McGill Division of Geriatric Medicine
12th Annual Research Day
April 27th, 2007
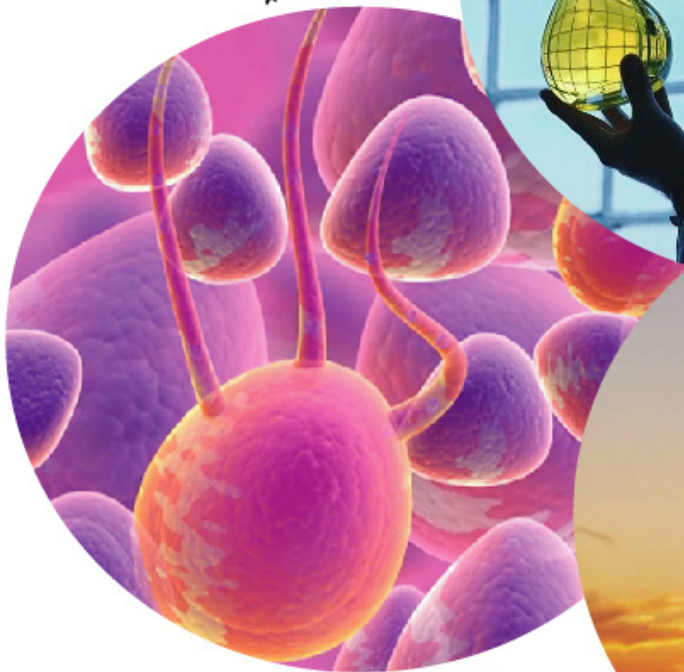

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Vendredi le 27 avril 2007

Soyez le bienvenu à la 12è Journée de recherche de la division de gériatrie de l'université McGill. Nous avons assemblé pour vous ce cahier sur le déroulement de la journée contenant l'horaire des activités ainsi que les résumés des présentations orales et par affiche. Nous espérons que vous aurez une journée très agréable toute en étant instructive.
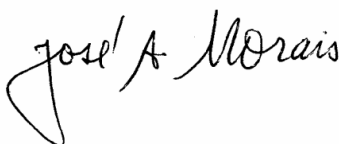
Friday, April 27th, 2007

Welcome to the 12th Annual McGill Division of Geriatric Medicine Research Day. In this program you will find a general agenda for the conference as well as abstracts relating to the podium and poster presentations. We are pleased that you were able to join us on this occasion and we hope that you walk away with an instructive experience.
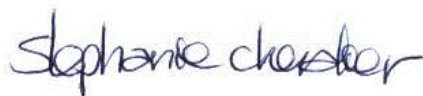
David Lussier, MD, FRCPC   José A. Morais, MD, FRCPC   Susan Gold, MD

Stéphanie Chevalier, PhD   Martine Puts, PhD

Remerciements:

McGill Division of Geriatric Medicine ◆ Division de Gériatrie de McGill
12th Annual Research Day Conference 2007 ◆ 12e journée de recherche 2007

◆

Nouvel Hôtel & Spa
Montréal, Québec, Canada

Research Day Program ◆ Programme de la journée de recherche

8:15 – 08:30	Continental Breakfast – Welcome (Dorchester) Petit déjeuner continental - Accueil
8:30 – 10:00	**Symposium - Translational Research**
8:30 – 9:00	Nancy Mayo, BSc (PT), MSc, PhD James McGill Professor Department of Medicine, School of Physical and Occupational Therapy Division of Clinical Epidemiology Division of Geriatric Medicine McGill University
9:00 – 9:30	Jacques Galipeau, MD Associate Professor Departments of Medicine and Oncology McGill University
9:30 – 10 :00	Discussion Period / Table ronde
10:00 – 11:00	Poster session • coffee & tea / Présentation des affiches • café et thé (Faubourg)
11:00 – 12:30	Paper session / Session de présentations orales (Dorchester)
12:30 – 14:00	Lunch / Déjeuner Restaurant Entracte
14:00 – 16:00	Paper session / Session de présentations orales (Dorchester)
16:00 – 16:15	Jury Deliberation • Coffee and refreshments / Discussions • café et thé
16:15 – 16:30	Award Presentations / Prix

Detailed Research Presentations Schedule ⬥ Programme détaillé des présentations

Poster Session / Session de présentation des affiches
10:00 – 11:00
Abstracts / Résumés P1 – P33

Oral Presentations AM Session / Session des présentation orales AM
11:00 – 12:30
Abstracts / Résumés O1 – O6

11:00 – 11:15
O1 – Effects of caloric restriction on bone marrow adipogenesis of aging rats
Alexandre Elbaz

11:15 – 11:30
O2 – Qualité de vie, arrêt de traitement et planification des soins de fin de vie de la clientèle québécoise en hémodialyse : comparaison des perceptions selon l'âge
Judith Gagnon

11:30 – 11:45
O3 – Assessment of bone changes in an animal model of healthy aging
Daniel Rivas

11:45 – 12:00
O4 – A memo reminding physicians to reassess the indication for antipsychotics among their nursing home patients with dementia
Dominique Hotte

12:00 – 12:15
O5 – Developing a method of measuring depression post-stroke
Julie Margulis

12:15 – 12:30
O6 – Effect of pre-stroke use of antihypertensives, antiplatelets, and statins on ischemic stroke severity and early outcome in a geriatric population
Amy Ying Xin Yu

Oral Presentations PM Session / Session des présentation orales PM
14:00 – 16:00
Abstracts / Résumés O7 – O12

14:00 – 14:15
O7 – Health status profiles and service utilization in a community-living population of frail elderly
Louise Lafortune

14:15 – 14:30
O8 – Rethinking the Measurement of Functioning: An Example from Stroke
Louis Finch

14:30 – 14:45
O9 – In-vitro knock-down of lamin-A/C inhibits osteogenic differentiation of mesenchymal stem cells
Rahima Akter

14:45 – 15:00
O10 – Identifying frailty using the ICF: proof of concept
Caryn Nash

15:00 – 15:15
O11 – Factors associated with 1-year weight loss in the healthy community-dwelling elderly: the NuAge study
Danielle St-Arnaud McKenzie

15:15 – 15:30
O12 – Blood pressure and antihypertensive therapy as predictors of short-term outcome in acute ischemic stroke in a geriatric population
Mark Keezer

15:30 – 15:45
O13 – Aging affects the steering of locomotion induced by changing optic flows
Jessica Berard

15:45 – 16:00
O14 – Effect of phytoestrogen and exercise training on oxidative stress markers in obese postmenopausal women: A randomized controlled trial
Gérémy Abdull Koumbadinga

Poster Session / Session de présentation des affiches 10:00 – 11:00

P1
HOSPITALIZATION RATES AND PSYCHOSOCIAL FACTORS AMONG ELDERLY PATIENTS WITH CONGESTIVE HEART FAILURE IN ISRAEL
Doron Sagi, Aya Bidermann, and P. Shwartzman
Department of Family Medicine, Faculty of Health, Ben-Gurion University of the Negev, Beer-Sheva, Israel

Background: Today elderly people represent about 10% of the population in Israel. HF is a central cause of morbidity and mortality among the elderly in Israel and around the world, and it is a leading factor for hospitalizations and significant expenses of the health system. The current constraints in the reaction of patients to drug treatment led to the planning and implementation of therapeutic interventions for HF patients. Such interventions are generally focused on the medical treatment and on preservation of the patient's functional and physiological state, beyond medication. However they do not deal with early finding about higher levels of psychosocial symptoms such as depression, lack of social support and cognitive deficiencies, in HF patients. Research purposes: This study is aimed at characterizing the psychosocial aspects of HF patients and the relations of these aspects to their rate of hospitalizations. This study is also a completion to the recent heart failure comprehensive survey in hospitals throughout Israel. Methods: The research population included 120 elderly (over 65) HF patients from four "Sherutei Briut Clalit " community clinics in Beer-sheva, Israel. Names of subjects and medical data were obtained from computer databases in the clinics. We also used customary HF medications in order to locate patient names. The research included a comprehensive Bio-psychosocial interview with elderly HF patients suffering from moderate and severe HF (classes 2-4 of the NYHA). A comparison of Biomedical and Psychosocial factors (Anova test) was made between patients with few hospitalizations (1 or less in the last 2 years) and patients with re-hospitalizations (at least 2 in the last 2 years). One year after the interview of each patient, we checked the psychosocial variables' ability to predict future medical services utilization and hospitalizations (Logistic regression). Results: Significant relations were found between Past hospitalization and several Psychosocial factors: Depression(F=16.34, p<0.05), Anxiety(F=8.51, p<0.05), and Self Rated Health(F=6.23, p<0.05). Depression was the only Psychosocial factor which predicted future hospitalization rates significantly (B=.207 , OR=1.23; p<0.05). Conclusions: General physicians, as well as other medical professionals, are encouraged to pay attention to psychosocial factors and especially depression level in their routine practice, in order to obtain a better understanding of their elderly patients' Bio-Psychosocial health status and decrease the chance for future hospitalizations. In the second stage we intend to expand the research to other parts of the country, and to develop an intervention plan, that will be based on the conclusions from the first stage.

P2
CLINICAL EXPERIENCES OF PRIMARY CARE PHYSICIANS WITH OLDER PATIENTS WITH REGARDS TO CANCER
Dagmar Peters-Mainville, M.T.E. Puts, J. Monette, M. Monette and H. Bergman.
Solidage Research Group, Lady Davis Institute for Medical Research, Jewish General Hospital, McGill University, Montreal.

Introduction: Cancer has become primarily a disease of the elderly. Little data is available about factors that influence family physicians in their decision-making concerning cancer screening and cancer treatment in elderly patients. However, the few studies that have been conducted suggest that decisions are often based on age and to a lesser extend on functional status. The paucity of studies available offers little guidance for Family Physicians. The aim of this study is to explore the attitudes of Family Physicians towards their elderly patients regarding screening for cancer, decision-making in case findings, referral practice and treatment of cancer. Methods: The design of this study is a qualitative interview study with in-depth interviews using semi-structured open-ended questions. Purposive sampling will be used. Participants will be chosen from the Quebec directory of (Family) Physicians differing in age, sex, years of practice, and rural versus urban location. The number of interviews will be guided by data saturation. The interviews will be

limited to 30 minutes. Two members of the team will conduct the interviews and analyse the transcripts of the audio taped interviews. The data analysis will be based on the grounded theory approach. Conclusion: We expect to gain more information about how family physicians make decisions in a heterogeneous elderly patient population concerning screening for cancer, referral practice and treatment options offered to elderly cancer patients. Once influencing factors or barriers are identified, these could be targeted in a systematic way to improve healthcare and quality of life of elderly patients.

P3

A CENSUS OF CANCER PHYSICIANS IN THE PROVINCE OF QUEBEC: CLINICAL EXPERIENCE WITH ELDERLY PATIENTS

Doreen Wan-Chow-Wah, Johanne Monette, Frédérique Retornaz, Michele Monette, Nadia Sourial, Martine Puts, Gerald Batist and Howard Bergman
SMBD Jewish General Hospital, Montreal.

Introduction: There is no clear consensus on how to evaluate and manage older cancer patients. The main goal of this study was to understand factors that may influence cancer physicians' decisions to administer chemotherapy to cancer patients aged 70 years and older. Methods: All 181 medical oncologists and hematologists in the province of Quebec listed in the Collège des médecins du Québec 2005-2006 directory and whose current practice involves clinical decision-making regarding chemotherapy administration in cancer patients aged 70 years and older were invited to participate through a mail-in questionnaire. The questionnaire contained multiple-choice and open-ended questions covering three main subjects: physician demographics, patient management and clinical trials. A second mailing was sent to non-respondents. Results: The response rate from the first mailing was 59(33%), of which 37(63%) were male, 43(73%) French speaking, 31(53%) double-certified in medical oncology and hematology, 45(76.5%) practiced in a university-affiliated hospital, and 38(64%) had received no prior training in Geriatrics. Physicians reported that a minority of their cancer patients were 70 years old and over. A minority of them had poor outcomes as a result of chemotherapy toxicity. Difficulty in decision-making regarding

chemotherapy in older patients was rated 5/10 on average, 10 being extremely difficult. The top five factors considered important when making chemotherapy treatment decisions were comorbidities, functional status, patient wishes, treatment toxicity and social support. Half of respondents said they had patients over 70 enrolled in clinical trials. However, the proportion of younger patients enrolled was 3 times higher than that of older patients. Patients' attitude was listed as the main factor for older patients not participating in clinical trials. Conclusions: Findings from this study provide insight into cancer physicians' experience in caring for older cancer patients and will serve as a background for developing strategies to improve cancer care in the elderly.

P4

WHICH FACTORS AFFECT THE AGREEMENT BETWEEN PATIENTS' AND PROXIES' ASSESSMENTS OF SOCIAL PARTICIPATION AFTER STROKE?

