



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 2011



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## WELCOME FROM THE DIRECTOR



In September 2011, at their sixty-sixth session in New York City, the United Nations General Assembly made a *political declaration on the prevention and control of non-communicable diseases* – a global commitment to increase efforts at chronic disease prevention. Dr. Arlene King, Chief Medical Officer of Health in Ontario, stated in her 2010 annual report *Health, Not Health Care – changing the conversation* that “it is time to shift our focus from health care to prevention”, “it is about fewer people getting sick”, and “it is about more people living long and healthy lives”. A similar sentiment can be found in the Federal Government’s Declaration on Prevention and Promotion released in the fall of 2010. Are we really ready, finally, to commit to prevention and the preservation of health? Have we reached a tipping point in our commitment to prevention? I am not so sure, but it certainly seems we are closer to the precipice than we were last year.

The urgency to prevent disease and preserve health has never been greater. In January 2011, the Canadian Society for Exercise Physiology released updated physical activity guidelines for school-aged children and youth and in February they released the first ever sedentary behaviour guidelines for the same age group. Using these new, evidence-informed guidelines, research from Statistics Canada’s Canadian Health Measures Survey showed that only 7% of Canadian children are achieving the *minimum* physical activity recommended and they are spending two-thirds of their waking time in sedentary behaviours. And once again the 2011 Active Healthy Kids Canada Report Card on Physical Activity for Children and Youth gave the country a failing grade. ParticipACTION began their “Think Again” campaign to encourage parents to be more attentive to the physical activity levels of their children. Even if our efforts in promoting healthy active living have increased, they clearly remain insufficient.

The Healthy Active Living and Obesity Research Group (HALO) at the CHEO Research Institute is committed to leading the battle against unhealthy living behaviours

and the effective management and treatment of childhood obesity. Through research, leadership, partnerships, education and advocacy HALO will continue to promote and preserve healthy active lifestyles while managing and treating childhood inactivity and obesity. The contributions of HALO in 2011 in this regard were by far the most substantial to date. The size and scope of HALO’s activities increased significantly in 2011 and we further increased the number of graduate students working with our group. Please read through this annual report for highlights and details of our accomplishments in 2011 and visit our website ([www.haloresearch.ca](http://www.haloresearch.ca)) to keep abreast of our work and contributions.

HALO remains indebted to the donors, contributors, researchers, stakeholders and partners, who fund, facilitate, support and synergize our efforts. To all of you, please accept our most sincere thanks.

This Annual Report provides a catalogue of the activities, accomplishments and contributions made by HALO in 2011 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.haloresearch.ca](http://www.haloresearch.ca).

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 2012.

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. 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. In 2011 HALO unveiled a plaque to recognize graduate students who have been trained by HALO researchers.

## 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.





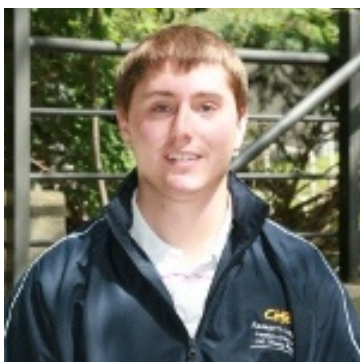
## 2011 HALO TEAM



**Dr. Kristi Adamo** earned a 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.

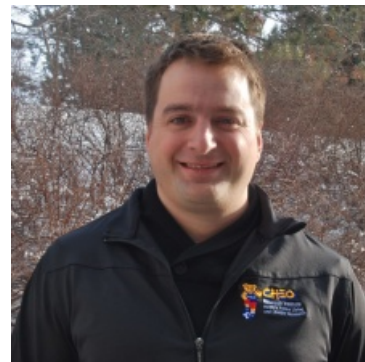


**Joel Barnes** has a BSc in Kinesiology from the University of New Brunswick. He also holds an MSc from the University of Saskatchewan. Under the supervision of Dr. Mark Tremblay, the focus of Joel's graduate work was pediatric exercise science. Joel joined the HALO Team in September 2010 as Knowledge 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.



**Mike Borghese** completed his Honours Bachelor of Sciences in Health Sciences (minor in Life Sciences), at the University of Ottawa in 2011. His undergraduate research project used a needs assessment approach to evaluate the current and future state of cycling in two Ottawa neighborhoods. Mike joined the HALO team as a summer student in 2010 and 2011, and now works as a research assistant with Dr. Rachel Colley of HALO primarily on the Physical Activity Engagement (PAE) study, and Dr. Rob Gow of CHEO's division of Cardiology on the Activity Intensity in Inherited Arrhythmias study. Mike also works with Prof. Wilma Jelley at the University of Ottawa's Department of Physiotherapy, investigating the essential competencies for intradisciplinary collaboration among medical professionals. Mike has been supervising the Rideau Canal's First Aid Skate Patrol team for 4 years; continues to tutor undergraduate students in organic chemistry, biochemistry, and anatomy and physiology; has taught English as a second language to children of families who have recently immigrated to Canada; and has worked a Blood Typer for Canadian Blood Services' blood donation promotional events. He enjoys staying active, reading, and learning something new each day.

**Charles Boyer** has a BSc and MA in Human Kinetics from the University of Ottawa. Charles's masters work involved understanding the situational factors leading to injury in youth bodychecking hockey. Charles joined the HALO team in February 2011 as a Research Assistant for the Canadian Assessment of Physical Literacy (CAPL) and the International Study of Childhood Obesity, Lifestyle and the Environment (ISCOLE) research projects. Charles enjoys several active pursuits outside of HALO which include running, weight lifting, hockey and golf.



