Sharpe, L Podgurny, J Howell, CT Hunter and T Battilana. Enhancing Seniors Nutrition Initiative, Calgary, Alberta [E]*

**Purpose:** To develop a tool to share experiences and knowledge gained in community nutrition initiatives for free living seniors within the Calgary Health Region. To share this tool with others interested in developing and/or improving access to nutrition related services and supports in the community for an aging population.

**Description of Process/Content:** The activities described within the guidelines are indicative of the work completed by the Calgary-based, *Enhancing Seniors Nutrition Initiative* (ESNI) from 2000 to 2002. ESNI was founded and guided by a steering committee of community partners/agencies for whom nutritional health for seniors was a priority. Major accomplishments within ESNI thus far include; the setup of bus programs for over 80 seniors apartment buildings that provide regular transportation to and from the grocery store, the development and distribution of a listing of food related programs and services (designed to increase awareness and utilization), the creation of two displays, two catalogues of nutrition resources, and three presentations pilot tested and made available for public use. All tools/support information and suggestions from the above accomplishments were compiled to form "*Enhancing Nutrition for an Aging Population – guidelines developed based on a community initiative*".

**Project Summary:** Guidelines are available for downloading from the web. Questions can be directed to ESNI steering committee members.

**Recommendations & Conclusions:** The guidelines developed, act as suggestions and provide tools for addressing access to nutrition related services and supports issues. The guidelines serve as a working document and describe projects completed by ESNI. As ESNI addresses arising needs, new sections will/in turn be added.

### **Effectiveness of individualized nutrition counseling for well community-living seniors**

*S Wong\*, H Keller, P Vanderkooy, M Hedley.  
Department of Family Relations and Applied Nutrition,  
University of Guelph, Guelph, Ontario [R]*

**Objectives:** Little research has been published showing the effectiveness of nutrition counseling for community-living seniors. This study reports preliminary results of process and outcome evaluation of individualized nutrition counseling for well community-living seniors.

**Methods:** Individual counseling was provided to seniors, on a self-referral basis, by a dietitian in a seniors' recreation facility. Counseling focused on addressing individual needs, and evaluation used a goal-based strategy. The counseling activity was part of an innovative, community organized, nutrition education program.

**Results:** 48 seniors sought counseling for a total of 110 visits. The majority of clients were women, and the mean age was 70.8 years (SD 7.7 years). The SCREEN© results (administered before counseling was received) showed that half of the clients were at nutritional risk. Telephone follow-up evaluation conducted two months after the final counseling visit indicated that the majority of counseling clients felt they were making some progress towards their nutrition goals and were continuing with their changes most of the time. Overall, seniors who received counseling expressed having a high level of satisfaction with the service, increased confidence and ability for self management of diet and health concerns, improved knowledge about individual nutrition needs, and confidence in their ability to access the health care system. **Implications and Conclusions:** These findings suggest that individualized nutrition counseling for well community seniors is effective for improving nutrition behaviours, increasing knowledge of individual nutrition needs, and developing confidence for self management of nutrition and health concerns. Future larger scale studies should include the use of objective outcomes and a longer follow-up period to assess whether dietary changes can be maintained over the long term.

### **Bowel care for institutionalized elderly residents with dementia: Nutrition-related findings from a broad interdisciplinary study**

*CJ Boyle\*, KA Traviss. Food and Nutrition Services,  
University of British Columbia Hospital, Vancouver,  
British Columbia [E]*

**Objectives:** This study was conducted to examine issues and options related to bowel care in an institutionalized elderly population with dementia.

**Methods:** This was a descriptive study conducted on an extended care unit specializing in the care of demented elderly residents (n=42). The study had two facets: (1) a descriptive profile of the residents including bowel care factors (e.g., dietary factors, mobility, use of bowel medications, bowel movement frequency), obtained using chart and/or document review, and (2) Perceptions of caregivers and family members about the bowel care provided, obtained using interviews and/or focus groups.

**Results:** Residents were elderly ( $84 \pm 9$  years) and highly dependent on others for care. Thirty-eight (90%) required assistance with meals and almost all (39, 92%) required texture-modified diets. Twenty-five of the residents (60%) were receiving one high fibre tray addition daily (e.g., prunes, bran muffin, fresh fruit), but few (4, 10%) were receiving two or more. Most residents (28, 72%) were achieving regular bowel movements, although almost all (39, 93%) had received medical bowel intervention(s) (suppository, laxative, and/or enema) in the 30-day period studied. Perceptions of caregivers and family members varied, with caregivers being more critical and family members more accepting of the care provided.

