



CHEO

Research Institute
Healthy Active Living and Obesity Research

Institut de recherche
Recherche sur les saines habitudes de vie et l'obésité

Healthy active living and obesity
research to promote the health and
wellness of our most precious resource -
Our children.



ANNUAL REPORT 2010

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Welcome from the Director

Sidney Crosby scored in overtime to give Canada the gold medal in the final event of The Games to secure the Vancouver Olympics as a defining event in Canada's sporting history – Canadians were successful, proud, and motivated. And soon thereafter, the Federal Government extended its commitment to the "Own the Podium" program in an effort to preserve our sporting success in the years to come. We should all be proud and celebrate this positive momentum.



But are we preserving the grass roots base of healthy active children from which our future Olympians and champions will emerge? Last year I began my welcoming remarks citing evidence from Statistics Canada that demonstrated clearly that the fitness of the nation has declined significantly and meaningfully over the past 30 years with the greatest declines noted in children and youth. The 2010 Active Healthy Kids Canada Report Card on Physical Activity for Children and Youth gave the country another failing grade. New Canadian Physical Activity Guidelines were just released in January 2011, and even though many believe the guidelines have been reduced, still only 7% of Canadian kids meet the standard. Furthermore, our children are spending on average 8.6 hours per day sedentary – 62% of their waking time. Surely such population trends will negatively impact our future sporting success and our future health.

The Healthy Active Living and Obesity Research Group (HALO) at the CHEO Research Institute has continued its leadership in promoting and preserving healthy active lifestyles while managing and treating childhood inactivity and obesity. Indeed, 2010 was HALO's busiest and most productive year to date. We were fortunate to hire two new Junior Research Chairs (Dr. Rachel Colley and Dr. Jean-Philippe Chaput) through generous funding support from The Lawson Foundation and the CHEO Foundation. The development of a multidisciplinary obesity treatment clinic designed to assist the most challenging obesity cases began in earnest in 2010 and is slated to be formally opened in 2011. We also increased the number of graduate students and research staff working in our group. Our research grant success and productivity, and our knowledge dissemination, transfer and translation outputs were at an all-time high in 2010. Please visit our website (www.cheori.org/halo) to keep abreast of our work and contributions. In summary, with our partners, funders, colleagues and friends, *we are making a difference* – but in many respects our work has just begun.

As a national centre of excellence for research, leadership, training and advocacy, HALO strives to provide national and international leadership in the prevention, management and treatment of pediatric obesity and the promotion of healthy body weights and active living. New partnerships with the Canadian Society for Exercise Physiology, the Canadian Fitness and Lifestyle Research Institute, and the CBC Live Right Now initiative extend the reach and impact of the work HALO accomplished with its ongoing collaborations with Active Healthy Kids Canada, ParticipACTION, the Champlain Cardiovascular Disease Prevention Network, the CHEO Foundation, the CHEO Research Institute and the University of Ottawa, among others.

This Annual Report provides a catalogue of the activities and contributions made by HALO in 2010, and is intended to inform partners, stakeholders, funders, potential students and staff, and other interested parties about our group. The Annual Report is available in print form upon request and also on our website at www.cheori.org/halo.

I hope you enjoy reading our Annual Report. If you have any questions, suggestions or opportunities for HALO, please do not hesitate to contact us.

Best wishes for a healthy, active 2011.

A handwritten signature in black ink, appearing to read "Mark Tremblay". The signature is fluid and cursive, with a long, sweeping underline.

Dr. Mark Tremblay
Director, Healthy Active Living and Obesity Research Group (HALO), CHEO-RI
Professor/Scientist, Department of Pediatrics, University of Ottawa
Chief Scientific Officer, Active Healthy Kids Canada

ABOUT HALO

OUR HISTORY

Obesity-related research began in the CHEO Research Institute with a part-time researcher in 2001 and shortly thereafter with the hiring of an endocrinologist with a research interest in childhood obesity. This research direction was initiated in response to the escalating obesity crisis and the increasing complexity of related co-morbidities. The Healthy Active Living and Obesity Research Group (HALO) was established in 2007 and rapid growth in the group occurred since that time. In 2010, the new HALO logo was developed (as can be seen on the cover of this annual report). The HALO Wall of Fame (a legacy of staff/volunteers/visitors who have been a part of HALO since its inception) was also unveiled in November 2010 and can be found in the HALO laboratory.

HALO'S VISION

HALO will provide national leadership and research excellence in Healthy Active Living for the prevention, management and treatment of obesity in children and youth.

HALO'S MISSION

HALO will establish a multidisciplinary centre of excellence in Healthy Active Living and Obesity research in children and youth that will:

- Significantly contribute to the understanding of healthy body weights and prevention of obesity;
- Develop and evaluate innovative strategies to manage and treat obesity and its related health consequences;
- Ultimately reduce the overall prevalence of obesity and its social burden.

HALO'S LINES OF BUSINESS

1. **Research:**

- Development and evaluation of current and future childhood obesity management and prevention options.
- Identification of environmental, behavioural and biological predictors of obesity and physical activity, their interactions, enablers and inhibitors.

2. **Leadership:**

- Development of innovative strategies to prevent and manage childhood obesity and promote healthy body weights and physical activity.

3. **Training:**

- Creation of a nationally recognized training centre for future researchers and health professionals interested in the prevention, treatment and management of childhood obesity and promotion of healthy body weights and physical activity.
- Develop, promote and practice effective knowledge translation strategies to increase the uptake of prevention, treatment and management options reducing future disease burden.

4. **Partnership:** Utilization of municipal, provincial, national and international partnerships to create, promote and evaluate the effectiveness of healthy active living programs aimed at achieving positive health outcomes in children and youth.

5. **Advocacy:** Professional, informed and authoritative voice for healthy active living and obesity research in children and youth.

6. **Good Governance:** Effective, efficient and transparent.

2010 HALO TEAM



Dr. Kristi Adamo earned an Honours B.Sc. degree in Human Kinetics and a M.Sc. degree specializing in exercise physiology through the University of Guelph Department of Human Biology and Nutritional Sciences. During this time she had the distinct opportunity to train at the Copenhagen Muscle Research Centre and August Krogh Institute in Denmark. Prior to commencing her doctoral work, Dr. Adamo worked for several years at the University of Ottawa Heart Institute Prevention and Rehabilitation Centre in the area of primary and secondary prevention of cardiovascular disease. This experience spurred her interest in inter-individual response to treatment intervention and led to her doctoral studies, completed through the University of Ottawa's Faculty of Medicine, Department of Cellular and Molecular Medicine, focusing on gene-environment interaction in diabetes and obesity. A brief post-doctoral fellowship (2006) in pediatric obesity solidified her research interests and she now holds academic appointments as an Assistant Professor in Pediatrics in the Faculty of Medicine and in the Faculty of Health Sciences, School of Human Kinetics at the University of Ottawa. Dr. Adamo is a Research Scientist with a multi-disciplinary background and is a founding member of the HALO Research Group. She played a key role in the planning and development of this research team and through CFI/ORF funding, Dr. Adamo has been able to equip HALO's metabolic lab. Kristi's research program, Power of Prevention in the Early Years, focuses on early intervention and upstream prevention of childhood obesity (i.e., maternal obesity management during pregnancy). Kristi's most successful experiments have resulted in the birth of her daughters Kysia in 2007 and Mallea in 2009.



Joel Barnes has a BSc in Kinesiology from the University of New Brunswick. He also holds an MSc from the University of Saskatchewan. Under the supervision of Dr. Mark Tremblay, the focus of Joel's graduate work was pediatric exercise science. Joel joined the HALO Team in September 2010 as Knowledge Synthesis and Analysis Manager. One of his main projects is the *Active Healthy Kids Canada Report Card on Physical Activity for Children and Youth*. Outside of work, Joel enjoys several active pursuits including mountain unicycling.



Dr. Jean-Philippe Chaput is currently an Assistant Professor in the Department of Pediatrics at the University of Ottawa and holds a Junior Research Chair in Healthy Active Living and Obesity Research at the Children's Hospital of Eastern Ontario Research Institute in Ottawa. Dr. Chaput completed a post-doctoral fellowship at the University of Copenhagen (Denmark) in 2010 under the guidance of Prof. Arne Astrup, insuring the research group's state-of-the-art scientific competence in relation to sleep physiology and mental stress. He has a background in biology and graduated from Laval University (Quebec City) in 2008, where he was under the supervision of Prof. Angelo Tremblay. He is particularly interested in new determinants of obesity and has authored or co-authored more than 50 scientific articles, and over 60 other publications such as textbook chapters, scientific abstracts, reviews and letters. Jean-Philippe has been a personal trainer for 6 years and has run a couple of half marathons. He enjoys traveling around the world and before joining HALO lived in Denmark for 2 years.



Dr. Rachel Colley is a Junior Research Chair with the Healthy Active Living and Obesity Research Group (HALO) at the Children's Hospital of Eastern Ontario Research Institute and is appointed as an Assistant Professor in the Faculty of Medicine, Department of Pediatrics at the University of Ottawa. Dr. Colley joined the HALO team in 2007 as a postdoctoral research fellow. Dr. Colley's research program is focused on the objective measurement of physical activity and sedentary behaviour, and the development of novel obesity interventions in children. Dr. Colley is currently leading a study exploring the interplay of fitness, motor development, activity preference and self-efficacy on physical activity engagement in children aged 8-10 years. She also recently obtained funding to explore physical activity and non-exercise activity thermogenesis (NEAT) habits in obese and non-obese children with and without obstructive sleep apnea. Dr. Colley is a consultant analyst in the Health Analysis Division of Statistics Canada and is the lead author on two recent papers from the Canadian Health Measures Survey detailing the physical activity habits of a nationally-representative sample of Canadian adults and children. Dr. Colley is presently the Scientific Officer of the Active Healthy Kids Canada Report Card on Physical Activity for Children and Youth, and was the primary author of the 2008, 2009 and 2010 Report Cards.



Kristine De Jesus completed both her B.Sc. in Physiology, and M.Sc. in Experimental Medicine at McGill University. Her graduate work consisted of studying the effects of IGF-I over-expression in somatic and islet cell growth, in a specific line of transgenic mice. She is a native of Ottawa, and returned in the fall of 2009 to join the HALO team as a Research Assistant. In addition to playing soccer at both the competitive and recreational levels, Kristine was also a member of the McGill Varsity Cheerleading Team for two years, during which time they competed at the National Championships. Kristine left the HALO group in December to begin medical school in Australia.

Dr. Nina Fowler earned a B.Sc with honours majoring in Genetics and Evolution. Her honours thesis work pertained to bone marrow transplantation markers. Dr. Fowler then went on to complete doctoral studies in the field of medicine specializing in cellular immunology. Her thesis explored the potential effectiveness a therapeutic vaccines for the treatment Human Papilloma Virus (HPV) associated cervical cancer. Following completion of her doctoral studies she continued to pursue her immunology interests by completing a postdoctoral fellowship at Harvard Medical School. Her interests then lead her to pursue clinical trial research in an intensive care unit. In late 2010 both her personal love of sporting activities and her academic pursuit of immunological questions were able to both be utilized by joining the HALO group.



Dr. Gary Goldfield has an Honour's Bachelor of Arts degree in Psychology, a Master's degree in Experimental Psychology, and a Ph.D. in Health Psychology from Carleton University. Dr. Goldfield completed a post-doctoral fellowship in Behavioural Medicine at the State University of New York at Buffalo where he gained expertise in the treatment of childhood obesity from a world renowned expert. Dr. Goldfield is presently a clinical scientist and one of the founders of the Healthy Active Living and Obesity Research Group at the Children's Hospital of Eastern Ontario Research Institute. Dr. Goldfield is also an Assistant Professor of Human Kinetics, Pediatrics and Psychology at the University of

Ottawa, and is an Adjunct Research Professor of Psychology at Carleton University. Dr. Goldfield is the recipient of a New Investigator Award from the Canadian Institutes of Health Research, and holds several peer-reviewed grants from various funding agencies. Dr. Goldfield is also a registered psychologist who practices in the community of Ottawa and sees children, adolescents and adults. He is also a member of the Ottawa Academy of Psychologists and the Canadian Psychological Association. Dr. Goldfield's main research interests are in the areas of child obesity treatment, the role of physical activity in the treatment and prevention of child obesity, behavioural psychology, and the rewarding value of food and eating behaviour. Dr. Goldfield is the proud father of two wonderful girls, Diana (10 years old) and Rachel (8 years old).



Dr. Stasia Hadjiyannakis received her medical degree from the University of Toronto (1996) and completed her pediatric residency at Queen's University with an endocrine fellowship at McGill University. She worked as a Visiting Professor at the University of California San Francisco (2003) where she received more in-depth training in the area of pediatric obesity and lipid disorders. Stasia is the Medical Director of the Center for Healthy Active Living and the Chief of the Division of Endocrinology at the Children's Hospital of Eastern Ontario (CHEO). She is an assistant Professor of Pediatrics at the University of Ottawa and has been an active member of the Department of Pediatrics at CHEO in the division of endocrinology since November 2001. Her clinical, advocacy and research interests are in the area of pediatric obesity and related co-morbidities such as metabolic syndrome, dyslipidemia, Type 2 diabetes and polycystic ovarian syndrome. Her research interests are in examining the interplay between behavioural/psychosocial, genetic and intrauterine factors in predicting risk for obesity related co-morbidities.



Alysha Harvey has an Honours B.Sc. in Kinesiology and Health Sciences from York University, is a certified Personal Trainer, and a certified Project Manager (PMP). At the age of 21, while completing her Bachelor of Science, she started her own business in health and fitness, working with elite athletes as well as the general population, including children. In addition to personal training and conducting fitness assessments, Alysha worked as a Kinesiologist in a clinical environment, aiding patients in rehabilitation. Alysha continued her interest in sport via sports event management, working on projects with Hockey Canada, the Canadian Hockey League, the OHL, the IIHF, and the OWHA, including: National Junior Hockey Team Selection Camps, pre-Olympic tour of the Women's Olympic Hockey Team of the People's Republic of China, and bidding for the Memorial Cup on behalf of several OHL teams. Alysha also broadcasted on the Fan Radio Network for the National Women's Hockey TSN Challenge, Team Canada vs Team USA. In developing her business acumen, Alysha pursued additional project management work in the private and not-for-profit sector for several years, while still maintaining her connection to health, fitness and sport. Alysha has recently joined HALO as a Research Coordinator, assisting Dr. Kristi Adamo and Dr. Gary Goldfield with research in childhood obesity, including studies in physical activity intervention amongst preschoolers and maternal obesity management.



of Ottawa.

Emily Knight has a B.Sc. in Exercise Science from the University of Winnipeg, and is a Canadian Society for Exercise Physiology - Certified Exercise Physiologist™ (CSEP-CEP). Emily joined HALO as a research assistant in the winter of 2009. Previously, Emily was the study coordinator for the Canadian Assessment of Physical Literacy (CAPL): Pilot and Feasibility Study as well as research assistant to Dr Meghann Lloyd. Currently, Emily is the study coordinator for the Physical Activity Engagement Study, research assistant to Dr Rachel Colley, and a graduate student in Human Kinetics at the University



Physical Activity Guidelines for all age groups and aide in the development of Canadian Sedentary Behaviour Guidelines for children and youth. Outside of work Allana has always loved being outdoors and has played various sports including rugby and competitive hockey. Current interests include cycling, running, yoga, skiing and photography.

Allana LeBlanc completed her B.Sc. at Acadia University with a double major in Biology (honours) and Kinesiology, her M.Sc. at Queen's University in Kinesiology and Health Studies, and is a Certified Exercise Physiologist with the Canadian Society for Exercise Physiology. Her graduate work focused on epidemiology and physical activity in children and youth. She grew up in Ottawa and returned in January 2010 to join the HALO team as a Research Coordinator. She is currently working in partnership with the Canadian Society for Exercise Physiology and ParticipACTION to update Canadian



children with and without disabilities. Dr. Lloyd's current research within HALO at the Children's Hospital of Eastern Ontario Research Institute is funded by a CIHR grant received in 2009 and focuses on developing a comprehensive assessment tool of physical literacy – The Canadian Assessment of Physical Literacy. This will provide information to both educators and medical professionals about the status of physical literacy in Canadian children. In 2009 Dr. Lloyd also entered into a partnership with Special Olympics International to analyze and disseminate the data from their Healthy Athletes assessments. Future research will further investigate the factors that influence early physical activity, to prevent obesity from emerging in the preschool age range, for children with and without Down syndrome. Dr. Lloyd is also an active Special Olympics Soccer coach in Ottawa. Megan left the HALO group in July 2010, accepting a tenure-track position at the University of Ontario Institute of Technology.

Dr. Meghann Lloyd is a Junior Research Scientist in the HALO group. Dr. Lloyd earned a B.Kin. (Honours) degree from Acadia University and an M.A. from McGill University. She then completed her Doctoral work at The University of Michigan in the Division of Kinesiology, specifically within the Center for Motor Behavior and Pediatric Disabilities. She then completed a short post-doctoral fellowship in Michigan before moving back to Canada to join HALO. Dr. Lloyd's research takes a multidisciplinary approach to investigate the physical activity and motor development of infants and young



Jane Rutherford completed a BSc. in Nutritional and Nutraceutical Sciences and a MSc. in Nutrition, Exercise and Metabolism from the University of Guelph. Jane is the Exercise Specialist for CHEO's newly established Centre for Healthy Active Living – an assessment and treatment centre for children and youth with complex severe obesity and type 2 diabetes. Jane's previous work experience includes working in cardiac and musculoskeletal injury rehabilitation as an Exercise Physiologist, Lifestyle coach with the YMCA/YWCA's Y Kids Fit program, and Research Coordinator with the Healthy Active Living and Obesity Research Group. Leading by example, Jane is an avid marathon runner, fitness instructor and field hockey player.



Hélène Sinclair is a Certified Administrative Professional (CAP®) who joined HALO in November 2010 as administrative assistant to the Director and the HALO group. Originally from Northern Ontario (Sudbury), she brings over 23 years of experience in office administration. Hélène is involved in many volunteer roles including her current position as President of the Ottawa Chapter of the International Association of Administrative Professionals (IAAP) for the term of 2010/2011. In addition to this volunteer role, she participates with various community events and activities. She is the proud mother of two wonderful daughters. As a single-parent, she strives to model and to lead a balanced lifestyle including physical activity, professional and personal development.



Michelle Takacs happily joined HALO in the fall of 2009 and provided administrative, human resource and financial services assistance to the Director and the HALO team until November 2010. Michelle embraced the HALO mission, strived for optimum health and wellbeing, and enjoyed outdoor activities including walking/hiking, badminton, swimming and kayaking. Michelle left the HALO group in November to take a position closer to home.



Dr. Mark Tremblay has a Bachelor of Commerce degree in Sports Administration and a Bachelor of Physical and Health Education degree from Laurentian University. His graduate training was from the University of Toronto where he obtained his M.Sc. and Ph.D. from the Department of Community Health, Faculty of Medicine with a specialty in exercise science. Dr. Tremblay is the Director of Healthy Active Living and Obesity Research (HALO) at the Children’s Hospital of Eastern Ontario Research Institute and Professor of Pediatrics in the Faculty of Medicine, University of Ottawa. He is a Fellow of the American College of Sports Medicine, Chief Scientific Officer of Active Healthy Kids Canada, Chair of the ParticipACTION Research Advisory Group, Chair of the Canadian Physical Activity Guidelines Project and former Dean of Kinesiology at the University of Saskatchewan. Dr. Tremblay was the Scientific Director for the Canadian Health Measures Survey being conducted by Statistics Canada and currently Chairs its Expert Advisory Committee. Dr. Tremblay has published more than 120 papers and book chapters in the areas of childhood obesity, physical activity measurement, exercise physiology, exercise endocrinology and health surveillance. He has delivered over 350 scholarly conference presentations, including more than 100 invited and keynote addresses, in 15 countries. Dr. Tremblay’s most productive work has resulted from his 22-year marriage to his wife Helen, yielding four wonderful children.

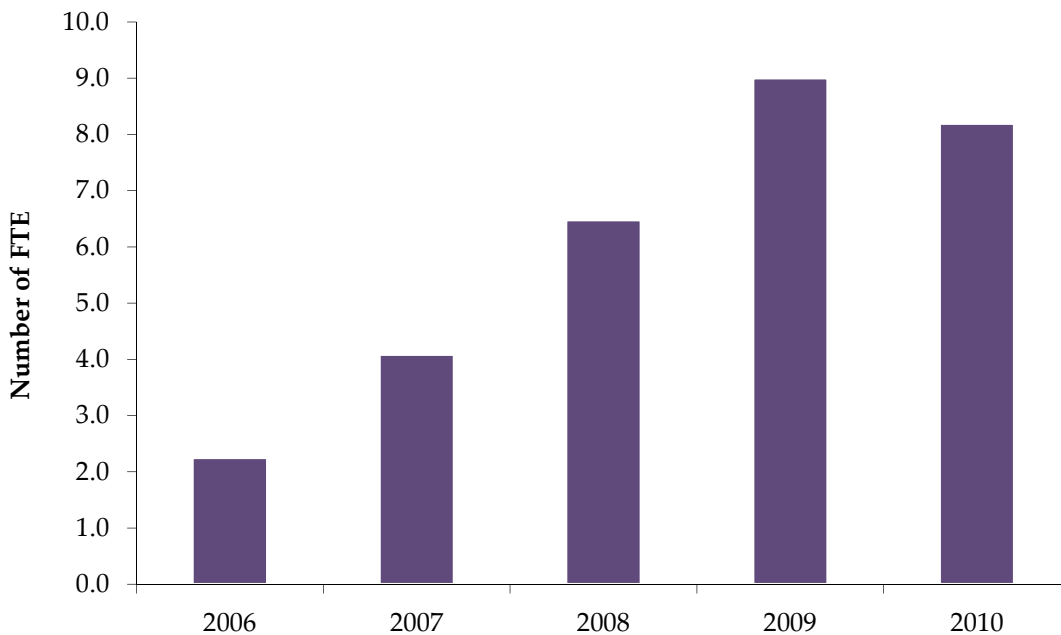


Figure 1. Number of Full Time Equivalent (FTE) positions in HALO Research Group from 2006 to 2010. Between 2006 and 2010, there was a 257% increase in FTE, and between 2009 and 2010, there was a 9% decrease in FTE.