**Dr. Annick Buchholz** is a clinical psychologist, and lead in outcomes management and research at the Centre for Healthy Active Living (CHAL). Prior to CHAL, Dr. Buchholz was involved in the development of the eating disorder day treatment and inpatient programs at CHEO; and, along with her colleagues in eating disorders, implemented outcomes measurement for both these programs. Dr. Buchholz has also been involved in the development and evaluation of the prevention program 'BodySense'; a program aimed at promoting healthy body image in athletes. She is a co-investigator on the REAL study, 'Research on Eating and Adolescent Lifestyles, an Ottawa-based longitudinal study examining shared risk factors between eating disorders and obesity in youth. Her research interests include psychosocial risk factors related to disordered eating and weight regulation in children and youth.

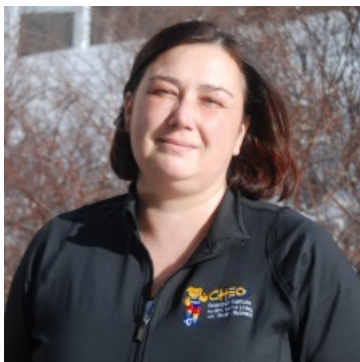
**Dr. Jean-Philippe Chaput** is currently an Assistant Professor in the Department of Pediatrics and the School of Human Kinetics at the University of Ottawa and holds a Junior Research Chair in Healthy Active Living and Obesity Research at the Children's Hospital of Eastern Ontario Research Institute. 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** holds 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 Paediatrics at the University of Ottawa. She is cross-appointed to the School of Human Kinetics and is a member of the Faculty of Graduate and Postgraduate Studies at the University of Ottawa. Dr. Colley's research program focuses on the objective measurement of physical activity and the development of strategies to engage overweight and obese children in healthy active living. 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 Canadian adult and children. She is presently working on several physical activity methodological papers and is interested in exploring the impact of the timing and patterns of sedentary behaviour on health in 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.







**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 family-based behavioural treatment of childhood obesity from a world renowned expert. Dr. Goldfield began the pediatric obesity research program at Children's Hospital of Eastern Ontario Research Institute (CHEO-RI) over 10 years ago. He is presently an Endowed Scholar, clinical scientist and founding member of the Healthy Active Living and Obesity (HALO) Research Group at CHEO. 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'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 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 is the proud father of two wonderful girls, Diana (11 years old) and Rachel (9 years old). Outside of work, Gary enjoys playing tennis, ball hockey, rollerblading, biking and weight training.



**Kimberly Grattan** conferred her Master of Arts in Applied Health Sciences degree at Brock University in the fall of 2009. Preceding this she completed a Bachelor of Honours in Kinesiology in the fall of 2007, also at Brock. With the guidance of Dr. Philip M. Wilson, she focused her graduate thesis on the role of motivation and goal setting on physical activity and healthy eating behaviours for people enrolled in commercial weight loss programs. Kimberly came to HALO initially as a volunteer in January of 2011 and then was fortunate to join the team as a Research Assistant in February of that same year. Her main responsibilities pertain to the Preschoolers Activity Trial, an intervention aimed at increasing the moderate to vigorous physical activity of preschool aged children and also Calibrate, an interdisciplinary look at providing educational workshops for health practitioners and early educators for the management of obesity in the early years. Outside of work Kimberly is a member of the women's National underwater hockey team who competed in the Elite Underwater Hockey World Championships in Portugal (2011) and she also enjoys weight training, kayaking, biking, and skiing.



**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. 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.



**Dr. Anne Marie Hospod** completed her undergraduate training at McGill University, earning a Bachelor of Science with Distinction in Physiology, and a minor in the History of Medicine. She completed additional undergraduate work at the Pierre et Marie Curie Faculty of Sciences at the Sorbonne University in Paris, and earned her medical degree at the Collegium Medicum of Jagiellonian University in Krakow, Poland. Dr. Hospod joined HALO in April 2011 to develop and direct the CALIBRATE program, a series of interdisciplinary educational workshops that teach health professionals and Early Childhood Educators about healthy weight management, and the promotion of healthy active lifestyles among children and youth. Dr. Hospod is also a proponent of dedicated Type 1 Diabetes self-management, and volunteers her time leading experiential and transitional care programming for the Type 1 adolescent population. She is an avid runner, having completed numerous marathons, half marathons and even a 24 hour relay.





**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 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.



**Dr. Pat Longmuir** completed an Honours Bachelor of Physical and Health Education, a Master of Science in Community Health (Exercise Science) and a Ph.D. in Medical Sciences from the University of Toronto. Her undergraduate, Masters and Ph.D. theses examined the impact of interventions to increase physical activity among children with heart defects or cystic fibrosis. Dr. Longmuir's post-doctoral fellowship was a community health promotion initiative implemented through the Hospital for Sick Children, Toronto. Dr. Longmuir is also an Assistant Professor in the Department of Physical Therapy at the University of Toronto and a Certified Exercise Physiologist. She is a member of the Canadian and American Heart Associations, Canadian Society for Exercise Physiology, American College of Sports Medicine and the North American Society for Pediatric Exercise Medicine. Dr. Longmuir's research interests are the promotion of physical activity to children with medical conditions and disabilities, and the use of physical activity to prevent and/or treat morbidity.