**Implications & Conclusions:** Although elderly residents with dementia can achieve bowel regularity, it is unlikely to be attained through nutritional interventions alone. Dietitians working in this setting need to acknowledge the complex, multifactorial nature of bowel care, and work with staff and family members to individualize care. (*This study was funded by the Vancouver Hospital Interdisciplinary Research Grant Competition, 2001-2002.*)

### **Dining experiences of lucid versus non-lucid residents in nursing homes**

*N Carrier\*, GE West, D Ouellet. Université Laval, Ste-Foy, Québec [R]*

**Objectives:** Many studies have shown that malnutrition is prevalent among residents in long-term care (LTC) facilities. These studies have addressed physical and psychological factors that put LTC residents at risk of malnutrition and have determined some of the consequences of malnutrition. The current study examines differences in the dining experiences of lucid versus non-lucid residents and how these experiences affect risk of malnutrition.

**Methods:** Thirty-eight of 61 LTC facilities in New Brunswick participated in this study. Within each facility, a random stratified sample of residents aged 65 plus was asked to participate. Lucid residents were interviewed and the primary institutional caregiver of each non-lucid resident completed a questionnaire; additional data was retrieved from medical charts and a nutritional screening was performed on each participant. Data was collected on 396 residents (non-lucid=263, lucid=132).

**Results:** Non-lucid residents had significantly lower body weight ( $57\pm 13$  kg vs  $69\pm 17$ kg,  $p=.000$ ) and were at higher risk for malnutrition (49% vs 18%,  $p=.000$ ) than lucid residents. Dining experiences were also significantly different : non-lucid residents were easily distracted during meals (30% vs 11%,  $p=.000$ ); needed more assistance with meals (66% vs 17%,  $p=.000$ ) and with feedings (14% vs 2%,  $p=.000$ ); waited longer for assistance (14% vs 2%,  $p=.000$ ); had less access to snacks (47% vs 58%,  $p=.004$ ); and could not replace their meals as often as lucid residents (56% vs 81%,  $p=.000$ ). Both lucid (28%) and non-lucid residents (18%) reported not having enough help with meals.

**Implications and conclusions:** These findings suggest that both lucid and non-lucid residents are at nutritional risk and that modifications, such as increasing mealtime staff and reducing noise and other distractions could improve food intake and decrease nutritional risk.

## Women's Issues

### Women's experiences of eating and feeding with changed health status

*N. Catherine Morley\*, Community Rehabilitation and Disability Studies/Graduate Division of Educational Research, University of Calgary, Calgary, Alberta [R]*

**Objective:** This study was undertaken to explore women's experiences of eating and feeding with changed health status.

**Method:** In-depth interviews were conducted with 11 women; three whose lives were relatively the same after a period of adjustment and eight whose lives were altered by their condition or the effects of treatment. Transcripts underwent thematic analysis and interpretation.

**Results:** Findings indicated very different experiences for informants in the Life-Altered (LA) and Life-the-Same groups (LS). Informants in the LS group described periods of adjustment to new diets/activity programs. Household and beyond household eating and feeding routines were minimally affected, and informants achieved their physiologic goals. Informants in the LA group experienced profound changes in their abilities to ingest, digest, and eliminate food, in their appearance, and enjoyment of eating. Anticipated physiologic effects of dietary change were not achieved. While family and friends helped with shopping and cooking when the informants were acutely ill, informants resumed these roles as soon as they were able even though unwell. Beyond household activities were eliminated or curtailed. The extent of change was difficult emotionally

and prompted personal reflections on possible meanings of suffering. Informants seemed to question long held values and beliefs about eating (particularly the ability to control one's body), many of which were previously unthought. Preserving one's role in feeding the family seemed to relate to the importance of women's roles as nurturers and creators of family through feeding.

**Implications and Conclusions:** This study suggests that many aspects of eating and feeding are intertwined with how women construct their identities and that changes with illness affecting these behaviours prompt reconsideration or recreation of identity. The Eating and Feeding with Changed Health Status conceptual framework that emerged offers a means to sort through and explore clients' experiences and narratives.

### Dietary Intake, Weight Gain and Birth Outcomes of

#### Active Pregnant Women

*I. Giroux\*, S. Gerrie and M.F. Mottola. Exercise and Pregnancy Laboratory, University of Western Ontario, and Brescia University College, London, Ontario [R]*

**Objectives:** Pregnant women have increased energy and nutrient needs. Exercise also augments energy demands. The purpose was to examine if active pregnant women are meeting their dietary needs, accompanied by normal weight gain and positive birth outcomes.

**Methods:** Women with  $VO_2$  peak at  $\geq 35$  ml/Kg/min at 18 weeks gestation were considered physically active.

Eleven women (32.5±3.6 years) were studied weeks 18 to 34 of gestation. They exercised ~40 min. at 70% VO<sub>2</sub>, 3-4 times/week. Body weights and one-day food records were collected weekly. Food records of weeks 21, 25 and 34 were analyzed using ESHA. Birth outcome measures included weight, length and APGAR scores.

**Results:** On average, the women had lower energy intake (2086±80 kcal/d) than EER recommendations, but higher protein intake (84±5 g/d) than RDA recommendations for pregnancy. Overall 62 ± 2% of daily energy intake came from carbohydrate, and 25 ± 1% from fat. Iron (20±2 mg/d) and folate (390±34 µg/d) intakes were lower than RDAs for ten subjects. Calcium intake (1164±101 mg/d) was adequate for seven of eleven women. Vitamin D intake (6.7±0.7 µg/d) was adequate for most women. Average maternal weight gain was normal (7.7±2.2 kg over 17 weeks), but six women had sub-optimal weight gain. Birth weights, lengths, and APGAR scores were within healthy ranges.