Valérie Poulin and Johanne Desrosiers
Research Centre on Aging, University Institute of Geriatrics of Sherbrooke

Introduction: Proxies might provide useful information to assess social participation in people with stroke unable to respond themselves because of cognitive impairment. However, several considerations must be addressed before using this type of information. Objective: The study aimed to explore factors affecting the agreement between patients with stroke and their proxies on the assessment of social participation. Methods: Forty people who had a stroke but without significant cognitive impairment and their self-identified proxies (total n=80) participated in the study. Participants were evaluated separately in face-to-face interviews using the Assessment of Life Habits questionnaire (LIFE-H 3.1)[1], which documents participation in daily activities and social roles. Patients' and proxies' characteristics were also collected, including sociodemographic (ex: sex, relationship of proxy to patient) and clinical variables (ex: severity of motor impairment, cognitive functions and depressive symptoms). Results: Only patient characteristics were associated with disagreement between the dyads on the LIFE-H. From multivariate regression analyses, severity of motor disabilities was the best predictor of disagreement between people

with stroke and proxies. Severe motor disabilities and poorer cognitive performance predicted greater disagreement on the LIFE-H total score and together explained 40% of the variance in disagreement between respondents. Other factors were also related to response discrepancy in patient-proxy dyads, such as patient sex [female], living environment [seniors' private residence versus home] and depressive symptoms (p<0.05). Conclusion: Clinicians and researchers should remain cautious when interpreting proxy information as a substitute for patients who cannot be interviewed about social participation. They should consider factors that may contribute to disagreement between people with stroke and their proxies, such as the severity of motor disabilities. 1. Fougeyrollas, P., Noreau, L., & St-Michel, G. (2002). Life Habits measure – Shortened version (LIFE-H 3.1). CQCIDIH: Lac St-Charles, Québec, Canada. The study was carried out with financial support from the Canadian Institutes of Health Research.

P5
THE DEVELOPMENT OF A FEAR-OF-FALLING INTERDISCIPLINARY INTERVENTION PROGRAM
Fernando Gomez and Carmen-Lucia Curcio.
Research Group on Gerontology and Geriatrics. Health Sciences Faculty. University of Caldas. Manizales. Colombia

Objective: To describe the development process of a protocol for a fear of falling interdisciplinary intervention program based on the main factors associated with fear of falling. Design/Methods: The process of developing a protocol consisted of defining the target population, selecting the initial assessment components, adapting the intervention program based on findings about fear of falling and restriction of activities in this population. Settings: university-affiliated outpatient vertigo, dizziness and falls clinic in coffee-growers zone of Colombian Andes Mountains. Results: An intervention program was developed based on three main falling conceptual models. A medical intervention, based on a biomedical and pathophysiological model, a physiotherapeutic intervention based on a postural control model and a psychological intervention based on a biological-behavioral model. Conclusion: This interdisciplinary fear of falling intervention program developed is based on particular characteristics of target population,

with differences in the inclusion criteria and the program intervention components; with emphasis on medical (recurrent falls and dizziness evaluation and management), psychological (cognitive-behavioral therapy) and physiotherapeutic (balance and transfers training) components. Key words: fear of falling; elderly programs; Colombian; intervention.

P6
PHYSICAL AND ORGANIZATIONAL ENVIRONMENTS OF RESIDENTIAL CARE FACILITIES, SHOULD THEY BE DIFFERENTS FOR ELDERLY COGNITIVELY IMPAIRED?
Catherine Lestage[1,2], Nicole Dubuc[1,2] and Gina Bravo1[2]
[1]Research Centre on Aging, Health and Social Services Centre, University Institute of Geriatrics of Sherbrooke and [2]Faculté de médecine et des sciences de la santé, Université de Sherbrooke

Objectives: This study aimed to identify which characteristics of the physical and organizational environments of residential care facilities need to be known to support the placement process of seniors cognitively impaired and of seniors physically disabled. Methods: A modified Delphi based on the RAND/UCLA Appropriateness Method was carried out through the mail, with 2 groups of experts. The consulted experts rated on a nine point scale, the relevance of each indicator which were proposed on a list that was divided in 15 sections. Each section ended by an open-question to collect suggestion of items. Both groups received the same list and instructions, except that group A considered the information required to place seniors cognitively impaired and group B for seniors physically disabled. Ratings were analyzed regarding the median score and the level of agreement among experts of each group. 2 rounds per group were required to reach a consensus. Then, the items selected by each group were compared. Results: On the 58 experts, 48 completed the entire process (82,8% response's rate). 286 indicators were judged by each group; 170 related to physical environment (PE) and 116 to organizational environment (OE). Group A rated 172 as essentials: 88 PE and 84 OE. On these 172 items, 11 came from those suggested by the experts. Group B identified 146 as essentials: 75 PE and 71 OE. Only 1 item was rated essential from those suggested by the experts of this group. 84.6% of

the overall items were correspondingly classified by the two groups; essential or not. On the 44 indicators rated differently by the two groups, 30 were judged essential by the group A which rated in regard of the placement process of elderly cognitively impaired. These 30 items were mainly related with organizational policies and aspects of security. Conclusion: These findings highlight that elderly cognitively impaired do not require completely different physical or organizational environments. However, for a better person-environment fit, specific environmental attributes have to be considered.

P7
AN AD-HOC SOLUTION TO USING MULTIPLE IMPUTATION FOR A MULTIVARIATE GRAPHICAL METHOD

Nadia Sourial, Russell Steele, Chritina Wolfson, Howard Bergman
Solidage Research Group, Jewish General Hospital; Department of Mathematics and Statistics, McGill University; Department of Epidemiology & Biostatistics and Department of Medicine, McGill University; Division of Geriatric Medicine, McGill University.

PURPOSE: Multiple Correspondence Analysis (MCA) is a multivariate graphical representation of the correlation between 2 or more categorical variables on a typically 2-D plane. When missing data are present, Multiple Imputation (MI) may be preferable to case deletion as the latter results in loss of data and may bias the correlation between variables, creating a distorted graph. As no MI technique exists in the literature for MCA, an ad hoc method was developed to summarize the imputed datasets into one graph. This work is part of the Frailty Data (FrData) project, the objective of which is to explore the association among 7 candidate domains of frailty. METHODS: Data are from the System of Integrated Services for the Frail Elderly study; a trial on 1164 community-dwelling older persons with mild disability living in Montreal. The MI procedure was iterated 10000 times, keeping every 10th cycle for a total of 1000 imputed datasets. The proportion of variance explained in the first three dimensions was computed for each imputed dataset. The dataset closest to the median value was selected to create the final graph. Sensitivity analysis was performed to assess the distribution of the explained variability and visual difference in the graphs

created by the imputed datasets corresponding to the minimum and maximum variance value. The final graph was compared to one using case deletion. RESULTS: Differences between the graph created using case deletion and MI were observed. Sensitivity analysis revealed very low variability in the proportion of explained variability from one imputed dataset to another with almost identical graphs using the minimum or maximum value versus the median. CONCLUSION: This ad-hoc solution to combining multiply imputed datasets resulted in a suitably robust display of the correlation between the variables. Moreover, MI was preferable to case deletion as no data was lost. Further research is needed to develop an algorithm to combine MI datasets for multivariate graphical methods.

P8
PARKINSON'S DISEASE IN CANADA

Amélie Pelletier[1], Ron Postuma[2] and Christina Wolfson[1,3]
[1]Division of Clinical Epidemiology, McGill University Health Centre, [2]Department of Neurology-Montreal General Hospita land [3]Department of Epidemiology and Biostatistics and Occupational Health, McGill University

Approximately 0.3% of the population and 1.5% of adults over the age of 60 years suffer from Parkinson's disease (PD). PD is the most common cause of the classic cardinal motor signs of parkinsonism: tremor, rigidity, bradykinesia and gait dysfunction. PD patients may also experience swallowing difficulties, impaired speech production, excessive salivation, depression, a variety of sleep problems, balance problems and dementia, particularly late in the disease course. In Canada, very few prevalence studies of PD have been conducted. All have used existing data sources collected for other purposes to estimate prevalence and were mostly geographically limited to a province or town. From these studies, the estimated prevalence varied between 12.5 and 363 per 100,000 persons. These extreme differences are probably due to differences in study methods and variable age distributions. Thus, they cannot be combined to obtain an accurate national picture of PD in Canada. These prevalence estimates are also much lower than more comprehensive population based prevalence studies carried out in other countries. We believe that the

prevalence of PD in Canada has probably been considerably underestimated. With the support of the Parkinson Society of Canada, we have submitted a recommendation that a national prevalence study of PD in Canada be developed. To allow precise estimation, at least 8,000 women and men aged 40 to 84 years old should be recruited using an appropriate sampling frame. The optimal design for this population-based study includes a two phase (screening and diagnostic) strategy to identify cases of PD. To screen for parkinsonism, one of several available short, reliable and validated questionnaires should be used. Screen positive patients should be evaluated by a movement disorders specialist to fully evaluate disease features. The final diagnosis of PD should be determined in a consensus conference of specialists. In summary, there is an important lack of information on the prevalence and impact of PD in Canada. Conducting a prevalence study of PD is feasible and will greatly advance our understanding of PD in Canada and our ability to plan for the health care of tomorrow.

P9
THE CANADIAN LONGITUDINAL STUDY ON AGING: AN OVERVIEW

Jennifer Uniat[1], Linda Furlini[1,2], Christina Wolfson[1,2,3], Parminder Raina[4], Susan Kirkland[5], Camille Angus[5], Tim Chipman[5], Homa Keshavarz[4], Judy Keys[4], Geoff Strople[5], Karen Szala-Meneok[4]
[1]Division of Clinical Epidemiology, McGill University Health Centre, [2]Department of Epidemiology and Biostatistics, McGill University, [3]Division of Geriatric Medicine, McGill University, [4]Department of Clinical Epidemiology and Biostatistics, McMaster University and [5]Departments of Community Health and Epidemiology and Medicine, Dalhousie University

The CLSA, a strategic initiative of the Canadian Institutes of Health Research (CIHR), is a 20-year prospective cohort study that will require the long-term participation of volunteers drawn from the Canadian population. The overall aim of the CLSA is to examine aging as a dynamic process. Through the CLSA we will investigate the interrelationships among intrinsic and extrinsic factors influencing health from mid-life to older age. This will allow us to capture transitions, trajectories and profiles of aging, elucidate the concept of successful aging, and

identify modifiable factors that could be used to develop interventions to improve the health of older populations. Once in place, the CLSA will also provide infrastructure and enhance capacity for sustained high quality longitudinal research on aging in Canada. The study will recruit 50,000 men and women aged 40 to 84 years at baseline. Of the 50,000 participants 30,000 will be selected to undergo in-depth assessment requiring visits to CLSA data collection sites. They will be asked to provide information through questionnaires, clinical examinations and biological testing. All 50,000 participants will also provide information through interviews (telephone administered and/or in person) and with permission of study subjects, link their data to existing health databases. Data will be collected every three years for the youngest age groups (40-79) and every year for the oldest group (80 or over). In this poster we outline the basic features of the design of the CLSA.

P10
THE CANADIAN LONGITUDINAL STUDY ON AGING: RECRUITMENT AND RETENTION

Linda Furlini[1,2], Jennifer Uniat[1], Christina Wolfson[1,2,3], Parminder Raina[4], Susan Kirkland[5], Camille Angus[5], Tim Chipman[5], Homa Keshavarz[4], Judy Keys[4], Geoff Strople[5], Karen Szala-Meneok[4]
[1]Division of Clinical Epidemiology, McGill University Health Centre, [2]Department of Epidemiology and Biostatistics, McGill University, [3]Division of Geriatric Medicine, McGill University, [4]Department of Clinical Epidemiology and Biostatistics, McMaster University and [5]Departments of Community Health and Epidemiology and Medicine, Dalhousie University.

Given the magnitude, depth and complexity of the CLSA, it is imperative to focus on recruitment and retention strategies especially for the participants selected to undergo in-depth assessment. This will allow us to better design a study that simultaneously is most conducive to study participants, maximizes recruitment, and minimizes attrition. Emphasis will be placed on recruitment strategies aimed at creating awareness, identifying participants, targeting the population, as well as specific components of the informed consent process such as developing the optimal consent process, using one form vs. multiple shorter forms, content of the form and

renewal of consent. The literature, previous experience of the CLSA investigators in the conduct of both cross-sectional and longitudinal studies, and data gathered during the Phase 1 feasibility studies all suggest that multiple overlapping strategies are necessary to meet recruitment goals and that continual monitoring and adaptation of strategies is imperative. Participant retention is a significant challenge for longitudinal studies. Retention strategies for the CLSA will focus around adaptive strategies and fostering participant motivation. Strategies will be developed for participants who become cognitively impaired over time, change location, and have new needs regarding their participation in the study. Specific techniques will also be used to foster participant motivation such as personal communications, ensuring convenience and promoting altruistic benefits. The possibility of returning clinical results to the study participants is being examined by the research team. In general, with sufficient resources and the persistent use of strategies for recruitment and retention, the aging process can be successfully studied over time.