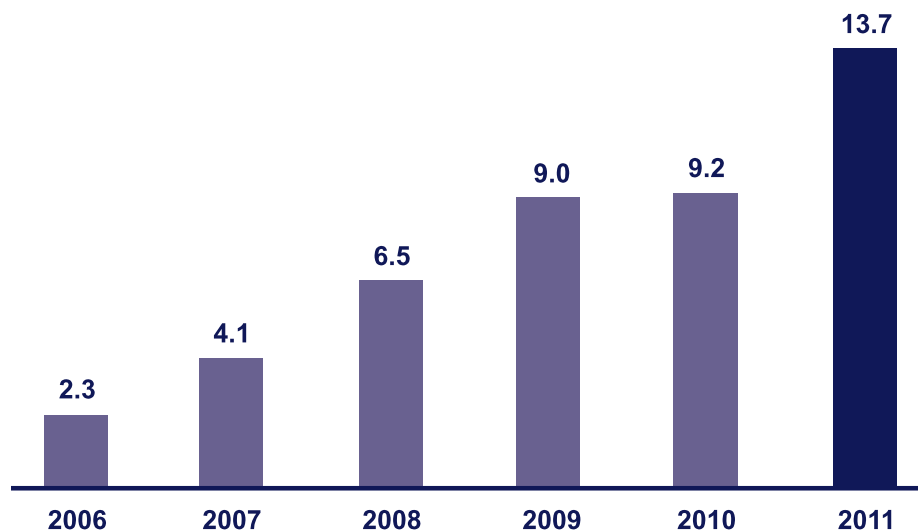


**Jane Rutherford** completed a BSc. in Nutritional and Nutraceutical Sciences and a MSc. in Nutrition, Exercise and Metabolism from the University of Guelph. Jane is the Exercise Specialist for CHEO's Centre for Healthy Active Living which works to help manage the health of children and youth with complex severe obesity and type 2 diabetes and their families. 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 Administration Professional – specializing in Organizational Management (CAP-OM® - International Association of Administrative Professionals - IAAP) who joined the HALO team in November 2010. She provides administrative, human resource and financial services assistance to the Director and the HALO team. Originally from Northern Ontario (Sudbury), she brings over 24 years of experience in office administration. She is an active volunteer and Past-President (2010/2011) of the Ottawa Chapter of the IAAP and is involved in helping with various community events and activities. Beyond her role with HALO, Hélène's passion and interest for healthy active living includes her long time (> 5 years) participation as a Community Team Member and Team Leader with an online weight loss and healthy living program (SparkPeople).

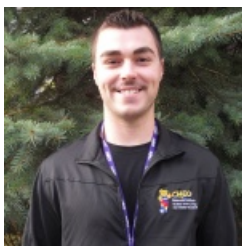
**Dr. Mark Tremblay** has a Bachelor of Commerce degree in Sports Administration and a Bachelor of Physical and Health Education degree from Laurentian University. His graduate training was from the University of Toronto where he obtained his M.Sc. and Ph.D. from the Department of Community Health with 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, where he is also cross-appointed to the School of Human Kinetics and the Department of Epidemiology and Community Medicine. 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, Chair of the Canadian Health Measures Survey Expert Advisory Committee and former Dean of Kinesiology at the University of Saskatchewan. Dr. Tremblay has published more than 140 papers and book chapters in the areas of childhood obesity, physical activity measurement, exercise physiology, exercise endocrinology and health surveillance. He has delivered over 450 scholarly conference presentations, including more than 120 invited and keynote addresses, in 15 countries. Dr. Tremblay recently received an honorary doctorate from Nipissing University for his leadership contributions to healthy active living in Canada. Dr. Tremblay's most productive work has resulted from his 23-year marriage to his wife Helen, yielding four wonderful children.



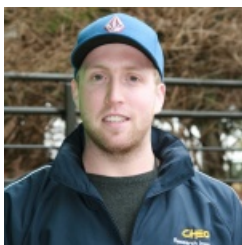
**Figure 1.** Number of Full Time Equivalent (FTE) positions in HALO Research Group from 2006 to 2011. Between 2006 and 2011, there was a 496% increase in FTE, and between 2010 and 2011, there was a 49% increase in FTE.



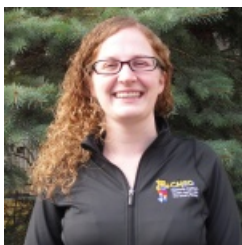
## OUR STUDENTS AND TRAINEES



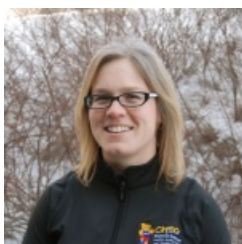
**Kevin Belanger**, M.Sc Student  
M.Sc Supervisor: Dr. Kristi Adamo  
Research Program: Master of Science, in Human Kinetics, University of Ottawa  
Thesis Topic: To be determined



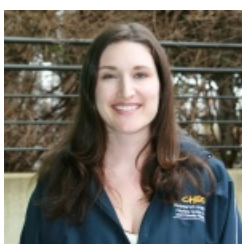
**Peter Breithaupt**, M.Sc. Student  
Supervisors: Dr. Kristi Adamo and Dr. Rachel Colley  
Research Program: M.Sc. Human Kinetics, University of Ottawa  
Thesis Topic: Validation of Cardiovascular Fitness and Body Composition Assessment Methodologies in the Overweight/Obese Pediatric Population



**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



**Megan Carter**, Ph.D. Student, CIHR Banting and Best Scholar  
Supervisor: Dr. Lise Dubois and Dr. Mark Tremblay  
Research Program: Population Health, University of Ottawa  
Dissertation Topic: The influence of place on body weight and food insecurity during childhood: a longitudinal study of young children living in Québec, Canada



**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, University of Ottawa Excellence Scholar  
Ph.D. Supervisors: Dr. Kristi Adamo and Dr. Denis Prud'homme  
Research Program: Ph.D. Human Kinetics, University of Ottawa  
Dissertation Topic: Maternal predictors and potential modifiers of fetal growth during pregnancy



**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: Relationship between active transportation, physical activity, body composition and cardiovascular fitness in children and adolescents