**Implications & Conclusions:** Almost all study women did not meet their recommended daily iron and folate intakes, and some had sub-optimal weight gain. These results suggest that even though birth outcomes were positive, active pregnant women would benefit from receiving nutrition education to help them meet their dietary needs. (Funded by Canadian Forces Personnel Support Agency)

### **Enhancing capacity by understanding the breastfeeding experiences of women with low incomes**

*J Aussant\*, Kim Raine. Calgary Health Region, Calgary, Alberta and Centre for Health Promotion Studies, University of Alberta, Edmonton, Alberta [R]*

**Objectives:** The experience of breastfeeding for women living with low incomes has received little attention despite less than ideal breastfeeding duration rates. The purpose of this phenomenological research was to examine the reality of breastfeeding for women living on a low income as one way of better understanding the experiences that promote or impede breastfeeding duration.

**Methods:** Descriptive interviews with nine mothers were used to explore the phenomena of breastfeeding including experiences that assist women to continue breastfeeding, experiences that lead women to wean early and the degree and nature of social support. In-depth interview data were analyzed using thematic analysis.

**Results:** Women spoke poignantly about a desire to breastfeed and a sense of personal motivation. They described unique experiences of breastfeeding that included incongruity between breastfeeding expectations and early breastfeeding problems. Study findings indicate maternal characteristics, infant behaviour and social support shaped the women's breastfeeding experiences. Four themes emerged as primary

descriptors of the breastfeeding experience: Idealized Expectations, Doubting Breastfeeding Ability, Perceived Social Support and Infant Feeding Feedback.

**Implications and Conclusions:** Dietitians and health professionals may consider these influences as possibly areas of focus when working with women to support their capacity to breastfeed. Enhanced understanding and application of these concepts may ultimately have positive influence on community breastfeeding promotion efforts.

### **Body shape perceptions of Aboriginal and non-Aboriginal girls and women**

*G. Marchessault, University of Manitoba, Winnipeg, Manitoba [R]*

**Objectives:** With increasing efforts at obesity-prevention, it is important to understand people's perspectives on their weight. One objective of a qualitative project exploring cultural understandings about weight was to describe body shape perceptions and preferences of urban and rural Aboriginal and non-Aboriginal girls and women. **Methods:** Questionnaires were administered at the end of individual interviews with 80 Grade 8 female students and their mothers drawn randomly from two Winnipeg and two rural Manitoba schools. The response rate was 72.5%. Figure drawings of female body shapes were used to assess participants' perceived, desired, attractive and healthiest shapes and to derive body shape dissatisfaction. Desired weight change, frequency of dieting, and Eating Attitude Test (EAT-26) scores were also assessed.

**Results:** Aboriginal participants selected larger drawings to represent their current shape (Mann-Whitney U Test,  $p = 0.0008$  for girls;  $0.005$  for women). There were no other significant differences between the girls' selections. There was a trend for Aboriginal women to select larger drawings than non-Aboriginal women for their desired shape and the shapes they said were most attractive and healthiest for girls. Body dissatisfaction was greater in Aboriginal participants (66% and 36% for girls; 83% and 62% for women; logistic regression,  $p = 0.0001$ ). More women than girls wanted to lose weight (84.8% and 63.6%; chi square test,  $p = 0.004$ ). The frequency of dieting was 25.2%, with no significant differences between groups (chi square tests). High EAT-26 scores indicated risk of an eating disorder in 17.5% of the Aboriginal girls and 2.5% of the non-Aboriginal girls.

**Implications and Conclusions:** The presence of serious concerns about weight indicate that both weight and weight preoccupation need to be considered in health messages to Aboriginal girls and women.

*(Funding has been provided in part by Health Canada through a National Health Research and Development Program Research Training Award, and by the Manitoba Health Research Council, the Children's Hospital Research Foundation, the Canadian Home Economics Association, the Women's Health Research Foundation of Canada, and Dietitians of Canada.)*

## **Importance given to family meals taking into account mothers' food motivations and culture**

*M. Marquis\*, B. Shatenstein. Département de nutrition, Université de Montréal, Institut universitaire de gériatrie de Montréal, Montréal, Québec [R]*

**Objectives:** To explore Haitian, Portuguese and Vietnamese mothers' food motivations when selecting foods and to verify whether these motivations can predict the importance of family meals.

**Methods:** 208 mothers participated in the study: 68 were born in Haiti, 74 in Portugal and 66 in Vietnam. A 23-item questionnaire was developed to examine food motivations. Mothers' perceptions of the importance of family meals was measured with two items rated on a 5-point Likert scale. Sociodemographic data were collected.