OUR STUDENTS AND TRAINEES



Peter Breithaupt, M.Sc. Student

Supervisors: Dr. Kristi Adamo and Dr. Rachel Colley

Research Program: M.Sc. Human Kinetics, University of Ottawa

Thesis Topic: Validation of Cardiovascular Fitness and Body Composition Assessment Methodologies in the Overweight/Obese Pediatric Population



Kendra Brett, Ph.D. Student

Supervisor: Dr. Kristi Adamo

Research Program: Ph.D. Human Kinetics, University of Ottawa

Dissertation Topic: Examining the expression of lipid transport proteins in the placenta in pregnancies complicated by overweight and obesity



Cynthia Colapinto, RD, Ph.D. Candidate, CIHR Health Professional Fellow in Public Health; Statistics Canada Tom Symon's Fellow; University of Ottawa Excellence Scholar

Ph.D. Supervisor: Dr. Mark Tremblay

Research Programs: Ph.D. in Population Health, University of Ottawa; Graduate Diploma in Health Services and Policy Research, University of Ottawa/Ontario Training Centre in Health Services and Policy Research

Dissertation Topic: Examining the folate status of Canadians, in particular women of childbearing age, using the Canadian Health Measures Survey



Zach Ferraro, Ph.D. Candidate, Ontario Graduate Scholar

Ph.D. Supervisors: Dr. Kristi Adamo and Dr. Denis Prud'homme

Research Program: Ph.D. Human Kinetics, University of Ottawa

Dissertation Topic: Insulin-like Growth Factor-1 dynamics (nutrient transport proteins), maternal-fetal endocrinology, 'programming' adult disease during growth and development, randomized controlled lifestyle intervention trials during pregnancy



Emily Knight, MSc Student

Supervisors: Dr. Mark Tremblay and Dr. Rachel Colley

Research Program: M.Sc. Human Kinetics, University of Ottawa

Thesis Topic: The relationship between determinants that contribute to physical activity (fitness, fundamental movement skills and psychosocial factors) and sedentary behaviour among 8-10 year old children.



Richard Larouche, Ph.D. Candidate, CIHR Banting and Best Doctoral Scholar
Ph.D. Supervisor: Dr. Mark Tremblay
Research Program: Ph.D. Human Kinetics, University of Ottawa
Dissertation Topic: Obesity Prevention and Physical Activity Promotion Through Increased Active Transportation and Lifestyle Activities



Stephanie Leclair, Ph.D. Candidate, CIHR Doctoral Clinical Scholar
Ph.D. Supervisor: Dr. Gary Goldfield
Research Program: Ph.D. Clinical Psychology, University of Ottawa
Dissertation Topic: Delivering behavioural intervention for obese children via the Internet



Stella Muthuri, Ph.D. Student, Ontario Graduate Scholarship in Science and Technology
Ph.D. Supervisor: Dr. Mark Tremblay
Research Program: Ph.D. in Population Health, University of Ottawa
Research Title: Cross-cultural comparative study of physical activity trends and the prevalence of obesity in school aged children in Canada and Kenya



Stephanie Prince-Ware, Ph.D. Candidate, SSHRC Scholar, Ontario Graduate Scholar, University of Ottawa Excellence and Research Scholar
Ph.D. Supervisors: Dr. Denis Prud'homme and Dr. Mark Tremblay
Research Program: Ph.D. Population Health, University of Ottawa
Dissertation Topic: Built and social environmental determinants of physical activity, overweight & obesity in City of Ottawa neighbourhoods



Travis Saunders, Ph.D. Candidate, CIHR Doctoral Clinical Scholar
Ph.D. Supervisor: Dr. Mark Tremblay
Research Program: Ph.D. Human Kinetics, University of Ottawa
Dissertation Topic: The relationship between sedentary time and metabolic health in children and youth



Angela Wilson, M.A./Ph.D. Student
Ph.D. Supervisor: Dr. Gary Goldfield
Research Program: M.A./Ph.D. Clinical Psychology, University of Ottawa
Thesis Topic: Identifying mediators and moderators of the obesity-depression link in children and adolescents

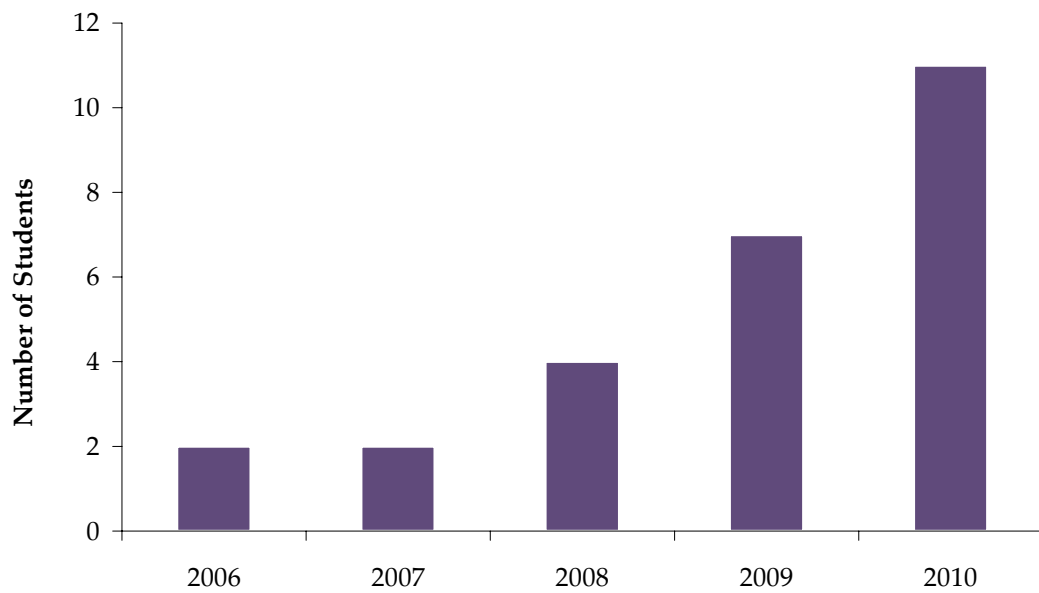


Figure 2. Number of graduate students in the HALO Research Group from 2006 to 2010. Between 2006 and 2010, there was a 450% increase, and between 2009 and 2010, there was a 57% increase in the number of students.

ADJUNCT INVESTIGATORS



Dr. Vincent O. Onywera
Senior Lecturer
Director, Center for Linkages and International Programs (CLIP)
Kenyatta University
P.O BOX 43844-00100
Nairobi-KENYA



Dr. A. William Sheel
Associate Professor
School of Human Kinetics
The University of British Columbia
6108 Thunderbird Blvd
Vancouver, BC, Canada, V6T 1Z3

VISITORS

Dr. Rebecca Abbott from the University of Queensland in Brisbane, Australia joined HALO for a month to create a research partnership and study with Drs. Tremblay and Colley and the whole HALO group.

INVITED SPEAKERS

- Dr. Weimo Zhu (University of Illinois): Measurement and Evaluation of Children and Youth Fitness - Past, Present and Future, Research Rounds January 2010
- Dr. Rebecca Abbott (University of Queensland): Physical Activity and Health in Children and Adolescents - Insights from "Down-Under", Research Rounds May 2010
- Dr. Christian F. Rueda-Clausen (University of Alberta): The early origins of cardiac and metabolic diseases, "exploring the ultimate window of opportunity", Research Rounds August 2010
- Dr. Patricia Longmuir (Hospital for Sick Children): Beyond Exercise Capacity and Obesity: Treating Childhood Illnesses and Disabilities with Physical Activity, Research Rounds October 2010
- Dr. Marc Hamilton (Pennington Biomedical Research Center): Inactivity Physiology – A New Paradigm for Physical Activity Recommendations, Research Rounds November 2010
- Andrea Haqq (University of Alberta): Genetics of Childhood Obesity: Specific Focus on Willi Syndrome (PWS), Grand Rounds October 2010

STUDENTS/VOLUNTEERS

- Mike Borghese (Supervisor: Dr. Rachel Colley) – Human Kinetics Undergraduate Student at the University of Ottawa. Funding Source: CHEO Research Institute Summer Student Funding
- Isaac Davis (Supervisor Dr. Gary Goldfield), Department of Psychology, Carleton University, (HEARTY - honour's thesis)
- Danijela Maras (Supervisor: Dr. Gary Goldfield), Department of Psychology, Carleton University (Internet Study-qualitative interviews)
- Pierce McKennirey (Supervisor: Dr. Gary Goldfield), Department of Psychology, Carleton University, Master's research volunteer (Internet study)
- Emily Michelussi (Supervisor: Dr. Kristi Adamo), 4th Year Human Kinetics program, Ottawa University (Freggie Fridays)
- Marisa Murray (Supervisor: Dr. Gary Goldfield), Department of Psychology, Master's Independent Study course, Carleton University (REAL study)
- Laura Peters (Supervisor: Dr. Gary Goldfield), Department of Psychology, Carleton University (Internet Study)

HALO Photo Gallery



TEAM OUTINGS



The Healthy Active Living and Obesity Research Group (#HALO) is located within the Children's Hospital of Eastern Ontario Research Institute (CHEO-RI) at the University of Ottawa (Canada) where we provide national leadership in research, clinical practice and treatment of obesity in children and adolescents. We are committed to providing national leadership and research excellence in healthy active living for the prevention, management and treatment of obesity in children and adolescents.



Awards & Conferences

a day in the life



Dr. Kristi Adamo and Dr. Gary Goldfield encouraging active play in preschoolers.



HALOites at their best



HALO HIGHLIGHTS IN 2010

VIDEO GAMES PROJECT



Key Finding: Video game playing increases food intake in adolescents

Background: Video game playing has been linked to obesity in many observational studies. However, the influence of this sedentary activity on food intake is unknown.

Objective: To examine the acute effects of playing sedentary video games on various components of energy balance.

Design: Using a randomized crossover design, 22 healthy, normal weight male adolescents (mean \pm SD age: 16.7 ± 1.1 years) completed two 1-hour experimental conditions, namely video game play and rest in a sitting position, followed by an *ad libitum* lunch. The endpoints were spontaneous food intake, energy expenditure, stress markers, appetite sensations, and profiles of appetite-related hormones.

Results: Heart rate, systolic and diastolic blood pressure, sympathetic tone, and mental workload were significantly higher during the video game play condition compared to the resting condition ($P < 0.05$). Although energy expenditure was significantly higher during the video game play condition compared to resting (mean increase over resting: 89 kJ, $P < 0.01$), *ad libitum* energy intake after the video game play condition exceeded that measured after rest by 335 kJ ($P < 0.05$). A daily energy surplus of 682 kJ (163 kcal, $P < 0.01$) over resting was observed in the video game play condition. The increase in food intake associated with playing video games was observed without increased sensations of hunger and was not compensated for during the rest of the day. Finally, the profiles of glucose, insulin, cortisol and ghrelin were not suggestive of an up-regulation of appetite during the video game play condition.

Conclusion: A single session of video game playing in healthy male adolescents is associated with an increased food intake, regardless of appetite sensations.

Status of the project: Completed. Paper submitted for publication in The American Journal of Clinical Nutrition.

THE 2010 ACTIVE HEALTHY KIDS CANADA REPORT CARD

HEALTHY HABITS START EARLIER THAN YOU THINK



The Active Healthy Kids Canada's Report Card on Physical Activity for Children and Youth ("Report Card") is a research-based communications and advocacy piece designed to provide insight into Canada's "state of the nation" each year on how, as a country, we are being responsible in providing physical activity opportunities for children and youth.

Focus on the Early Years: The 2010 Report Card marked the 6th annual overview of the many factors impacting physical activity for children and youth in this country. The 2010 Report Card provides a dedicated synopsis of how we are doing at ensuring children get an active start in life. The early years (e.g., <5 years of age) have been identified as a critical period for growth and acquisition of motor skills that are needed to be physically active throughout life.

Health practitioners and researchers are looking earlier and earlier in the lifespan to determine when interventions should take place to effectively instill healthy lifestyle habits and prevent obesity.

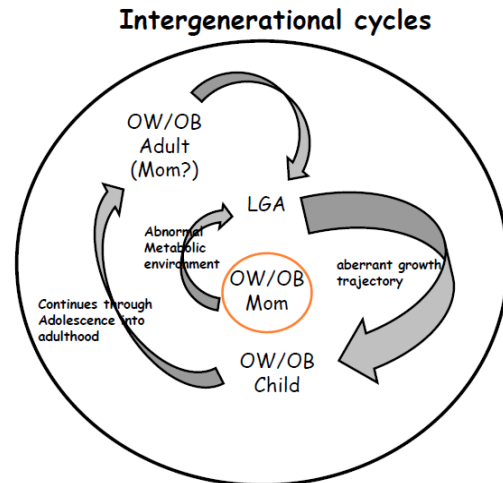
Obesity and Screen Time in the Early Years: Obesity is becoming a problem even before the age of 5 years in Canadian children with national surveillance data showing that 15.2% of 2- to 5-year-olds are overweight, and 6.3% are obese. Key behaviours point to where we need to focus our attention. In 1971, the average age at which children began to watch TV was 4 years; today, it is 5 months. More than 90% of children begin watching TV before the age of 2 years in spite of the Canadian Pediatric Society recommendation to the contrary. The concern is that early exposure to screens discourages exploration, learning and play opportunities in young children. Long-term implications have been documented including deficits in learning, cognition and language development.

Recommendations for Action: The 2010 Report Card provides focused recommendations on how to improve the physical activity situation in Canada. Policy-makers are encouraged to invest in healthy active living initiatives for children under 5 years of age. Policies for child care programs/facilities that target increasing physical activity and outdoor time while decreasing screen time are suggested. Health care professionals are encouraged to ensure safe outdoor spaces for children to play and to promote physical activity as part of early years program design. Recreation leaders in the community are encouraged to develop resource plans that include playground safety leaders to alleviate parental safety concerns. Educators and school board officials are encouraged to consider mandating physical education in schools and to provide trained specialists. Finally, parents are encouraged to keep TVs out of bedrooms, institute daily screen time limits and provide ample opportunities for outdoor active play.

Advocacy and Exposure: The influence of the Report Card continues to be far-reaching. The publication is now considered a "must-read" in the sector that informs policy-makers and practitioners working in healthy child development. The 2010 Report Card received over 150 million media impressions and came in at #2 on *Global's Top 10 Health Stories of 2010*.

THE MATERNAL OBESITY MANAGEMENT (MOM) TRIAL- A LIFESTYLE INTERVENTION DURING PREGNANCY TO MINIMIZE DOWNSTREAM OBESITY

Background: Overweight/Obese (OW/OB) women and their offspring are at increased risk of a myriad of obstetric problems during gestation, peripartum and postpartum. Similarly, high gestational weight gain is also associated with negative metabolic consequences for the mother-offspring pair. Pre-gravid obesity and excessive gestational weight gain contribute to the cycle of obesity through their relationship with post-partum weight retention- a risk factor for long-term obesity in mothers, and large for gestational age (LGA) babies- a risk factor for overweight in pre-school, adolescence and adulthood. The obesity epidemic is related to unhealthy lifestyle, and pregnancy represents a critical period for preventive measures as women are highly motivated during this time and more receptive to behaviour change as a means of ensuring the health of their offspring. The initial pilot trial (registration # ISRCTN75323409) is underway with the intent of proposing a larger, multi-centre, multi-province, appropriately powered RCT to thoroughly test our hypotheses.



Objectives: The primary objective of this study is to evaluate the effects of a structured prenatal physical activity and nutrition intervention provided to OW/OB pregnant women during their 2nd and 3rd trimester on offspring BMI z-score at 24 months of age. Secondary objectives include evaluating the effects of the intervention on women meeting the updated Institute of Medicine (IOM) gestational weight gain guidelines, pregnancy related complications (i.e. gestational diabetes, pre-eclampsia, c-section etc.), infant birthweight (macrosomia, SGA, AGA, LGA), infant/child growth trajectories (3, 6, 12 & 24 months), post partum weight retention (3, 6, 12 & 24 months), psychosocial functioning (stress, social support, depression, attitudes), maternal physical activity and dietary habits .

Study Design: This study is a two-arm, parallel group, randomized controlled trial being conducted in Ottawa Overweight (BMI > 25 kg/m²) or obese (BMI > 30 kg/m²) pregnant women, between 12 and 15 weeks gestation, are being randomized in equal numbers to one of two groups: intervention who will receive our MOM trial Handbook (guide to healthy gestation) plus a structured physical activity and nutrition program, or a standard clinical care control group receiving Health Canada's "A Sensible Guide to a Healthy Pregnancy" booklet. This pilot study aims to recruit 60 women: 30 intervention and 30 control. The intervention will last approximately 25-28 weeks (6 months) depending on anticipated delivery date, with follow-up assessment on mother and child, from both groups, at 3, 6, 12 and 24 months post-delivery. **Hypotheses:** We hypothesize that a greater number of offspring of women in the intervention group will follow healthy growth trajectories and thus fewer will be categorized as OW/OB at 2 years of age. We hypothesize that those randomized to the intervention group will meet IOM recommended GWG guidelines more often, have fewer pregnancy-related complications and less post-partum weight retention than those in the control group and give birth to fewer macrosomic offspring who will display more favourable infant and childhood body composition at follow-up. **Significance:** The global burden of obesity is increasing in all age groups, and more effective preventive intervention is needed. The gestational period, a critical time of growth, development and physiological change in mother and child, provides an opportunity for intervention via maternal nutrition and physical activity. Identifying an effective lifestyle program for the gestational period leading to healthy fetal growth and development, fewer pregnancy related complications, normal weight offspring and less maternal weight gain and retention, could influence clinical decision making in the management of maternal obesity and possibly attenuate the intergenerational cycle of obesity.

THE PRESCHOOLERS ACTIVITY TRIAL (PAT)

Description

The current physical activity guidelines for preschoolers by the North American Society for Physical Education (2002) call for children aged 2-5 years old to accumulate at least 60 minutes of structured physical activity and 60 minutes of unstructured (spontaneous) physical activity per day, and not be sedentary for more than 60 minutes at one time. However, recent research has found that most preschool children (aged 2-5 years) in North America engage in very little physical activity, and only a small fraction meet the physical activity guidelines. Many preschool children spend the majority of their time in day care settings, making this environment an ideal place to promote daily physical activity in fun and safe ways and reduce time that children spend in sedentary behaviour.

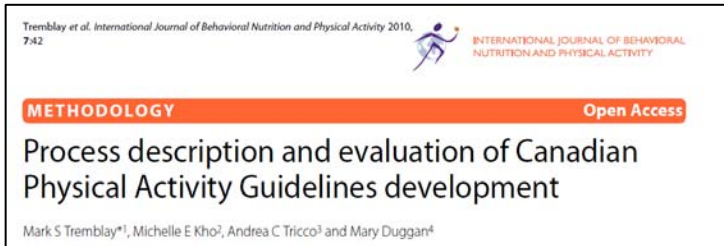
The primary aims of the Preschoolers Activity Trial are to test whether Day Care providers can increase their children's physical activity and reduce time spent in sedentary behaviour when they are provided with appropriate training and tools to do so. We also want to see if the children whose day care providers got physical activity training show improvements in body composition and motor skill development.

To test our study objectives, we will use a randomized controlled design. We will "randomly" (like flipping a coin) assign 2 day cares to the Intervention group whereby the day care providers are given training on how to get children under their care more active or to 2 day cares to a Control group in which day care providers do not receive training and implement their normal curriculum. Providers in day cares assigned to the intervention group will receive two, 3-hour workshops before the study period, delivered by a Master Trainer experienced in promoting physical activity in preschoolers. They will also be provided with a manual and resource kit. The Master Trainer will also provide two "booster" sessions per month in the intervention day cares that will involve facilitating physical activities with the children.

Measurement of physical activity and sedentary behaviour (objectively assessed by a motion sensor – "Actical" accelerometer), body composition and motor skill development will take place in the day cares before the study, at 3-months and 6-months post study initiation. After the study is completed, care providers assigned to the control group will receive the full training and resource kit but we will not evaluate the effects on the children.

This study is important in that establishing a healthy active lifestyle must start early while children's health behaviour are very malleable, and this may help prevent obesity and other chronic diseases such as Type 2 diabetes or cardiovascular disease later in life.

DEVELOPING NEW CANADIAN PHYSICAL AND SEDENTARY BEHAVIOUR GUIDELINES FOR CHILDREN AND YOUTH



HALO worked closely with the Canadian Society for Exercise Physiology and ParticipACTION on the development of new Canadian Physical Activity and Sedentary Behaviour Guidelines for Children and Youth through 2010, with the

process being Chaired by Dr. Mark Tremblay. The new guidelines will be officially released in early 2011 and include a preamble to provide context, and specific guidelines for children (aged 5-11 years) and youth (aged 12-17 years). The guideline development process adhered to the guidance of the Appraisal of Guidelines for Research Evaluation (AGREE) II instrument, the international standard for clinical practice guideline development. Thus, the guideline development was thorough, rigorous and transparent and benefitted from an extensive on-line and in-person consultation process with hundreds of stakeholders and key informants, both domestic and international. The release of the new guidelines in 2011 will serve to elevate the prominence and awareness of increasing physical activity and decreasing sedentary behaviours among Canadian children and youth.



Canadian Physical Activity Guideline Development International Consensus Conference participants (Kananaskis, 2009)

Canadian Sedentary Behaviour Guideline Development International Consensus Conference participants (Toronto, 2010)



CENTRE FOR HEALTHY ACTIVE LIVING

CHEO's Centre for Healthy Active Living was established to improve **the health and quality of life of children with weight related health complications and support them and their families in achieving a healthy active lifestyle.**

The centre has launched two new programs one focused on children with complex severe obesity and the other focused on children who are at risk for or have been diagnosed with type 2 diabetes.

CHAL Team at Official Opening of the Clinic – February 9th, 2011



Approximately one in four Canadian children is overweight or obese. Of these children, one in 3 will have complex severe obesity with significant weight related health complications such as type 2 diabetes, high blood pressure, fatty liver disease, high cholesterol and obstructive sleep apnea. Effective treatment for these complications includes a healthy and active lifestyle.

Care of children with complex severe obesity is coordinated through the Centre for Healthy Active Living. A patient and family specific plan of care is developed following an in-depth assessment by a team of specialists including a pediatric endocrinologist, advanced practice nurse, psychologist, exercise specialist and a dietitian. The treatment program provides an evidence-based, family-centred, interdisciplinary approach that focuses on the whole child, including physical, mental, and social aspects of functioning and their family.

In the last several decades we have seen a significant rise in the number of children diagnosed with type 2 diabetes and pre-diabetes, paralleling rising rates of pediatric obesity. The onset of pre-diabetes and type 2 diabetes is often silent. Screening for these disorders, in those who are at risk, is imperative. Prompt diagnosis and timely treatment may reduce the risk for both acute and chronic complications. Type 2 diabetes and its precursors run in families. The Center for Healthy Active Living will oversee a family-based screening and surveillance program for T2DM. The goal of the program is to help identify children of parents with T2DM who may also have diabetes themselves and provide a comprehensive family-based treatment program for those children and youth diagnosed with type 2 diabetes.