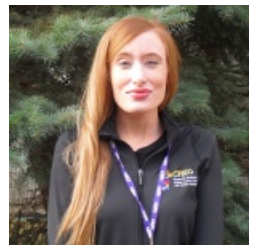
**Stephanie Leclair**, Ph.D. Candidate, CIHR Doctoral Clinical Scholar  
Ph.D. Supervisor: Dr. Gary Goldfield  
Research Program: Ph.D. Clinical Psychology, University of Ottawa  
Dissertation Topic: Delivering behavioural intervention for obese children via the Internet



**Danijela Maras**, M.A. Student, Ontario Graduate Scholar  
M.A. Supervisor: Dr. Gary Goldfield  
Research Program: M.A. Experimental Psychology, Carleton University  
Thesis Topic: To be determined



**Marisa Murray**, Ph.D. Candidate  
Ph.D. Supervisor: Dr. Gary Goldfield  
Research Program: Ph.D. Clinical Psychology, University of Ottawa  
Thesis Topic: Psychological Factors Predicting Obesity among Adolescents



**Stella Muthuri**, Ph.D. Candidate, Queen Elizabeth II – Graduate Scholarship in Science and Technology  
Ph.D. Supervisor: Dr. Mark Tremblay  
Research Program: Ph.D. in Population Health, University of Ottawa  
Research Title: Comparative study of physical activity trends and the prevalence of obesity in school aged children in Canada and Kenya

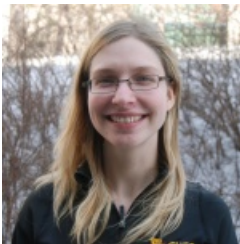




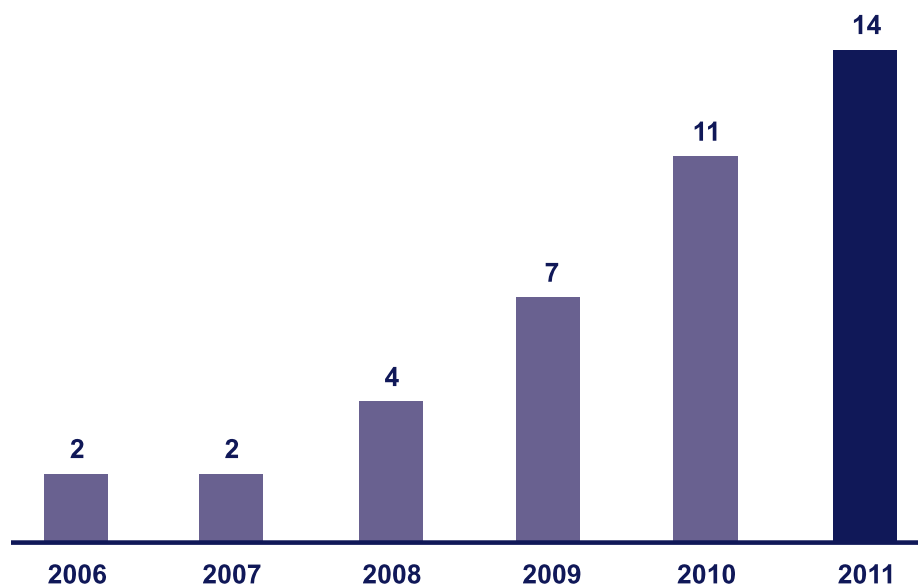
**Stephanie Prince Ware**, Ph.D. Candidate, SSHRC Scholar, Ontario Graduate Scholar, University of Ottawa Excellence and Research Scholar  
Ph.D. Supervisors: Dr. Denis Prud'homme and Dr. Mark Tremblay  
Research Program: Ph.D. Population Health, University of Ottawa  
Dissertation Topic: Neighbourhood built and social environments and individual physical activity, overweight & obesity: A multi-method assessment



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



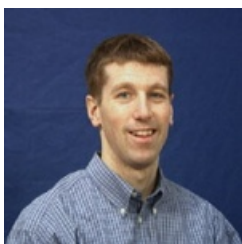
**Figure 2.** Number of graduate students in the HALO Research Group from 2006 to 2011. Between 2006 and 2011, there was a 600% increase, and between 2010 and 2011, there was a 27% increase in the number of students.

## ADJUNCT INVESTIGATORS



**Dr. Vincent O. Onywera**

Senior Lecturer  
Director, Center for Linkages and International Programs (CLIP)  
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**Dr. A. William Sheel**

Professor  
School of Kinesiology  
The University of British Columbia  
6108 Thunderbird Blvd  
Vancouver, BC, Canada, V6T 1Z3

## VISITORS

Dr. Grant Tomkinson Senior Lecturer from the School of Health Sciences (from the University of South Australia - City East Campus) joined the HALO team for a week in May 2011 to develop research collaborations. He made several presentations while with the HALO group including presenting at CHEO Pediatric Grand Rounds (Secular Changes in Children's Anaerobic Fitness) and at CHEO Research Rounds (Causes and Correlates of Secular Changes in Children's Fitness – Is Obesity the Culprit?).

## INVITED SPEAKERS

- Angelo Tremblay (Laval University): How do we prevent obesity in 2011? Research Rounds, February 2011
- Dr Bob Ross (Queen's University) and Dr Yoni Freedhoff (Bariatric Medical Institute): Forks vs Feet: Which is More Critical to Obesity Treatment and Prevention?", Public debate, funded by the Canadian Obesity Network (CON) and the University of Ottawa Faculty of Health Sciences, and organized by members of HALO and the University of Ottawa CON student group, May 2011
- Dr. Brian Timmons (Research Director, Child Health & Exercise Medicine Program; Assistant Professor of Pediatrics, McMaster University): Exercise And Inflammation From A Pediatric Perspective, Research Rounds, November 2011