**Results:** Food motivations were analyzed by principal components factor analysis. Five factors emerged explaining 61.67% of the variance: convenience, health, pleasure, familiarity and ingredient properties. Analyses of variance indicated significant differences between cultures for food motivations. Regression analyses

assessed the effect of mothers' food motivations on the importance given to family meals. The first model, which did not consider cultural differences, explained 18.4% of the variance observed ( $F(5, 205)=10.26$ ,  $p<0.005$ ). Health and pleasure were significant predictors of the importance ascribed to family meals. To assess the relative importance of these predictors in each culture, further regression analysis was carried out using the same independent variables. For Haitians ( $F(5,66)=4.09$ ,  $p<0.005$ ,  $R^2=19\%$ ) and Portuguese ( $F(5,72)=2.88$ ,  $p<0.05$ ,  $R^2=11.5\%$ ), health motivations emerged as the only significant predictors, whereas for Vietnamese ( $F(5,65)=4.45$ ,  $p<0.005$ ,  $R^2=21\%$ ), health and eating familiar foods were both predictors of the importance given to family meals.

**Implications and conclusions:** These results suggest the importance of considering cultural differences in understanding mothers' food motivations and using them as persuasive arguments to favor family meals. Research areas are presented. (*This project was funded by the Canadian Foundation for Dietetic Research*)

## **Weight Control Issues**

### **Pedometers 101: Answers to Questions You Might Ask**

*J Gesell., Alberta Centre for Active Living, Edmonton, Alberta [E]*

**Purpose:** This presentation will provide an overview of the usefulness and limitations of the pedometer as a tool to measure and encourage increased physical activity.

**Content:** Walking is essential to all our daily activities and is consistently reported as a preferred leisure-time activity choice (Canadian Fitness and Leisure Research Institute, 1996). Therefore, walking is perhaps the most significant physical activity to assess. In terms of practicality, pedometers offer a low cost, objective monitoring tool that is accessible to both researchers and practitioners. A pedometer can be used as a tracking device, a feedback tool, and as an environmental cue. Used in combination with record keeping, pedometers may be used in an effective way to increase daily physical activity. Generally, few adults have problems recording their total daily steps and re-setting the pedometer to zero in preparation for the next day. However, it would be reckless to presume that if we distributed enough pedometers, our work as physical activity promoters would be done (Tudor-Locke, Myers, & Rodger, 2001).

**Recommendations and Conclusions:** Currently, the 10,000-step recommendation seems a reasonable estimate, but there is little empirical evidence linked to health-related outcomes. Expected values of steps/day

can serve as benchmarks for interpreting change and comparison purposes, but should not be misinterpreted as recommendations for appropriate activity levels.

Recommendations can only be made once the accumulated evidence supports specific health-related indicators. Pedometers are practical, accurate, and acceptable tools for measurement and motivation in physical activity. The simple pedometer serves the needs of both researchers and practitioners, and therefore offers an opportunity to narrow the gap between research and practice. As acceptance continues to grow, accumulation of additional evidence will allow improvement of measurement methods and procedures.

### **Canadian dietitians' attitudes and practices regarding obesity and weight management**

*S.I. Barr, R. Levy-Milne\*, G.E. Chapman. University of British Columbia, Vancouver, British Columbia [R]*

**Objective:** Obesity is a growing health concern in Canada. This study was designed to assess Canadian dietitians' attitudes and practices regarding obesity and weight management.

**Methods:** A questionnaire was sent to a regionally-stratified random sample of members of Dietitians of Canada and the Ordre professionnel des dietetistes du Quebec. It sought information on dietitians' views regarding obesity and their professional practices with overweight and obese clients.

**Results:** The response rate was 74% (n=516). Dietitians agreed that obesity contributes to morbidity and mortality (89.8%), and that dietitians are the professional group best trained to manage obesity (74%). However, they do not focus on weight loss: 94% agreed that dietary advice should focus on healthy eating habits rather than reducing caloric intake. The three most important outcomes in judging success in obesity management were 1) improved food and exercise habits irrespective of weight loss, 2) improvement in clinical indicators, and 3) improved body image and self-confidence irrespective of weight loss. Modest weight loss likely to be sustained over time was ranked 4<sup>th</sup>, and weight loss to the healthy weight range was ranked least important. The most commonly recommended strategies for weight management were general advice to do more exercise, and advice regarding distribution of meals and snacks throughout the day (both often/usually recommended by 94.2%), advice regarding cooking and shopping (87.6%) and advice on including low intensity long duration exercise (86.4%). Specific advice to reduce fat intake was offered more frequently than advice to reduce caloric intake (81.1% vs 62.1%).

**Conclusions & Implications:** As a group, dietitians have adopted a lifestyle approach to weight management. Research is required to evaluate the effectiveness of this approach.

### **Challenges dietitians experience in counselling clients for weight management**

*G.E. Chapman\**. 'Do It With Focus' Research Group, University of British Columbia, Vancouver, British Columbia [R]

**Objective:** To describe the challenges experienced by Canadian dietitians in counselling clients for weight management.