P11
PRISE EN CHARGE DES ATTEINTES COGNITIVES EN UNITE D'EVALUATION GERIATRIQUE: INDICATEURS DE QUALITE ET PROCESSUS DE VALIDATION.

Isabelle Payot, J. Latour, F. Massoud and M.J. Kergoat
Université de Montréal

INTRODUCTION: Les soins dispensés aux personnes âgées hospitalisées peuvent être mieux systématisés et optimisés, particulièrement dans certaines conditions ayant trait aux syndromes gériatriques. Afin d'harmoniser les interventions, nous avons analysé et adapté des indicateurs de qualité pour l'évaluation et la prise en charge des personnes avec atteinte des fonctions cognitives, dont la prévalence est très élevée dans les unités d'évaluation gériatrique au Québec. MÉTHODE: Parmi les indicateurs développés en 2001 par la méthode RAND ACOVE Quality Indicators. Ann Intern Med. 2001;135:653-667, 22 items sélectionnés pour leur pertinence au cours du processus d'évaluation et de prise en charge d'une atteinte des fonctions cognitives ont été adaptés aux conditions de pratique du milieu hospitalier québécois. Les indicateurs, accompagnés d'évidences de la littérature, ont

été soumis, par poste, à un panel d'experts (n=7). Chaque expert a coté, sur une échelle de 1 à 9, son degré d'accord à des affirmations, concernant la validité, la qualité et la nécessité d'être inscrit dans le dossier médical de chaque indicateur. Pour qu'un indicateur soit retenu, il devait faire consensus, selon les valeurs médianes, être situé dans le tertile supérieur et recevoir l'agrément des experts. Les indicateurs incertains étaient modifiés en fonction des commentaires des experts, puis soumis au même panel pour un second tour. PARTICIPANTS: Sept praticiens hospitaliers de milieux universitaires affiliés à 3 universités du Québec, choisis pour leur compétence reconnue en démence et soins gériatriques. RÉSULTATS: Des 22 indicateurs soumis au premier tour, 21 ont été validés. Ils prenaient en compte le dépistage, l'investigation, l'évaluation, le traitement et le suivi. L'indicateur, considéré comme incertain, a été modifié, puis accepté lors du second tour. CONCLUSION: Cette étude a identifié 22 indicateurs pertinents pour l'évaluation et la prise en charge de l'atteinte des fonctions cognitives dans une unité d'évaluation gériatrique. Ils serviront de base à l'évaluation de la problématique de la démence, dans une étude ayant cours sur la qualité des soins dans les services de gériatrie du Québec.

P12
PROMOTION OF PHYSICAL ACTIVITY IN PRIMARY CARE: OPINIONS AND PERSPECTIVES OF ADULTS AGED 65 AND OVER

Deborah Weiss, Ian Shrier, Mark Yaffe, and Christina Wolfson
McGill University

Introduction: Important health benefits are associated with being physically active, and this may be particularly true for older people. However, older people are less physically active when compared to younger adults. While it has been suggested that physicians can promote physical activity in their older patients, interventions implemented in the primary care setting have had limited success. Methods: Six focus groups with adults aged 65 and over were conducted by a trained moderator. The topics explored included the meaning of physical activity, the benefits and risks associated with being active, and factors that encourage, or act as barriers, with regards to being active, or being more active. As well, the groups explored the

concept of receiving physical activity advice from their primary care physician. The results were analyzed using the constant comparative method. Results: The following themes emerged: physical activity was viewed as very important in this population. There was however, some ambiguity regarding what physical activity encompasses and how much activity is recommended. Participants stressed the importance of being active in general, which for them included social participation and mental activity, as well as physical activities. The participants indicated that for the most part, their physicians had never raised the issue of physical activity with them. Moreover, participants were not receptive to the idea of receiving this type of advice from their physicians. The reasons for this included the view that the physicians lack the time and necessary training to discuss physical activity. The physician's role was viewed as one of treating, and not preventing illness. Conclusions: These results indicate that primary care physicians may not be the most suitable for promoting physical activity in their older adult patients.

P13
DETERMINING THE DISCRIMINATIVE VALIDITY OF THE MCGILL INGESTIVE SKILLS ASSESSMENT (MISA) IN A GERIATRIC POPULATION

Charmine Francis, Erika Gisel and Sharon Wood-Dauphinee.
McGill University, Faculty of Medicine, School of Physical and Occupational Therapy, Montreal, Quebec

INTRODUCTION: Stroke is associated with a high prevalence of dysphagia in the elderly population (Health Canada, 2003). Few dysphagia assessments exist with adequate psychometric properties for use with the elderly. The McGill Ingestive Skills Assessment (MISA; Lambert 2002) is a recently developed mealtime observational tool aimed at evaluating the functional aspects of the oral phase of ingestion. RESEARCH OBJECTIVE: This ongoing study aims at determining the discriminative validity of the MISA by assessing known/extreme groups of elderly individuals presenting with stroke, who have been admitted to an acute-care hospital or rehabilitation center. METHODS: Nine subjects out of an expected sample of 60 patients (65years and older) have been recruited from stroke units in acute-care hospitals and rehabilitation centers. Patients are allocated to one of two groups according to their current ingestive performance: 1) individuals with stroke, without dysphagia, who are on a regular diet, 2) individuals with stroke and dysphagia, who are on a pureed diet (irrespective of liquid intake). PROCEDURE: All recruited subjects are evaluated with the MISA and a comprehensive chart review is conducted. RESULTS: The Mann-Whitney test was employed to determine the difference between the two known/extreme groups (no dysphagia and dysphagia). Preliminary findings (n=9) indicate that the Solid-ingestion scale, Liquid-ingestion scale and the MISA as a whole significantly discriminate (p< 0.05) between the two groups. SIGNIFICANCE: The discriminative validity will enhance the clinical utility of the tool for dysphagia management and promote further studies addressing the responsiveness of the MISA.

P14
DEVELOPMENT OF A SCREENING TOOL TO IDENTIFY OLDER PATIENTS IN EMERGENCY DEPARTMENTS AT RISK OF FALLS

Taitu Hailu and Jane McCusker
McGill University

Background: Falls in the elderly are a considerable cause of morbidity, mortality and use of health care services. Falls have multiple etiologic factors, both environmental and clinical, the study of which is crucial to prevention. Emergency department (ED) elderly patients in particular are at increased risk of adverse health outcomes. ED visits present invaluable opportunity for fall risk assessment. There are no validated fall screening tools for ED patients at present. Objective: We propose in this study to develop a screening tool, a short self report questionnaire (5-6 Y/N questions) to identify ED patients at increased risk for falls. Methods: A cohort of patients aged 65 and older from EDs of 4 acute-care hospitals in Montreal, Quebec (n=1673) were followed prospectively for 6 months. Twenty-seven screening items were collected as potential measures of risk factors for adverse health outcomes. Items include information on age, sex and other social and demographic variables, pre-morbid functional status, acute change in function, a history of chronic diseases and falls, presence of sensory impairments and mental problems, use

of medications and alcohol, recent hospital admission and emergency department visits, and perceived general health status. Administrative database information (hospital discharges, physician bills from the ED and elsewhere, and medication prescription) was also obtained for these patients for a period of one year preceding and following the ED visit. Predictors of falls will be analyzed from the 27 screening questions, firstly using univariate analyses. Outcomes will include self-reports of falls at 3 months, and 6 months follow-up and data on injuries obtained from the administrative data. Multivariate logistic regression will then be used to identify the best subset of items, further evaluated by sensitivity and specificity analyses and ROC curves. After this, we will conduct exploratory analyses to identify any other study variables which might improve predictive ability (e.g. specific medications, medical condition leading to the ED visit). Results: This research is in progress; we expect to have some preliminary results to present on research day. Conclusions: The outcome of this study will be a fall risk screening tool, easily administrable to ED patients and with demonstrated validity.

P15
RELATIONSHIP BETWEEN MUSCLE MASS AND METABOLIC PROFILE IN OBESE POSTMENOPAUSAL WOMEN: A MONET STUDY

Virginie Messier[1], Marie-Ève Lavoie[1], Lyne Messier[1], Lise Coderre[1], Diane Mignault[1], Denis Prud'homme[2] and Rémi Rabasa-Lhoret[1]
[1]Department of Nutrition, University of Montreal, Montreal, Quebec, Canada and, [2]School of Human Kinetics, University of Ottawa, Ottawa, Ontario, Canada

Background and aim: Lost of muscle mass with age can lead to sarcopenia which is defined as a gradual lost of skeletal muscle mass and strength that occurs with advancing age (1). Sarcopenia is believed to be associated with metabolic, physiologic and functional impairments and disability (1). Our aim was to compare the metabolic profile in pre-sarcopenic obese and obese postmenopausal women. Methods: The study population consisted of 137 obese postmenopausal women aged between 44 and 73 years old. The muscle mass index (MMI) was used to identify pre-sarcopenic subjects. MMI was calculated as proposed by Baumgartner and al.: appendicular LBM (kg)/height (m)2 (1).

Subjects were considered pre-sarcopenic if they had a MMI of 1 SD below the MMI of a younger population. We measured body composition, insulin sensitivity, blood lipids, liver enzymes, uric acid, inflammation markers, fasting insulin, fasting and 2-hours glucose, VO2 peak, resting metabolic rate (RMR), total energy expenditure (TEE) and physical activity energy expenditure (PAEE). Results: Nine subjects were found to be pre-sarcopenic. These subjects were matched to 9 obese women for age and % of BF. By design, pre-sarcopenic obese women had a significant lower MMI and appendicular LBM than obese women (P<0.05). No further differences between the groups were noted for body composition. Pre-sarcopenic obese women had higher levels of insulin sensitivity (P<0.05) and tended to have a better VO2 peak (P=0.080) than obese women. No differences between the groups were noted for blood lipids, inflammation markers, liver enzymes, uric acid, fasting insulin, fasting and 2-hours glucose, TEE, PAEE and RMR. Conclusions: In our study, pre-sarcopenic obese postmenopausal women do not display a worse metabolic profile since they present higher levels of insulin sensitivity and tended to have a better VO2 peak than obese postmenopausal women. Références 1) Baumgartner RN, Koehler KM, Gallagher D, Romero L, Heymsfield SB, Ross RR, et al. Epidemiology of sarcopenia among the elderly in New Mexico. American journal of epidemiology 1998; 147: 755-763.

P16
PERCEPTUAL AND COGNITIVE MECHANISMS OF AUDIO-VISUAL SPEECH PROCESSING IN AGING

Laura S. Copeland[1], Natalie A. Phillips[1,2,3], Jean-Pierre Gagné[4] and Madhavi Basu1[1]
[1]Department of Psychology/Centre for Research in Human Development, Concordia University, Montréal, Québec, Canada, [2]Centre for Research on Language, Mind and Brain, [3]Lady Davis Institute for General Research/Jewish General Hospital, Montréal, Québec, Canada and [4]Université de Montréal, Montréal, Québec, Canada

This study examined the benefit of visual cues (i.e., lipreading) during audio-visual speech processing. Four older and 13 young adults with normal vision and hearing thresholds were asked to identify the terminal word in sentences presented in a background of phonologically-correct noise and which provided varying

contextual cues: low, medium, and high context. The sentences were presented in blocks of 50 under auditory- alone (A) and audio-visual (AV) conditions in a counterbalanced, alternating fashion, so that the sentences were heard in the two different modalities across participants. Within each block of 50, an equal number of the three sentence contexts were intermixed. An increasing proportional gain in visual enhancement (VE) was observed with increasing contextual constraint in the young group. Preliminary results in older adults suggest a more variable pattern in VE.