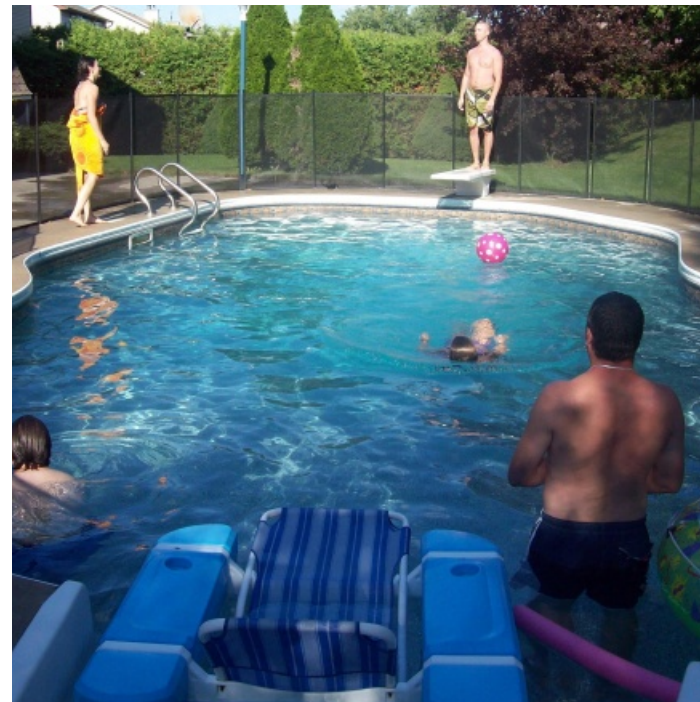
## STUDENT VOLUNTEERS

- Eva Applebaum (volunteer under Drs. Kristi Adamo and Gary Goldfield)
- Alicia Biafore (supervisor: Dr. Gary Goldfield), Department of Psychology, Carleton University
- Jesse Beckstead, Research practicum (supervisor: Dr. Gary Goldfield), Department of Psychology, Carleton University
- Kristi Billard, Department Biomedical Science, 3rd year, Ottawa University (volunteer under Dr. Kristi Adamo)
- Mike Borghese - CHEO Research Institute Funded Summer Student, Physical Activity Engagement Study, Active Healthy Kids Canada Report Card (Dr. Rachel Colley, supervisor)
- Colleen Burke (volunteer under Drs. Gary Goldfield and Kristi Adamo), Department of Psychology, University of Ottawa
- Emily Chan (volunteer under Drs. Kristi Adamo and Gary Goldfield)
- Emma Cotman, Kinesiology student, University of Toronto (Dr. Pat Longmuir -undergraduate research supervisor)
- Stefanie Cundari, MSc Exercise Counselling, University of Guelph/Humber (Dr. Pat Longmuir - internship supervisor)
- Christina Czaban, Research practicum (supervisor: Dr. Gary Goldfield), Department of Psychology, Carleton University
- Isaac Davis, Undergraduate thesis (supervisor Dr. Gary Goldfield), Department of Psychology, Carleton University
- Dolap Disu, Research practicum (supervisor: Dr. Gary Goldfield), Department of Psychology, Carleton University
- Chauntelle Facey, MSc Exercise Counselling, University of Guelph/Humber (Dr. Pat Longmuir - internship supervisor)
- Genevieve Hayden (supervisor: Dr. Gary Goldfield), Department of Psychology, Carleton University
- Chloé Le Quéré (supervisor: Dr. Kristi Adamo), Department of Health Sciences, University of Ottawa, Registered Dietician Co-operative Placement (MOM Trial)
- Jasmine Lim (volunteer under Drs. Kristi Adamo and Gary Goldfield)
- Katherine McNeill, Kinesiology student, University of Toronto (Dr. Pat Longmuir - undergraduate research supervisor)
- Emily Michelussi (supervisor: Dr. Kristi Adamo), Department of Health Sciences, 4th Year Human Kinetics program, Ottawa University (Freggie Fridays)
- Victoria Peck (supervisor: Dr. Kristi Adamo), Department of Health Sciences, 4th Year Human Kinetics program, Ottawa University (Preschoolers Activity Trial)
- Laura Proudfoot, MSc Exercise Counselling, University of Guelph/Humber (Dr. Pat Longmuir - internship supervisor)
- Nicole Stieber, Stephanie Gilmour, Angela Morra, Jacqueline Rainbow, Stacey Robitaille, MSc physical therapy students, University of Toronto (Dr. Pat Longmuir - research supervisor)
- Niko Tzakis, Integrated Science, Carleton University (Dr. Jean-Philippe Chaput - BSc supervisor)
- Claire Wells (volunteer with Dr. Rachel Colley on the Stepscount and Physical Activity Engagement Studies)
- Li-Ann Yap, MSc student, Health Promotion, University of Saskatchewan (Dr. Pat Longmuir - internship supervisor)
- Thomas Zakharov (volunteer under Drs. Kristi Adamo and Gary Goldfield)
- Bianca Zapanta (volunteer under Dr. Rachel Colley and Mr. Joel Barnes), Faculty of Health Sciences, 2nd Year Health Sciences Program, McMaster University (StepsCount Study)





HALO PHOTO GALLERY













# HALO HIGHLIGHTS IN 2011

## SLEEP DEPRIVATION STUDY

The decrease in average sleep duration over the last decades has been paralleled 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. Thus, there may be an “optimal sleeping time” for the prevention of common diseases and premature death. However, the mechanisms behind these associations are far from fully elucidated.