**Methods:** As part of a larger study examining dietitians' attitudes and practices regarding weight management, 15 focus groups including a total of 103 dietitians were conducted in 7 Canadian cities. Moderated discussions were based on an interview guide with questions about how participants would approach specific counselling scenarios, changes in counselling approaches, and understandings and use of non-dieting and size-acceptance approaches. Sessions were tape-recorded, transcribed verbatim, and coded. For the purposes of this presentation, transcript segments coded as 'challenges' were further coded and analysed.

**Results:** The challenges dietitians experience in counselling clients for weight management arise from the dietitian/client interaction, the client's context, the dietitian's context, the health services setting, and the

broader social and physical environment. Within the counselling setting, dietitians' goals for improved health through permanent lifestyle changes may differ from clients' goals for rapid and/or significant weight loss through diet restriction. This, as well as perceived lack of motivation or readiness for change in some clients, frequently produces feelings of frustration for dietitians. Dietitians also reported inadequate preparation for dealing with clients' emotional issues and constraints of their work setting that limited their ability to see clients when and as often as needed. Finally, weight management counselling is complicated by the challenges inherent in our weight-preoccupied, food-rich, sedentary environment.

**Implications & Conclusions:** The difficulties dietitians experience in counselling clients for weight management may be lessened by improving the public's understanding of lifestyle approaches to weight management, by providing more training for dietitians in therapeutic counselling, and by advocacy work to help create more supportive environments.

### **Healthy You: Outcomes of a group weight loss intervention in primary care**

*T Hussey\**, *AM Crustolo*. HSO Nutrition Program, Hamilton, Ontario [R]

**Objectives:** The Healthy You Program was developed by dietitians to address the large demand for weight loss counseling in primary care.

**Methods:** The program consists of eleven one-hour weekly sessions facilitated by a dietitian. Inclusion criteria were BMI>27 and no concurrent individual nutrition counseling. Pre- and post-data collection included the Paul Stress and Well Being inventories. Self-reported data included 3-day food records, body weight monitoring and minutes of exercise completed per week.

**Results:** 6 sessions with 84 participants have completed to date. Overall mean improvements include: Paul Stress (46±14 to 42±12)\*\*, Well Being (63±18 to 69±20)\*\*, weight(kg) (100.5±22 to 96.4±21)\*\*\*, kcal/d (1705±426 to 1440±271)\*\*\*, g fat/d (46±18 to 31±18)\*\*\*, g fibre/d (14±6 to 18±7)\*\*. There was also a trend towards an increase in minutes of exercise per week (173±108 to 219±137, p=0.07). Participant satisfaction was consistently positive with the exception of the lack of an exercise component. Dietitians also enjoyed facilitating the sessions.

**Conclusions:** This type of service delivery in primary care is effective and is satisfying for participants and dietitians. \*\* p<0.05, \*\*\*p<0.001

## Abstracts Presented by Dietetic Interns

*Note: These abstracts represent research projects of dietetic interns across Canada and were not subject to the DC peer-review process.*

1. HM Niederer-French  
Northern Dietetic Internship Program with  
a First Nations Focus  
Thunder Bay, Ontario  
The perception of traditional and market foods among adults  
in a first nations community
2. L Ingram, M Cheskes, T Lavallee, T  
Burden, C Chatalasingh and DG  
Oreopoulos  
University Health Network (UHN)  
Toronto, Ontario  
Self-reported diet adherence in the Peritoneal Dialysis  
population at The Toronto Western Hospital
3. EL Hawthorne and N Currie  
Toronto Shared Dietetic Internship  
Program, Lakeridge Health Corporation  
Oshawa, Ontario  
Medical directives for clinical dietitians: a one-year follow-  
up study to evaluate the change in the efficiency of nutrition  
care delivery pertaining to prescribing enteral nutrition
4. T Yeung, C Ionson-Reid, K Mollot and J  
Madill  
University Health Network (UHN)  
Toronto, Ontario  
Is malnutrition a predictor of ninety-day mortality following  
orthotopic liver transplantation?
5. T Thomas, N Glauser, R Figueroa, V  
Jassal, T Oliver and H Bell  
University Health Network (UHN)  
Toronto, Ontario  
Protein and zinc intake in hemodialysis patients and the  
presence of skin ulcers: A case-controlled study
6. H Papageorgiou and H Plourde  
McGill University  
Montreal, Quebec  
The EAT-26 Test and intakes of young adult ballet dancers
7. LF Côté  
Professional Practice (Stage) in Dietetics,  
McGill University  
Montreal, Quebec  
Tolerance of a post-surgical diet progression in  
gastrointestinal surgical patients: A pilot project
8. CM Dennis  
Southeastern Ontario Comprehensive  
Dietetic Internship Program  
Kingston, Ontario  
Implementation of the “Food Steps: A Guide to Eating  
Better” for workplaces in the Kingston, Frontenac and  
Lennox & Addington area
9. DM Deveaux  
Southeastern Ontario Comprehensive  
Dietetic Internship Program  
Kingston, Ontario  
Enhancement of literacy and nutrition knowledge of parents  
with children aged 1 – 6 years
10. DJ Saari  
Southeastern Ontario Comprehensive  
Dietetic Internship Program  
Belleville, Ontario  
Hydration management: A protocol for complex continuing  
care