The Centre will work in collaboration with the CHEO Research Institute's Healthy Active Living and Obesity Research group (HALO) to provide a venue for continued clinical and epidemiological research in treatment and prevention of pediatric obesity and continue to educate and inform the public about the growing epidemic of childhood obesity and effective management strategies.

CURRENT RESEARCH INITIATIVES

Summary List – Please see details on these HALO Research Initiatives further in this section:

1.	Appetite Signaling Proteins and Energy Intake in Obese Adolescents with Binge Eating Disorder: A Pilot Study
2.	Physiological and psychological predictors and determinants of metabolic complications of pediatric obesity: A Cohort Study
3.	Validation of a sub-maximal treadmill protocol to measure cardiorespiratory fitness in overweight and obese children and youth
4.	Body Composition Measured by Dual-Energy X-ray Absorptiometry Half-body Scans in Obese Children
5.	Maternal Obesity Management – The MOM Trial (<i>PILOT</i>)
6.	CIHR Team in Critical Periods of Body Weight Regulation: A Women’s Health Perspective SOMET: Sherbrooke-Ottawa-Montréal Emerging Team
7.	Tackling the childhood obesity epidemic – Starting with MOM
8.	Characterization of the insulin-like growth factor-1 (IGF1) axis in women with maternal obesity and their neonates
9.	Evaluation of the “Freggie Fridays Program” in Ottawa Schools
10.	Understanding the Factors That Enable or Inhibit Physical Activity Engagement in Obese and Non-Obese Children
11.	Co-Existent Obstructive Sleep Apnea and Obesity: Finding NEAT Targets for Intervention
12.	Sleep, diet and physical as well as modern sedentary activities as integrated risk factors of adiposity in children
13.	Effects of playing video games on appetite control in adolescents
14.	Effects of sleep restriction on energy balance: a randomized, 2-condition, crossover study in adolescents
15.	Sleep and obesity in children and adolescents: identifying pathogenic pathways
16.	Family-Based Behavioural Treatment of Childhood Obesity Via Internet: A Randomized Controlled Trial.
17.	Healthy Eating, Aerobic and Resistance Training in Youth (HEARTY)
18.	The Preschoolers Activity Trial (PAT)
19.	Effects of Methylphenidate on Energy Balance in Obese Adolescents
20.	A Tertiary Care Approach to the Management of Pediatric Obesity and its Co-morbidities
21.	Prevalence of Markers of Insulin Resistance among Offspring Exposed to Gestational Diabetes: A 13 to 17 Year Follow-Up Study of a RCT Cohort (GDM)
22.	International Study of Childhood Obesity, Lifestyle and the Environment (ISCOLE)
23.	Kenyan International Development Study – Canadian Activity needs (KIDS-CAN) Research Alliance
24.	Active Healthy Kids Canada 2010 Report Card
25.	Revising Canada’s Physical Activity Guidelines
26.	Development of the first Canadian Sedentary Behaviour Guidelines for Children and Youth
27.	Built and Social Environmental Determinants of Physical Activity and Obesity in Ottawa Neighbourhoods – The Neighbourhood Physical Activity Study
28.	Examining the Folate Status of Canadians
29.	Canadian Assessment of Physical Literacy (CAPL)
30.	Canada – Mexico Battling Childhood Obesity
31.	Canadian Health Measures Survey: Analyses of healthy active living indicators of Canadians

CURRENT RESEARCH INITIATIVES (*project details*)

1. **Appetite Signaling Proteins and Energy Intake in Obese Adolescents with Binge Eating Disorder: A Pilot Study**

Principal investigator: Dr. Kristi Adamo

Co-investigators: S. Hadjiyannakis, G. Goldfield, E. Doucet

Funding Source: Children's Hospital of Eastern Ontario Research Institute (\$30,000)

Description: The increasing prevalence of obesity in youth is due to positive energy balance resulting from increased energy intake vs. energy expenditure. Our "toxic environment", characterized by an overabundance of palatable food rich in fat and sugar, encourages over-eating. Appetite regulation and the control of food intake are thereby of great scientific interest and clinical relevance. Feeding behaviour is the result of complex interactions between genetic, biological, environmental and psychosocial factors. From a biological perspective, food intake is controlled by hunger and satiety signals. The signals are generated in peripheral organs, such as the digestive tract and adipose tissue, and in the brain itself. Hunger and satiety signals generated by the GI tract, including ghrelin, PYY, and GLP-1, have been implicated in the short-term regulation of food intake. The primary objectives of this study are to assess whether there are differences in the temporal patterns of ghrelin, PYY, and GLP-1 and sensations of satiety following a standardized test meal between obese adolescents with and without binge eating disorder (BED). Secondary objectives are to evaluate whether there are baseline differences between fasting levels of ghrelin (hunger stimulating peptide) and PYY, GLP-1 (satiety hormones) in obese adolescents with BED vs. obese adolescents without BED; determine whether the levels of signaling proteins released after a standard meal predict the sensation of satiety and fullness and/or the amount of food the adolescent will consume when provided with *ad libitum* access.

Status: Participant recruitment was completed as of November 2010 and assays are now being performed and data should be available by March 2011 with manuscripts to be prepared immediately thereafter.

2. **Physiological and psychological predictors and determinants of metabolic complications of pediatric obesity: A Cohort Study**

Principal investigator: Dr. Kristi Adamo

Co-investigators: S. Hadjiyannakis, G. Goldfield, S. Dagenais

Funding Source: Canadian Diabetes Association (\$49,730)

Description: This study is an exploratory, prospective, observational cohort feasibility study of obese children attending the CHEO Pediatric Endocrinology Clinic. It is expected to generate data and hypotheses that will be used to inform sample size calculations in future studies. For this initial study, children will be recruited over one year and followed for a period of one year after recruitment. The initial plan is to gather clinical data obtained during a comprehensive patient assessment protocol to determine the feasibility of enrolling a larger group of patients into a long-

term study with the goal of answering important research questions aimed at improving patient care in this population. There will be 4 dimensions related to child obesity being assessed bi-annually in the children visiting CHEO's Pediatric Endocrinology Clinic. These include: i) Biomarkers & Clinical Markers- plasma, serum and urine factors as well as abdominal ultrasound and sleep study, ii) Body Composition- height, weight, BMI, and body fat, iii) Physical Activity, Fitness & Nutrition – 7-day physical activity recall and accelerometry, VO₂ peak, Resting Energy Expenditure and dietary intake, iv) Psychosocial & Behavioural Factors – eating behaviour and food practices, quality of life, depression, anxiety, stress, self-esteem, and coping. Ultimately, it is our intent to systematically evaluate the population visiting this clinic to determine the prevalence of and predictors of various obesity related co-morbidities. These data will aid us in developing an effective course of action for the management of obesity and related co-morbidities at the CHEO Pediatric Endocrinology Clinic.

Status: Recruitment for the original pediatric obesity cohort study was completed in October 2010 and this project has been amalgamated with the new Centre for Health and Active Living obesity management program. As an extension of the original cohort study, we will play a role in the evaluation of the pediatric obesity treatment program.

3. Validation of a sub-maximal treadmill protocol to measure cardiorespiratory fitness in overweight and obese children and youth

Principal investigators: **Drs. Kristi Adamo and Rachel Colley**

Co-investigator: **Peter Breithaupt**

Funding Source: Sub-study of the Cohort Study described in #2 above.

Description As part of the **physiological and psychological predictors and determinants of metabolic complications of pediatric obesity cohort study (POC)** one of the major dimensions being assessed is cardiorespiratory fitness through a measure of VO₂ peak. However, the current approach to measuring fitness requires that children exercise until exhaustion; an experience which may be particularly negative for overweight/obese children. As it is possible to predict maximal fitness using a sub-maximal test this may be a more comfortable and appropriate methodology for future measures of aerobic fitness. All those who complete a 'maximal' fitness test as part of the POC, or now the Centre for Health and Active Living obesity management program, will be approached to complete a subsequent validation test. We hope that our new test will be better tolerated and more reflective of the intensity of movement that overweight/obese children and youth would undertake in the real world while still providing the important measure of fitness. The new test will be based on self-paced walking speed for 4 minute stages of increasing intensity through an increase in grade until a cap of 85% of age predicted maximal heart-rate is achieved.

The purpose of the project is to determine whether the new Healthy Active Living and Obesity Research Group (HALO) sub-maximal aerobic fitness test protocol for OW/OB children and youth provides a comparable estimate of VO₂ to that measured using validated maximal and sub-maximal, equation-based, protocols.

Status: Recruitment and assessment is ongoing for this trial as new participants with the Centre for Health and Active Living obesity management program continue to be seen twice per week. To date 16 assessments have been completed with 43 required to have an adequate statistical validation of the new protocol.

4. Body Composition Measured by Dual-Energy X-ray Absorptiometry Half-body Scans in Obese Children

Principal investigators: Drs. Kristi Adamo and Rachel Colley

Co-investigator: Peter Breithaupt

Funding Source: Sub-study of the Cohort Study described in #2 above.

Description As part of the **physiological and psychological predictors and determinants of metabolic complications of pediatric obesity cohort study (POC)** another of the major dimensions being assessed is body composition. Completed through the use of dual-energy x-ray absorptiometry (DXA), considered the gold standard for human body composition measurements, there were sometimes issues in collecting complete data due to size restrictions on the scanner. The purpose of this study was to perform a methods comparison of a half-body scan versus whole body scan for measuring body composition in a sample of obese children and youth. Of the 58 children required to get a DXA scan as part of the POC, 34 (58%) fit within the scanning field and were included in the analysis. By comparing percent fat, total mass, fat mass, lean mass, and bone mineral content (BMC) estimated from half-body scans, to the whole-body results strong correlations were found between the half-body and whole-body scan methodologies for these variables. As an important aspect in providing clinical care to this population is to have an accurate measure of their body composition it is important that the results from this study support using a half-body scan methodology for percent fat, total mass, fat mass, lean mass, and BMC as a valid alternative to whole-body analysis in obese children and youth.

Status: This project has been completed with results which were presented at the 2010 CSEP conference in Toronto, and a manuscript has been submitted to the Journal of Pediatrics for publication.

5. Maternal Obesity Management – The MOM Trial (PILOT)

Principal investigator: Dr. Kristi Adamo

Co-investigators: E. Keely, M. Walker, S. Hadjiyannakis, G. Goldfield, N. Barrowman, G. Tawagi, J. Sylvain

Collaborators: A. Gruslin, F. Tesson, D. Prud'homme, I. Strychar, D. Stacey

Funding Source: Canadian Institutes of Health Research Team Grant (\$300,000), Ottawa Dragon Boat Foundation (\$90,000)

Description: Obesity is our society's most prevalent public health problem. It affects Canadians of all ages, ethnicity and socioeconomic status and it is very important to address obesity as early as possible because the longer it persists the harder it is to treat. Prevention is therefore the key. Current evidence is pointing towards pregnancy as an incredibly critical period in the programming of downstream child obesity and later adult obesity and therefore a potentially valuable prevention target. Approximately 40% of pregnant women are carrying more weight than is considered healthy. A woman's weight status prior to pregnancy and the amount of weight she gains over this period is linked to her baby's birthweight as well as weight status in childhood, adolescence and beyond. The goal of this specific study is to test whether a structured physical activity and nutrition program

offered to overweight or obese women over the course of their pregnancy will help to limit the amount of weight they gain during this time and, if this lifestyle program will result in fewer of these women giving birth to very large babies. Being overweight and gaining more weight than recommended also puts women at risk of other pregnancy-related complications such as gestational diabetes and post-partum weight retention that can affect the health of their babies and their own long-term health. We will explore the affect this intervention has on these outcomes as well. We hope that adopting healthy exercise and dietary behaviours during pregnancy will assist overweight and obese women halt the cycle of obesity.

Status: Jane Rutherford's tenure as the project research coordinator came to an end in August 2010, as she moved on to assist with the development and management of the CHEO's Centre for Healthy Active Living pediatric obesity treatment program. We welcomed Dr. Nina Fowler to our HALO team in the fall of 2010 to take on the responsibility of coordinating the MOM trial and contribute to other projects. Recruitment is ongoing for this trial. We have completed 13 baseline assessments, two 3-month assessments, and zero 6-month assessments. The trial protocol was presented at the 2010 CSEP conference in Toronto.

6. CIHR Team in Critical Periods of Body Weight Regulation: A Women's Health Perspective SOMET: Sherbrooke-Ottawa-Montréal Emerging Team

Team Lead: Dr. Denis Prud'homme

Co-Principal investigators: **Dr. K. Adamo** (PI for Critical period of Pregnancy and early childhood- the MOM trial described above), E. Doucet and R. Rabasa-Lhoret (PIs for perimenopause), M. Brochu (PI for post-menopause/aging) and D. Stacey (PI for Knowledge translation)

Co-investigators: I. Strychar, F. Tesson, J-M Lavoie, A. Dumas, **G. Goldfield**, **S. Hadjiyannakis**, E. Keely, M. Walker

Funding Source: Canadian Institutes of Health Research (CIHR) (\$2,500,000 over 5 years)

Description: The proposed CIHR Team is a multidisciplinary research group that will investigate the problem of body weight regulation in women during three critical periods: gestation/post-partum, peri-menopause and menopause years. The objectives are to: (1) understand the complex interactions between the bio-psycho-social-cultural and environmental factors underlying body weight regulation in overweight and obese women with and without glucose intolerance, (2) develop and evaluate integrative obesity prevention and treatment approaches, specific to these critical periods, with the combined expertise of an inter-professional health team and institutional partners using new multi-level intervention programs, (3) develop practical planning tools to promote the adoption of new knowledge into practice. The findings of this research program will improve the health of Canadians and the Canadian health care system.

The specific aim of the gestation/postpartum piece is to determine the effect of a structured physical activity and nutritional intervention provided to overweight/obese pregnant women on gestational weight gain, gestational diabetes, infant birth weight, post-partum weight retention, and longitudinal child BMI.

Status: All projects under the SOMET umbrella are actively recruiting. The National and International speaker series as well as the annual SOMET student meeting have been well received.

7. Tackling the childhood obesity epidemic – Starting with MOM

Principal investigator: **Dr. Kristi Adamo**

Funding source: Ministry of Research and Innovation (\$190,000 over 5 years)

Description: Childhood obesity (OB), the most common pediatric disorder in the developed world is a costly disease in Ontario. OB is the product of complex interactions; genetic, biological, environmental, behavioral and societal factors. In its simplest form, obesity results when energy intake exceeds energy expenditure. My research will perform randomized control trials to test the ability of structured lifestyle intervention, incorporating activity and nutrition during pregnancy to prevent excessive gestational weight gain in overweight or obese women. We will determine if intervention results in fewer macrosomic infants and pregnancy complications. Successful intervention will benefit Ontario by limiting the future presentation of pediatric obesity and the social and economic burden.

Status: Kristine DeJesus completed her term as research assistant with us in 2010 and is now attending medical school in Sydney Australia. Alysha Harvey joined the HALO research team in late 2010 to take on these research assistant duties as well as many others. PhD student Zach Ferraro continues to move forward on projects related to this funding and was fortunate enough to travel to Universidade Estadual de Maringa, Brazil in December 2010 to deliver a knowledge translation seminar series related to 'the prevention and management of obesity throughout the life course'. This week long seminar was attended by clinicians, researchers, trainees from all levels as well as the community at large. PhD student Kendra Brett joined Dr. Adamo's team in September 2010 and is also working on projects related to this research theme.

8. Characterization of the insulin-like growth factor-1 (IGF1) axis in women with maternal obesity and their neonates

Principal investigator: **Dr. Kristi Adamo**

Co-investigators: **Z. Ferraro & D. Prud'homme**

Funding source: Children's Hospital of Eastern Ontario/Faculty of Health Science Partnership Research Grant (\$14,000)

Description: An unhealthy body weight during pregnancy increases the mother's risk for complications and can also affect the growth, development and future health of her baby. However, a firm understanding of the complex systems mediating these relationships is lacking. Substrate exchange within the maternal-placental-fetal axis is tightly controlled by nutrient and growth-factor availability. We are examining the control and regulation of insulin-like growth factor-1 (IGF-1) and its most abundant binding protein (IGFBP -3); a protein responsible for IGF-1 bioactivity and nutrient transport from mom to baby. Our specific interest is identifying how differences in maternal phenotype (i.e., lean vs. obese) may have downstream effects on the developing baby and therefore affect the child's metabolic health at birth. In pregnancies complicated by obesity we believe this system is compromised which predisposes larger women, and those that gain excessive amounts of weight, to give birth to macrosomic or large-for-gestational age babies. This is not only problematic in

the delivery room as it increases complication risk for mom and baby, but also increases the risk of a disproportionally accelerated growth trajectory in these infants resulting in early onset pediatric obesity, in most cases. Recently, placenta mechanistic target of rapamycin (mTOR), a 'nutrient sensor' that responds to changes in energy balance and growth factor homeostasis, was identified as a candidate protein linking maternal nutrient availability to fetal growth. With this study we intend to report, for the first time, how pregnancies complicated by obesity alter placental mTOR activity and GLUT transporter quantity in the basal membrane of the syncytiotrophoblast. We suggest that maternal energy reserve prepregnancy (BMI) as well as variation throughout gestation (weight gain) will affect placental mTOR, downstream nutrient transporters and subsequent neonatal metabolism during this highly plastic critical period. By linking these findings with neonatal IGF1 bioactivity we aim to identify a growth-regulating target that may be modified with therapeutic intervention.

Status: We have collected and catalogued a comprehensive set of bio-specimens from 31 mother-infant pairs (collection ongoing). This includes venous samples of maternal and umbilical cord serum, cord plasma, fetal DNA, directly measured placenta and infant birth weight, as well as information from antenatal and birth records (which includes neonatal APGAR scores, maternal weight gain during pregnancy, parity, smoking status, medical history, etc.). From the 31 placental samples we were able to take several tissue biopsies now preserved in specific reagents that will allow for subsequent DNA, RNA and protein analyses. We also have cross-sections of the maternal-fetal interface (nutrient transfer zone in the placenta) fixed in paraffin wax which we are analyzing using immunohistochemical techniques to determine protein localization in areas of the placenta known to be involved with substrate exchange (e.g., glucose transporters in the basal membrane of the syncytiotrophoblasts).

9. Evaluation of the 'Freggie Fridays Program' in Ottawa Schools

Principal investigator: **Dr. Kristi Adamo**

Co-investigators: **G. Goldfield & C. Colapinto**

Funding source: Canadian Produce and Marketing Association (\$30,000)

Description: The eating habits children learn when they are young will help them maintain a healthy lifestyle when they are adults and the modification of school cultures to encourage healthful eating and reduce consumption of unhealthy foods could provide perpetuity allowing successful interventions to continue to benefit students year after year. Given the amount of time children and youth spend in school, this environment can significantly influence students' food choices and intakes and thus is an ideal location intervene and target healthy eating. Recognizing that an adequate diet is of profound importance in childhood, the Canadian Produce Marketing Association (CPMA) began introducing the 'Freggie Fridays Program' to interested schools across Canada in 2007. This program has been developed to give educators and students the tools to think creatively about the benefits of healthy eating and to encourage Canadian children to eat their recommended number of fruit and vegetable servings each day as recommended by Health Canada in Eating Well with Canada's Food Guide.

Objectives: This research has two objectives:

1. To test the effectiveness of the CPMA endorsed 'Freggie Fridays Program' to increase the consumption of fruit and vegetables and reduce the consumption of high-density, high sugar based snack foods consumed by children during snack time, recess and lunch time at school.

2. To determine if children's awareness, knowledge, preference, willingness and self-efficacy to increase fruit and vegetable consumption is improved as a result of the 'Freggie Fridays Program.'

Status: We have recruited 14 Ottawa schools to participate in this research project. Of these, 8 schools are receiving the Freggie Fridays program and 6 schools are controls. Baseline assessments were completed on 892 children. Alysha Harvey has taken on the task of coordinating the Freggie Fridays project and liaising with schools as needed.

10. Understanding the Factors That Enable or Inhibit Physical Activity Engagement in Obese and Non-Obese Children

Principal Investigator: **Dr. Rachel Colley**

Co-Investigator: **M. Lloyd**

Funding Source: CHEO Research Institute Grant (\$29,025)

Description: We expect children to inherently enjoy physical activity, exercise and movement. Sadly, for the first time in our history we are faced with a situation where a large proportion of our current generation of children and youth are leading sedentary and unhealthy lifestyles; a reality that is contributing to skyrocketing rates of obesity. Obesity currently affects about a quarter of Canadian children and youth. Physical inactivity and childhood obesity increase the risk of disease later in life. In response to this urgent problem many interventions have been attempted with modest, if any, tangible success. Children are not simply 'mini adults' and thus research efforts need to look at the specific factors unique to this age group. The factors that promote or deter children from physical activity are very different from those which affect adults. Similarly, evidence is emerging indicating that obese children are different to healthy weight children in how they perceive, interpret and respond to healthy living messages. We propose that low physical activity participation rates in obese children result from a lack of understanding of their unique needs, limitations and preferences. This knowledge gap has prevented community- and school-based programming to be appropriately tailored to promote healthy active living in these children. A strong evidence base exists to show that movement skills, fitness and self-efficacy are all key determinants of physical activity in healthy weight children. Some evidence exists on how these individual factors affect physical activity participation in obese children. However, a directed effort to look at all of these factors at the same time has not been done in obese children; therefore we do not know which factor(s) is/are most important.

Status: Data collection began in August 2010 and was ongoing as of December 2010. The projected sample size is 60 children aged 8-10 years.

11. Co-Existent Obstructive Sleep Apnea and Obesity: Finding NEAT Targets for Intervention

Principal Investigators: Dr. Sherri Katz and **Dr. Rachel Colley**

Co-Investigators: **S. Hadjiyannakis** and Dr. Nick Barrowman

Collaborator: **G. Goldfield**

Funding Source: Ontario Thoracic Society / Canadian Lung Association (\$49,176.92)

Description: Obstructive sleep apnea (OSA) is a recognized complication of obesity in youth, which also has long-term health complications, including reduced quality of life, cardiovascular disease and premature death. OSA is associated with decreased sleep quality and sleep deprivation is an independent risk factor for obesity. *The compounding effect of co-existent OSA and obesity on energy balance behaviours in youth is unclear.* Historically, interventions to reduce obesity have focused on increasing purposeful exercise while not considering the energy expenditure potential of incidental movement; namely non-exercise activity thermogenesis (NEAT). Increasing NEAT has been proposed as an alternative (and currently untapped) opportunity to increase total energy expenditure (TEE) in populations who engage in low levels of purposeful exercise or sport (e.g., obese youth). *Obese youth are more likely than lean youth to be sedentary and whether OSA exacerbates this is presently unknown.* OSA and obesity are associated with dysregulation of appetite hormones, which may lead to increases in energy intake. *Whether this is exacerbated when obesity and OSA co-exist is presently unknown.* We will investigate whether the presence of co-existent obesity and OSA in youth is associated with the following outcomes to a greater extent than seen in either condition alone or compared to controls:

- (1) low NEAT and/or low moderate-to-vigorous physical activity;
- (2) altered levels of appetite-controlling hormones and/or excess dietary intake.