The main aim of this project 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

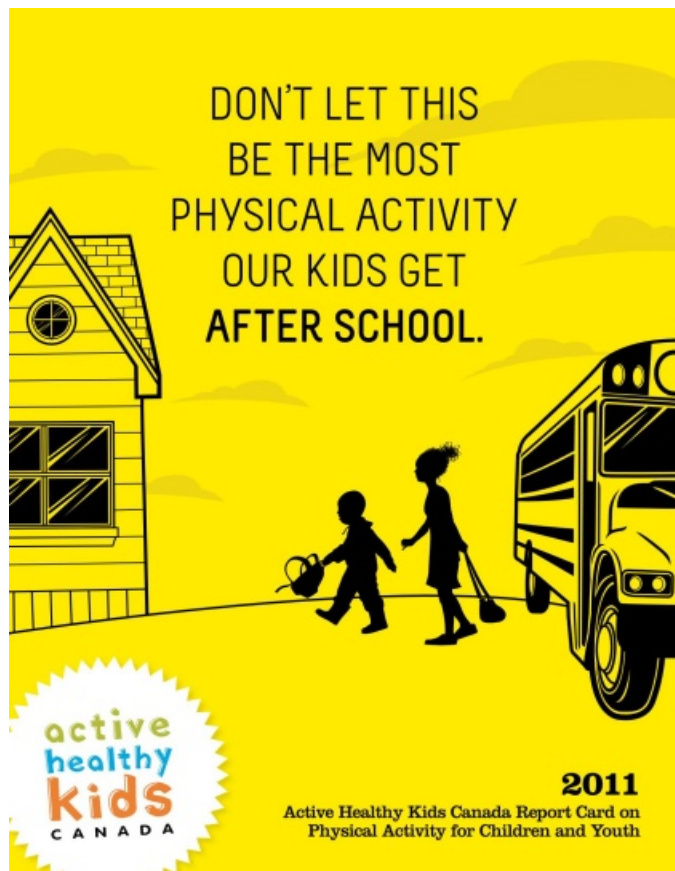
intake as well as relevant appetite hormones assessed after 3 nights of regular sleep (9 hours/night) and after 3 nights of restricted sleep (4 hours/night). Experiments are performed in a randomized, crossover design.

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. Since preventing obesity is important, a pragmatic approach adding sleep hygiene advice to encouragement towards a healthy diet and physical activity might be our future approach to combat the obesity pandemic.





## THE 2011 ACTIVE HEALTHY KIDS CANADA REPORT CARD ON PHYSICAL ACTIVITY FOR CHILDREN AND YOUTH



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 After School Period:** The 2011 Report Card marked the 7th annual overview of the many factors impacting physical activity for children and youth in this country. The 2011 Report Card highlights the critical after-school period, focusing on the influences on physical activity levels that exist in the time between the end of the school day and before the dinner hour. Intuitively, it would seem that once school is out for the day, children's activity levels would rise because they are presented with "free time". Anecdotally, we know that most children who grew up a generation or two ago spent this time in active play – running, biking, and playing (usually outside) with their friends. Various data sources suggest this is not the case today; Canadian children and youth have adopted a modern lifestyle that includes spending a great deal of this after-school time sitting idle indoors.

**The Benefits of Outdoor Time:** Outdoor activity, once a key source of children's after-school physical activity, is

on the decline, due in part to parental concerns about supervision and safety. Parents feel pressure to enroll their children in organized activities after-school; however, new data from the Canadian Fitness and Lifestyle Research Institute indicates that children who play outdoors between 3 and 6pm on weeknights accumulate as many additional steps as do children involved in organized sports and activity programs (~2,000 extra steps per day!).

**Recommendations for Action:** The 2011 Report Card provides focused recommendations on how to improve the physical activity situation in Canada. Parents, teachers and practitioners should encourage children to *get outside* where there is room to move as much as possible. Effective *partnerships between schools and community organizations* can maximize the usage of high quality sport and physical activity facilities. Evidence indicates that *peer-led programs* are highly successful and reach a sub-group of children who might otherwise shy away from active pursuits. The after-school period has been identified as a target for physical activity by the Public Health Agency of Canada and all of the provincial and territorial governments. *Policy changes by governments and partners are needed* to ensure that resources and training for physical activity promotion in the after-school period are available, and sustained.

**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 2011 Report Card received over 100 million media impressions.

### INTERNATIONAL GRADUATE COURSE IN CLINICAL AND EXERCISE PHYSIOLOGY

Dr. Kristi Adamo was one of the Canadian faculty members at the **International Graduate Course in Clinical and Exercise Physiology** held at Auberge Duchesnay in Ste-Catherine-de-la-Jacques-Cartier, Quebec.

This 1-week intensive advanced graduate-level course brings together faculty and students from Canadian and European Universities focusing on topics in exercise and clinical physiology. This integrative research-based course covers basic science topics on various physiological systems and extends to common clinical physiological applications. The international aspect of the course facilitates diverse exchange of research perspectives, themes and experimental approaches. The lecture topics and discussion format is intended to maximize student-student and student-faculty exchange.

Dr. Adamo was asked to specifically address '*Metabolic Studies in Pediatric and Maternal Obesity*' and during the '*Training Approaches - Training Responses*' Round



Table, she lead a debate related to early Specialization vs. early Diversification entitled '*Is Early Specialization in Youth Sport a requirement for adult expertise?*'

#### Course Sponsored By:

- Faculty of Arts & Science - Concordia University
- School of Graduate Studies - Concordia University
- Faculty of Health Sciences - University of Copenhagen
- Academy of Muscle Biology, Exercise & Health Research (AMBEHR)

#### Faculty Members



**Left to right:** Ylva Hellsten (University of Copenhagen), Kevin Shoemaker (University of Western Ontario), Bengt Saltin (Copenhagen Muscle Research Centre), Maureen MacDonald (McMaster University), Kristi Adamo (CHEO Research Institute), Peter Schjerling (University of Copenhagen), Robert Boushel (University of Copenhagen), Andreas Bergdahl (Concordia University), Johannes van Lieshout (Amsterdam Medical University), Graham Holloway (University of Guelph), Mary-Ellen Harper (University of Ottawa)

**Missing from the photo:** Erich Gnaiger (University of Innsbruck), Jose Calbet (University of Las Palmas), Charles Hoppel (Case Western University), Terry Graham (University of Guelph), Patrice Brassard (Laval University), Phillip Gardiner (University of Manitoba)

#### THE PRESCHOOLERS ACTIVITY TRIAL (PAT)

##### Background

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.