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| 11. | JP Ho<br>Southeastern Ontario Comprehensive<br>Dietetic Internship Program<br>Kingston, Ontario                            | School-based approaches to healthy eating   |
| 12. | J Smith<br>Southeastern Ontario Comprehensive<br>Dietetic Internship Program<br>Port Hope, Ontario                         | Developing a workplace virtual supermarket tour for blue-collar workers in Northumberland County  |
| 13. | SA Baker<br>Southeastern Ontario Comprehensive<br>Dietetic Internship Program<br>Brockville, Ontario                       | Nutrition education for community-living older adults in Leeds, Grenville and Lanark Counties   |
| 14. | MA Dockeray<br>Southeastern Ontario Comprehensive<br>Dietetic Internship Program<br>Brockville, Ontario                    | Evaluating the delivery of diabetes education classes at Providence Continuing Care Centre – St. Vincent de Paul Hospital Diabetes Education Centre |
| 15. | A Simpson and H Yannacoureas<br>The Ottawa Hospital Dietetic Internship<br>Program<br>Ottawa, Ontario                      | The development of a questionnaire to determine the resource and program needs of health professionals in Ottawa                                    |
| 16. | I Sirois<br>Sunnybrook & Women’s College Health<br>Sciences Centre (SWCHSC)<br>Toronto, Ontario                            | Aggressive versus conservative parenteral protein administration in infants born weighing less than 1250g: effects on early protein intake          |
| 17. | BE Neville and MJ Taylor<br>Capital Health Dietetic Internship Program<br>Halifax, Nova Scotia                             | Product wastage and nutrient consumption among acute stroke patients on texture modified diets  |
| 18. | D McKay and D Lucyk<br>Capital Health Dietetic Internship Program<br>Halifax, Nova Scotia                                  | Employee beliefs about healthy eating   |
| 19. | LA Burgess and JE Spiers<br>Capital Health Dietetic Internship Program<br>Halifax, Nova Scotia                             | The effectiveness of the family information session “Mealtime Madness” in improving feeding behavioral problems in children aged 1-5 years          |
| 20. | L Ward and M Murton<br>Capital Health Dietetic Internship Program<br>Halifax, Nova Scotia                                  | Peanut policy implementation and acceptance in the Halifax Regional School Board  |
| 21. | M Huxter and I Higgins-Bowser<br>Capital Health Dietetic Internship Program<br>Halifax, Nova Scotia                        | The appropriateness of the good health eating guide for type 2 diabetes patients  |
| 22. | MK MacPhail, H Sandeson, J Palmer and<br>D Whitehorn<br>Capital Health Dietetic Internship Program<br>Halifax, Nova Scotia | The effect of nutrition education on weight gain and dietary behaviors associated with the use of atypical antipsychotic medications                |
| 23. | ME Wong and M Regan<br>Capital Health Dietetic Internship Program<br>Halifax, Nova Scotia                                  | Evaluation of group facilitated education in improving the dietary habits and satisfaction of Healthy Heart Clinic patients                         |

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| 24. | S Olson and M Murton<br>Capital Health Dietetic Internship Program<br>Halifax, Nova Scotia  | The prevalence of anaphylactic peanut allergies and “peanut smart” programs in elementary schools  |
| 25. | WS Lee and S MacIntosh<br>Capital Health Dietetic Internship Program<br>Halifax, Nova Scotia  | The influence of nurses’ attitudes on patient satisfaction with food service in acute care hospitals in Capital Health   |
| 26. | K Blekaitis, A Foldes, G Ronen, B Meaney, H Pelletier and J Fabe<br>Hamilton Health Sciences Dietetic Internship Program<br>Hamilton, Ontario | Does the ketogenic diet affect bone mineral density and bone mineral content in children?  |
| 27. | KA Afghan, JP Murphy and A Mayhew<br>The Ottawa Hospital Dietetic Internship Program<br>Ottawa, Ontario                                       | The effect of Jevity Plus on the prevalence of Clostridium difficile in enterally fed patients on a medical floor; a pilot project                                     |
| 28. | AD Barkhouse<br>Acadia University Integrated Dietetic Internship Program<br>Wolfville, Nova Scotia  | Quality assessment of Meals on Wheels: Determining client and volunteer satisfaction with the town of Yarmouth Meals on Wheels program                                 |
| 29. | SA Rosen and HY Lovelace<br>Vancouver General Hospital<br>Vancouver, British Columbia   | Inter-rater reliability: how similar are 24-hour recall assessments between dietitians working in the same clinic?   |
| 30. | A Yu<br>Calgary Regional Dietetic Internship Program<br>Calgary, Alberta  | An Evaluation of the Basic Shelf: A Food Security Program for Low-income Prenatal Women Participating in the Best Beginning Program                                    |
| 31. | A Lau<br>Calgary Regional Dietetic Internship Program<br>Calgary, Alberta   | Satisfaction and food waste among hospitalized renal patients  |
| 32. | MA Drewniak and AY Lee<br>Calgary Regional Dietetic Internship Program<br>Calgary, Alberta  | Identifying existing barriers of phenylketonuria patients treated by the Inherited Metabolic Disorder Clinic in the Calgary Health Region from adhering to their diets |
| 33. | B Rangarao and H Mohamed<br>Calgary Regional Dietetic Internship Program<br>Calgary, Alberta  | To determine if the nurses knowledge and attitudes influence the intake of calcium and vitamin D among the cognitively impaired residents in long term care (LTC)      |
| 34. | D Baumler<br>Calgary Regional Dietetic Internship Program<br>Calgary, Alberta   | An Evaluation of “Feeding Your Baby”: a community based infant feeding class in the Calgary Health Region (CHR)  |
| 35. | KL Rondeau<br>Calgary Regional Dietetic Internship Program<br>Calgary, Alberta  | Needs assessment of Calgary-area schools to support healthy school environments and Comprehensive School Health  |