Status: Ethics approval obtained. Awaiting study initiation.

12. Sleep, diet and physical as well as modern sedentary activities as integrated risk factors of adiposity in children

Principal investigators: **Drs Jean-Philippe Chaput** and Anders Sjödén

Funding source: Nordea Denmark Foundation (\$1,499,000).

Description: The main objective of this study is to obtain important data from a large sample of more than 1000 Danish school children studied in their natural environment. We will be able to correlate lifestyle factors with adiposity measurements (e.g. DEXA scans) and blood samples, including measures of appetite-regulating hormones and inflammatory markers. With the use of actigraphy, we will get objective data on both sleep and physical activity patterns. By doing so, this will improve the validity of data and yield to a much more accurate assessment of the interactions between lifestyle factors and adiposity in the young. Finally, a well characterized cohort like this will give us unique opportunities for future longitudinal assessments.

Status: Pilot testing recently completed.

13. Effects of playing video games on appetite control in adolescents

Principal investigator: **Dr. Jean-Philippe Chaput**

Co-investigators: A. Astrup, A. Sjödín and A. Tremblay

Funding source: Nordea Denmark Foundation (\$450,750)

Description: Video game playing has been linked to obesity in many observational studies. However, the influence of this sedentary activity on food intake is unknown. The objective of this study is to examine the acute effects of playing sedentary video games on various components of energy balance. Using a randomized crossover design, 22 healthy, normal weight male adolescents will complete two 1-hour experimental conditions, namely video game play and rest in a sitting position, followed by an *ad libitum* lunch. The endpoints will be spontaneous food intake, energy expenditure, stress markers, appetite sensations, and profiles of appetite-related hormones.

Status: Study recently completed and manuscript has been submitted.

14. Effects of sleep restriction on energy balance: a randomized, 2-condition, crossover study in adolescents

Principal investigator: **Dr. Jean-Philippe Chaput**

Co-investigators: A. Astrup and A. Sjödín

Funding source: Nordea Denmark Foundation (\$750,200)

Description: The decrease in average sleep duration over the last decades has been mirrored by an increase in the prevalence of obesity. A growing body of epidemiological evidence shows that lack of sleep is associated with obesity, type 2 diabetes, coronary heart disease, hypertension, and all-cause mortality. However, the mechanisms behind these associations are far from fully elucidated. The main aim of this study is to experimentally examine the effects of restricted sleep on energy and substrate metabolism as well as relevant hormonal systems that might be involved in the underlying mechanisms. We hypothesize that short-term sleep curtailment decreases physical activity while increasing food intake, thereby shifting 2 crucial behavioral components of energy homeostasis toward weight gain. In 24 healthy, normal-weight adolescents, spontaneous physical activity is recorded by accelerometry and food intake as well as relevant appetite hormones assessed after 3 nights of regular sleep (9 hours/night) and after 3 nights of restricted sleep (4 hours/night). Experiments are performed in a randomized, crossover design. The present study, performed by a network of scientists with experience in key areas, uses sophisticated and partly unique methodology (e.g. polysomnography, calorimetric chamber and power spectral analysis of heart rate variability). The study is likely to result in a number of new and important findings regarding the influence of impaired sleep on energy balance and might strengthen the recommendations for optimal sleep in adolescents.

Status: Testing almost completed.

15. Sleep and obesity in children and adolescents: identifying pathogenic pathways

Principal investigator: Dr. Jennifer McGrath

Co-investigators: **Jean-Philippe Chaput**, Angelo Tremblay, Robert Brouillette, Marie Lambert, Evelyn Constantin, Robert Kline, Gilles Paradis

Funding source: Canadian Institutes of Health Research (\$1 353 724)

Description: Short sleep duration is associated with overweight and obesity in children and adults. There is strong support for a causal association between short sleep duration and obesity. There is mounting evidence for three potential pathways: alterations in appetite regulation hormones, activation of the stress response system, and dysregulation of glucose homeostasis. However, there is a paucity of research examining how the unique contributions and combined effects of these three mechanisms may explain the association between sleep and obesity. It is evident that multiple mechanisms potentially underlie the association between short sleep duration and obesity in children. To date, no studies have simultaneously modeled or integrated these mechanisms to determine their unique and combined contributions in order to explain the association between sleep and childhood obesity. The predominant pathophysiological evidence is based on well-controlled, but small sample-size, laboratory studies of short durations in adults. To date, virtually no studies have examined these mechanisms in children. Objective sleep assessment (polysomnograph) provides detailed and discriminating information about sleep duration, sleep architecture (sleep stages), and sleep fragmentation (arousals). Research aimed at identifying how these pathophysiological mechanisms vary in accordance with specific sleep stages and parameters, based on objective assessment, will facilitate the understanding of the association between sleep and obesity. Research based on prospective designs with repeated measures of both sleep and weight, including objective assessment of sleep duration, and with a focus on adolescents and younger children, who may be more vulnerable to the consequences of sleep loss, is needed to better define the causal relationship of sleep deprivation on obesity.

Status: Experimental testing is currently underway.

16. Family-Based Behavioural Treatment of Childhood Obesity via Internet: A Randomized Controlled Trial

Principal Investigator: **Dr. Gary Goldfield**

Co-Investigators: P. McGrath, D. Prud'homme, **S. Hadjiyannakis**, R. Sigal

Funding Source: Heart & Stroke Foundation of Canada (\$100,000)

Description: Because obese children are more likely to become obese adults than lean children, and research shows that obesity treatment in adults is largely ineffective in the long-term, intervention during childhood is critical to prevent adult obesity and related diseases. Family-based behavioural treatment for childhood obesity has been proven to be the treatment of choice, but this method of service delivery is labor-intensive, designed for small numbers of families, and not widely available. The deficits in service provision are striking when one considers that 25% of children are overweight

or obese, yet there are only a few multidisciplinary childhood obesity clinics in Ontario. This discrepancy between the supply and demand for comprehensive child obesity treatment highlights the need to explore alternative methods of service provision. Rapid increases in access to the Internet make it a viable medium of public health intervention, but no studies have used this medium to deliver child obesity treatment.

Objectives: The primary objectives of this study are to evaluate the feasibility as well as the effects of a comprehensive family-based behavioural intervention for childhood obesity delivered via Internet on percent body fat measured using BIA in 8-12 year old overweight or obese children. Secondary objectives include evaluating the effects of the intervention on children's BMI, waist and hip circumference, and quality of life in children and parents will also be examined.

Study Design/Intervention: Twenty children (and parents) will be recruited to family-based behavioural intervention via Internet. The behavioural intervention will deliver behaviour modification in eating and activity behaviours through multiple forms of interactive media, including regular (3x/week) contact and individualized feedback from a therapist and dietitian using email, chat rooms for social support/education, videographic instruction on behaviour modification techniques, and education modules in healthy eating and active living available for downloading (in modular format) on our secure website. The intervention period will last 3 months, with a 3-month follow-up assessment post treatment.

Status: Active recruitment of participants was completed in December 2010, along with data from qualitative interviews to assess barriers, facilitators, and participant satisfaction. Data are being analyzed knowledge dissemination will be done via publications and presentations in 2011.

17. Healthy Eating, Aerobic and Resistance Training in Youth (HEARTY)

Principal investigator: Dr. Ron Sigal

Co-Principal investigators: **G. Goldfield**, G. Kenny, **S. Hadjiyannakis**

Funding Source: Canadian Institutes of Health Research (\$1,600,000)

Description

Background: Obesity among youth has reached epidemic proportions. Exercise and diet modification can reduce adiposity and the risk of co-morbidities in obese adults and youth, diabetes and other chronic diseases. Obesity can make adherence to aerobic activity difficult but may be less of an obstacle to resistance training, which has shown favourable effects on lean body mass, metabolic rate, insulin resistance and quality of life in adults. Resistance training may offer an effective alternative or adjunct to aerobic training in overweight adolescents, but no randomized controlled trials has yet evaluated resistance exercise in this population.

Objectives: To assess the effects of resistance training, aerobic training, and combined resistance and aerobic training on body composition (CMRI), cardiovascular disease risk markers and psychosocial functioning in overweight and obese adolescents.

Study Design: Randomized controlled trial. In the full trial, after a 4-week supervised low-intensity run-in period, 300 overweight or obese adolescent youth age 14-18 will be randomized to 4 arms: Diet alone (**C**) or in combination with aerobic exercise (**A**), resistance exercise (**R**), or combined aerobic and resistance exercise (**A+R**). The intervention will last 16 weeks, with a follow-up assessment immediately and 6-months post-treatment.

Hypothesis: Reductions in percent body fat will be larger in diet + aerobic and diet + resistance exercise than diet only controls at post-treatment, and the combined aerobic and resistance training will be superior to either aerobic or resistance training alone in reducing percent body fat at post-treatment. The combined resistance and aerobic group will show greater improvements in percent body fat, body composition, and physiological and psychosocial function at post-treatment and 10-months follow-up. Groups that include resistance training will produce greater psychosocial changes and better adherence than aerobic training alone at post-treatment and follow-up.

Significance: More effective intervention in overweight and obese adolescents is needed. This study may identify that resistance training is an important component in the treatment of overweight adolescents. As such, findings may influence clinical decision making in the management of juvenile obesity, as well as inform public health exercise guidelines and school-based physical education curricula in attempt to reduce the economic, medical, and psychosocial burden of obesity on youth.

Status: The final subjects have been randomized. We anticipate that data collection will be completed by August 2011.

18. The Preschoolers Activity Trial (PAT)

Principal Investigator: **Dr. Gary Goldfield**

Co-Investigator: **K. Adamo**

Collaborators: V. Temple, PJ. Naylor

Funding Source: Heart & Stroke Foundation of Ontario (\$140,000)

Description: The current physical activity guidelines for preschoolers by the North American Society for Physical Education (2002) call for children aged 2-5 years old to accumulate at least 60 minutes of structured physical activity and 60 minutes of unstructured (spontaneous) physical activity per day, and not be sedentary for more than 60 minutes at one time. However, recent research has found that most pre-school children (aged 2-5 years) in North America engage in very little physical activity, and only a small fraction meet the physical activity guidelines. Many preschool children spend the majority of their time in day care settings, making this environment an ideal place to promote daily physical activity in fun and safe ways and reduce time that children spend in sedentary behaviour.

The primary aims of the Preschoolers Activity Trial are to test whether Day Care providers can increase their children's physical activity and reduce time spent in sedentary behaviour when they are provided with appropriate training and tools to do so. We also want to see if the children whose day care providers got physical activity training show improvements in body composition and motor skill development.

To test our study objectives, we will use a randomized controlled design. We will "randomly" (like flipping a coin) assign 2 day cares to the Intervention group whereby the day care providers are

given training on how to get children under their care more active or to 2 day cares to a Control group in which day care providers do not receive training and implement their normal curriculum. Providers in day cares assigned to the intervention group will receive two, 3-hour workshops before the study period, delivered by a Master Trainer experienced in promoting physical activity in preschoolers. They will also be provided with a manual and resource kit. The Master Trainer will also provide two “booster” sessions per month in the intervention day cares that will involve facilitating physical activities with the children.

Measurement of physical activity and sedentary behaviour (objectively assessed by a motion sensor – “Actical” accelerometer), body composition and motor skill development will take place in the day cares before the study, at 3-months and 6-months post study initiation. After the study is completed, care providers assigned to the control group will receive the full training and resource kit but we will not evaluate the effects on the children.

This study is important in that establishing a healthy active lifestyle must start early while children’s health behaviour are very malleable, and this may help prevent obesity and other chronic diseases such as Type 2 diabetes or cardiovascular disease later in life.

Status: Obtained approval from CHEO Research Ethics Board and in process of collecting data.

19. Effects of Methylphenidate (Ritalin) on Energy Balance in Obese Adolescents

Principal Investigators: Dr. Eric Doucet and **Dr. Gary Goldfield**

Co-Investigator: Dr. Phillippe Robaey

Funding Source: CHEO Research Institute/Faculty of Health Sciences, University of Ottawa (\$15,000)

Description

Background: Dopamine mediates the reinforcing value of food, and low levels of dopamine are related to increased feeding behaviour. Thus administering a drug that increases dopamine may reduce energy intake, possibly by reducing food reinforcement.

Objectives: To test the effects of 1-week administration of short-acting methylphenidate (MPH), a drug that increases the availability of dopamine by blocking its reuptake, on energy intake, macronutrient preference, and energy expenditure in obese adolescents.

Design: Twenty obese adolescents will be given placebo or short-acting MPH (0.5 mg/kg) in a randomized, double blind, placebo-controlled crossover fashion. Dosing will occur three times per day for 7 days. At the beginning of day 7, subjects will enter a metabolic chamber for accurate measurement of energy intake, macronutrient preference, hunger and appetite sensations, food reinforcement, as well as energy expenditure (resting energy expenditure and thermic effects of food). Free-living physical activity energy expenditure will be assessed for 7 days by accelerometry (Actical).

Significance: Behavioural treatment of adolescent obesity has yielded modest outcomes, thus the need to identify more effective weight management approaches are needed. Findings of the current study

may extend and support acute laboratory data to a 1 week trial of MPH as a method of reducing food intake and increasing energy expenditure in obese youth, suggesting that agents targeting increased dopamine may be helpful in the overall management of obesity and its comorbidities.

Status: In process of getting ethics approval from Health Canada, CHEO, and University of Ottawa.

20. A Tertiary Care Approach to the Management of Pediatric Obesity and its Co morbidities

Principal investigator: **Dr. Stasia Hadjiyannakis**

Co-investigators: **K. Adamo, G. Goldfield, M. Tremblay**

Funding Source: Academic Health Sciences Centre (AHSC) AFP Innovation Fund (\$65,000)

Description: The primary purpose of this study is to evaluate the efficacy of the 2006 Canadian Obesity Clinical Practice Guidelines. Children with obesity related health conditions are seen and evaluated by multiple physicians and their clinics here at CHEO and the complications associated with obesity are assessed and treated. This results in patients and their families having to make multiple visits to the hospital and it creates a heavy load on the health care system. Furthermore, their obesity is not being managed. With a program that follows the Canadian Clinical Practice Guidelines for the Prevention and Management of Obesity, the hope is that the health of the patients would greatly improve and the number of visits to the specialists by each patient would decrease allowing greater and more effective access to care for patients and their families. Children and their families will take part in a structured program that has them meet regularly with a dietitian, exercise specialist and psychologist over a 12-month period through the Centre for Healthy Active Living. At the end of one year, results of a variety of health measures (body composition, fitness testing, biomarkers, and psychosocial questionnaires) will be evaluated.

Status: Awaiting final Research Ethics Board approval with project to begin immediately thereafter.

21. Prevalence of Markers of Insulin Resistance among Offspring Exposed to Gestational Diabetes: A 13 to 17 Year Follow-Up Study of a RCT Cohort (GDM)

Principal investigator: **Dr. Stasia Hadjiyannakis**

Co-investigators: T. Pinto, **K. Adamo, J. Rutherford**, J. Malcolm, E. Keely, **G. Goldfield**, I. Gaboury, M. Lawson

Funding Source: Children's Hospital of Eastern Ontario Research Institute (\$28,912)

Description: Gestational Diabetes Mellitus (GDM) is defined as "carbohydrate intolerance of variable severity with first recognition during pregnancy." There is increasing evidence to suggest that offspring of women with GDM are at an increased risk of long-term consequences such as obesity and abnormalities of glucose metabolism including Type 2 Diabetes. This study aims to determine whether differences in the prevalence of markers of insulin resistance and body composition exist in a cohort of offspring of women with GDM when compared to a control group matched for age, sex,

pubertal stage and BMI. Offspring (aged 13-17 years of age) of mothers with GDM will be examined for markers of insulin resistance [increased waist circumference, hypertension, hypertriglyceridemia, low HDL-cholesterol, impaired glucose tolerance, impaired fasting glucose] and body composition as measured by percent body fat (DEXA), abdominal obesity (waist circumference) and compared to a matched control group. The possibility of prenatal and postnatal interventions, targeting known modifiable risk factors could play an integral part in preventing or attenuating this epidemic of obesity and Type 2 Diabetes.

Status: Active recruitment and assessment underway.

22. International Study of Childhood Obesity, Lifestyle and the Environment (ISCOLE)

Principal investigators (Canadian Site): **Dr. Mark Tremblay and Dr. Jean-Philippe Chaput**

Principal investigators (Coordinating Center): Drs Peter T. Katzmarzyk and Timothy S. Church

Principal investigators (Study Sites): Drs Catrine Tudor-Locke (USA), Chris Riddoch (UK), Timothy Olds (Australia), José Maia (Portugal), Victor Matsudo (Brazil), Juan Ricardo López-Taylor and Ian Janssen (Mexico), Olga Sarmiento (Colombia), **Vincent Onywera and Mark Tremblay** (Kenya), Vicki Lambert (South Africa), Gang Hu and Muqing Yi (China), and TBD (India).

Funding source: Pennington Biomedical Research Center (Canadian Site \$420,000).

Description: The primary aim of ISCOLE is to determine the relationship between lifestyle characteristics, obesity and weight gain in a large multi-national study of 10-year-old children, and to investigate the influence of behavioral settings and physical, social and policy environments on the observed relationships within each country. Data will be collected in 12 countries (500 children per site) from five major regions of the world (Eurasia & Africa, Europe, Latin America, North America, and the Pacific). Baseline evaluations and periodic follow-up examinations will be undertaken in each country. The physical characteristics of the children will be directly measured in order to classify their body weight and adiposity status, and physical activity and dietary patterns will be measured with the most objective techniques currently available. A concise set of environmental measures that are feasible, valid and meaningful across the international settings included in this research will also be employed. The results of this study will provide a robust examination of the correlates of obesity and weight gain in children, focusing on both sides of the energy balance equation. The results will also provide important new information that will inform the development of lifestyle interventions to address childhood obesity that can be culturally adapted for implementation around the world. This protocol is for the baseline assessment of all participants. The protocol for periodic follow-up examinations will be developed as the study progresses beyond the baseline data collection phase.

Status: Ethics approval underway.

23. Kenyan International Development Study – Canadian Activity Needs (KIDS-CAN) Research Alliance

Principal investigator: **Dr. Mark Tremblay**

Co-investigators: **V. Onywera, K. Adamo, W. Sheel, M. Boit, J. Waudu, S. Muthuri**

Funding Sources: Canadian Institutes of Health Research – International Opportunities Partnership (\$25,000); University of Ottawa (\$5,000); International Research Development Centre, through CAMBIO (\$7,000); Private Donors (\$10,000)

Description: Kenya is a country where traditionally most children live an active lifestyle and thus have been protected from the childhood obesity pandemic. Currently, their growing affluence and global economic and technological influences place them at-risk of transitioning to more obesity-promoting environments and behaviours common-place in North America. However no data currently exist regarding obesity prevalence, fitness levels or physical activity patterns in their pediatric population. Thus the Canadian contingent of the KIDS-CAN Research Alliance (Tremblay, Adamo, Sheel) visited Kenya in November 2008 for meetings with University and Government officials (Education, Statistics, Health) and to collect pilot data on body composition, aerobic fitness, strength and flexibility at 2 urban and 2 rural schools. Data were also collected from parents on their health beliefs and physical activity patterns. We hope to extend this project and gather similar data on a nationally representative sample in Kenya and compare to our Canadian population.

Status: Pilot data collection is complete. Follow-up grant submissions have been submitted for continuation of the research alliance and the development of an International Ambassadors Team is underway. Dr. Onywera from Kenya spent three months studying with the HALO team in 2009 thanks to generous support from Kenyatta University, the University of Ottawa and HALO. Dr. Tremblay has been appointed as an Adjunct Professor at Kenyatta University in Nairobi. Several presentations have been at international conferences on the KIDS-CAN Research Alliance and two manuscripts have been completed from the pilot research.

24. Active Healthy Kids Canada 2010 Report Card

Principal investigators: **Dr. Mark Tremblay and Dr. Rachel Colley**

Co-investigator: **J. Barnes**

Funding Source: Active Healthy Kids Canada (\$65,025)

Description: Active Healthy Kids Canada's Report Card on Physical Activity for Children and Youth ("Report Card") is a research-based communications and advocacy piece designed to provide insight into Canada's "state of the nation" each year on how, as a country, we are being responsible in providing physical activity opportunities for children and youth.

The development of each annual Report Card is largely supported by the work of a Research Work Group. The Research Work Group includes an interdisciplinary selection of experts that are responsible for identifying and ranking Report Card indicators based on available data, research and key issue areas that can be graded nationally. As part of the development process the Research Work Group also accesses additional experts/researchers to fill issue specific gaps as applicable. Once

gathered, the raw report card data are organized into a detailed version (long form) of the Report Card and condensed to produce a summary (short form) Report Card. The Healthy Active Living and Obesity Research Group at the CHEO Research Institute has entered into a strategic partnership agreement whereby the HALO research group serves as the knowledge and research engine for Active Healthy Kids Canada, including the writing of the Report Card. HALO leads the development, coordination, data gathering, evidence synthesis and expert response related to the Report Card preparation and release.

Status: The project began August 1, 2009 and the report card was released in April 2010. The media reach of the release of the 2010 Report Card exceeded 150 million and Global News ranked it as the second health news story of 2010!

25. Revising Canada's Physical Activity Guidelines

Principal investigator: **Dr. Mark Tremblay**

Co-investigators: Steering Committee through the Canadian Society for Exercise Physiology

Funding Source: Canadian Society for Exercise Physiology and Public Health Agency of Canada

Description: This project builds on the substantial work already done on the “future of physical activity measurement and guidelines” project. It utilizes the intellectual capital summarized in the foundation documents (Canadian Journal of Public Health 98(suppl.2), 2007; Applied Physiology, Nutrition and Metabolism 32(suppl.2E), 2007) and the Thematic Series of papers published in the International Journal of Behavioral Nutrition and Physical Activity (http://www.ijbnpa.org/series/canada_physical_activity) edited by Dr. Mark Tremblay as it was intended and serves to meet or advance several needs related to public health in Canada. Through 2010 new Canadian Physical Activity Guidelines for Children (aged 5-11 years), Youth (aged 12-17 years), Adults (aged 18-64 years), and Older Adults (aged 65+ years) were crafted, assessed by stakeholders and revised for final release in 2011. The Healthy Active Living and Obesity Research Group at the Children's Hospital of Eastern Ontario Research Institute worked closely with the Canadian Society for Exercise Physiology on the development of the new Guidelines.