P17
THE CONTRIBUTORY ROLE OF MEALS TO THE EVOLUTION OF NUTRITIONAL STATUS OF ELDERLY PATIENTS HOSPITALIZED AT A REHABILITATION UNIT

Danielle St-Arnaud McKenzie, M.J. Kergoat, L. Dube and G. Ferland G
Centre de recherche sur le vieillissement, Institut universitaire de gériatrie de Sherbrooke

OBJECTIVES: This study investigated meal patterns in a group of elderly patients admitted at a rehabilitation unit, and determined the contributory role of breakfast, lunch, and dinner to the evolution of nutritional status during hospitalization when controlling for the presence of inflammation. METHODS: This was a prospective observational study of 32 participants (22F/11H; 78.8y) not suffering from dementia, depression, malabsorption, or potentially hypermetabolic conditions. Participants' nutritional status was evaluated at admission and discharge (max. 6 weeks) using the Protein-Energy Malnutrition Index (PEMI1). This index is based on measures of BMI, % ideal body weight (% IBW), mid-arm circumference (MAC), triceps skin-fold (TS), albumin, total lymphocyte count and hemoglobin. C-reactive protein (CRP) was measured at admission. Energy and protein intakes were assessed 3 meals a day, every other day (total = 1477 meals; 46.2?14.6 meals/participant). RESULTS: Breakfast, lunch, and dinner respectively contributed 29.0%, 36.6% and 34.9% of daily energy, and 26.5%, 36.7%, and 37.8% of daily protein intake. Multiple linear regression analyses, controlling for normalized CRP values at admission, revealed that lunch energy intake predicted improvements in PEMI scores ($R2=0.193$, p=.049). Among the individual

nutritional indicators, lunch energy intake also predicted improvements in BMI ($R2=0.411$, p<.001), in % IBW ($R2=0.402$, p=.001), and in MAC ($R2=0.257$, p=.013). However, breakfast protein intake predicted improvements in albumin ($R2=0.210$, p=.033), and in total lymphocyte count ($R2=0.204$, p=.039). CONCLUSIONS: These results highlight a distinct contribution of meals to improving elderly nutritional status during hospitalization. Nutritional interventions aimed at geriatric patients could benefit from targeting optimal food intake earlier in the day rather than later. Furthermore, breakfast could prove to be a particularly important meal with respect to the immune function in this population. 1Thomas DR, Verdery RB, Gardner L, et al. A prospective study of outcome from protein-energy malnutrition in nursing home residents. JPEN. 1991;15(4):400–440.

P18
ADIPOSITY IS LINKED TO INSULIN RESISTANCE IN FRAIL ELDERLY PERSONS

Assia Hussaine[1], Tamas Fulop[2], Daniel Tessier[2], Abdelouahed Khalil[2], Isabelle Dionne[2], Bryna Shatestein[3], Pierrette Gaudreau[3] and José A Morais[1]
FRSQ - Axis of Nutrition and Successful Aging, [1]McGill University, [2]University of Sherbrooke, and [3]University of Montreal, Quebec

INTRODUCTION. Frail elderly persons (FEP) undergo changes in body composition, nutritional habits and physical activity, as well as hormones, pro- inflammatory and redox status that predispose them to the development of insulin resistance (IR). Our objective was to compare obese FEP (FO; BMI > 29kg/m2) with lean (FL; BMI < 24kg/m2) and healthy elderly (HE; BMI 24-29 kg/m2) in order to determine factors responsible for IR, as measured by the HOMA. METHODS. FEP were recruited from GDH or AGU and their healthy counterparts from the community. Twenty four HE (14 W, 10 M; 79±5 y, 70.4 ± 5.1 kg, 27.2±1.9 kg/m2); 17 FO (12 W, 5 M; 79±5, 90.4±3.2, 34.2±4.1) and 22 FL (16 W, 6 M, 84±5, 54.4±9.3, 21.2±2.8) had fasting venous blood, anthropometrics, body composition, dietary intake and physical activity assessed. RESULTS. The HOMA score was higher in the FO vs. FL (3.6±2.3 vs. 2.1±1.1, p <0.02) with a trend vs. HE (2.5±0.9, p = 0.076). The lean body mass and the triceps skinfold

(TSK) were lower in FL vs. FO and HE (39.2±7.5 vs. 47.8±8.2 vs. 45.6±8.5 kg and 12.5±4.6 vs. 25.0± 9.4 vs. 21.2±7.9 mm, p < 0.01). % body fat was different (FO vs. FL vs. HE: 26.0±9.7 vs. 44.1±9.7 vs. 34.9±7.3, p < 0.001). Physical activity was higher in HE vs. FO and FL (126±75 vs. 58±40 vs. 59±56, p < 0.02). The HOMA correlated positively with weight, BMI, TSK, Hb, and lymphocyte count (all, r ? 0.34- 0.49, p < 0.03) and negatively with C-HDL (r ? 0.33, p < 0.03). In multiple regression analysis, only BMI was retained and explained 27 % of the HOMA variability. Analysis of other biological markers is pending. CONCLUSION. Adiposity is the leading factor in IR and this even in FEP.

P19
AGE-RELATED DIFFERENCES IN INTERLINGUAL PRIMING: A BEHAVIOURAL AND ELECTROPHYSIOLOGICAL INVESTIGATION

Shanna Kousaie and Natalie A. Phillips
Department of Psychology/Center for Research in Human Development, Concordia University, Montreal, Canada

The literature regarding the representation of a bilingual's two languages is inconsistent. Furthermore, little research has investigated lexical ambiguity in a bilingual situation (i.e., interlingual homographs (IH), words with identical orthography but different meanings in two languages, e.g., COIN meaning 'money' in English and 'corner' in French). Some studies have suggested that there is preferential access to the meaning in one language, while others have found simultaneous initial access to both meanings. Little is known about the representation of IHs in the older bilingual speaker. In monolinguals, it has been suggested that there is an age-related decline in inhibitory control, limiting the ability of older adults (OAs) to ignore irrelevant information and, consequently, they may rely more heavily on compensatory strategies, such as context, to overcome this. This implies that bilingual OAs may benefit from a language context in a lexically ambiguous situation to a greater extent than young adults (YAs). We used response times (RT) and event-related brain potentials (ERPs) to investigate language selectivity and processing in highly proficient English-French bilingual young (18-35 years of age; n = 19) and older (65-80 years of age; n = 13) adults. Stimuli were triplets of words comprised of a language context cue, an IH, and a target, in a semantic priming paradigm. Language consistency between the cue and target were varied to investigate the effect of language context on the reading of an IH, e.g., SHOE – COIN – MONEY vs. SOULIER – COIN – MONEY. Data were analyzed using a series of ANOVAs. There was no significant interaction between age and language consistency for the RT data, suggesting that the OAs were not relying on context to a greater extent than the YAs. However, the ERP data did reveal age-differences which will be discussed in terms of language selectivity and processing in both the native and second language of bilinguals.

P20
AGREEMENT BETWEEN QUALITY ASSESSORS FOR LONGITUDINAL STUDIES

Sathya Karunananthan, Nadia Sourial, Mark Oremus, Christina Wolfson and Howard Bergman
Mcgill University, Université de Montréal

Introduction: There is no widely accepted tool for assessing the methodological quality of longitudinal studies. In the context of a systematic literature review on frailty in the elderly population, we developed a 13-item form for this purpose and examined its inter-rater reliability. Methods: Assessors used the form to rate the methodological quality of 56 articles. Ratings were done on a four-point scale (1 = poor quality; 4 = high quality). Each of the 13 items on the quality form had to be rated. Assessors also gave each article a subjective, overall methodological quality rating based on their views of the article as a whole. The overall rating used the same four-point scale as the item-specific ratings. Two assessors were randomly assigned to independently rate each article. Inter-rater reliability was assessed using the weighted kappa statistic. Results: Eight assessors participated in the quality assessments. Rating scores for overall article quality ranged from 2 to 4. Out of 112 total overall quality ratings (56 articles x 2 assessors), 18% of the ratings were scored a 2, 62% a 3, and 20% a 4. Assessors agreed with one another in 80% of cases. For disagreements, differences in score were never more than 1 point. The inter-rater reliability for the overall quality ratings was 0.74 (95%

confidence interval: 0.60 to 0.89). Conclusion: There was substantial agreement between assessors on the subjective rating of the overall quality of the studies. These findings suggest that our tool is a reliable means of assessing the methodological quality of longitudinal studies.

P21
L'UTILISATION DE L'APPROCHE MONTESSORI POUR UNE CLIENTELE ATTEINTE DE DEFICITS COGNITIFS MODERES A SEVERES

Dominique Giroux, Line Robichaud and Martin Paradis.
Université Laval

Introduction : Le choix d'activités répondant aux besoins des personnes atteintes de démence modérée à sévère est une préoccupation de plus en plus importante chez les intervenants qui vivent une augmentation constante de cette clientèle dans les institutions d'héberbement. Ceux-ci tentent donc de cibler les activités les mieux adaptées aux capacités et besoins de ces personnes. Les activités crées par Maria Montessori au début du siècle dernier, bien que conçues d'abord pour les enfants, semblent adaptées à cette clientèle. En effet, elles permettent de combler les besoins d'accomplissement de soi des personnes âgées tout en étant facilement adaptables à leurs capacités. Méthode : Il s'agit d'une étude quasi-expérimentale où les participants sont comparés à eux-mêmes au cours de leur participation à trois types d'interventions : sans activité proposée, en activités régulières de loisirs et en activités Montessori. L'humeur rapportée par la personne, l'affect observé, les comportements perturbateurs observés et le degré de participation à l'activité sont mesurés en situation réelle et en différé à partir d'une vidéo. Résultats : Les résultats démontrent que les activités Montessori ont un effet positif significatif sur l'affect et sur la participation à l'activité. Ils supportent l'hypothèse que lorsque les activités correspondent aux besoins et capacités de la personne atteinte de démence, ces effets positifs s'observent aussi sur les comportements et sur l'affect. Conclusions : La présente étude a permis de corroborer les écrits scientifiques et d'apporter des éléments supplémentaires sur les effets positifs de l'utilisation des activités et de la philosophie Montessori avec les personnes atteintes de démence modérée à sévère sur la satisfaction de leurs besoins psychologiques de base, sur leur bien-être et, par le fait même, sur leur qualité de vie.

P22
EFFETS D'UN BREUVAGE DE GLUCOSE SUR LE CONTROLE DE L'ATTENTION CHEZ DES AINES SAINS

Nathalie Castonguay[1], Christine Gagnon[1], Carol Greenwood[2] and Louis Bherer[1].
[1]Université du Québec à Montréal, département de psychologie et [2]Université de Toronto, département des sciences nutritionnelles.

Le glucose est un sucre indispensable au fonctionnement du cerveau et de faibles augmentations du taux de glucose sanguin ont montré une amélioration des performances cognitives chez les aînés (Kaplan, 2000).Le rôle du glucose sur les performances cognitives dépend de la régulation du glucose (RG),souvent moins efficace chez les aînés que chez les jeunes.Les études s'intéressant au lien glucose et cognition chez les aînés ont essentiellement étudié la mémoire et aucune n'a porté sur le contrôle attentionnel.On sait que l'âge affecte aussi des fonctions plus spécifiques telles que le contrôle attentionnel et les fonctions exécutives(Bherer et al., 2004, 2006).Cette étude en cours d'exécution vise à mieux comprendre le rôle du glucose dans les déficits d'attention des personnes âgées en s'intéressant à des mécanismes attentionnels élémentaires connus pour être touchés avec l'âge (alternance,inhibition).Le traçage des pistes A et B et l'épreuve du Stroop sont des tests cliniques standardisés qui permettent de mesurer ces mécanismes.L'objectif est de vérifier l'impact d'un breuvage de glucose et de la RG sur la performance à ces tests en utilisant une méthodologie déjà éprouvée dans les études sur le vieillissement mnésique(Greenwood, 2003).40 sujets de 60 ans et plus sont répartis entre le groupe glucose et placebo (saccharine).Ils sont d'abord évalués globalement sur leur fonctionnement cognitif de base,d'attention et de mémoire,pour ensuite être testés sur leurs performances cognitives après l'ingestion du breuvage.5 ponctions faites à l'aide d'un glycomètre servent à mesurer les variations du niveau de glucose sanguin suite à la prise du breuvage ainsi que l'aire sous cette courbe (RG).L'hypothèse testée ici est que l'effet du glucose sur la cognition n'est pas spécifique à la mémoire et donc les aînés du groupe glucose

performeront mieux que ceux du groupe saccharine aux tests d'attention.De plus, il devrait y avoir une relation positive entre la RG et les performances en attention.Des analyses de variance et des corrélations permettront de tester l'hypothèse que l'ingestion de glucose et une bonne RG peuvent avoir un effet bénéfique sur les performances cognitives des aînés.

P23
OPIOID INDUCED RESPIRATORY DEPRESSION WITH THE ADDITION OF PREGABALIN
Akash Girn and David Lussier
McGill University

Purpose Respiratory depression is the most feared adverse effect of opioids. Whereas it is infrequent with stable doses of opioids, it can occur if the pain intensity is significantly reduced following an anesthetic procedure (e.g., epidural steroid injection, celiac block). It has however never been reported following good pain control resulting from the addition of an adjuvant analgesic to a stable dose of opioids. Results An 85 year old female was suffering from severe neuropathic pain secondary to a right L5 radiculopathy despite being treated with a stable dose of transdermal fentanyl 62,5 mcg/h q72h. The anticonvulsant pregabalin (Lyrica®) was initiated at a dose of 25 mg bid. Over the next 5 days, she experienced very good pain relief and became almost pain free. Ten days after the initiation of pregabalin, she became progressively sedated and bradypneic. Upon arrival to the emergency room, she was unconscious, bradypneic (respiratory rate 8/minute) and had a respiratory acidosis (ph 7,23, pCO2 67). The decreased level of consciousness and respiratory depression responded to an intravenous infusion of naloxone 8mcg/min, within one hour. The fentanyl patch was discontinued and the pain remained well controlled with pregabalin 25 mg bid. Conclusion When the addition of an adjuvant analgesic to a stable dose of opioids provides significant pain relief, the patient should be monitored closely for the development of sedation and respiratory depression.