##### Objectives

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.

##### Study Design

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.

##### Significance

This study is important in that establishing a healthy active lifestyle must start early while children's health behaviour are very malleable and because activity tracks from early childhood to adulthood. Thus, getting children more physically active in the early years may alter their activity trajectory over their lifespan, helping to prevent obesity and other chronic diseases such as Type 2 diabetes or cardiovascular disease later in life.



## CANADIAN ASSESSMENT OF PHYSICAL LITERACY

**Key Finding:** Obstacle course is a new motor skill assessment for population research.



**Background:** Motor skill deficits are associated with sedentary lifestyles. Existing assessments examine isolated skill performance and the 1:1 examiner:participant ratio is not amenable to population-based data collection.

**Objective:** To examine the feasibility, validity and reliability of an obstacle course incorporating fundamental motor skills suitable for use with large populations of children 8 to 12 years of age.

**Design:** Cross-sectional design. 50 healthy, normal children (mean  $\pm$  SD age:  $10.2 \pm 1.6$  years) completed obstacle course and Movement ABC. Participants were similar for the intra-rater ( $n=46$ ,  $11.1 \pm 1.2$  years), inter-rater ( $n=62$ ,  $11.0 \pm 1.5$  years) and test-retest ( $n=55$ ,  $10.1 \pm 2.0$  years) reliability assessments. Participants recruited through summer camps.

**Results:** All 213 children, 6 to 14 years of age, achieved a time and score for completing the obstacle course. Time ( $r = 0.49$ ,  $p=.001$ ) and skill ( $r = .31$ ,  $p=.03$ ) were associated with higher scores on the aim & catch subscore of the Movement ABC. The one-foot hopping component of the obstacle course showed a strong trend of association ( $r = 0.26$ ,  $p=.07$ ) with the balance subscore of the Movement ABC. Intra-rater (ICC = 0.55), inter-rater (ICC = 0.47) and test-retest (ICC = 0.38) reliability were moderately strong for scored performance of obstacle course motor skills. Substantial correlations were obtained for intra-rater (ICC = 0.86), inter-rater (ICC = 0.74) and test-retest (ICC = 0.79) reliability of the time for obstacle course completion.

**Conclusion:** The obstacle course is feasible to administer to large groups of children, typically requiring 20 to 25 seconds per trial. Better obstacle course performance by children with higher scores on the Movement ABC test of motor development. Measures of obstacle course reliability are moderate to substantial.

**Status of the project:** Completed. Paper in preparation for publication. Obstacle course included in final psychometric evaluations of Canadian Assessment of Physical Literacy (on-going).

## DEVELOPMENT OF THE FIRST CANADIAN PHYSICAL ACTIVITY AND SEDENTARY BEHAVIOUR GUIDELINES FOR THE EARLY YEARS (AGED 0-4 YEARS)

With funding from the Canadian Institutes of Health Research, HALO worked closely with the Canadian Society for Exercise Physiology and ParticipACTION on the development of the first Canadian Physical Activity and Sedentary Behaviour Guidelines for the Early Years (aged 0-4 years) through 2011. The process was led and chaired by Dr. Mark Tremblay with project management from Allana LeBlanc. These first ever Canadian Physical Activity Guidelines for the Early Years (aged 0-4 years) and Canadian Sedentary Behaviour Guidelines for the Early Years (aged 0-4 years) will be officially released in March 2012 and each include a preamble to provide context, and specific guidelines for the early years. Supplementary public-facing materials will also be available to assist in messaging the guidelines to care-providers. The guideline development process was assessed by 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 2012 will serve to elevate the prominence and awareness of increasing physical activity and decreasing sedentary behaviours among Canadian infants, toddlers and preschoolers.



**Back row (left to right):** Brian Timmons, John Spence, Allana LeBlanc, Ian Janssen, Audrey Hicks, Kelly Murumets, Jodie Stearns, Tony Okely

**Front row (left to right):** Mark Tremblay, Mary Duggan, Amy Latimer-Cheung, Sarah Connor Gorber, Michelle Kho, Val Carson, Claire LeBlanc, Mary Jane Gordon, John Reilly

**Missing:** Louise Choquette, Carrie Dillman



## SEDENTARY BEHAVIOUR RESEARCH NETWORK (SBRN)



Although the health impact of regular physical activity is well established, a growing body of evidence suggests that the amount of time a person spends engaging in sedentary behaviour (e.g., sitting) is strongly associated with increased health risk, independent of their level of physical activity. For example, research performed in our group suggests that sedentary behaviour is associated with increased risk of obesity and metabolic syndrome as well as reduced aerobic fitness, self-esteem, pro-social behaviour, and academic achievement among children and youth.

While sedentary behaviour research is underway in fields of study ranging from sociology and psychology to medicine, physiology and health policy, to date there has been very little opportunity for interaction between researchers from different disciplines. Thus, there was a need for a network connecting sedentary behaviour researchers across disciplines in order to synthesize current knowledge, develop collaborations for future research, disseminate knowledge to practitioners and policy-makers, and advocate for public health interventions to reduce sedentary behaviour.