Status: In addition to the 14 manuscripts published as foundation documents in *Applied Physiology, Nutrition and Metabolism* and the *Canadian Journal of Public Health*, five systematic reviews, a summary consensus paper and a descriptive process paper were published in 2010 as a “Thematic Series” in the *International Journal of Behavioral Nutrition and Physical Activity*. The final new Physical Activity Guidelines were crafted by the end of 2010 and will be released in early 2011 by the Canadian Society for Exercise Physiology in partnership with ParticipACTION, HALO and other partners.

26. Development of the first Canadian Sedentary Behaviour Guidelines for Children and Youth

Principal investigator: **Dr. Mark Tremblay**

Co-investigators: Steering Committee through the Canadian Society for Exercise Physiology

Funding Source: Canadian Society for Exercise Physiology and HALO

Description: This project builds on the substantial work already done on the “future of physical activity measurement and guidelines” project. It utilizes the intellectual capital summarized in the foundation documents (Canadian Journal of Public Health 98(suppl.2), 2007; Applied Physiology, Nutrition and Metabolism 32(suppl.2E), 2007) and serves to meet or advance several needs related to public health in Canada. Through 2010 new Canadian Physical Activity Guidelines for Children (aged 5-11 years), Youth (aged 12-17 years), Adults (aged 18-64 years), and Older Adults (aged 65+ years) were crafted, assessed by stakeholders and revised for final release in 2011. The Healthy Active Living and Obesity Research Group at the Children’s Hospital of Eastern Ontario Research Institute worked closely with the Canadian Society for Exercise Physiology (CSEP) on the development of the new Guidelines. In parallel with the development of the Canadian Physical Activity Guidelines, HALO and CSEP followed rigorous clinical practice guideline development procedures to develop the first Canadian Sedentary Behaviour Guidelines for Children and Youth, planned to be released with the physical activity guidelines in early 2011.

Status: Through 2010 a sedentary behaviour background review paper was published, a systematic review of the literature examining the relationship between measured sedentary behaviours and health outcomes was completed and submitted for publication, a consensus meeting was held to craft the sedentary guidelines, a survey of stakeholders opinions of the crafted guidelines was completed, a conference symposium was held, and a manuscript was completed on the guideline development process. The final new Sedentary Behaviour Guidelines will be released in early 2011 by the Canadian Society for Exercise Physiology in partnership with HALO and ParticipACTION.

27. Built and Social Environmental Determinants of Physical Activity and Obesity in Ottawa Neighbourhoods

Principal investigators: **Dr. Mark Tremblay** and Dr. Denis Prud’homme

Co-investigators: **S. Prince Ware, T. Saunders, R. Colley**

Funding Source: Faculty of Health Science and CHEO Research Institute partnership grant (\$14,986)

Description: This research project looks at the potential influences of the built and social environments on objectively measured physical activity, overweight and obesity in parents and children across 86 City of Ottawa neighbourhoods. The project is a cooperative venture involving City of Ottawa Public Health and the Ottawa Neighbourhood Survey under the direction of Dr. Elizabeth Kristjansson (School of Psychology), the University of Ottawa, Dr. Denis Prud’homme, Faculty of Health Sciences and Dr. Mark Tremblay from the CHEO Research Institute. The pilot data will identify whether possible cross-sectional relationships exist between the built and social environments and physical activity and overweight/obesity in adults and children in the city of Ottawa.

Status: This project is underway with completion of data collection planned for May 2011.

28. Examining the Folate Status of Canadians

Principal investigators: **Dr. Mark Tremblay** and Dr. Debbie O'Connor

Co-investigators: **C. Colapinto** and L. Dubois

Funding Source: Canadian Institutes of Health Research (CIHR) Operating Grant (\$95,000) and CIHR Fellowship in Public Health for Cynthia Colapinto (\$220,000)

Description: For her dissertation research, Cynthia Colapinto will investigate the folate status of the Canadian population, in particular women of childbearing age, using direct biochemical blood measures available for the first time in 30 years from a nationally representative sample through Statistics Canada's Canadian Health Measures Survey (CHMS). Prevalence of folate deficiency in the general population, and folate inadequacy for maximal protection against neural tube defects in women of childbearing age, will be determined and risk factors identified (e.g., demographic, socioeconomic status, folic acid supplement and folate-rich food intake). An international collaboration has been formed with the National Center for Health Statistics (NCHS, United States) allowing for comparison of CHMS data to relevant American data (i.e., the National Health and Nutrition Examination Survey (NHANES)). This research will provide a novel opportunity to inform policy makers with respect to food fortification and prenatal supplementation recommendations for the Canadian population.

Status: Cynthia Colapinto is a 3rd year Ph.D. Candidate in the Population Health program at the University of Ottawa. The first of several manuscripts from this research was published in the *Canadian Medical Association Journal* in December 2010, receiving media attention around the world.

29. Canadian Assessment of Physical Literacy (CAPL)

Principal investigator: **Dr. Mark Tremblay**

Co-investigator: **M. Lloyd, E. Knight, R. Larouche, T. Saunders**

Funding Sources: Multiple sources including Canadian Institutes of Health Research (CIHR). New funding sources are always being sought.

Description: Many children today lack the basic skills, knowledge and physical activity behaviours needed to lead healthy active lifestyles. For the purposes of the Canadian Assessment of Physical Literacy (CAPL): *Physical literacy is a construct which captures the essence of what a quality physical education or a quality community sport/activity program aims to achieve. It is the foundation of characteristics, attributes, behaviours, awareness, knowledge and understanding related to healthy active living and the promotion of physical recreation opportunities.*

Physical literacy is deemed to have four core domains:

- 1) Physical Fitness – cardio-respiratory endurance, muscular strength & endurance, and flexibility
- 2) Motor Behaviour – fundamental motor skill proficiency
- 3) Physical Activity Behaviours – objectively measured daily activity
- 4) Knowledge, Awareness and Understanding – psycho-social/cognitive factors

Being physically literate is conceived to be the result of the integrated interaction of these domains to facilitate lifelong healthy physical activity behaviours. The aim of this project is to develop a comprehensive tool to measure physical literacy in Canadian children thus allowing education, sport, recreation, and health experts to better understand the quality and effectiveness of current programming. Currently there is no comprehensive measurement to address the multi-dimensional nature of physical literacy in children – there is no accepted battery of tests to assess whether the outcome of quality physical education, sport, or recreational programming is achieved. *The absence of such a test, or series of tests, may reduce accountability, the quality and quantity of effort, and the priority assigned to the area.*

Status: The CAPL has been approved by the Children’s Hospital of Eastern Ontario (CHEO) Research Ethics Board (REB), as well as two local school boards. Over 800 children have been tested using various iterations of the CAPL. This project is currently recruiting additional participants through schools and community sport/recreation programs. Four manuscripts have now been published on the CAPL background work and developmental research. Many research conference abstracts have been prepared and presented from the work to date.

30. Canada – Mexico Battling Childhood Obesity (CAMBIO)

Principal investigators: Dr. Ian Janssen and Dr. Juan Lopez Taylor

Co-investigators: P.T. Katzmarzyk, **M.S. Tremblay**, R. Ross, L.Y. Lévesque, E.M. Power, A.B. Guzmán Alatorre, E. Jáuregui Ulloa, A. Lara Esqueda, V. Ortis Lefort, J.A. Rivera Dommarco, A. Salmon, E.M. Vásquez Garibay

Funding Source: Teasdale-Corti Grant Agreement from the International Development Research Centre (IDRC) on behalf of the Global Health Research Initiative (\$1,554,400)

Description:

CAMBIO is funded through Queen’s University in Kingston, Canada in collaboration with the University of Guadalajara, Mexico. The collaboration began in 2006. Childhood obesity is emerging as a public health crisis in many countries. In industrialized, high income countries, under-nutrition and infectious diseases have been largely replaced by diseases of over-nutrition such as type 2 diabetes, heart disease, and cancers. However, in low and middle income countries such as Mexico, simultaneous under-nutrition and obesity are placing a double burden on public health as the population undergoes rapid economic and social changes, leading to a nutritional transition. The rapid emergence of obesity in developing countries has the potential to replace under-nutrition and infectious disease as the primary health concern in the coming years. The CAMBIO Program is anchored on developing an active collaboration between researchers from Canada and Mexico, as well as partners from government in both countries. The plan of research development is built around four main activities: 1) Development and Delivery of an Annual Obesity Short-Course, 2) Development of Collaborative Program of Research, 3) Student and Faculty Exchanges, and 4) Building Partnerships and Networking. The CAMBIO Program is intended to develop the capacity for a sustainable, on-going multi-disciplinary research program to study childhood obesity and healthy body weights in Mexico. This research will inform the development of intervention programs and healthy public policies to combat the double-edged problem of obesity and under-nutrition in Mexico and in other developing countries beginning to experience similar problems. The long-term

goal of the Program is to increase research capacity in Mexico in the field of childhood obesity, within the context of the nutrition transition.

Status: The CAMBIO Research Program is in its final year of its 5 years of funding. Several faculty and student exchanges have occurred (including Pilar Rodriguez spending three months with the HALO team) and many subsidiary research projects are underway, including the development of a Mexico Report Card modeled after the Active Healthy Kids Canada Report Card. Many manuscripts are currently being prepared from this research. A formal partnership is also in place linking the CAMBIO and KIDS-CAN research alliances.

31. Canadian Health Measures Survey: Analyses of Healthy Active Living Indicators of Canadians

Principal investigators: **Dr. Mark Tremblay and Dr. Rachel Colley**

Co-investigators: M. Shields, I. Janssen, C.L. Craig, S. Wong, D. Garriguet, M. Laviolette, T. Bushnik, S. Connor Gorber, J. Clarke

Funding Source: Partnership with Statistics Canada

Description: The Canadian Health Measures Survey (CHMS) is the most comprehensive direct health measures survey ever conducted in Canada. It has direct measures of health indicators related to physical activity, fitness, blood pressure, anthropometry, oral health, chronic disease, infectious disease and environmental exposures on a representative sample of Canadians aged 6-79 years. The data from the first cycle of the CHMS began to be released in early 2010. The HALO team, led by Drs. Tremblay and Colley have developed an analytical plan to prepare several manuscripts based on the CHMS data related to fitness, physical activity, blood pressure, sleep, spirometry and several biospecimen analytes. The results of these analyses will yield unique and impactful evidence to inform future research and policy development in Canada.

Status: Over 15 manuscripts based on the CHMS data have been published by HALO researchers and at least 10 additional manuscripts are in press or being prepared. External funding support from the Canadian Institutes of Health Research has been applied for to provide further support for the analyses and for the dissemination of findings.

SUMMARY OF RESEARCH FUNDING, GRANTS AND AWARDS 2010

(only those with HALO Researchers as Principal Investigators)

Name of the PI(s)	Organization / Agency	Title of Submission	Amount (Year)
Adamo	Ottawa Dragon Boat Foundation	Research- intervention Trial 'MOM trial'	\$90,000 (2010-2013)
Adamo	Canadian Institutes of Health Research Team (SOMET)	Maternal Obesity Management 'MOM' Trial	300,000 (2009 – 2013)
Adamo	Canada Foundation for Innovation- IOF	Infrastructure Operating Fund: HALO Research Lab	\$24,000 (2010-2013)
Adamo	University of Ottawa Faculty of Health Science/CHEO RI Partnership Grant:	Exploring the role of the insulin-like growth factor axis in overweight/obese mothers undergoing a lifestyle intervention	13,534 (2010-2011)
Chaput	Nordea Foundation	Effects of playing video games on energy balance in adolescents	\$450,750 (2009-2010)
Chaput	Nordea Foundation	Effects of impaired sleep on energy balance: a randomized, 2-condition, crossover study in adolescents	\$750,000 (2009-2011)
Colley	Ontario Thoracic Society / Canadian Lung Association	Co-Existent Obstructive Sleep Apnea and Obesity: Finding NEAT Targets for Intervention	\$49,177 (2010-2011)
Colley	Children's Hospital of Eastern Ontario Research Institute	Understanding the factors that enable or inhibit physical activity engagement in obese and non-obese children	\$29,025 (2010)
Colley	Children's Hospital of Eastern Ontario Research Institute – Summer Studentship	Understanding the factors that enable or inhibit physical activity engagement in obese and non-obese children	\$5,252 (2010)
Goldfield	Heart & Stroke Foundation of Canada	Behavioural Engineering of Physical Activity in Obese Children: A randomized Controlled Trial	\$139,645 (2010-2012)
Goldfield	CHEO/Faculty Health Sciences at University of Ottawa	Effects of Methylphenidate (Ritalin) on Energy Balance in Obese Adolescents	\$15,000 (2010)

Name of the PI(s)	Organization / Agency	Title of Submission	Amount (Year)
Hadjiyannakis	AHSC AFP Innovation Fund	A Tertiary Care Approach to the Management of Pediatric Obesity and its Co-morbidities	\$65,000 (2009-2011)
Tremblay	CIHR	Examining the Folate Status of Canadians	\$95,000 (2011-2012)
Tremblay	CAMBIO (IDRC)	Strengthening CAMBIO - KIDS-CAN Collaboration to Fight Childhood Obesity in Canada, Mexico, Kenya	\$7,000 (2010-2011)
Tremblay	Borealis Foundation CHEO Foundation	Healthy Active Living and Obesity Research	\$200,000 \$200,000 (matched by CHEO Foundation) (2009-2012)
Tremblay	The Lawson Foundation CHEO Foundation	HALO Junior Research Chair Program	\$508,250 \$508,250 (matched by CHEO Foundation) (2010-2015)
Tremblay	Active Healthy Kids Canada	2010 Active Healthy Kids Canada Report Card	\$65,025 (2010)
Tremblay	ParticipACTION	Physical Literacy Test Development	\$15,000 (2010)
Tremblay	Champlain Cardiovascular Disease Prevention Network	Physical Literacy Test Development	\$10,000 (2010)
Tremblay	Ontario Ministry of Health Promotion	Assessment of Physical Literacy: Feasibility and Pilot Study	\$30,000 (2010)
Tremblay	CIHR – IHDCYH	Creation of a Canadian Assessment of Physical Literacy: Development and Validation	\$74,927 (2009-2010)
Tremblay	University of Ottawa and Children’s Hospital of Eastern Ontario	Built and Social Environmental Determinants of PA and Obesity in Ottawa Neighbourhoods	\$14,986 (2008-2010)

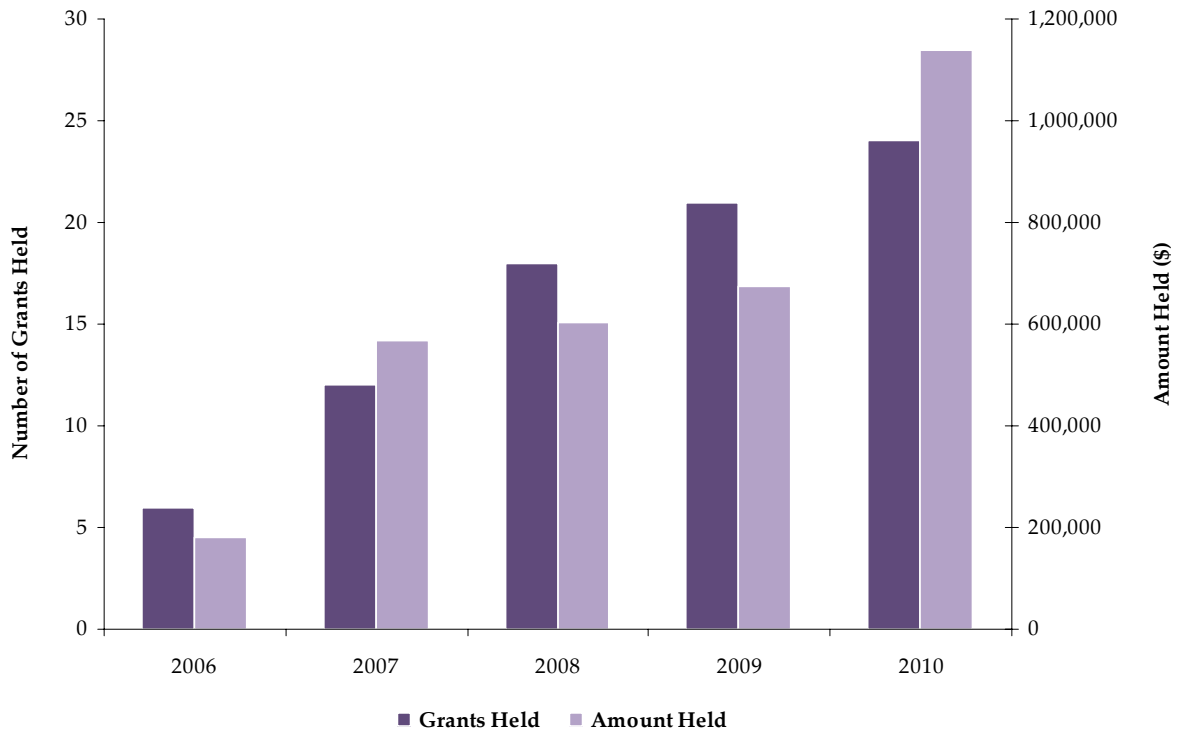


Figure 3. Number of grants held and amount of funds held as principal or co-principal investigator (attributed to 2010) by HALO Research Group from 2006 to 2010. Between 2006 and 2010, there was a 300% increase in the number of grants held and a 534% increase in the amount held. Between 2009 and 2010, there was a 14% increase in the number of grants held and a 69% increase in the amount held.

STUDENT FUNDING, SCHOLARSHIPS AND AWARDS 2010

Student Name	Organization / Agency	Grant / Award
Breithaupt	Canadian Obesity Network	Student Travel Award
Carter	CIHR	Canada Graduate Scholarship
Colapinto	Dietitians of Canada (sponsored by McCain Foods) CIHR Statistics Canada University of Ottawa	Graduate Student Award Health Professional Fellow in Public Health Tom Symon's Fellowship Excellence Scholar
Ferraro	Ontario Ministry of Training, Colleges & Universities Canadian Obesity Network University of Ottawa	Ontario Graduate Scholar Student Travel Award Excellence Scholarship
Larouche	CIHR University of Ottawa	Banting and Best Doctoral Scholar Excellence Scholarship and Doctoral Research Award
LeBlanc	Canadian Obesity Network	New Professional Oral Presentation Award
Leclair	CIHR	Doctoral Clinical Scholar
Muthuri	Government of Ontario University of Ottawa	Ontario Graduate Scholarship in Science and Technology Excellence Scholarship and Doctoral Research Award
Prince-Ware	Social Sciences and Humanities Research Council (SSHRC) University of Ottawa	Doctoral Fellowship Excellence Scholarship and Doctoral Research Award
Saunders	CIHR University of Ottawa	Doctoral Clinical Scholar Excellence Scholarship and Doctoral Research award

PEER-REVIEWED, REFEREED PUBLICATIONS

In recognition of all the great work done by all HALO students and staff (some of which may have occurred outside of HALO) this report includes all publications from 2010.

1. **Adamo KB**, S Papadakis, L Dojeiji, M Turnau, J Cunningham, M Parameswaran, L Simmons, A Pipe, RD Reid. Using Path Analysis to Understand Parents Perceptions of their Children's Weight, Physical Activity and Eating Habits in the Champlain District of Ontario. **Paediatrics & Child Health**15(9): e33-e41, 2010.
2. **Adamo KB**, JA Rutherford, **GS Goldfield**. Effects of Interactive Video Game Cycling on Overweight and Obese Adolescent Health. **Applied Physiology, Nutrition and Metabolism** 35:805-815, 2010.
3. Amed S, HJ Dean, C Panagiotopoulos, EA Sellers, **S Hadjiyannakis**, TA Laubscher, D Dannenbaum, BR Shah, GL Booth, JK Hamilton. Type 2 Diabetes, Medication-Induced Diabetes and Monogenic Diabetes in Canadian Children: A Prospective National Surveillance Study. **Diabetes Care** 33:786-791, 2010.
4. Arguin H, M Sanchez, GA Bray, JC Lovejoy, JC Peters, RJ Jandacek, **JP Chaput**, A Tremblay. Impact of adopting a vegan diet or an olestra supplementation on plasma organochlorine concentrations: results from two pilot studies. **British Journal of Nutrition** 103: 1433-1441, 2010.
5. Astrup A, **JP Chaput**, JA Gilbert, JK Lorenzen. Dairy beverages and energy balance. **Physiology & Behavior** 100: 67-75, 2010.
6. Bizet I, L Laurencelle, J Lemoyne, **R Larouche** & F Trudeau. Career changes among physical educators: searching for new goals or escaping a heavy task load? **Research Quarterly for Exercise and Sports** 81(2): 224-232, 2010.
7. Bryan S, M Saint Pierre Larose, N Campbell, J Clarke, **MS Tremblay**. Blood pressure measurement methodology and experience from the Canadian Health Measures Survey cycle 1. **Health Reports** 21(1):71-78, 2010.
8. Bustros J, **MS Tremblay**, M Shields, CL Craig, I Janssen. Fitness of the Nation: Findings from the Canadian Health Measures Survey. **Journal of Physical Activity and Health** 7(suppl.3):S349-S351, 2010.
9. **Chaput JP**, A Tremblay. Well-being of obese individuals: therapeutic perspectives. **Future Medicinal Chemistry** 12: 1729-1733, 2010.
10. **Chaput JP**, L Klingenberg, AM Sjödin. Do all sedentary activities lead to weight gain: sleep does not. **Current Opinion in Clinical Nutrition and Metabolic Care** 13: 601-607, 2010.
11. **Chaput JP**, AM Sjödin, A Astrup, JP Després, C Bouchard, A Tremblay. Risk factors for adult overweight and obesity: the importance of looking beyond the "Big Two". **Obesity Facts** 3: 320-327, 2010.