P24
WHEN OPPORTUNITY KNOCKS: REGRET AND ACTIVITY LEVELS IN EARLY RETIREES
Jamie Farquhar, Carsten Wrosch and Dolores Pushkar
Concordia University

Despite increases in life expectancy, individuals are not necessarily living healthier lives with many older adults experiencing psychological and physical stressors (Lenze et al., 2001). Regret is a common psychological stressor that has been shown to impair older adults' quality of life (Wrosch et al., 2005). Theoretically, regrets can serve two functions. They can either motivate a person to change the undesired conditions or contribute to depression and health problems (Wrosch et al., 2005). The specific function of regret typically depends on a person's opportunity to undo the negative consequences of the regretted events. Due to the nature of the aging process, older adults often lack these opportunities. However, there may be specific stages in later adulthood, such as the transition from work to retirement, that provide better opportunities (e.g., time) for undoing regretted events. In the current study, the regrets of a large sample of recent retirees from Montreal (N = 463) were examined. The purpose of this investigation was twofold. First, we examined the domains of the retirees' regrets. Regrets were coded as pertaining to one of 12 life domains (based on Roese, 2005). In descending order, the six most popular regret domains include: education (17.4%), career (15.1%), romance (13.6%), family (12.8%), parenting (9.5%), and self (5.6%). The second purpose of the current investigation was to determine if regret could play a beneficial role in retirees' quality of life. It was hypothesized that regret may motivate active behaviors, especially when the regret has the potential to be undone. To explore this, the opportunity and engagement to undo the regretted behaviour was examined along with a measure of the retirees' level of activity (i.e., EAQ; Pushkar et al., 1997). In support of our hypothesis, older adults reported elevated levels of activity if they engage in undoing their regrets when the opportunities are favorable. This finding suggests that regret plays an important role in determining older adults' activity levels in the early stages of retirement. Overall, this study provides a more sophisticated understanding of the types of regrets older adults

are experiencing and the role regret can play in older adults' quality of life. The implications of these findings for successful aging are discussed.

P25
LEARNING WHILE HAVING FUN: THE USE OF VIDEO GAMING AS A METHOD OF TEACHING GERIATRIC MEDICINE TO MEDICAL STUDENTS
Jessica Labranche, Shek Fung, Nancy Posel, David Fliszer and Gustavo Duque
McGill University

BACKGROUND: Home visits are an important part of the geriatric care. Although most health professionals perform home visits, there is not a structured method to perform them. In addition, in-training health professionals' exposure to home visits is limited due to logistical reasons. We developed a new method for health professionals to learn how to perform an effective home visit combining 3D virtual reality with video-gaming. AIMS:1- To learn the principles of a home visit using 3D virtual reality. 2- To determine the usefulness of video gaming (edutainment) in health care education. METHODOLOGY: A virtual environment was created simulating a patient's house that the students were able to explore. Medical students are expected to click on those elements that they consider as either risk factors for falls or harmful for the patient. Students are awarded with a point for every correct click whereas penalized with one less point if clicking on the wrong factor. Students have to play against time and distracters. At the end of the game the students receive feedback on the chosen elements which were right or wrong. Finally, evaluation of knowledge is performed using pre and post-tests. SUMMARY AND RESULTS: This method has shown to have a high level of engagement associated with improvement on knowledge. Additionally, users' feedback recognizes it as an innovative approach to the teaching of health sciences. In summary, this method provides medical students with a fun and structured experience that has an effect not only in their learning but on their understanding of the particular needs of our elderly population.

P26
EFFECT OF FOOT POSITION ON THE CENTRE OF PRESSURE PROFILE DURING SIT-TO-STAND TASK IN HEALTHY CONTROLS AND PATIENTS WITH HEMIPARESIS
Cyril Duclos, Sylvie Nadeau, Denis Gravel and Julie Lecours
Centre de Recherche Interdisciplinaire en Réadaptation, Institut de Réadaptation de Montréal

The sit-to-stand transfer is highly demanding on dynamic stability, particularly with aging or stroke, since it requires the upper-body segment to quickly move forward and upward. Previous studies in stroke patients have shown the influence of foot position on weight-bearing asymmetry but none has reported its effect on the position of the centre of pressure (CP) in the base of support during the whole task. This would provide data on dynamic stability requirements during the task. Seventeen subjects (mean age: 51.7 ± 12.3 yrs), with chronic hemiparesis due to stroke, and 14 controls (56.2 ± 11.3 yrs) were asked to stand up, from being seated in a chair at their natural speed. 3D kinematics and CP position were recorded during the entire task. The position of the feet was either spontaneous or asymmetric, with the affected (stroke patients) or dominant (healthy subjects) foot placed behind. The CP displacement was calculated according to the midline of the base of support at each 10% of the task. ANOVA and t-tests were used to assess the effects of foot position and subject group on the CP asymmetry at various percentages of the task. In the spontaneous foot condition, the stroke patients were significantly more asymmetrical than the controls, with their CP deviating laterally towards the non-paretic side (max. values: 36 ± 34 mm vs. 3 ± 17 mm; $p < 0.05$) when standing up. This was observed in the middle of the task, from 10% before seat-off to 30% after. With their paretic foot placed behind, the patients' CP position (20 ± 43 mm) no longer differed from that of the controls performing spontaneously (12 ± 20 mm). As shown previously with weight-bearing distribution, the CP profile was greatly affected by the foot position during the sit-to-stand transfer, mainly around seat-off. From this profile, one might infer that, in addition to increasing the symmetry of weight-bearing, rising from a chair with the paretic foot placed behind the non-paretic foot does not increase the

risk of falling laterally in individuals with stroke. However, a more complex model of dynamic stability would need to be applied to the sit-to-stand task to support this last finding.

P27
RECOVERY OF FUNCTIONAL WALKING CAPACITY IN THE ELDERLY SURGICAL PATIENT

Carolina Moriello[1,2], Nancy E. Mayo[1,2], Franco Carli[3] and Liane Feldman[4]
[1]*Division of Clinical Epidemiology, McGill University, Montreal, Canada, [2]School of Physical and Occupational Therapy, McGill University, Montreal, Canad,. [3]Department of Anesthesia, McGill University, Montreal, Canada and [4]Department of Surgery, McGill University, Montreal, Canada.*

Objective: The objective of this study is to estimate the extent to which age is a factor in recovery of functional walking capacity after colonic resection. Methods: The data for the current study was obtained from a randomized trial of patients undergoing scheduled colonic resection. The outcome was recovery of functional walking capacity (6 Minute Walk Test) to within 20 m. of baseline at 4 and 8 - weeks post-surgery. Results: A total of 63 subjects participated. At 4 weeks post surgery, excellent recovery to above baseline was observed for 15% of persons under 70 years (n=47) compared with 6% (n=1) for persons over 70 (n=16); poor recovery (less than 20 m of baseline) was observed for 57% and 75%, for younger and older, respectively. By 8 weeks post-surgery, excellent recovery was observed for 34% of younger subjects but still only 6% of older subjects; the proportions for poor recovery were 36% and 56%, for younger and older, respectively. These differences were associated with a p-value of p<0.01. Conclusion: Evidence has been provided that age is an important factor to consider in recovery post surgery in functional walking capacity. Over all ages, 40% of people have not recovered to baseline function two months after colonic surgery. Interventions to improve this outcome need to be considered particular in the elderly who are at highest risk for disability following surgery.

P28
CLINICAL EXPERIENCE OF PHYSICIANS INVOLVED IN CANCER TREATMENT MANAGEMENT OF OLDER PATIENTS: A QUALITATIVE INTERVIEW STUDY

Matine T.E. Puts, V. Girre, J. Monette, M. Monette, D. Wan-Chow-Wah, C. Wolfson and H. Bergman.
Centre for Clinical Epidemiology and Community Studies/Solidage Research group, Lady Davis Institute for Medical Research, Jewish General Hospital, McGill University, Montreal Quebec.

Introduction: Cancer is an increasing health problem in older persons. There is little current data to guide the decision-making process in the treatment of older cancer patients. While there have been a few surveys on how oncologists manage these patients there are no qualitative studies concerning the challenges oncologists face in the treatment of these. The aim of this study was to explore how physicians manage the treatment of older cancer patients. Methods: Interviews with physicians involved in cancer treatment using semi-structured open-ended questions. Sample: Physicians at the Jewish General Hospital. Analysis: Grounded Theory approach. Results: 4 medical oncologists, 3 hematologists, 4 pulmonary physicians and 3 physicians from other departments with clinical experience ranging from 1.5 to 33 years participated. All interviewed physicians involved in cancer treatment have developed an assessment of their patients including performance status, comorbidity, medication use, cognition, nutrition, social support, mobility/transportation, living situation, psychosocial functioning. No formal assessment tools are used. The management of these patients varied between physicians with regard to: sharing treatment decisions, treatment plan, and follow-up care. Communication with older patients differs from that with younger patients with regard to family dynamics and may be hampered by cognitive problems. Half of the physicians didn't find the care for older patients different than the care of younger patients. Half of the physicians reported having little collaboration with geriatricians, in partly due to the time delay for a geriatric consultation. Half of them reported wanting a geriatric clinic within the oncology department and would like a geriatrician to attend their tumor board to

identify problems that might interfere with cancer treatment. Conclusions: physicians involved in the care for older patients assess multiple domains of functioning. Care for older cancer patients might be improved by more collaboration between geriatricians and other physicians involved in cancer treatment.

P29
THE ASSOCIATION BETWEEN HEALTH AND FUNCTIONAL STATUS, AND OUTCOMES OF CANCER TREATMENT IN OLDER NEWLY DIAGNOSED CANCER PATIENTS: A PROSPECTIVE PILOT STUDY

Martine T.E. Puts, J. Monette, V. Girre, C. Wolfson, D. Wan-Chow-Wah, C. Pepe, L. Panasci, M. Basik, F. Retornaz, G. Batist and H. Bergman.
Centre for Clinical Epidemiology and Community Studies/Solidage Research Group Lady Davis Institute for Medical Research, Jewish General Hospital, McGill University, Montreal.

Introduction: Older cancer patients may not receive optimal treatment because of limited data available to guide decision-making. Therefore, it remains challenging for oncologists to predict who can tolerate treatment and which older cancer patient is at risk for complications. The concept of frailty may be a useful way to characterize vulnerability, in order to optimize treatment for older cancer patients. Objectives: To evaluate the recruitment strategy and the ability to retain subjects and the feasibility of using the selected measurement tools in this population and to describe the health and vulnerability of older cancer patients. Methods: An observational prospective cohort study. The baseline interview will be conducted before the start of treatment. A second and third face-to-face interview will be conducted after 3 and 6 months. In addition, patients will also be called at 1.5 and 4.5 months following the baseline interview and a short questionnaire on self-report of functional status and treatment toxicity will be administered. Sample: Older cancer patients referred to the Segal Cancer Center of the Jewish General Hospital, outpatients, aged 65 and older with a new diagnosis of solid tumor with or without metastasis (breast, colorectal or lung cancer) will be eligible to participate. Data will be collected on demographics, on health (co morbidity, medication use and self-rated health),

cancer related information (e.g. type of cancer, stage and treatment regime), functional status; activities of daily living, instrumental activities of daily living, functional limitations, frailty markers (nutrition, cognition, mood, mobility, strength, energy, physical activity), lifestyle factors, pain, social support, and quality of life. Primary outcome measures: change in health and vulnerability and treatment toxicity. Conclusion: This pilot study will contribute to the best design for the longitudinal prospective cohort study on health and vulnerability in older newly diagnosed cancer patients.