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| 36. | J Jager and L Schopff<br>Calgary Regional Dietetic Internship Program<br>Calgary, Alberta  | Outpatient Satisfaction with the Grace Osteoporosis Centre  |
| 37. | SM Davis<br>Calgary Regional Dietetic Internship Program<br>Calgary, Alberta   | Analysis of the dietary fibre content of meals offered in Carewest, a continuing care organization of the Calgary Health Region, and acceptability of higher fibre menu items                       |
| 38. | K Cormier, D Mager, H Richards, C Jackson, L Bannister and P Pencharz<br>The Hospital for Sick Children (HSC) internship program<br>Toronto, Ontario | Are the energy needs of children and adolescents with active Crohn's disease being met with current TPN therapy?  |
| 39. | N Bass and L Boucher-Matthews<br>Régie régionale de la santé Beauséjour<br>Moncton, Nouveau-Brunswick  | Lignes directrices établies pour les allergies aux arachides et aux noix dans un milieu hospitalier   |
| 40. | M Cormier<br>Régie régionale de la santé Beauséjour<br>Moncton, Nouveau-Brunswick  | Développement d'un protocole de référence sur les allergies au poisson et aux fruits de mer   |
| 41. | S Sarkisian and C Basualdo-Hammond<br>Capital Health Regional Dietetic Internship Program<br>Edmonton, Alberta                                       | Classification of adult patients receiving long term tube feeding in Capital Health between April 2001 and March 2002 according to clinical and ethical guidelines                                  |
| 42. | BL Haverluck<br>Capital Health Regional Dietetic Internship Program<br>Edmonton, Alberta   | Evaluation of a home care diabetic diet survival teaching tit: perceptions of healthcare professionals  |
| 43. | CA Roth, G Hubert and EA Ryan<br>Capital Health Regional Dietetic Internship Program<br>Edmonton, Alberta  | The nutritional status, activity levels and body composition of patients pre-islet cell transplant and one-month post islet cell transplant   |
| 44. | CA Stephenson and CG Basualdo-Hammond<br>Capital Health Regional Dietetic Internship Program<br>Edmonton, Alberta                                    | Evaluation of nutrition services provided by dietitians to inpatients with diabetes within various hospitals of the Capital Health region   |
| 45. | CLM Durocher<br>Aramark Dietetic Internship Program<br>Toronto, Ontario  | Development of texture modified grain products to enhance variety and increase nutritional intake in dysphagic diets  |
| 46. | R Gallant<br>Régie régionale de la santé Beauséjour<br>Moncton, Nouveau-Brunswick  | Contrôle des interactions médicaments-nutriments chez les patients hospitalisés   |
| 47. | S Levesque<br>Régie régionale de la santé Beauséjour<br>Moncton, Nouveau-Brunswick   | Évaluation de l'alimentation chez le bébé prématuré avec l'accent sur la transition de l'alimentation entérale par gavage à l'alimentation orale et un volet sur l'impact du stress environnemental |