12. **Chaput JP.** Short sleep duration promoting overconsumption of food: a reward-driven eating behavior? **Sleep** 33: 1135-1136, 2010.
13. **Chaput JP.** Is sleeping more and working less a new way to control our appetite? **European Journal of Clinical Nutrition** 64: 1032-1033, 2010.
14. **Chaput JP, A Tremblay.** Intelligence and obesity: does the intensity of mental workload matter? **Obesity Reviews** 11: 548-549, 2010.
15. **Chaput JP, JA Gilbert, NT Gregersen, SD Pedersen, AM Sjödin.** Comparison of 150-mm versus 100-mm visual analogue scales in free living adult subjects. **Appetite** 54: 583-586, 2010.
16. **Chaput JP, L Klingenberg, AM Sjödin.** Sleep restriction and appetite control: waking to a problem? **American Journal of Clinical Nutrition** 91: 822-823, 2010.
17. **Chaput JP.** A good night's sleep for a healthier population. **American Journal of Preventive Medicine** 38: 349, 2010.
18. **Colley RC, N King, A Hills, N Byrne.** Exercise-induced energy expenditure: implications for exercise prescription and obesity. **Patient Education & Counseling** 79: 327-332, 2010.
19. **Colley RC, S. Connor Gorber, MS Tremblay.** Quality control and data reduction procedures for accelerometry-derived measures of physical activity. **Health Reports** 21(1):63-70, 2010.
20. **Connor Gorber S, M Tremblay.** The bias in self-reported obesity from 1976 to 2005, a Canada – U.S. comparison. **Obesity** 18:354-361, 2010.
21. **Esliger DW, MS Tremblay, JL Copeland, JD Barnes, GE Huntington, DR Bassett, Jr.** Physical activity profile of Old Order Amish, Mennonite, and contemporary children. **Medicine and Science in Sports and Exercise** 42:296-303, 2010.
22. **Goldfield GS, C Moore, K Henderson, A Buchholz, N Obeid, M Flament.** Body Dissatisfaction, Dietary Restraint, Depression and Weight Status in Adolescents. **Journal of School Health** 80 (4): 186-192, 2010.
23. **Ho J, E Sellers, H Dean, S Hadjiyannakis, A Mokashi, R Sauve, C Jones, D Pacaud.** Prevalence and Associated Risk Factors for Secondary Diabetes in Canadian Children Followed in Pediatric Tertiary Care Centres. **Canadian Journal of Diabetes** 34 (2): 107-112, 2010.
24. **Janssen I, AG LeBlanc.** Systematic review of physical activity and health in children and youth. **International Journal of Behavioural Nutrition and Physical Activity** 7(40), 2010.
25. **Larouche, R & F Trudeau.** Étude des impacts du transport actif sur la pratique d'activités physiques et la santé et de ses principaux déterminants. **Science & Sports** 25: 227-237, 2010.

26. **Larouche R**, L Laurencelle, S Grondin & F Trudeau. Influence of birth quarter on the rate of physical activities and sports participation. **Journal of Sports Sciences** 28 (6): 627-631, 2010.
27. **LeBlanc AG**, I Janssen. Dose-response relation between physical activity and dyslipidemia in children and youth. **Canadian Journal of Cardiology** 26(6):201-205, 2010.
28. **LeBlanc AG**, I Janssen. Difference between self-reported and accelerometer measured moderate-to-vigorous physical activity in youth. **Pediatric Exercise Science** 22:523-534, 2010.
29. **Lloyd M, RC Colley, MS Tremblay**. Advancing the Debate on 'Fitness Testing' for Children: Perhaps We're Riding the Wrong Animal. **Pediatric Exercise Science** 22:176-182, 2010.
30. Murumets K, N O'Reilly, **MS Tremblay**, P Katzmarzyk. Public Private Partnerships in Physical Activity and Sport: Principles for Successful, Responsible Partnerships. **Journal of Physical Activity and Health** 7(suppl.3):S317-S319, 2010.
31. Paradis G, **MS Tremblay**, I Janssen, A. Chiolero, T. Bushnik. Blood pressure in Canadian children and adolescents. **Health Reports** 21(2):15-22, 2010.
32. Plotnikoff RC, P Lightfoot, S McFall, C Spinola, ST Johnson, T Prodaniuk, G Predy, **MS Tremblay**, L Svenson. Child Health Ecological Surveillance System (CHESS) for childhood obesity: a feasibility study. **Chronic Diseases in Canada** 30(3):95-106, 2010.
33. **Rutherford JA**, LL Spriet, T Stellingwerff. The effect of acute taurine ingestion on endurance performance and metabolism in well-trained cyclists. **International Journal of Sport Nutrition and Exercise Metabolism** 20(4):322-9, 2010.
34. Shields M, **MS Tremblay**. Canadian childhood obesity estimates based on WHO, IOTF and CDC cut-points. **International Journal of Pediatric Obesity** 5:265-273, 2010.
35. Shields M, **MS Tremblay**, M Laviolette, CL Craig, I Janssen, S Connor Gorber. Fitness of Canadian adults: Results from the 2007-2009 Canadian Health Measures Survey. **Health Reports** 21(1):21-36, 2010.
36. Takken T, S Stephens, A Balemans, **MS Tremblay**, DW Esliger, J Schneiderman, D Biggar, P Longmuir, V Wright, B McCrindle, M Hendricks, A Abad, J van der Net, BM Feldman. Validation of the Actiheart activity monitor for measurement of activity energy expenditure in children and adolescents with chronic disease. **European Journal of Clinical Nutrition** 64:1494-1500, 2010.
37. Tremblay A, **JP Chaput**. Sleep and metabolic fitness. **Sleep**, 33: 861, 2010.
38. **Tremblay MS, RC Colley, TJ Saunders**, GN Healy, N Owen. Physiological and health implications of a sedentary lifestyle. **Applied Physiology, Nutrition and Metabolism** 35:725-740, 2010.

39. **Tremblay MS**, ME Kho, AC Tricco, M Duggan, R Adams. Process description and evaluation of Canadian physical activity guidelines development. **International Journal of Behavioral Nutrition and Physical Activity** 7:42, 2010.
40. **Tremblay MS, M Lloyd**. Physical literacy measurement – the missing piece. **Physical and Health Education Journal** 76(1):26-30, 2010.
41. **Tremblay MS, GS Goldfield**. Primary care screening and brief counselling for overweight or mildly obese children does not improve BMI, nutrition or physical activity. (Commentary on BMJ 2009; 339:b3308). **Evidence-Based Medicine** 15:23-24, 2010.
42. **Tremblay MS, V Onywera, KB Adamo**. A Child's Right To Healthy Active Living. Building Capacity in Sub-Saharan Africa to Curb the Impending Physical Activity Transition: The KIDS-CAN Research Alliance. In: Bennett S, Pare, M, editors. **20th Anniversary of The Convention on the Rights of the Child**, University of Ottawa Nov 18-20, 2009. STM Learning Inc Publishers; 2010.
43. **Tremblay MS**, M Shields, M Laviolette, CL Craig, I Janssen, S Connor Gorber. Fitness of Canadian children and youth: Results from the 2007-2009 Canadian Health Measures Survey. **Health Reports** 21(1):7-20, 2010.
44. **Tremblay MS**. Assessing the Level of Sedentarism. In C. Bouchard and P.T. Katzmarzyk (Eds.), **Physical Activity and Obesity, 2nd Edition**. Human Kinetics Publishers. pp. 13-17, 2010.
45. *Solh Z, ***KB Adamo**, JL Platt, K Ambler, E Boyd, E Orrbine, E Cummings, and CMA LeBlanc. Practicing What We Preach: A Look At Healthy Active Living Policy and Practice in Canadian Pediatric Hospitals. **Paediatrics & Child Health** 15(10): e42-e48, 2010.
* Shared principal authorship
46. Stacey D, M Hopkins, **KB Adamo**, R Shorr, D Prud'homme. Knowledge Translation to Fitness Trainers: A systematic review. **Implementation Science** 5:28, 2010.
47. Wilkins K, NRC Campbell, MR Joffres, HL Johansen, FA McAlister, M Nichol, S Quach, HL Johansen, **MS Tremblay**. Blood pressure in Canadian adults. **Health Reports** 21(1):37-46, 2010.

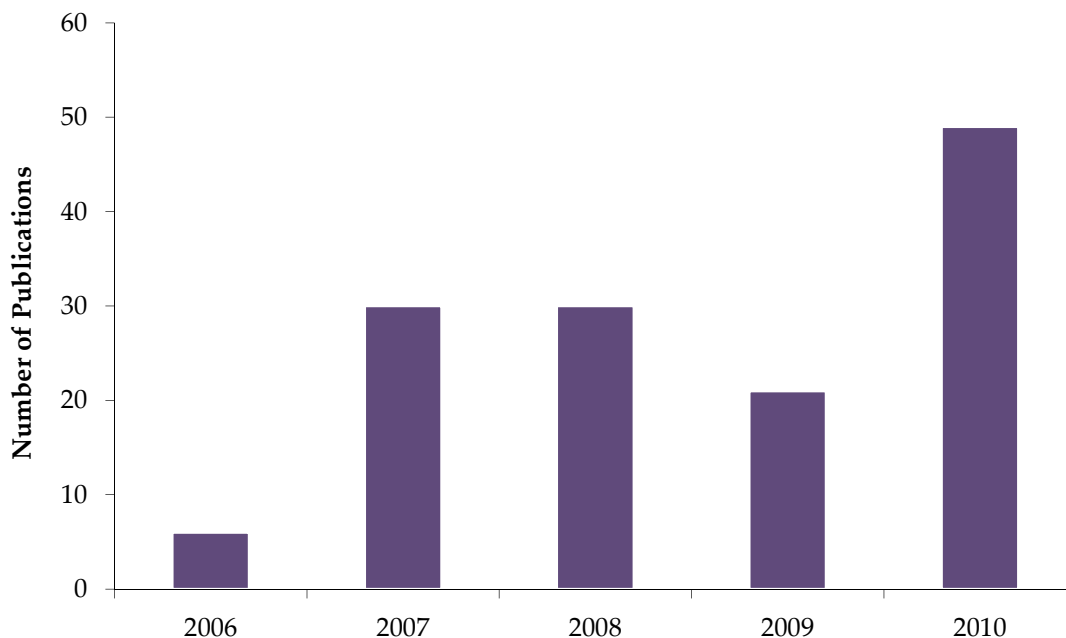


Figure 4. Number of peer-reviewed, refereed publications by HALO Research Group from 2006 to 2010. Between 2006 and 2010 there was a 717% increase in number of publications; between 2009 and 2010, there was a 133% increase.

NON-PEER-REVIEWED PUBLICATIONS

1. Bull F, A Bauman, P Hallal, HW Kohl III, **MS Tremblay**. Research Priorities for Physical Inactivity in Low and Middle Income Countries. Prepared for the **World Health Organisation – A prioritised research agenda for prevention and control of non-communicable disease**, 2010.
2. **Chaput JP**, L Klingenberg, A Sjödin. Moderna (in)aktiviteter och brist på sömn får oss att äta mer. **Nordisk Nutrition** 2: 14-16, 2010.
3. **Chaput JP**, A Tremblay. Biopsychological factors and body weight stability. In: L Dubé, A Bechara, A Dagher, A Drewnowski, J LeBel, P James, D Richard, R Yada, eds. **Obesity Prevention: The Role of Brain and Society on Individual Behavior**. Montreal, Quebec: McGill Queen's University Press; 179-189, 2010.
4. **Colley RC**, Lead Author: **Active Healthy Kids Canada (2010) - Healthy Habits Start Earlier than You Think – Canada's Report Card on Physical Activity for Children & Youth**. Toronto: Active Healthy Kids Canada.
5. **Larouche R**, F Trudeau & RJ Shephard. The challenge of quality physical education. **British Journal of Sports Medicine**, 2010.

http://bjism.bmj.com/content/early/2010/03/08/bjism.2009.068072.abstract/reply#bjsports_el_4333

6. **Tremblay MS.** Development of Updated Canadian Physical Activity Guidelines. **Canadian Society for Exercise Physiology Communiqué**, May, 2010.
7. **Tremblay MS.** Published editorial “Healthy active living behaviours are the key” in **The Ottawa Citizen** March 9, 2010.
8. **Tremblay MS.** Published editorial “A Number on the Scale” in the **Globe and Mail** January 16, 2010.

PUBLISHED ABSTRACTS

In recognition of all the great work done by all HALO students and staff (some of which may have occurred outside of HALO) this report includes all abstracts from 2010.

1. **Adamo KB, Z Ferraro, J Rutherford,** E Keely, M Walker, **GS Goldfield, S Hadjiyanakkis,** N Barrowman. The maternal obesity management (MOM) trial: A lifestyle intervention during pregnancy to minimize downstream obesity. **Applied Physiology, Nutrition & Metabolism** 35 (Suppl.1):S1, 2010.
2. **Breithaupt P, RC Colley, J Rutherford, KB Adamo.** Body composition measured by dual-energy x-ray absorptiometry half-body scans in obese children and youth. **Applied Physiology, Nutrition and Metabolism** 35(Suppl.1):S11, 2010.
3. Cameron JD, **GS Goldfield,** G Finlayson, JE Blundell & E Doucet. Preferred snack foods are more reinforcing following a 24-hour complete fast; Evidence that energy deprivation alters food reward. **Obesity: A Research Journal** 18 (S2): S21, 2010.
4. **Chaput JP,** T. Visby, S Nyby, L Klingenberg, NT Gregersen, A Tremblay, A Astrup, AM Sjödin. Playing video games promotes overconsumption of food: a randomized crossover study in adolescents. **Obesity** 18 (Suppl. 2):88, 2010.
5. **Chaput JP.** Work less and sleep more! **Obesity Reviews** 11 (Suppl. 1): 14, 2010.
6. **Colley RC, MS Tremblay.** Light-to-moderate and moderate-to-vigorous physical activity cut-points for the Actical accelerometer. **Proceedings of the North American Society for Pediatric Exercise Medicine and the European Group for Pediatric Work Physiology** at Niagara-on-the-Lake, 2010.
7. **Colley RC, M Brownrigg, MS Tremblay.** The Active Healthy Kids Canada Report Card on Physical Activity for Children and Youth: Are we impacting policy and practice? **Proceedings of the International Congress on Physical Activity and Public Health.** May 5-8, Toronto, ON, 2010.
8. Connor Gorber S, **MS Tremblay.** Bias in self-reported obesity from 1976 to 2005, a Canada – U.S. comparison. **Obesity Reviews** 11(suppl.1):339, 2010.

9. Gilbert JA, DR Joanisse, **JP Chaput**, P Miegueu, K Cianflone, N Alméras, A Tremblay. Milk supplementation facilitates appetite control in obese women during weight loss: a randomized single-blind controlled trial. **Obesity Reviews** 11 (Suppl. 1): 440, 2010.
10. Klingenberg L, **JP Chaput**, LB Christensen, AM Sjödin, C Mølgaard, KF Michaelsen. Can the relation between short sleep duration and obesity be observed in early childhood? **Obesity Reviews** 11 (Suppl. 1): 414, 2010.
11. Klingenberg L, **JP Chaput**, P Jennum, U Holmback, A Astrup, AM Sjödin. Effects of sleep restriction on energy balance in adolescents. **Obesity** 18 (Suppl. 2): 89, 2010.
12. **Leblanc AG, TJ Saunders, R Larouche, RC Colley, G Goldfield, MS Tremblay**. Relation between sedentary behaviours and health outcomes in children and youth. Proceedings of the **North American Society for Pediatric Exercise Medicine and the European Group for Pediatric Work Physiology** at Niagara-on-the-Lake, 2010.
13. **LeBlanc AG, CL Craig, MS Tremblay**. Predicting maximal oxygen uptake in children and youth. **Applied Physiology, Nutrition and Metabolism** 35(Suppl.1):S53-54, 2010.
14. Murray M, A Kukaswadia, K Henderson, A Buchholz, M Flament, **Goldfield, GS.**, The effect of family meals on Body Mass Index among Canadian Adolescents. **Obesity: A Research Journal** 18 (S2):S23, 2010.
15. Murray G, **R Larouche**, L Laurencelle, RJ Shephard. & F Trudeau. Tracking of lung function from childhood to adulthood. **Applied Physiology, Nutrition and Metabolism** 35 (Suppl. 1), S75, 2010.
16. Pérusse-Lachance E, **JP Chaput**, E Pigeon, A Tremblay. Impact of mental workload intensity on blood pressure. **Proceedings of the 2nd Canadian Obesity Student Meeting**, Ottawa, Canada, 2010.
17. **Saunders T, RC Colley, Tremblay MS**. Relationship between daily steps and clustered metabolic risk in American youth. Proceedings of the **International Congress on Physical Activity and Public Health**. May 5-8, 2010.
18. Shields M, **MS Tremblay**. Canadian childhood obesity estimates based on WHO, IOTF and CDC cut-points. **Obesity Reviews** 11(suppl.1):431-432, 2010.
19. Takken T, A Balemans, S Stephens, M Hendricks, D Esliger, **MS Tremblay**, J Van Der Net, BM Feldman. Calibration of the Actiheart activity monitor for the prediction of physical activity energy expenditure in children with chronic disease. **European Journal of Cardiovascular Prevention and Rehabilitation** 17(Suppl 2):S32, 2010.
20. **Tremblay MS**. Trends in measured fitness of Canadian children and youth: 1981-2009. **Proceedings from the 2010 International Forum on Sport Science (Shandong University)**, p.148-149, 2010.

21. Tremblay MS, AG LeBlanc, RC Colley, G Goldfield, T Saunders, R Larouche. Systematic review of the relationship between sedentary behaviour and health indicators in school-aged children and youth. **Applied Physiology, Nutrition and Metabolism** 35(Suppl.1):S103, 2010.
22. Tremblay MS, M Shields, M Laviolette, CL Craig, I Janssen, S Connor Gorber. Trends in the measured fitness of Canadian children and youth: 1981-2009. **Obesity Reviews** 11(suppl.1):50, 2010.

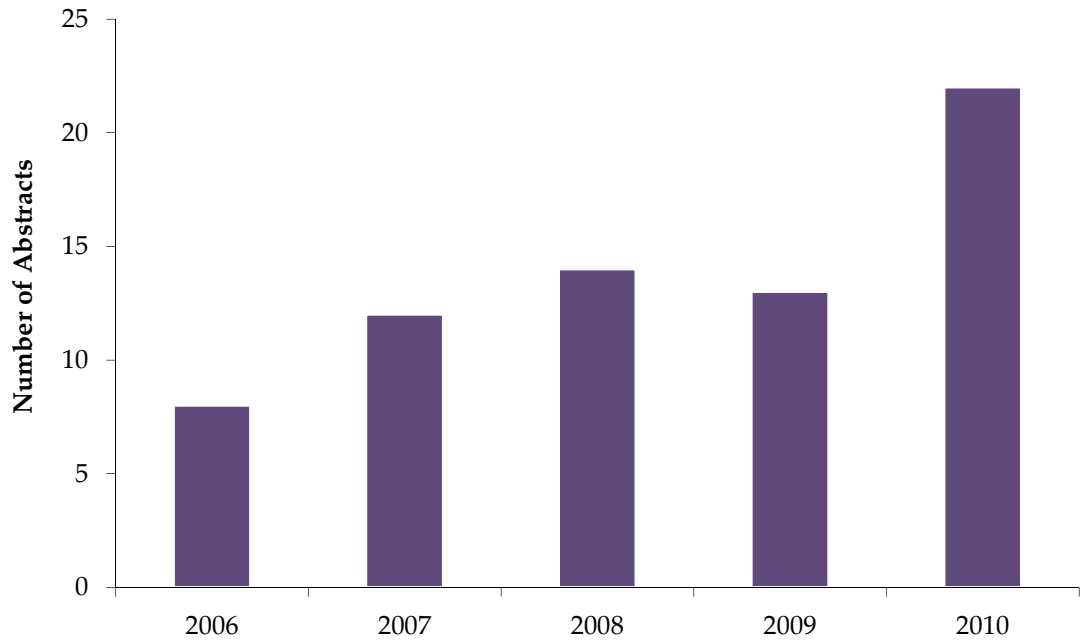


Figure 5. Number of published abstracts by HALO Research Group from 2006 to 2010. Between 2006 and 2010 there was a 175% increase in the number of published abstracts; between 2009 and 2010, there was a 69% increase.

CONFERENCE AND INVITED PRESENTATIONS

In recognition of all the great work done by all HALO students and staff (some of which may have occurred outside of HALO) this report includes all conference and invited presentations from 2010.

1. **Adamo KB, Rutherford JA, Goldfield GS.** Effects of Interactive Video Game Cycling on Obese Adolescent Health. **Presentation at the North American Society for Pediatric Exercise Medicine Conference** (Niagara-on-the-Lake), 2010.
2. **Adamo KB.** Tackling the Childhood Obesity Epidemic- Starting with MOM. The Maternal Obesity Management Trial (MOM Trial). Invited presentation: **Department of Obstetrics and Gynecology Grand Rounds** (Ottawa), 2010.
3. **Adamo KB.** Pathway to a Research Scientist- the Work, Life Balance. Invited keynote presentation at the **Canadian Obesity Network's meeting for students and new professionals** (Ottawa), 2010.
4. **Adamo KB.** The maternal obesity management (MOM) trial: a lifestyle intervention during pregnancy to minimize downstream obesity. Invited presentation: **Division of Maternal and Newborn Care group** (Ottawa), 2010
6. **Breithaupt P, RC Colley, J Rutherford, KB Adamo.** Body composition measured by dual-energy x-ray absorptiometry half-body scans in obese children and youth (Poster). **Canadian Society for Exercise Physiology (CSEP) Annual General Meeting** (Toronto), 2010.
7. Buchholz A, SJ Norwood, A Bowker, K Henderson, **GS Goldfield**, MF Flament. Self Silencing, restrained eating, and appearance esteem: A test of a meditational model among adolescents. Poster presented at the **Academy of Eating Disorders (AED) International Conference for Eating Disorders** (Salzburg, Austria), 2010.
8. **Chaput JP.** Une diète pour maigrir: mythe ou réalité? Invited presentation at the **Mini-École de Médecine** (Ottawa), 2010.
9. **Chaput JP.** Does short sleep duration make us fatter? Presentation for the **Canadian Obesity Network-Students & New Professionals (CON-SNP) University of Ottawa Chapter** (Ottawa), 2010.
10. **Chaput JP.** Childhood obesity prevention at the individual and family levels. **Pan-Canadian webinar on Childhood Obesity Prevention** orchestrated by the Chronic Disease Prevention Alliance of Canada (CDPAC) in partnership with the Public Health Agency of Canada (PHAC) (Ottawa), 2010.
11. **Chaput JP.** Is working less and sleeping more a new way to control our appetite? Invited presentation to the **Pediatric Grand Rounds, Children's Hospital of Eastern Ontario** (Ottawa), 2010.