P30
LES COMPORTEMENTS FORMELS ET INFORMELS DE SOUTIEN A DOMICILE AUX PERSONNES AGEES : FONDEMENTS D'UNE RECHERCHE DOCTORALE

Nicolas Rousseau, Jean-Pierre Lavoie and François Béland
Université de Montréal

Les amis, les voisins et surtout les familles représentent la principale source de soutien à domicile aux personnes âgées ayant des incapacités. En dépit des services offerts par l'État, la majeure partie du soutien à domicile à ces personnes continue en effet de provenir de source informelle. En raison de l'ampleur de la charge qui leur incombe et à ses conséquences sur leurs vies, des groupes de citoyens comme le Regroupement des aidantes et aidants naturel(le)s de Montréal (RAANM) appellent à un débat de société sur le partage des responsabilités de soutien entre les familles et l'État. Sur le plan empirique, des études scientifiques tentent depuis le milieu des années 1980 de comprendre quelle est l'évolution, dans le quotidien des personnes âgées, des comportements formels et informels de soutien à domicile. Le rôle explicatif crucial de l'état de santé des personnes âgées sur l'évolution de ces comportements a ainsi été identifié. Toutefois, la situation particulière des personnes âgées ayant plusieurs problèmes de santé et des besoins d'aide complexes n'a pas été décrite dans ces études. Aussi, les données analysées sont surtout issues d'enquêtes transversales. Ces dernières se limitent à un seul type de soutien social – le soutien social de type instrumental – et à une seule dimension du soutien social – le soutien reçu. Enfin, les variations qui existent dans l'organisation des programmes de services à

domicile n'ont été ignorées jusqu'ici. Étant donné les faiblesses de ces études et le débat actuellement en cours au Québec sur le partage des responsabilités de soutien à domicile, cette communication présente les fondements d'une recherche doctorale réalisée dans le but de mieux comprendre la relation entre l'état de santé des personnes âgées et l'évolution des comportements formels et informels de soutien à domicile dont elles font l'objet.

P31
DEFECTIVE RETRO-TRANSLOCATION CAUSES LOSS OF ANTI-BAX FUNCTION IN HUMAN FAMILIAL PRION PROTEIN MUTANTS

Julie Jodoin[1,2], Stéphanie Laroche-Pierre[1,2], Cynthia G. Goodyer[3] and Andréa C. LeBlanc[1,2]
[1]Bloomfield Center for Research in Aging, Lady Davis Institute for Medical Research, Sir Mortimer B. Davis Jewish General Hospital, Montréal, Canada. [2]Department of Neurology and Neurosurgery, McGill University, Montréal, Canada, [3]Department of Pediatrics, McGill University, Montréal, Canada.

Prion protein (PrP) inhibits the activation of pro-apoptotic Bax in primary human neurons and MCF-7 cells. Since neuronal apoptosis occurs in human prion diseases, here, we examine the anti-Bax function of familial PrP mutants. All Creutzfeldt-Jakob disease and Fatal Familial Insomnia-associated prion protein mutations partially or completely lose the anti-Bax function in human neurons and, except for A117V and V203I, in MCF-7 cells. The ability of the mutants to protect against Bax-mediated cell death is divided into 3 groups: (I) retention of anti-Bax function in both the Val129 and Met129 mutants, (II) retention of anti-Bax function only in Val129 mutants, and (III) reduction or no anti-Bax function in Val129 and Met129 mutants. The loss of anti-Bax function in these PrP mutants correlates completely with a significant decrease in the production of cytosolic PrP; a form of PrP previously shown to have anti-Bax function in human neurons. Co-transfection of the full-length PrP mutants with wild type or mutant cytosolic PrP, but not with wild type full-length PrP, rescues the anti-Bax function of PrP. The results show that the failure of PrP mutants to produce cytosolic PrP is responsible for the loss of anti-Bax function and that the effect of the PrP mutants is dominant over wild type PrP. Furthermore, these results

imply that mis-folded PrP that escapes retro-translocation could accumulate at the cell surface and cause neuronal dysfunction.

P32
THE EFFECT OF REPETITIVE TRANSCRANIAL MAGNETIC STIMULATION IN STROKE

Ka Wai Leong and Lisa Koski
Divisions of Geriatrics & Clinical Epidemiology

Background: Age is an important risk factor for cerebrovascular accident (1). Six months after stroke, weakness and disability of the upper extremity (UE) is still present in 80% of patients (2). To date, rehabilitation approaches have limited effectiveness for improving the function of the affected UE after stroke (3). Repetitive transcranial magnetic stimulation (rTMS) of the brain shows promise to enhance motor function after stroke (4-6). Objective: To estimate the extent to which 9 rTMS sessions improve cortical excitability and UE function. Design: This is a within-subject, repeated-measures study of changes in motor task performance and corticomotor excitability before and after 9 sessions of rTMS. Intervention: Nine sessions of 1-Hz rTMS were applied over the unlesioned motor cortex in a sample of 7 chronic stroke patients with UE impairment. Outcome measures: Motor function was measured using the Box and Blocks Test (BBT) and the Wolf Motor Function Test (WMFT). Corticomotor excitability was evaluated in terms of motor evoked potential amplitudes and resting motor thresholds (RMT) measured in the same muscle from both hands. Analysis: We calculated effect sizes and confidence intervals for each outcome measure. Changes in motor function were compared with changes in corticomotor excitability to evaluate recovery. Results: MT for the lesioned hemisphere declined by 6% maximum stimulator output (N = 5, effect size(ES): 0.9, 90% confidence limits (CL): +0.8 to -13.2). The maximum motor evoked potential amplitude for the lesioned side increased by 260 ?V (N = 5, ES: 0.9, 90% CL: -0.02 to +0.54). Motor task performance improvement with the affected UE was found to be 2 blocks (N = 7, ES: 0.5, 90% CL: +5.17 to -1.17) in the BBT, and up to 15 seconds (N = 7, ES: 0.6, 90% CL: +4.48 to -34.32) for the WMFT. Improvements in corticomotor excitability were not related to improvement in motor task performance at the individual subject level. Conclusions: There is

early evidence of improvement in the observed variables. However, this small sample is problematic for the examination of the treatment effect of rTMS. 1. Higgins N.E., J Rehabil Res Dev. 42, 65 (2005); 2. Nakayama H.et al. Archi Phys Med 75 394 (1994); 3. Teasell R et al., "Evidence-Based Review of Stroke Rehabilitation: Upper Extremity Interventions" (2005); 4. F. Fregni et al., Stroke 37, 2115 (2006); 5. Y. H. Kim et al., Stroke 37, 1471 (2006); 6. Takeuchi N. et al, Stroke 36, 2681 (2005)

P33
EXECUTIVE FUNCTIONING IN MILD COGNITIVE IMPAIRMENT, FRONTOTEMPORAL DEMENTIA, AND LEWY BODY DEMENTIA

Erin K. Johns[1], Natalie A. Phillips[1,2], Sylvie Belleville[4], Diane Goupil[4], Lennie Babins[3], Nora Kelner[3], Bernadette Ska[4], Brigitte Gilbert[4], Gary Inglis[3], Fadi Massoud[4], Michel Panisett[3] and Howard Chertkow[3]
[1]Centre for Research in Human Development, Concordia University, [2]Lady Davis Institute for Medical Research, McGill University, [3]McGill University and [4]Université de Montréal

Correct diagnosis of the different causes of dementia is based on a patient's clinical presentation. Therefore, it is important to document the profile of cognitive functioning in these patients, since this will lead to greater diagnostic precision and a better understanding of prognosis and early treatment options. The present study focused on executive functioning in mild cognitive impairment (MCI), frontotemporal dementia (FTD), and Lewy body dementia (LBD). Deficits in executive functioning have been reported in these three groups, and this study aimed to describe and compare the profile of executive functioning in these groups. We examined performance on 6 measures of executive functioning collected by the Consortium on Cognition and Aging of the Quebec Research Network on Aging for 40 MCI, 24 FTD, and 15 LBD patients. Results were compared to standardized normative values. Overall, MCI patients were less impaired than FTD and LBD patients, who showed equally severe impairment. Interestingly, a discriminatory function analysis with FTD and LBD patients revealed that the two groups could not be discriminated based on these measures, suggesting that the two groups have a similar

profile of executive abilities. Across groups, working memory (WM) and verbal fluency were relatively preserved, with only FTD and LBD patients exhibiting deficits on one WM measure (-1.7 *SD* and -1.6 *SD*, respectively) and on semantic fluency (-2.3 *SD* and -2.1 *SD*), but not phonemic fluency. In contrast, all groups showed deficits in inhibitory control, which were moderate in MCI patients and pronounced in FTD and LBD patients (-1.6 to -10.1 *SD*). MCI patients also exhibited mild deficits on some measures of planning ability (-1.1 to -2.2 *SD*). These results indicate that inhibitory control is the domain of executive functioning most greatly affected in patients with dementia (FTD and LBD) and in those at risk (MCI), and that the degree and pattern of executive function impairment is similar in FTD and LBD.

Oral Presentations AM Session / Session des présentation orales AM
11:00 – 12:30

O1
EFFECT OF CALORIC RESTRICTION ON BONE MARROW ADIPOGENESIS OF AGING RATS

Alexandre Elbaz, F. Picard, G. Grenier, P. Reboul, P. Ferland & Gaudreau and G. Duque
Lady Davis Institute, Division of Geriatric Medicine, McGill University, Network for Aging Research. Research Centre on Aging, Sherbrooke Geriatric University Institute, Department of Surgery, Service of Orthopaedic

The role of increasing bone marrow adipogenesis remains unknown. Caloric restriction delays the aging process in several organisms and diminishes the incidence of disease. Although caloric restriction (CR) was shown to increase bone mass in aging mammals, its mechanism remains unknown. We hypothesize that CR could affect bone marrow adipogenesis and enhance bone formation AIMS: To determine the effect of CR on age-related bone marrow adipogenesis and identify if changes in general adiposity due to caloric restriction correlate with bone marrow changes. METHODS: Male Sprague Dawley rats (8 month-old) were exposed for 12 months to a CR of 40% in comparison to rats fed to satiety. A control group was fed ad libitium. Changes in BMI, weight,

length and serum leptin were quantified. At 20 months, animals (n= 20) were sacrificed and tibiae were obtained for both oil red O (fat volume) and immunohistochemistry for adipose related factors (PPAR?2, leptin and CEBP?). RESULTS: CR induced a significant change in weight, BMI and serum leptin levels compared to the ad libitium group (p<0.001).The results of the quantification of fat volume and adipocytes number were similar in both groups. Expression of PPAR?2 and CEBP? was significantly higher in CR groups vs the ad libitium ones (p<0.01). A significant change in serum level of leptin between caloric restricted and ad-libitium groups was observed (6.1±0.5 vs 69± 6ng/mL), changes in leptin expression inside the bone marrow were insignificant. CONCLUSION: Contrary to the effect of CR in visceral and subcutaneous fat, bone marrow fat plays a "non-metabolic" role as suggested by no changes in fat volume and leptin expression in the bone marrow. Our data demonstrates that bone marrow adipogenesis in age-related bone loss has a different physiological role than peripheral fat. Fat accumulation is an important feature of osteoporosis in older adults, its replacement with new bone should be the right approach for the treatment and prevention of age-related bone loss.

O2
QUALITE DE VIE, ARRET DE TRAITEMENT ET PLANIFICATION DES SOINS DE FIN DE VIE DE LA CLIENTELE QUEBECOISE EN HEMODIALYSE : COMPARAISON DES PERCEPTIONS SELON L'AGE

Judith Gagnon, Jocelyne Saint-Arnaud, Marc Bourdeau, Claire Chapados et José Coté
Université de Montréal

Selon le rapport du Registre canadien des insuffisances et des transplantations d'organes(RICTO) 2005, le nombre de patients inscrits en dialyse rénale a subi une augmentation de 111% entre 1993 et 2002; plus de la moitié des nouveaux patients inscrits ont 65 ans et plus et le nombre de patients âgés de 75 ans et plus a quadruplé. Les résultats d'une enquête sur l'impact de la rareté des ressources en dialyse au Québec (Saint-Arnaud et al, 2003) indiquent que les patients dialysés sont plus âgés et malades, qu'ils sont fréquemment hospitalisés et que la question des traitements de fin de vie n'est abordée qu'au moment où l'état de santé du patient se détériore grandement. Objectifs de la présente étude : dégager les similitudes et les différences entre les personnes de moins de 65 ans et celles de 65 ans et plus sous hémodialyse quant à leur perception (1) de leur qualité de vie, (2) des traitements de fin de vie? Méthode : Devis mixte provenant de données secondaires d'une enquête par questionnaire (Saint-Arnaud, et al., 2003) auprès des patients de dialyse de 14 centres hospitaliers québécois. L'échantillon est constitué de patients en traitements d'hémodialyse hospitalière (n=244), selon qu'ils ont moins de 65 ans (n=121) ou 65 ans ou plus (n=123). Résultats: Les groupes diffèrent statistiquement selon la manière de choisir les traitements de maintien de la vie (p=0,04); les plus jeunes préfèrent choisir eux-mêmes, alors que les plus âgés préfèrent laisser le médecin choisir pour eux. En cas d'inaptitude, les plus âgés préfèrent donner priorité aux volontés des proches, alors que les plus jeunes préfèrent que le médecin donne priorité à leurs volontés (p=0,009). Les perceptions des groupes diffèrent aussi sur les raisons de cessation de la dialyse telles la mort imminente (p=0,01), la phase terminale (p=0,002) et un état de découragement (p=0,001). Pour les personnes plus âgées, ces raisons ne justifient pas l'arrêt de la dialyse. Par ailleurs, les patients plus âgés ont exprimé davantage leurs volontés de maintien de la vie à leurs proches (p= 0,02) et souhaitent le soutien de l'équipe de dialyse advenant une décision d'arrêt de traitement (p=0,02). Conclusion : Ces résultats indiquent que les personnes plus âgées ont d'avantage besoin de soutien de la part de l'équipe traitante dans les processus décisionnels reliés aux soins et aux traitements de fin de vie.