48. W Koo  
St. Paul's Hospital Dietetic Internship Program  
Vancouver, British Columbia  
Is there a relationship between consumption of foods low in glycemic index and risk of metabolic syndrome in participants of a cardiac rehabilitation program?
49. C Campbell, J Surette, M Graham and A Mayhew  
The Ottawa Hospital Dietetic Internship Program  
Ottawa, Ontario  
A Nutrition Screening Tool at a Family Medicine Centre: A Patient-Centered Approach to Addressing Nutrition Concerns
50. J Dawson, D O'Connor and D Stone  
The Hospital for Sick Children (HSC) Dietetic Internship Program  
Toronto, Ontario  
Carob bean gum thickens human breast milk, for the management of infants with increased risk of aspiration due to gastro-esophageal reflux (GER) and swallowing anomalies
51. M Brotherwood, L Timoshenko, K Burleigh, L Teague and PB Darling  
St. Michael's Hospital Dietetic Internship Program  
Toronto, Ontario  
Characteristics of wounds in patients undergoing hemodialysis at St. Michael's Hospital and the factors associated with wound development
52. N Fish, D Kwan, M Morningstar, R Mustard and PB Darling  
St. Michael's Hospital Dietetic Internship Program  
Toronto, Ontario  
Incidence of abnormal blood glucose in Trauma/Neurosurgery Intensive Care Unit (TNICU) patients and its relationship with mortality, morbidity, insulin therapy, and enteral nutrition
53. C Mickolwin, F Press and PB Darling  
St. Michael's Hospital Dietetic Internship Program  
Toronto, Ontario  
Dietary compliance and perceived satisfaction with dietary instruction of patients with Celiac Disease
54. A Diamantouros, N Beattie, J Song, P Darling, R Hanning and M Keith  
St. Michael's Hospital Dietetic Internship Program  
Toronto, Ontario  
Do patients change their lifestyle following cardiovascular surgery?
55. A Bar-Dayam, J Brennan and J Hellmann  
The Hospital for Sick Children (HSC) Dietetic Internship Program  
Toronto, Ontario  
Post necrotizing enterocolitis (NEC) feeding tolerance in pre-term infants with non-surgical intervention
56. K Wadden and B Wolf  
The Children's Hospital of Eastern Ontario (CHEO)  
Ottawa, Ontario  
The implementation of a room service menu style in order to improve patient meal satisfaction in pediatric oncology and hemodialysis patients
57. DA Harding  
University of Alberta Internship Program  
Edmonton, Alberta  
Nutritional Intake Of Elite Competitive Swimmers
58. SL Waite  
Northern Dietetic Internship Program with a First Nations Focus  
Thunder Bay, Ontario  
A comparison of distance education models, based on the needs of aboriginal health workers

59. FM Woods, GA Zello, SJ Whiting and N Leydon  
Food and Nutrition Services, Saskatoon Health Region  
Saskatoon, Saskatchewan  
Foodservice Practices in the Care of the Elderly in Saskatoon District Health Special Care Homes: Foodservice Survey – Summer 2002
60. R Colwell, R Shavron, C Torgerson, R Shavron, C Arnold and W Dahl  
Food and Nutrition Services, Saskatoon Health Region  
Saskatoon, Saskatchewan  
Malnutrition of residents in Saskatoon special care homes
61. TL Mardell and CJ Arnold  
Food and Nutrition Services, Saskatoon Health Region  
Saskatoon, Saskatchewan  
Parenteral nutrition associated cholestasis in infants with intestinal failure
62. TL Haanen and CJ Arnold  
Food and Nutrition Services, Saskatoon Health Region  
Saskatoon, Saskatchewan  
Development of a Patient Satisfaction Tool for Clinical Nutrition Services
63. TM Dublanica, AD Healey, M Strader, N Haskey and C Arnold  
Food and Nutrition Services, Saskatoon Health Region  
Saskatoon, Saskatchewan  
A retrospective analysis of the prevalence of malnutrition using the 1992 and 2002 Cystic Fibrosis Foundation Nutrition Consensus statements in the Saskatoon Health Region pediatric cystic fibrosis clinic
64. AL Nahnybida  
University of Saskatchewan Dietetic Internship Program  
Saskatoon, Saskatchewan  
Perceptions of food intolerances and food-related complications in individuals with ostomies: A critical literature review
65. K Klein, E McNaughton and J Shea  
Regina Qu'Appelle Health Region Dietetic Internship Program  
Regina, Saskatchewan  
High fibre study in the long-term care setting
66. R Hagerty and N Karamujic  
Regina Qu'Appelle Health Region Dietetic Internship Program  
Regina, Saskatchewan  
Carbohydrate counting in the acute care setting in the Regina Qu'Appelle Health Region (RQHR)
67. TL Friedrich, TA Michel and MJ Richardson  
Regina Qu'Appelle Health Region Dietetic Internship Program  
Regina, Saskatchewan  
Folate, homocysteine and cardiovascular disease
68. J Sanden, J Striha and N Ferrara  
Regina Qu'Appelle Health Region Dietetic Internship Program  
Regina, Saskatchewan  
Client perceptions of past weight loss experiences in the Regina Qu'Appelle Health Region (RQHR)
69. S Willoughby  
Regina Qu'Appelle Health Region Dietetic Internship Program  
Regina, Saskatchewan  
Efficacy of Pectin in Tube Fed Patients in the Regina Qu'Appelle Health Region (RHQR)

70. A Ulmer and C Bodnarus  
Regina Qu'Appelle Health Region Dietetic  
Internship Program  
Regina, Saskatchewan  
Diabetes Case Management Across Canada
71. TL Taylor  
Regina Qu'Appelle Health Region Dietetic  
Internship Program  
Regina, Saskatchewan  
Introduction of a nutrition screening tool at Wascana  
Rehabilitation Centre (WRC) Children's Program