12. **Chaput JP.** Work less and sleep more! Invited presentation to the **International Congress on Obesity** (Stockholm, Sweden), 2010.
13. **Chaput JP,** Visby T, Nyby S, Klingenberg L, Gregersen NT, Tremblay A, Astrup A, Sjödín A. Does video game playing promote overconsumption of food? Invited presentation to the **New Investigator Award Competition, International Congress on Obesity** (Stockholm, Sweden), 2010.
14. **Chaput JP.** Putative contributors to the obesity epidemic. Invited presentation to the **FINE Seminar, Department of Biomedical Sciences, Center for Healthy Aging** (Copenhagen, Denmark), 2010.
15. **Chaput JP.** Reduced sleep, mental workload, and obesity. Invited presentation to the **Preventive Medicine Seminar, Institute of Preventive Medicine** (Copenhagen, Denmark), 2010.
16. **Chaput JP.** Effects of playing video games on appetite control. Presentation at **the Internal Research Congress, Department of Human Nutrition** (Copenhagen, Denmark), 2010.
17. **Colapinto C, MS Tremblay, D O'Connor, L Dubois.** Examining the folate status of Canadians. Presentation at the **Canadian Public Health Association Annual Conference** (Toronto), 2010.
18. **Colley RC.** "Le Bulletin 2010 de l'activité physique chez les enfants et les jeunes de Jeunes en Forme Canada". Presented as a webinar to the **Healthy Eating Physical Activity Coalition of New Brunswick**, 2010.
19. **Colley RC.** "The 2010 Active Healthy Kids Canada Report Card on Physical Activity for Children and Youth". Presented as a webinar to the **Healthy Eating Physical Activity Coalition of New Brunswick**, 2010.
20. **Colley RC.** "The 2010 Active Healthy Kids Canada Report Card on Physical Activity for Children and Youth". Presented at the **Heart & Stroke SPARK Together for healthy kids breakfast** (Ottawa), 2010.
21. **Colley RC.** "Promoting Healthy Active Living in Children and Youth". Presented to the **Lawson Foundation** (Toronto), 2010.
22. **Colley RC.** "The Active Healthy Kids Canada Report Card on Physical Activity for Children and Youth" **XII Congreso Internacional Avances en Medicina** (Guadalajara, Mexico), 2010.
23. **Colley RC, M.S. Tremblay.** Light-to-moderate and moderate-to-vigorous physical activity cut-points for the Actical accelerometer. Presentation at the **North American Society for Pediatric Exercise Medicine Conference** (Niagara-on-the-Lake), 2010.

24. **Colley RC, M Brownrigg, MS Tremblay.** The Active Healthy Kids Canada Report Card on Physical Activity for Children and Youth: Are we impacting policy and practice? Presentation at the **International Congress on Physical Activity and Public Health** (Toronto), 2010.
25. Connor Gorber S, **MS Tremblay.** Bias in self-reported obesity from 1976 to 2005, a Canada – U.S. comparison. Presentation at the **International Congress on Obesity** (Stockholm, Sweden), 2010.
26. Craig CL, **MS Tremblay.** Temporal trends in fitness in Canada: 1978-2009. Symposium presentation at the **International Congress on Physical Activity and Public Health** (Toronto), 2010.
27. **Ferraro Z, D Prud'homme, N Barrowman, M Roger, M Walker, S Wen, KB Adamo.** The effect of maternal body mass index and gestational weight gain on neonatal birth weight: Support for obstetrical weight management? Presentation at the **3rd Annual CHEO Clinical Research Day** (Ottawa), 2010.
28. **Ferraro, Z.** Improving student involvement in knowledge translation initiatives. **State University of Maringá** (Paraná, Brazil), 2010. (Invited lecture series)
29. **Ferraro, Z.** The intergenerational effects of maternal obesity: Managing chronic disease in mom while preventing it in baby. **State University of Maringá** (Paraná, Brazil), 2010. (Invited lecture series).
30. **Ferraro ZM, D Prud'homme, N Barrowman, MW Walker, M Rodger, SW Wen, KB Adamo.** The effect of gestational weight gain and maternal BMI on neonatal birth weight: support for obstetrical weight management? **CHEO 3rd Annual Research Day** (Ottawa), 2010.
31. **Ferraro ZM, D Prud'homme, N Barrowman, MW Walker, M Rodger, SW Wen, KB Adamo.** The effect of gestational weight gain and maternal BMI on neonatal birth weight: support for obstetrical weight management? **The Canadian Obesity Student Meeting** (Ottawa), 2010.
32. Galaviz KI, **MS Tremblay, RC Colley, I. Janssen.** Associations among waist circumference, physical activity, and cardiorespiratory fitness in 5th and 6th grade Mexican children; a cross sectional study. Presentation at the **International Conference of Physical Activity and Applied Sports Sciences** (Guadalajara), 2010.
33. **Goldfield GS & A Buchholz.** Child obesity management strategies. Invited Presentation to the **Children's Aid Society** (Ottawa), 2010.
34. Giguere I, **KB Adamo, I Strychar, E Doucet, D Prud'homme.** Postpartum Weight Loss, Body Composition and Cardiometabolic Risk of Pre-Menopausal Women. A MONET Study. **The Obesity Society** (San Diego), 2010.
35. **Hadjiyannakis S,** Tackling Childhood Obesity, CHEO's 35th **Annual Pediatric Refresher Course** (Ottawa)(2 workshops), 2010.

36. Henderson KA, N Obeid, A Buchholz, MF Flament, & **GS Goldfield**. Does coping matter? A meditational model of stress coping and eating pathology. Paper presented at the **Academy of Eating Disorders (AED) International Conference for Eating Disorders** (Salzburg, Austria), 2010.
37. Henderson KA, N Obeid, A Buchholz, MF Flament, & **GS Goldfield**. Does coping mediate the relationship between stress and disordered eating Oral Presentations of paper at **the 3rd Annual Research Day of the Children’s Hospital of Eastern Ontario Research Institute** (Ottawa), 2010.
38. Hill E, K Henderson, A Buchholz, **GS Goldfield**, A Kukaswadia, M Birmingham, MF Flament. What’s your ideal weight? Sociocultural and psychological Influences on Actual-weight discrepancy and weight satisfaction in adolescents. Paper presented at the 8th annual **Conference of the Australian and New Zealand Academy for Eating Disorders (ANZED)** (Auckland, New Zealand), 2010.
39. **Hadjiyannakis, S**. Childhood Obesity from an Endocrinologists Perspective, **Mexican Delegation Visit to CHEO** (Ottawa), 2010.
40. **Hadjiyannakis, S**. Metabolic Complications of Obesity: Beyond the Metabolic Syndrome, **Canadian Pediatric Society Annual Meeting** (Vancouver), 2010.
41. **Hadjiyannakis, S**. Tackling Childhood Obesity in the Clinical Setting, **Canadian Obesity Network Student Meeting, University of Ottawa** (Ottawa), 2010.
42. **Knight E, M Lloyd, MS Tremblay**. Adverse events occurring during field tests of physical fitness: Experiences during pilot testing of the Canadian Assessment of Physical Literacy (CAPL). Presentation at the **Annual CHEO Research Day** (Ottawa), 2010.
43. **Knight E, M Lloyd, MS Tremblay**. The FitnessGram PACER test “Healthy Fitness Zone” does not effectively discriminate between fit and unfit 10-year old girls. Presentation at the **North American Society for Pediatric Exercise Medicine Conference** (Niagara-on-the-Lake), 2010.
44. **Knight, M Lloyd, MS Tremblay**. “...I can’t play a lot of sports because I don’t know how.” Presentation at the **International Congress on Physical Activity and Public Health** (Toronto), 2010.
45. Kristjansson E, Calhoun M, Leclair S, Russell K, Bilette J-M, Sawada M, He J, McKinnon J, **Prince-Ware S**, Hole D. Neighbourhood and individual characteristics that predict healthy eating and overweight/obese Body Mass Index. **Why Place Still Matters: Community Forum** (Ottawa), 2010.
46. Kukaswadia A, MF Flament, A Buchholz, K Henderson, **GS Goldfield**, M Talijsaard. Accuracy of self-reported weight and height in adolescents. Paper presented at the **2nd Canadian Obesity Network Student Meeting** (Ottawa), 2010.

47. **Larouche R, M Lloyd, E Knight, MS Tremblay.** BMI in children who use active vs. passive modes of transportation to and from school: results from the Canadian Assessment of Physical Literacy study. Presentation at the **Annual CHEO Research Day** (Ottawa), 2010.
48. **Larouche R, M Lloyd, E Knight, MS Tremblay.** Differences in BMI between children in grades 4 to 6 who use active vs. passive modes of transportation to and from school: results from the Canadian Assessment of Physical Literacy study. Presentation at the **North American Society for Pediatric Exercise Medicine Conference** (Niagara-on-the-Lake), 2010.
49. **Larouche R, L Laurencelle, RJ Shephard & F Trudeau.** Life transitions in the waning of physical activity from childhood to adult life. Presented at the **4th Congress of the Sport Canada Research Initiative** (Ottawa), 2010.
50. **Larouche R, L Laurencelle, RJ Shephard & F Trudeau.** Should time devoted to physical education be increased? Insights from participants to the Trois-Rivières study. Presented at the **3rd International Congress on Physical Activity and Public Health** (Toronto), 2010.
51. **Larouche, R.** A pilot study on the walkability of a university campus and its relationship with active transportation. Presented at the **Human Kinetics Graduate Student's Conference at the University of Ottawa** (Ottawa), 2010.
52. **LeBlanc AG, Janssen I.** Dose response relationship between physical activity and dyslipidemia in youth. **2nd Canadian Obesity Network Student Meeting** (Ottawa), 2010.
53. **Leblanc AG, CL Craig, MS Tremblay.** Predicting maximal oxygen uptake in children and youth. Presentation at the **Canadian Society for Exercise Physiology Annual Scientific Conference** (Toronto), 2010.
54. **LeBlanc AG, TJ Saunders, R Larouche, RC Coley, G Goldfield, M.S. Tremblay.** Relation between sedentary behaviour and health outcomes in children and youth. Presentation at the **North American Society for Pediatric Exercise Medicine Conference** (Niagara-on-the-Lake), 2010.
55. **LeBlanc CMA, N Chui, K Ambler, KB Adamo, G Spence, E Cummings.** Practicing what we preach Part 2: a follow-up look at healthy active living policy and practices in Canadian Academic Pediatric Health Centres. **Proceedings of the Canadian Pediatric Society Conference** (Vancouver), 2010.
56. **Lloyd M and MS Tremblay.** Physical Literacy Measurement: An update on the Canadian Assessment of Physical Literacy. Presentation at the **Physical and Health Education Canada and Ophea Annual Conference** (Toronto), 2010.
57. **Lloyd M, E Knight, MS Tremblay.** The Canadian Assessment of Physical Literacy (CAPL): Pilot and Feasibility Testing. Presentation at the **North American Society for Pediatric Exercise Medicine Conference** (Niagara-on-the-Lake), 2010.

58. **Lloyd M, E Knight.** The Canadian Assessment of Physical Literacy. Presentation for the **Ottawa Catholic School Board Advanced Qualification Course for Physical Educators** (Ottawa), 2010.
59. **Lloyd M, MS Tremblay.** The Canadian Assessment of Physical Literacy: Results from Cycle 1 of Pilot Testing. Presentation at the **International Congress on Physical Activity and Public Health** (Toronto), 2010.
60. Murray M, E Hill, A Buchholz, K Henderson, **GS Goldfield**, MF Flament. Predicting body esteem in Adolescents: Are risk factors gender specific? Paper presented at the **American Psychological Association** (San Diego), 2010.
61. Murray M, A Kukaswadia, M Birmingham, A Buchholz, K Henderson, **GS Goldfield**, MF Flament. Factors associated with weight satisfaction among Canadian adolescents in different weight categories. **Child Development** (Ottawa), 2010.
62. Murray G, **R Larouche**, L Laurencelle, RJ Shephard & F Trudeau. Tracking of lung function from childhood to adulthood. Presented at the **2010 Canadian Society for Exercise Physiology Conference** (Toronto), 2010.
63. Norwood S, A Buchholz, A Bowker, KA Henderson, **GS Goldfield**, MF Flament. Gender differences in self-silencing as a predictor of eating pathology among adolescents. **Academy of Eating Disorders (AED) International Conference for Eating Disorders** (Salzburg, Austria), 2010.
64. Norwood SJ, A Buchholz, A Bowker, KA Henderson, **GS Goldfield**, MF Flament. Self-silencing and anger regulation as predictors of disordered eating among adolescent females. Paper presented at the **Academy of Eating Disorders (AED) International Conference for Eating Disorders** (Salzburg, Austria), 2010.
65. **Onywera VO, KB Adamo, WA Sheel, MK Boit, JN Waudo, MS Tremblay.** Emerging evidence of the physical activity transition in Kenya. Presentation at the **17th Biennial Conference of the International Society for Comparative Physical Education and Sport** (Nairobi, Kenya), 2010.
66. **Prince SA.** The built environment as a determinant of health. Determinants of Health guest lecture, **University of Ottawa, Faculty of Interdisciplinary Studies** (Ottawa), 2010.
67. **Prince Ware SA, E Kristjansson, K Russell, A Ali, D Prud'homme, M Tremblay, M Sawada.** Adult obesity and physical activity in the context of built and social environments in the City of Ottawa. **Canadian Obesity Network Student Meeting** (Ottawa), 2010.
68. Rodríguez MP, J Lopez Taylor, **RC Colley, MS Tremblay.** Development of a report card on the physical activity of Mexican children and youth. Presentation at the **International Congress on Physical Activity and Public Health** (Toronto), 2010.
69. **Rutherford J.** Stopping the downward spiral: Targeting Childhood Obesity through a Family Centred Approach. Invited presentation at **Nepean Kanata Rotary Club** (Ottawa), 2010.

70. **Rutherford J.** Childhood Obesity and Cardiac Issues. Invited presentation at **Regional Heart Saver Committee – CPR Across the Generations** (Ottawa), 2010.
71. **Saunders TJ, M Lloyd, E Knight, V Onywera, MS Tremblay.** Urban Kenyan children are no more active than their Canadian peers. Presentation at the **North American Society for Pediatric Exercise Medicine Conference** (Niagara-on-the-Lake), 2010.
72. **Saunders T, RC Colley, MS Tremblay.** Relationship between daily steps and clustered metabolic risk in American youth. Presentation at the **International Congress on Physical Activity and Public Health** (Toronto), 2010.
73. Shields M, **MS Tremblay.** Canadian childhood obesity estimates based on WHO, IOTF and CDC cut-points. Presentation at the **International Congress on Obesity** (Stockholm, Sweden), 2010.
74. Shields M, **MS Tremblay,** M Laviolette, CL Craig, I Janssen, S Connor Gorber. Aerobic and musculoskeletal fitness of Canadian adults. Symposium presentation at the **International Congress on Physical Activity and Public Health** (Toronto), 2010.
75. Spettigue W, M Norris, **S Hadjiyannakis** The Role of Atypical Antipsychotics in the Treatment of Adolescent Eating Disorders. **Eating Disorders Association of Canada annual meeting** (Toronto), 2010.
76. Stephens S, **MS Tremblay,** G Faulkner, S Koohsary, E Limenis, BM Feldman. The Stages of Exercise Scale: Validating a Measure of Readiness to Exercise in Children with Arthritis. Presentation at the **North American Society for Pediatric Exercise Medicine Conference** (Niagara-on-the-Lake), 2010.
77. **Tremblay MS.** Trends in Healthy Active Living – Evidence, Implications, and Future Directions. Invited keynote address at the **Inaugural Alberta Action on Wellness Forum** (Edmonton), 2010.
78. **Tremblay MS.** Findings from Cycle 1 of the Canadian Health Measures Survey. Symposium presentation at the **Canadian Society for Exercise Physiology Annual Scientific Conference** (Toronto), 2010.
79. **Tremblay MS, AG LeBlanc, RC Colley, G Goldfield, T Saunders, R Larouche.** Systematic review of the relationship between sedentary behaviour and health indicators in school-aged children and youth. Presentation at the **Canadian Society for Exercise Physiology Annual Scientific Conference** (Toronto), 2010.
80. **Tremblay MS.** Canadian Sedentary Behaviour Guidelines: Process and Consensus Meeting Outcomes. Symposium presentation at the **Canadian Society for Exercise Physiology Annual Scientific Conference** (Toronto), 2010.

81. **Tremblay MS.** Fitness of Canadian Children and Youth. Invited keynote presentation at the **2010 Nanjing International Conference on Youth Fitness and Health** (Nanjing, China), 2010.
82. **Tremblay MS.** Trends in measured fitness of Canadian children and youth: 1981-2009. Invited presentation at the **2010 International Forum on Sport Science** (Jinan, China), 2010.
83. **Tremblay MS.** Fitness of Canadian Children and Youth. Invited presentation at the **Beijing Sport University** (Beijing, China), 2010.
84. **Tremblay MS.** Canada's Inactive Kids: An Urgent Call for Action. Invited presentation to the **University of Western Ontario Faculty of Health Sciences Distinguished Lecture Series** (London), 2010.
85. **Tremblay MS.** What Parents Can do to Raise a Healthy and Active Child: The Evidence and Issues. Invited public presentation to the **City of London and London-Middlesex In Motion** (London), 2010.
86. **Tremblay MS.** What Service Providers Can do to Increase their Efficacy to Get Our Kids Active and Healthy: The Evidence and Issues. Invited public presentation to the **City of London and London-Middlesex In Motion** (London), 2010.
87. **Tremblay MS.** Contemporary Issues and Solutions for Physical Activity. Invited keynote address at the inaugural **Superintendent Speaker Series, New Brunswick School District 2** (Moncton), 2010.
88. **Tremblay MS.** Understanding the Physical Activity Transition: Evidence, Implications and Future Directions. Invited presentation to the **Ecole de kinesiologie et de recreologie** (Moncton), 2010.
89. **Tremblay MS.** Measuring our way to Success in Physical Education: Issues and Future Directions. Invited keynote presentation at the **New Brunswick School District 2 Physical Education Professional Development Workshop** (Moncton), 2010.
90. **Tremblay MS.** The Childhood Physical Activity Transition: Evidence, Implications and Future Directions. Invited symposium presentation at the **North American Society for Pediatric Exercise Medicine Conference** (Niagara-on-the-Lake), 2010.
91. **Tremblay MS.** Childhood Obesity Prevention Series: Part 1 Setting the Stage. Invited webinar presentation for the **Chronic Disease Prevention Alliance of Canada and Public Health Agency of Canada's Canadian Best Practices Initiative** (Ottawa), 2010.
92. **Tremblay MS.** Understanding the Physical Activity Transition: Evidence, Implications and Future Directions. Invited keynote address at the **in motion National Physical Activity Institute** (Saskatoon), 2010.
93. **Tremblay MS.** The childhood physical activity transition: evidence, implications, future directions. Invited presentation to the **Manitoba Institute of Child Health** (Winnipeg), 2010.

94. **Tremblay MS.** Canada – Mexico Connections for Studying Childhood Obesity: Introducing Monarca, CAMBIO and HALO. Invited presentation at the **Congreso Nacional Sociedad de Pediatría / Medicos Militares Pediatras** (Oaxaca, Mexico), 2010.
95. **Tremblay, M Shields, M Laviolette, CL Craig, I Janssen, S Connor Gorber.** Trends in the measured fitness of Canadian children and youth: 1981-2009. Presentation at the **International Congress on Obesity** (Stockholm, Sweden), 2010.
96. **Tremblay MS.** Process development and introduction of concepts related to public-private partnerships. Symposium presentation at the **International Congress on Physical Activity and Public Health** (Toronto), 2010.
97. **Tremblay.** Aerobic and musculoskeletal fitness of Canadian children. Symposium presentation at the **International Congress on Physical Activity and Public Health** (Toronto), 2010.
98. **Tremblay.** Exercise Guidelines. Invited presentation at the **Champlain Diabetes Network – Integrating Diabetes Services Conference** (Ottawa), 2010.
99. **Tremblay.** Sedentary behaviour and child health: emerging and disturbing trends. Invited presentation at the **XII Congreso Internacional Avances en Medicina 2010** (Guadalajara, Mexico), 2010.
100. **Tremblay.** Making the Truth or Masking the Truth: Measure and Measure Carefully. Invited lecture to **West Texas A & M University, Department of Sports and Exercise Sciences Graduate Trends and Issues Class** (Canyon, Texas), 2010.
101. **Tremblay.** Automation, Mechanization, Digitization: Contemporary Role Reversal of Physical Activity and Sedentarism. Distinguished lecturer, **West Texas A & M University** (Canyon, Texas), 2010.
102. **Wilson A, A Buchholz, K Henderson, MF Flament, N Obeid, C Moore, GS Goldfield.** Physical activity and psychosocial adjustment in adolescents. Paper presented at the **3rd Annual Research Day of the Children’s Hospital of Eastern Ontario Research Institute** (Ottawa), 2010.

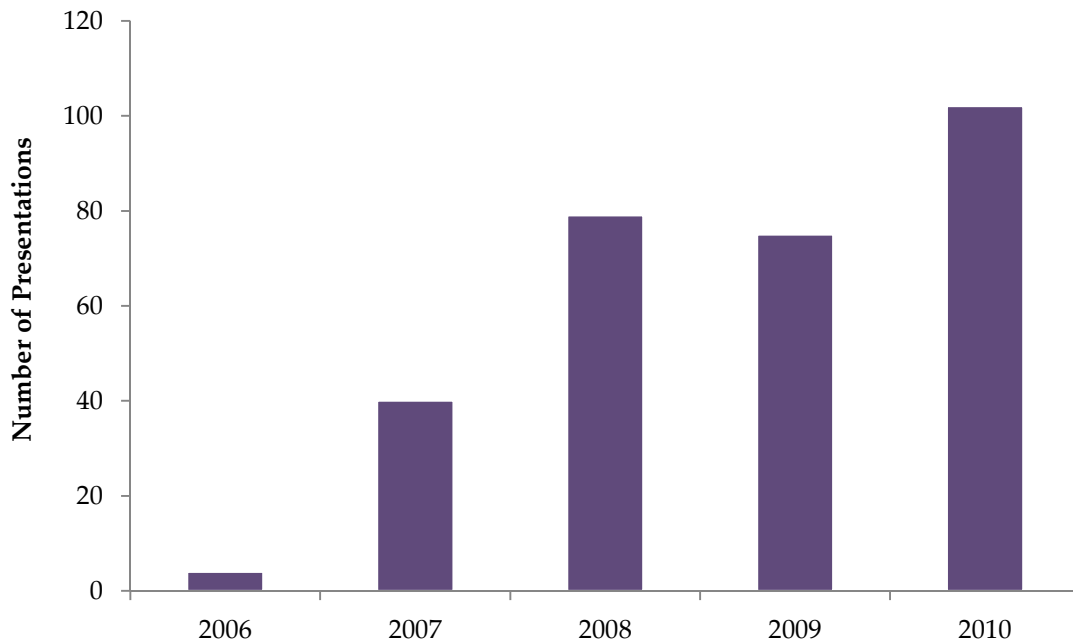


Figure 6. Number of scholarly presentations by HALO Research Group from 2006 to 2010. Between 2006 and 2010, there was a 2,450% increase in in the number of scholarly presentations; between 2009 and 2010, there was a 36% increase.