O3
ASSESSMENT OF BONE CHANGES IN AN ANIMAL MODEL OF HEALTHY AGING

Daniel Rivas, Janet Henderson, Lee Wei, Pierrette Gaudreau, Guylaine Ferland and Gustavo Duque
Division of Geriatric Medicine, Lady Davis Institute, Centre for Bone and Periodontal Research, McGill University; Centre Hospitalier de l'Université de Montréal.

Introduction: Inbred albino Lovain (LOU) rats have been proposed as a model of "healthy aging". Their characteristics are longevity, absence of obesity and low incidence of diabetes and cancer. In this study, we were interested not only on identifying their changes in bone

microarchitecture and adiposity but also to determine if osteoporosis is present in this model of healthy aging. Methodology: 24 LOU rats f (12 male and 12 female) at two different ages (4 and 24 month-old) were sacrificed and both side tibiae and femora dissected and fixed. Bone quality measurements (3D MicroCT, histomorphometry) as well as Von Kossa (mineralization) and oil red-O (adiposity) stainings were performed. Additionally, serum levels of estrogens, vitamin D, parathyroid hormone (PTH), N-telopeptide (bone resorption) and calcitonin (bone formation) were quantified. Results: At 4 months of age, both male and female show similar bone parameters. In contrast, while quality of bone in male rats remains the same at 24 months of age, female LOU rats show a significant deterioration in all histomorphometrical and microCT parameters ($p<0.001$). Additionally, osteoclastic activity in female rats does not correlate with their degree of bone loss suggesting that osteoblastic activity is reduced. This is confirmed by significantly low levels of alkaline phosphatase expression in bone and by lower levels of osteocalcin in serum of female rats ($p<0.001$). Additionally, no changes in serum levels of PTH were found in both aging groups. Finally, higher density of adipocytes and bone marrow adipogenesis was found in both, male and female old rats as compared to the young ones ($p<0.001$). Conclusion: In bone, LOU rats show contradictory results. While no changes are seen in male rats, female rats show a significant reduction in bone quality. Interestingly, contrary to the typical findings of peri-menopausal osteoporosis seen in other aging models, female LOU rats show the typical characteristics of senile osteoporosis. Finally, despite the absence of general obesity in this model, bone marrow maintains its adiposity suggesting that adipogenesis within the bone marrow is independent of adipogenesis in other organs.

O4
A MEMO REMINDING PHYSICIANS TO REASSESS THE INDICATION FOR ANTIPSYCHOTICS AMONG THEIR NURSING HOME PATIENTS WITH DEMENTIA

Dominique Hotte, Johanne Monette, Michèle Monette, Susan Gold and Nathalie Champoux
Sir Mortimer B. Davis Jewish General Hospital, Montreal; Maimonides Geriatric Centre, Montreal; Institut universitaire de gériatrie de Montréal, Montréal

INTRODUCTION: Atypical antipsychotics are used as first-line drugs to treat disruptive behaviours in patients with dementia, despite their uncertain benefits, adverse effects, and safety issues. In Canadian nursing homes, between 15% and 37% of patients receive antipsychotics. There is a tendency to keep the patients on antipsychotics for longer than six months, without reassessing their indication. As part of an interdisciplinary educational program implemented in a single nursing home, memos were sent to physicians for each of their patients taking an antipsychotic at the same dosage for longer than three months, reminding them to reassess the indication. METHODS: The memo was based on OBRA-87 regulations and was sent by the pharmacist during a six-month period. It contained the information on the antipsychotic prescription, along with multiple-choice and open-ended questions. Physicians were asked to identify symptoms and behaviours targeted by the antipsychotic and to consider a possible discontinuation. If discontinuing the antipsychotic at that time was not advisable, physicians were to explain the reasons. Physicians were then to return the memo to the pharmacist. RESULTS: A total of 130 memos were sent to six physicians, for 90 patients on antipsychotics. The response rate was 100%. Agitated psychotic symptoms (32%) and assertive and belligerent behaviours (25%) were the principal symptoms and behaviours targeted by antipsychotic prescribing. On 80 memos, physicians indicated that it was not advisable to discontinue the antipsychotic, mainly because the targeted symptoms were still present (64%). CONCLUSION: This memo was found to be an acceptable educational tool to help remind physicians to regularly reassess the antipsychotics prescribed to nursing home patients. A study will be conducted to evaluate this memo as a possible unique intervention, rather than just part of a whole educational program.

O5
DEVELOPING A METHOD OF MEASURING DEPRESSION POST-STROKE

Julie S. Margulis, Lois Finch, Johanne Higgins, Sydney Miller and Nancy Mayo
Concordia University and McGill University

Background: Persons with stroke are particularly vulnerable to the effects of depression due to the interaction between brain lesion, functional impact, and age. Measuring depression in this complex population is a challenge: Diagnostic tools do not provide a measure of the extent of depression; screening tools based on depressive symptomatology are not stroke-specific and do not provide a value that is mathematically or clinically meaningful. Many of the symptoms are sequlae of stroke and not indicative of depression and the burden of asking 30 or 40 questions about depression to someone after a stroke is unacceptable. Modern statistical methods are available to create parsimonious and hierarchical measures and, if applied to the measurement of depression, would provide both mathematical valid values and, through the application of adaptive testing, reduce the number of items required for accurate estimation to usually less than 10. Purpose: To create a ruler-like measure of depressive symptomatology for persons with stroke. Methods: Secondary analyses of a randomized trial to improve walking competency post-stroke. The 30-item Geriatric Depression Scale was transformed onto a logit scale. Rasch Analysis was used to establish unidimensionality and assess item fit, redundancy, and differential item functioning (DIF). Results: Only 17 items fit a hierarchical structure. The items ranged in difficulty from -1.881 to +1.184 logits, only 38% of the theoretical range of the underlying construct. Certain items were identified as potentially problematic as responses to these items depended upon gender, age and side of CVA rather than the individual's level of depression. Conclusion: The 17-item GDS is specific to post-stroke depression. Items from alternative depression inventories are being gathered to complete the lower and higher ends of the scale. This research is an important step towards accurately quantifying this important construct and will lead to a mathematically valid tool to measure the effect of interventions targeting depression post-stroke with a minimum of items.

O6
EFFECT OF PRE-STROKE USE OF ANTIHYPERTENSIVES, ANTIPLATELETS, AND STATINS ON ISCHEMIC STROKE SEVERITY AND EARLY OUTCOME IN A GERIATRIC POPULATION.

Amy Y. X. Yu, Mark R. Keezer, Bin Zhu, Christina Wolfson and Robert Côté
McGill University, Montreal, Quebec, Canada.

Background/Objective: Some studies have suggested that treatment with antihypertensives (AHT), antiplatelets (APL), or statins (STAT) decrease ischemic stroke severity, whereas others have not. We examined the effect of pre-stroke use of these medications on the initial severity and early outcome of ischemic stroke. Methods: We reviewed the charts of ischemic stroke patients presenting to the Montreal General Hospital within 2 days of stroke onset. Severe stroke was defined as a Canadian Neurological Scale score ?7. Poor early outcome was determined by a modified Rankin score >3 at 10 days post-stroke. Unconditional multivariable logistic regression analysis was used with adjustment for age, presence of diabetes mellitus, coronary artery disease, hypertension, atrial fibrillation, hyperlipidemia, and initial blood pressure. Initial stroke severity was an additional covariate for day 10 outcome. Results: Our study included 364 patients. The average age was 73 years old. We conducted three separate analyses, comparing the pre-stroke use of AHT, APL, or STAT (n=241, 158, 79, respectively) with patients who were not taking these medications (n=123, 206, 285, respectively). None of these drugs showed a significant protective effect. However, use of AHT showed a trend with more severe stroke and poor outcome at day 10 [OR=1.32(95%CI, 0.68-2.57), OR=1.56(95%CI, 0.69-3.49) respectively], while APL therapy resulted in a trend with better outcome at day 10 [OR=0.66(95%CI, 0.36-3.00)], as did STAT treatment [OR=0.63(95%CI, 0.29-1.36)]. Conclusions: None of the medications showed a significant impact on initial stroke severity and early outcome although the point estimates suggested that better early outcomes were associated with pre-stroke use of antiplatelets or statins, while severe stroke and poor early outcome was associated with pre-stroke use of antihypertensive medications.

Oral Presentations PM Session / Session des présentation orales PM
14:00 – 16:00

O7
HEALTH STATUS PROFILES AND SERVICE UTILIZATION IN A COMMUNITY-LIVING POPULATION OF FRAIL ELDERLY

Louise Lafortune[1,2,4], François Béland[1,2], Joël Ankri[4] and Howard Bergman[2,3]
[1]Department of Health Administration, Université de Montréal, [2]Solidage Research Group, Montreal, [3]Division of Geriatric Medicine, McGill University, Jewish General Hospital and [4]Laboratoire Santé et Vieillissement, INSERM U687, Paris

A recurring problem in evaluating interventions aimed at maintaining autonomy in frail elderly is the difficulty in capturing the heterogeneity that is so characteristic of their health states. Latent class models can be used to account for this heterogeneity and reveal groups of individuals that behave differently regarding their use of medico-social services. Objective: This study uses latent class analysis (LCA) to summarize health in multivariate modeling of services utilization in a population of community-living elders requiring complex care. Method: Data collected during the randomized trial of a system of integrated care for frail elderly (n=1164) is used to identify health profiles, i.e. classes. LCA models are fitted using the following health indicators: cognition, depression, chronic diseases, sensory limitations, mobility, basic and instrumental activities of daily living (ADL/IADL). Model fit is assessed using information criteria and likelihood-based tests. Mean annual costs are estimated for hospitalizations, ambulatory and long-term care, emergency and medical visits and medication. Accounting for the probability and intensity of service utilization, we estimated the relationship between mean annual costs, health profiles and sociodemographic characteristics. Results: Four substantially meaningful health profiles were identified (group prevalence: 23%, 11%, 36%, 30%). Cognition, chronic diseases and ADL all significantly contribute to the classification. The health profiles were found to be differentially related to utilization of services across the continuum of care and influenced by predisposing and enabling factors. Preliminary analyses suggest the profiles are sensitive to change in health states. Conclusion: Frail elderly can be grouped according to health profiles that retain the multidimensional nature of heath. These profiles can be used to study the complex relationship between health state, determinants of utilization and the configuration of medico-social services needed to maintain autonomy and allow elders to stay in their community.

O8
RETHINKING THE MEASUREMENT OF FUNCTIONING: AN EXAMPLE FROM STROKE

Lois Finch, Johanne Higgins, Sharron Wood-Dauphinee and Nancy Mayo
Division of Epidimiology, Royal Victoria Hospital

Measuring a person's ability to function independently is part of a standard evaluation in health care. Because of its complex nature numerous ordinal indices have been developed to interpret the impact of advancing age and disease on functioning. Although multiple indices are methodologically difficult, a single measure of functioning does not exist. A single measure formed by combining items from tests where performance is observed and questionnaires where a person reports on their performance could improve the understanding of functioning. The development of such a measure requires rethinking of the construct and its quantification. A conceptual framework the International Classification of Functioning (ICF) model of Functioning, Health and Disease has a coherent and definite content to which items indicative of functioning can be addressed, but does not quantify it. An analytical approach, Rasch analysis, could provide the quantitative framework. This analysis transforms ordinal observations onto an interval-like scale with the logit, or the log odds of the probability of success to the probability of failure, as the unit of measurement. This study purports to unite the components of functioning within the ICF through Rasch analysis to conceptualize, define, and quantify functioning in a single measure. Methods: A study of 235 subjects assessed 3-months post-stroke using 14 self-report and observational indices commonly utilized to evaluate stroke survivors was carried out. Information on important variables was also collected. Rasch analyses combined the items

across the ICF components and developed the measure. Items were retained based on fit to the Rasch model and relationship to the construct; reliability and validity were assessed. Results: The subjects were on average 71.6 (standard deviation: 12.5) years old, and predominately male (62%). The F3m functioning measure formed from the best 44 items evaluates limb movement, activities of daily living and participation. All items and persons fit the model reliably (0.96) indicating a stable hierarchy and validity was adequate. Conclusion: The simplicity of the F3m that incorporates the reality of performance and the perceptions of the person is its practicality and ease of interpretation.