RESEARCH, CLINICAL, PROFESSIONAL AND SCHOLARLY SERVICE

Dr. Kristi Adamo

- Reviewer - CIHR Doctoral Research Awards 2010/2011
- Reviewer - Ottawa Red Flags- A Reference Guide for Early Years Professionals Early Identification in Child Development Prenatally to Age Six.
- Member - Champlain Cardiovascular Disease Prevention Network: Champlain Healthy School Age Children Initiative Committee
- Contributor - 2010 Active Healthy Kids Canada Report Card
- Campaign spokesperson- 'Know More, Do More- building healthy active families'
- Executive Member- Sherbrooke-Ottawa-Montreal Emerging Team Committee
- Member - CHEO's Centre Health Active Living Advisory Board
- Member - Obesity Research Clinical Alliance
- Member - Canadian Obesity Network; and Ottawa Chapter Faculty Advisor
- Journal Reviewer for:
 - *Journal of Obesity*
 - *Journal of School Health*
 - *Pediatrics*
 - *Journal of Pediatrics*

Dr. Jean-Philippe Chaput

- Advisory Board Member, Canadian Sleep Society
- Research Work Group, Active Healthy Kids Canada Report Card on Physical Activity for Children and Youth
- Scientific Expert, PasseportSanté.net. This website offers practical, reliable, objective and independent information on disease prevention and healthy active living.
- Journal Reviewer for:
 - *Obesity Reviews* (reviewed 3 papers)
 - *International Journal of Obesity* (reviewed 2 papers)
 - *Sleep* (reviewed 2 papers)
 - *Obesity* (reviewed 2 paper)
 - *International Journal of Pediatric Obesity* (reviewed 1 paper)
 - *Physiology and Behavior* (reviewed 1 paper)
 - *Applied Physiology, Nutrition, and Metabolism* (reviewed 1 paper)
 - *Appetite* (reviewed 1 paper)
 - *American Journal of Clinical Nutrition* (reviewed 1 paper)
 - *Pediatrics* (reviewed 1 paper)
 - *British Journal of Nutrition* (reviewed 1 paper)
 - *Obesity Facts* (reviewed 1 paper)

Dr. Rachel Colley

- Journal Reviewer for:
 - *Medicine and Science in Sports and Exercise*
 - *Journal of Sport Sciences*
 - *Applied Physiology, Nutrition & Metabolism*
- Panel Member (2008-2010) – Monitoring, Surveillance and Evaluation Expert Panel for the Champlain Cardiovascular Disease Network (CCPN)
- Chair of Active Healthy Kids Canada Research Work Group
- Scientific Officer, Active Healthy Kids Canada

Dr. Gary Goldfield

- Grant Reviewer for Alberta Heritage Foundation for Medical Research (1 grant)
- Grant Reviewer for Heart & Stroke Foundation (1 grant)
- Grant Reviewer for CHEO Research Institute Science Sub-Committee (3 grants)
- Grant Reviewer for CHEO Research Institute CHAMO Innovation Fund (2 grants)
- Journal Reviewer for:
 - *International Journal of Neuropsychopharmacology* (1 paper)
 - *International Journal of Pediatric Obesity* (1 paper)
 - *BioMed Central Health* (1 paper)
 - *BioMed Central Psychiatry* (1 paper)
 - *International Journal of Obesity* (2 papers)
 - *Journal of Physical Activity & Health* (1 paper)
 - *Pediatrics and Child Health*
 - *International Journal of Behavioral Nutrition and Physical Activity* (1 paper)
- Member - American Heart Association's Behavioural Change Committee
- Member - Advisory Board of CHEO's Obesity Treatment Program
- Member - Obesity Research Clinical Alliance
- Member – CHEO RI Grant Review Committee
- Clinical Psychologist – Private Practice providing services to children, youth and adults
- Clinical psychologist – Supervision of Master's level therapists and psychometrists
- Consulted with Active Healthy Kids Canada for 2010 Physical Activity Report Card – Focusing on Physical Activity, Cognition, and Academic Performance.

Dr. Stasia Hadjiyannakis

- Clinical Endocrinologist- Supervision of endocrine fellows, pediatric residents and medical student
- Pediatric Obesity Lecture, 3rd year medical students
- Pediatric OSCE Examiner (3rd year medical students)
- Lecturer Unit 2 – Obesity Week
- PGY4 Royal College Exam Review
- Grant Reviewer for CIHR
- Journal Reviewer for:
 - *Pediatrics and Child Health*
 - *Obesity*

Jane Rutherford

- Regular *Running Room* Expert Speaker – Nutrition, Heart Rate Training, Cross-training techniques
- YMCA/YWCA Group Fitness Instructor
- YMCA/YWCA Individual Conditioning Coach
- Member – Pediatric Regional Assessment and Treatment Centre Steering Committee
- Member – Obesity Research Clinical Alliance

Dr. Mark Tremblay

- Invited reviewer for *Obesity in Canada: A Joint Public Health Agency of Canada / Canadian Institute for Health Information Report*
- Journal Reviewer for:
 - *Journal of Physical Activity and Health* (2 papers)
 - *International Journal of Behavioral Nutrition and Physical Activity* (1 paper)
 - *Annals of Epidemiology* (1 paper)
 - *BMC Public Health* (1 paper)
 - *Canadian Pediatric Society Healthy Active Living position Stand*
- Reviewer for CAMBIO Grants (2 grants)
- Reviewer for *Obesity Reviews* (1 paper)
- University of Manitoba PhD External Examiner
- Symposium Chair: Sedentary Physiology: Implications for Public Health Guidelines for Children and Youth. *Canadian Society for Exercise Physiology Annual Scientific Conference* (Toronto)
- Facilitator for the *in motion National Physical Activity Institute National Network of Researchers Workshop* (Saskatoon)
- External Referee for evaluation of two candidates for tenure and promotion to rank of Associate Professor at a Western Canadian Universities
- Invited member of the CBC “Live Right Now” Advisory Board
- Chair, Free Communications Session on Physical Activity in Various Settings (6 presentations) at the *International Congress on Physical Activity and Public Health* (Toronto)
- Invited participant in the Pediatric Exercise is Medicine Network (PEMnet)
- Chair of the Knowledge Translation Pillar of PEMnet
- Published editorial “Healthy active living behaviours are the key” in *The Ottawa Citizen* March 9
- Editor of thematic series “Evidence Informing Updates to Canada’s Physical Activity Guidelines” (7 papers published in the *International Journal of Behavioral Nutrition and Physical Activity*)
- Invited faculty for the 3rd Annual CAMBIO Short Course on Obesity for Junior Researchers in Mexico (Puerto Vallarta, Mexico)
- Published editorial “A Number on the Scale” in the *Globe and Mail* January 16
- Appointed Visiting Lecturer, Department of Recreation Management and Exercise Science, *Kenyatta University, Nairobi Kenya*
- Co-Chair, Childhood Obesity Working group, *Kids Health Foundation*
- Chair of the Research Work Group for the preparation and release of the sixth annual *Active Healthy Kids Canada Report Card on Physical Activity for Children and Youth*. Including preparation of summary report card, long-form report card, and press activities (>150 million media impressions)
- Chief Scientific Officer, *Active Healthy Kids Canada*
- Chair, Canadian Physical Activity Guidelines Committee, *Canadian Society for Exercise Physiology*
- Members of the Board of Directors, *Child and Nature Alliance*
- Research Affiliate with the *Alberta Centre for Active Living*
- Editorial Board member of *Acta Kinesiologicalae Universitatis Tartuenssis* (University of Tartu, Estonia)
- Member of the Steering Committee for the development of “The Partnership Principles” - Guidelines and Principles for Not-for-Profit – Private Partnerships for the promotion of physical activity and sport
- Chair, Scientific Advisory Committee for the Canadian Assessment of Physical Literacy Project
- Chair, Steering Committee for the Canadian Assessment of Physical Literacy Project
- Member of the Steering Committee for *Treatment and Research of Obesity in Pediatrics in Canada (TOPIC)*
- Chair, *ParticipACTION* Research Advisory Group
- Member of the *Champlain Cardiovascular Disease Prevention Network* Coordinating Committee
- Member, Board of Directors, *Active Healthy Kids Canada*
- Co-Chair, *Expert Advisory Committee of the Canadian Health Measures Survey*, Statistics Canada

PROFESSIONAL DEVELOPMENT ACTIVITIES

Dr. Kristi Adamo

- Canadian Obesity Network- Student Meeting (Ottawa)
- North American Society for Pediatric Exercise Medicine annual meeting (Niagara-on-the-Lake)
- Canadian Society for Exercise Physiology Annual meeting (Toronto)
- 3rd Annual Research Day – CHEO Research Institute (Ottawa)

Dr. Jean-Philippe Chaput

- International Congress on Obesity (Stockholm, Sweden)
- The Obesity Society Annual Scientific Meeting (San Diego, USA)
- Congress on Preventive Medicine (Copenhagen, Denmark)

Dr. Rachel Colley

- French Language Training (CHEO) – Sept-Dec 2010

Dr. Gary Goldfield

- Ontario Psychological Association Conference (Toronto)
- Participating member – Ottawa Academy of Psychologist Mentor Group (Ottawa)
- CHEO –Mental Health professional Development meetings (Ottawa)
- The Obesity Society Conference (San Diego, CA)
- 3rd Annual Research Day –CHEO Research Institute (Ottawa)
- 31st Annual research Day, University of Ottawa, Department of Psychiatry (Ottawa)

Dr. Stasia Hadjiyannakis

- Cincinnati Children’s Adolescent Bariatric surgery Workshop
- Canadian Pediatric Society Meeting

Dr. Mark Tremblay

Attended the following conferences, symposia and workshops:

- CAMBIO 3rd Annual Course in Childhood Obesity (Puerto Vallarta, Mexico)
- in *motion* National Physical Activity Institute (Saskatoon)
- North American Society for Pediatric Exercise Medicine (Niagara-on-the-Lake)
- Canadian Society for Exercise Physiology Annual Scientific Conference (Vancouver)
- Alberta Action on Wellness Forum (Edmonton)
- Nanjing International Conference on Youth Fitness and Health (Nanjing, China)
- International Forum on Sport Science (Jinan, China)
- Congreso Nacional Sociedad de Pediatría / Medicos Militares Pediatras (Oaxaca, Mexico)
- International Congress on Obesity (Stockholm, Sweden)
- International Congress on Physical Activity and Public Health (Toronto)
- Champlain Diabetes Network – Integrating Diabetes Services Conference (Ottawa)
- XII Congreso Internacional Avances en Medicina (Guadalajara, Mexico)

ACADEMIC APPOINTMENTS

Dr. Kristi Adamo

- Assistant Professor, Faculty of Medicine, Pediatrics, University of Ottawa
- Cross appointed Assistant Professor, Faculty of Health Sciences, School of Human Kinetics, University of Ottawa
- Faculty appointment in Ph.D. Program in Population Health, University of Ottawa
- Research Scientist, Children's Hospital of Eastern Ontario Research Institute

Dr. Jean-Philippe Chaput

- Assistant Professor, Faculty of Medicine, Pediatrics, University of Ottawa
- Junior Research Scientist, HALO, Children's Hospital of Eastern Ontario Research Institute

Dr. Rachel Colley

- Assistant Professor, Faculty of Medicine, Pediatrics, University of Ottawa
- Junior Research Scientist, HALO, Children's Hospital of Eastern Ontario Research Institute

Dr. Gary Goldfield

- Assistant Professor, Department of Pediatrics, Faculty of Medicine, University of Ottawa
- Cross appointed to School of Human Kinetics, University of Ottawa
- Cross appointed to School of Psychology, University of Ottawa
- Adjunct Research Professor, Department of Psychology, Carleton University
- Clinical Scientist, HALO, CHEO Research Institute

Dr. Stasia Hadjiyannakis

- Assistant Professor, Department of Pediatrics, Faculty of Medicine, University of Ottawa

Dr. Mark Tremblay

- Full Professor, Department of Pediatrics, Faculty of Medicine, University of Ottawa
- Cross-appointed to Department of Epidemiology and Community Medicine, University of Ottawa
- Cross-appointed to Department of Human Kinetics, University of Ottawa
- Faculty appointment in Ph.D. Program in Population Health, University of Ottawa
- Senior Research Scientist, Children's Hospital of Eastern Ontario Research Institute
- Adjunct Full Professor, Faculty of Kinesiology, University of Saskatchewan
- Adjunct Professor, School of Graduate Studies, University of Toronto
- Adjunct Professor, Kenyatta University, Nairobi, Kenya

SUPERVISION AND TRAINING

Dr. Kristi Adamo

- Angela Alberga (PhD-c), 2010 Faculty of Health Science, School of Human Kinetics (examiner for comprehensive exams).
- Angela Alberga (PhD- c), 2011 Faculty of Health Sciences, School of Human Kinetics: *“The effects of aerobic exercise, resistance exercise and their combination, on cardiorespiratory and musculoskeletal fitness, resting metabolic rate, regional body composition and metabolic profile in obese adolescents”*.
- Brittany Beauchamp (PhD- c) 2010 Faculty of Medicine, Dept. Biochemistry, Microbiology & Immunology: *“Epigenetic programming of skeletal muscle metabolism.”*.
- Peter Breithaupt (MSc. candidate) U of Ottawa, School of Human Kinetics, September 2009 - *Validation of Body Composition and Aerobic Capacity Assessment Methodologies in the Overweight/Obese Pediatric Population*.
- Kendra Brett (PhD Candidate) U of Ottawa, School of Human Kinetics, September 2010 - *Exploring placental lipid transport in pregnancies complicated by overweight and obesity*.
- Zach Ferraro (PhD candidate) U of Ottawa, School of Human Kinetics, Jan. 2008 - *Characterization of the insulin-like growth factor-1 (IGF1) axis in women with maternal obesity and their neonates*.
- Sarah Labib (MSc), 2010 Faculty of Medicine, Dept. Biochemistry, Microbiology & Immunology: *“The effect to LMNA mutations on lamin A/C and binding partner interactions and cellular distribution”*.
- Emily Michelussi (BSc. HK Internship student). Project: *‘Evaluation of the Freggie Fridays Program in Ottawa Schools’* Sept 2010.
- Yannick Molgat-Seon (MSc- c), 2010 Faculty of Health Sciences, School of Human Kinetics: *“Quantifying heat balance components in neonates nursed under radiant warmers in neonatal intensive care”*
- Marie-Eve Rioux (PhD-c), 2010 Faculty of Health Science, School of Human Kinetics (examiner for comprehensive exams)

Dr. Jean Philippe Chaput

- Mads Fiil Hjorth – Ph.D. Co-supervisor (2010-2013), Sedentary behaviors and energy balance, University of Copenhagen.
- Lars Klingenberg – Ph.D. Co-supervisor (2009-2012), Sleep deprivation and energy balance, University of Copenhagen.
- Signe Nyby – M.Sc. Supervisor (2009-2010), Video games and energy balance, University of Copenhagen.
- Trine Visby – M.Sc. Supervisor (2009-2010), Video games and appetite control, University of Copenhagen.

Dr. Rachel Colley

- Mike Borghese – Summer Student, HALO
- Peter Breithaupt – M.Sc. Candidate, HALO
- Emily Knight – M.Sc. Candidate, HALO

Dr. Gary Goldfield

- Colleen Burke, Research Volunteer, Dept. of Psychology, University of Ottawa
- Isaac Davis - Honours BA Candidate, Dept. of Psychology, Carleton University
- Stephanie Leclair - Ph.D Candidate, Clinical Psychology, University of Ottawa
- Laura Peters, Research Volunteer, Dept. of Psychology, Carleton University
- Danijela Maras – Research Volunteer, Dept of Psychology, Carleton University
- Pierce McKinnon, Research Volunteer, Dept. of Psychology, Carleton University
- Jessica McNeil – School of Human Kinetics, University of Ottawa, MSc thesis committee
- Marisa Murray - Master’s Independent Study, Dept. of Psychology, Carleton University
- Angela Wilson - Ph.D Candidate, Clinical Psychology, University of Ottawa
- Travis Saunders – School of Human Kinetics, University of Ottawa, Ph.D. Comprehensive exam committee

Dr. Stasia Hadjiyannakis

- Dr. Sarah Tsai - Pediatric Endocrine Fellow, Children’s Hospital of Eastern Ontario- Completing her third year of fellowship

Dr. Mark Tremblay

- Megan Carter – Ph.D. Co-supervisor (2008-2011) (CIHR Scholarship)
- Cynthia Colapinto – Ph.D. Supervisor (2008-2011) (CIHR Fellowship in Public Health; Statistics Canada Tom Symon’s Ph.D. Fellowship)
- Emily Knight – M.Sc. Supervisor
- Richard Larouche – Ph.D. Supervisor (2009-2013) (CIHR Banting and Best Doctoral Scholarship)
- Stella Muthuri – Ph.D. Supervisor (2010-2014) (Graduate Scholarship in Science and Technology, Government of Ontario)
- Stephanie Prince-Ware – Ph.D. Co-supervisor (2006-2011) (SSHRC Doctoral Scholarship, Ontario Graduate Scholarship, University of Ottawa Doctoral Research Award and University of Ottawa Excellence Scholarships)
- Marjo Rinne – Ph.D. Opponent (University of Jyväskylä, Finland)
- Travis Saunders – Ph.D. Supervisor (2009-2013) (CIHR Scholarship)
- Samantha Stephens – Ph.D. Committee (2008-2011)
- Kristy Wittmeier – Ph.D. External Examiner (University of Manitoba)

STRATEGIC PARTNERSHIPS

The Healthy Active Living and Obesity Research Group is honoured to have the following organizations as strategic partners:

- Active Healthy Kids Canada
- Alberta Centre for Active Living
- Canada – Mexico Battling Childhood Obesity (CAMBIO)
- Canadian Fitness and Lifestyle Research Institute
- Canadian Society for Exercise Physiology
- Carleton University
- Champlain Cardiovascular Disease Prevention Network
- CHEO Foundation
- CHEO Research Institute
- Health Analysis Division, Statistics Canada
- Kenyatta University, Nairobi, Kenya
- National Capital Region YMCA/YWCA
- The Ottawa Hospital
- Ottawa Public Health
- ParticipACTION
- Treatment and Research of Obesity in Pediatrics in Canada (TROPIC)
- University of Ottawa
- University of Ottawa Institute of Mental Health Research (IMHR)



PROFESSIONAL MEMBERSHIPS

Dr. Kristi Adamo

- University of Ottawa- Institute of Population Health
- University of Ottawa- Faculty of Graduate and Postgraduate Studies
- Children’s Hospital of Eastern Ontario Research Institute
- Canadian Society for Exercise Physiology (CSEP- CEP)
- The Obesity Society (NAASO)
- North American Society for Pediatric Exercise Medicine (NASPEM)
- Canadian Obesity Network (CON)
- Treatment and Research of Obesity in Pediatrics In Canada (TROPIC)
- Reality Coalition Canada

Dr. Jean Philippe Chaput

- Canadian Obesity Network
- The Obesity Society
- International Association for the Study of Obesity
- Canadian Sleep Society
- American Academy of Sleep Medicine
- World Association of Sleep Medicine
- Coalition québécoise sur la problématique du poids

Dr. Rachel Colley

- The Obesity Society
- Canadian Society for Exercise Physiology (Member and Certified Exercise Physiologist)
- North American Society for Pediatric Exercise Medicine (NASPEM)
- Canadian Obesity Network (Member)

Dr. Gary Goldfield

- Children’s Hospital of Eastern Ontario Research Institute
- Member of College of Psychologists of Ontario
- Ottawa Academy of Psychologists
- Canadian Psychological Association
- The Obesity Society (North American Association for the study of Obesity)
- Canadian Obesity Network
- American Heart Association, Behavior Change Committee
- Registered Nurses Association of Ontario – Child Obesity Committee

Dr. Stasia Hadjiyannakis

- Children’s Hospital of Eastern Ontario Research Institute
- Canadian Pediatric Endocrine Group
- American Diabetes Association
- Canadian Diabetes Association
- Canadian Society for Endocrinology and Metabolism
- Endocrine Society
- Lawson and Wilkins Pediatric Endocrine Society
- International Society for Pediatric and Adolescent Diabetes

- Canadian Obesity Network
- National Association for the Study of Obesity

Jane Rutherford

- Canadian Obesity Network

Dr. Mark Tremblay

- North American Society for Pediatric Exercise Medicine
- Canadian Society for Exercise Physiology
- American College of Sports Medicine
- Canadian Obesity Network
- Physical and Health Education Canada
- Ontario Society for Health and Fitness
- International Society for Physical Activity and Health (ISPAH)
- ISPAH Physical Activity Measurement and Surveillance Council
- ISPAH Physical Activity and Obesity Council
- ISPAH Global Advocacy for Physical Activity Council
- Children's Hospital of Eastern Ontario Research Institute

CONTACT US

Current Staff List (as of March 31, 2011)

**Healthy Active Living and Obesity Research Group (HALO)
Children's Hospital of Eastern Ontario, Research Institute
401 Smyth Road, Ottawa, ON K1H 8L1**

Please visit our HALO web site at www.cheori.org/halo

Kristi Adamo

Research Scientist
613-737-7600, ext. 4190
kadamo@cheo.on.ca

Kimberly Grattan

Research Assistant
613-737-7600 ext. 4191
kgrattan@cheo.on.ca

Joel Barnes

Knowledge Synthesis and Analysis Manager
613-737-7600 ext. 4148
jbarnes@cheo.on.ca

Stasia Hadjiyannakis

Pediatric Endocrinologist
613-737-7600, ext. 3939
shadjiyannakis@cheo.on.ca

Charles Boyer

Research Assistant
613-737-7600 ext. 4191
cboyer@cheo.on.ca

Alysha Harvey

Research Coordinator
613-737-7600 ext. 4191
aharvey@cheo.on.ca

Jean-Philippe Chaput

Junior Research Scientist
613-737-7600, ext. 3683
jpchaput@cheo.on.ca

Allana Leblanc

Research Coordinator
613-737-7600, ext. 4145
alleblanc@cheo.on.ca

Rachel Colley

Junior Research Scientist
613-737-7600, ext. 4118
rcolley@cheo.on.ca

Hélène Sinclair

Administrative Assistant
613-737-7600, ext. 4102
mtakacs@cheo.on.ca

Nina Fowler

Research Coordinator
613-737-7600, ext. 3271
nfowler@cheo.on.ca

Mark Tremblay

Director, HALO
613-737-7600, ext. 4114
mtremblay@cheo.on.ca

Gary Goldfield

Clinical Scientist
613-737-7600, ext. 3288
ggoldfield@cheo.on.ca