O9
IN-VITRO KNOCK-DOWN OF LAMIN-A/C INHIBITS OSTEOGENIC DIFFERENTIATION OF MESENCHYMAL STEM CELLS

Rahima Akter, Daniel Rivas and Gustavo Duque
Lady Davis Institute for Medical Research, McGill University

In ageing bone, the amount of bone forming osteoblast decreases and on the contrary, fat forming adipocyte increases. This increase in adipogenesis and decrease in osteogenesis is due to age-related alterations in differentiation of mesenchymal stem cell (MSC). However, the factors that stimulate such shift in MSC differention with advancing age remain unknown. Recent studies have demonstrated the link between lamin-A/C, a component of nuclear membrane, and Hutchison-Gilford-Progeria Syndome, a premature ageing syndrome with severe bone loss. Although the bony changes observed in those cases suggested the role of lamin-A/C on osteogenesis no study has been pursued to detect the role of lamin-A/C on osteogenic differentiation of MSC. Previously, we have found a reduction in lamin-A/C expression in osteoblasts from old as compared to young mice. Furthermore, we have found that MSC differentiated into osteoblast had higher expression of lamin A/C than those differentiated into adipocyte. We hypothesized that the changes in expression of lamin-A/C are responsible for the alterations in the differentiation of MSC with aging. Specifically, reduced expression of lamin A/C has a negative impact on osteogenic differentiation of MSC. Methods: To see the effect of lamin-A/C inhibition, we will use

siRNA. MSC will be induced to differentiate into osteoblasts using osteoblast induction media. Simultaneously, different concentration of siRNA oligos for lamin A/C will be added to the media to identify the effect of different level of lamin A/C inhibition on osteogenesis. Cells treated with vehicle but without the oligo will be used as control. At different time intervals (week-1 & 2) osteogenic markers will be identified by RT-PCR, western blot, flow-cytometry. Finally, alkaline phosphatase and alizarin staining will be performed to assess osteogenesis and mineralization. Results: It is expected that inhibition of lamin-A/C will inhibit osteogenic differentiation. Experiments are ongoing and results will be shown at the meeting. Conclusion: In conclusion, age-related reduction in osteogenic differentiation of MSC could be associated with the reduced expression of lamin-A/C. As a result, lamin A/C could be used in the future as a therapeutic target for the treatment of age-related bone loss.

O10
IDENTIFYING FRAILTY USING THE ICF: PROOF OF CONCEPT

Caryn Nash, Nancy Mayo, Isabelle Gelinas and Carolina Moriello
MUHC/ McGill University

Introduction: Frailty is an increasingly important concept in the understanding and care of the elderly. The current lack of consensus regarding the components of frailty is hampering advances in service planning for the elderly. The International Classification of Functioning, Disability and Health (ICF) may be a workable framework for detection and staging of frailty as it provides a coding structure suited to the terminology that has grown around the frailty paradigm. Using the ICF, components of frailty could be translated into standardized functional status indicators (FSIs) which are compatible for electronic capture through population health databases and, thus, their availability would facilitate population health monitoring and research. Objective: This cross-sectional study intends to determine to what extent the language of frailty is compatible with the ICF. If compatible, this would support using the ICF model to facilitate standardization of terminology, identification of the outcomes and precursors that are crucial to understanding frailty and its impact, and standardization of assessment. Methods: Multidisciplinary raters

were asked to assign ICF codes to frailty language, derived from a comprehensive review of the frailty literature. Results: In total, 80% of the frailty language was compatible with the ICF. Impairments of body function and activity limitations/participation restrictions predominated, appearing 42% and 30% of the time respectively. Impairments of body structures were minimal (2%) and environmental factors were coded 20% of the time. No codes are available for personal factors. The 20% of the language that was not ICF compatible consisted of health conditions or diseases (65%) which are classified using the ICD-10, and are not appropriate for inclusion in the ICF. The remaining 35% were imprecise or indefinable words that can easily be misinterpreted, and their use should be discouraged. Conclusions: The ICF has been shown to be a useful framework to standardize the language of frailty. Development and utilization of universal functional status indicators will facilitate communication among healthcare professionals; enrich existing clinical and population health databases to facilitate research to inform practice and policy.

O11
FACTORS ASSOCIATED WITH 1-YEAR WEIGHT LOSS IN THE HEALTHY COMMUNITY-DWELLING ELDERLY: THE NUAGE STUDY

Danielle St-Arnaud McKenzie, Katherine Gray-Donald and Hélène Payette
Centre de recherche sur le vieillissement, Institut universitaire de gériatrie de Sherbrooke

OBJECTIVES: Weight loss, a key component of frailty in the elderly, is frequent and has serious consequences in terms of physical impairment, institutionalization and mortality. The literature on the reasons behind weight loss identifies age-related physiological changes, and social, psychological, and clinical factors but studies among healthy elderly adults have not targeted factors affecting dietary changes and weight loss with a view to weight loss prevention or reversal in its early stages. The objectives of this study were 1) to determine the incidence of >=5% weight loss in the NuAge cohort of apparently healthy community-dwelling participants between baseline and year-1 follow-up, 2) to investigate the associations of baseline demographic (age, sex), socio-economic/lifestyle (revenue, education) nutritional (macronutrient intake, appetite), and clinical (3MS, GDS,

illnesses and medications, albumin, total lymphocyte count) factors to this weight loss. METHODS: Incidence was calculated using the entire NuAge cohort (n=1793). The second objective was addressed using a comparison of those who lost >=5% body weight (WL) between baseline and year 1 and a group of weight stable participants (WS) defined as those with a weight change of +/-2% or less. RESULTS: Overall, we observed a small but significant mean decline in body weight of 0.52 kg at year 1 (p<.001). During this period, 167 participants (10.8%; 90 F/77M) lost >=5% of body weight (mean loss=7.1%, SD=2.7%; range=5%-19%) while 931 WS participants (60.3%; 450 F/481M) showed weight changes of +/-2% or less. T-test comparisons of WL vs. WS participants revealed that neither age nor gender was related to weight loss. Compared to WS participants, WL were slightly heavier at baseline (diff=.83 kg/m2, p=.043), had lower dietary energy, protein and lipid intake at baseline per unit of body weight (diff=1.7 kcal/kg, .09 g/kg, and .08 g/kg, respectively; all p's<.05), and had lower albumin (diff=.08 g/L, p=.002). CONCLUSIONS: Given the importance of weight loss as a determinant of the onset of frailty, further investigation is needed for a more in depth understanding of the natural history of weight loss in this population. These results are preliminary and multivariate analyses will be undertaken to identify independent predictors.

O12
BLOOD PRESSURE AND ANTIHYPERTENSIVE THERAPY AS PREDICTORS OF SHORT-TERM OUTCOME IN ACUTE ISCHEMIC STROKE IN A GERIATRIC POPULATION

Mark R. Keezer, Amy Y. X. Yu, Bin Zhu, Christina Wolfson and Robert Côté
McGill University, Montreal, Quebec, Canada.

Objective: To determine the effect of blood pressure (BP) and antihypertensive therapy (AHT) on early outcome in acute ischemic stroke. Background: Approximately 80% of acute ischemic stroke patients present with hypertension. The clinical impact of such deviations in BP as well as the impact of AHT administered in the immediate post stroke period is uncertain. Design/Methods: We reviewed the charts of patients admitted to the Montreal General Hospital between April 1, 2002 and October 15, 2005 with same or previous-day

onset of ischemic stroke. Stroke was described as severe if the Canadian Neurological Scale score at presentation was ?7. Poor outcome at 10 days after stroke onset was defined as a modified Rankin Scale >3 or death. Baseline BP was defined as the first measurement in the emergency department. High BP was defined as a mean arterial pressure (MAP) >130mmHg; low BP was described as a MAP <90mmHg. Acute change in BP was defined as the percent difference between the mean 24hour MAP and the baseline MAP. AHT was considered present if administered ?5 days during the first week after stroke onset. The association between predictors and outcome was assessed using unconditional multivariable logistic regression. Results: The charts of 364 patients were reviewed. Mean patient age ±SD was 73 ±13.3 years. Compared to patients with intermediate BP, those patients with high and low BP were found to have a statistically significant risk of poor outcome after adjustment for age, stroke severity, diabetes mellitus, coronary artery disease, atrial fibrillation and pre-morbid history of chronic hypertension and hyperlipidemia [OR=2.47(95% CI, 1.04-5.85); OR=2.94(95% CI, 1.28-6.77) respectively]. A 15% increase in MAP was associated with an increased risk of poor outcome while AHT in the first week after stroke onset was found to result in a decreased risk [OR=5.34(95% CI, 1.18-24.3); OR=0.39(95% CI, 0.17-0.90) respectively]. However, neither of these findings remained statistically significant after adjustment for the described covariates. Conclusions/Relevance: High and low MAP at hospital presentation are associated with poor outcome at 10 days after ischemic stroke.

O13
AGING AFFECTS THE STEERING OF LOCOMOTION INDUCED BY CHANGING OPTIC FLOWS

Jessica Berard, Joyce Fung, Bradford McFadyen and Anouk Lamontagne
McGill University

Introduction: Perceived self-motion from optic flow is well known to be involved in the control of locomotion [1]. However, there is evidence that aging affects the ability to discriminate directions of 3D optic flow [2]. The purpose of this study is to examine how aging affects the steering of locomotion in response to altered optic flow fields in an immersive virtual

environment (VE). Methods: Five young adults (23±3 years), and eight older adults (66±4 years) participated in the study. Subjects were asked to walk as straight as possible overground while viewing a VE through a head-mounted display unit (Kaiser). The VE viewed by the subjects was a large room displayed as an expanding translational optic flow, with the focus of expansion (FOE) located at neutral, 20° or 40° to the right or left. Kinematic data from the subjects' body movements were collected using a high-speed motion capture system (Vicon). Centre of mass (CoM) position and heading direction in the 3D physical and virtual space were calculated after the subjects walked for approximately 3 meters. Results: Young subjects were able to make better heading adjustments in the VE as compared to older individuals. Young subjects altered their CoM trajectory so that it was oriented in the direction opposite to the FOE in the physical environment and resulted in small deviation in the VE. The older showed greater variability in their locomotor behaviour, resulting in larger deviation in the VE. Discussion and Conclusions: Aging is related to an altered control of steering of locomotion in response to changing directions of optic flow. This may be related to higher discrimination thresholds of optic flow in older adults or altered sensorimotor integration. 1. Warren, W.H., Jr., et al., Optic flow is used to control human walking. Nat Neurosci, 2001. 4(2): p. 213-6. 2. Andersen, G.J. and P. Atchley, Age-related differences in the detection of three-dimensional surfaces from optic flow. Psychology And Aging, 1995. 10(4): p. 650-658.

O14
EFFECT OF PHYTOESTROGEN AND EXERCISE TRAINING ON OXIDATIVE STRESS MARKERS IN OBESE POSTMENOPAUSAL WOMEN: A RANDOMISED CONTROLLED TRIAL

Gérémy Abdull Koumbadinga, Mylène Aubertin-Leheudre, Berrougui Hicham, Isabelle Dionne and Abdel Khalil
Institut universitaire de gériatrie de Sherbrooke

Background : Cardiovascular disease (CVD) risk generally rises significantly after menopause. Hormone replacement therapy (HRT) and aerobic training have been proposed as an efficient strategy for preventing CVD. However some studies have shown that HRT may raise cancer risk and have no beneficial effect on

CVD. Therefore, phytoestrogens have been suggested as a better alternative to HRT in the prevention of CVD risk. Objective : To verify the effect of 6 months of phytoestrogen supplementation combined to aerobic training on CVD risk factors in obese postmenopausal women. Method : Fifty-six healthy postmenopausal women (50-75 years) were submitted to an aerobic exercise program (3x / week) and randomised in two groups (phytoestrogen and placebo) for 6 months. Plasmatic antioxidants (vitamin E and C) and malondialdehyde were assayed by HPLC, PON1 activities and conjugated diene were assayed by spectrophotometric measurements before and after the intervention. Results : At the end of 6 months there was a significant increase of the level of vitamin C ($p < 0.05$), paraoxonase ($p < 0.05$) and arylesterase activities ($p = 0.01$) along with a decrease of the level of vitamin E in the two groups. However, there were no significant differences between the two groups for the changes observed in different oxidative stress markers. Conclusion : Our results suggest that phytoestrogen had no additional effect on risk factors of CVD in exercising women. Beneficial changes observed in the two groups might be due to the adaptive response to oxidative stress resulting from exercise. Funded by the Canadian Diabetes Association.