In response to this need members of the Healthy Active Living and Obesity Research Group performed a needs assessment survey which received feedback from more than 100 sedentary behaviour researchers spread across 6 continents. More than 90% of survey respondents supported the creation of a network connecting sedentary behaviour researchers in order to facilitate collaborations, knowledge syntheses, and advancing understanding. In response to this feedback, HALO team members founded the Sedentary Behaviour Research Network ([www.sedentarybehaviour.org](http://www.sedentarybehaviour.org)) – an online community bringing together researchers and clinicians interested in the health impact of sedentary behaviour.

To date the Network has created a rapidly expanding list-serve for sedentary behaviour researchers, an online database of sedentary behaviour research (the largest such database in the world), and begun work on a synthesis of the best available evidence for practitioners and policy-makers. The Network has grown to include 175 members, including prominent researchers in the areas of physiology, epidemiology, psychology, and ergonomics. Further, the Network's membership has

also developed a letter promoting a standardized and more robust definition of sedentary behaviour that can be applied consistently across research domains, and that has been accepted for publication in the journal of *Applied Physiology, Nutrition and Metabolism*. The Network's membership also has plans for in-person meetings at upcoming conferences in San Francisco and Sydney, Australia.

## HALO'S WEB PRESENCE

An organization's web presence makes an indirect, yet important, statement about their ability to embrace technology and adapt to change in the modern environment. As an organization keeping pace with technology that enables effective and efficient governance, HALO has a website that is freely accessible to the public: [www.haloresearch.ca](http://www.haloresearch.ca).

There are many reasons for maintaining a web presence and HALO has done so in order to:

- Help establish a permanent identity
- Share information
- Garner worldwide exposure

Statistics are presented below, which demonstrate how HALO's website has been beneficial for our identity, the sharing of information and exposure on a worldwide level.

[www.haloresearch.ca](http://www.haloresearch.ca)

In May 2011, HALO launched a brand-new website that runs on the WordPress platform. WordPress is the most popular content management system on the Internet and is used by approximately 15% of the top 1 million websites. Notable organizations using WordPress include Adobe, CNN, Macleans, The University of British Columbia and the University of Calgary.

With the launch of the new website, a new domain name was registered to further establish HALO's identity: [www.haloresearch.ca](http://www.haloresearch.ca).





Web Statistics

The current architecture of the HALO website consists of 285 web pages. The statistics presented below are estimates based on web activity across these web pages in the last quarter of 2011 (October-December 2011). Since the website was not launched until the middle of 2011, statistics from the last quarter are likely most representative of typical web usage.

In 2011, there were approximately 2,500 unique visitors to [www.haloresearch.ca](http://www.haloresearch.ca) every month. These visitors viewed HALO web pages over 45,000 times per month. More than 55,000 items were sent from [www.haloresearch.ca](http://www.haloresearch.ca) to web users (see Figure 3 for all overall statistics).

**Hits:** the total number of items on all web pages (e.g., images, audio clips) that are requested. For example, a web page with 3 graphics and some text will usually result in 4 hits when the web page is requested.

**Files:** the total number of hits (requests) that actually result in something being sent back to the user. This is useful since not all hits will send data.

**Web Pages:** the actual web pages requested and not all of the individual items that make up the web pages (e.g., images, audio clips).

**Visits:** the total number of websites making requests within a given timeout period (default is 30 minutes). Remote websites that link to images and other non-web page addresses are not counted.

**Visitors:** the total number of unique IP addresses that makes requests to [www.haloresearch.ca](http://www.haloresearch.ca).

Most Popular Web Pages

In 2011, 47 new web pages about new peer-reviewed publications by HALO researchers were published; an additional 40 new web pages about media coverage of HALO research were published. The most popular web pages as measured by total views were:

- Director’s Message (6,626 views)
- Kimberly Grattan Prepares for Underwater Hockey World Championships in Portugal (4,753 views)
- Dr. Pat Longmuir Develops Kids Fitness Test (4,134 views)
- Study Participants Needed (1,583 views)
- Fork vs. Feet: Experts Debate the Role of Diet Versus Exercise in Weight Management (1,192 views)

Website Usage by Country

The greatest percentage of users who accessed [www.haloresearch.ca](http://www.haloresearch.ca) in 2011 was from the United States and Canada (59%); however, the countries from which a large percentage of requests came (33%) were indeterminable.

Website Usage by HALO Researchers

[www.haloresearch.ca](http://www.haloresearch.ca) was used to facilitate various research activities (e.g., database management services, online questionnaires, online registration forms, online reports for study participants) for several HALO projects including Calibrate and CAPL (see Current Research Initiatives on page 26).

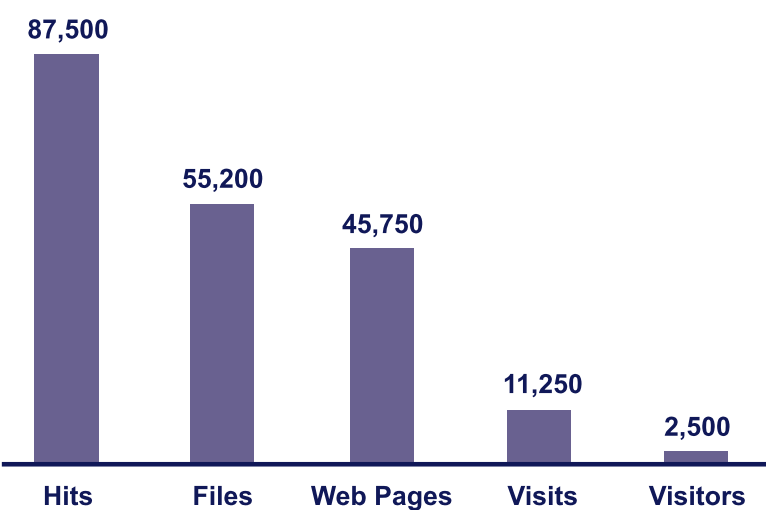


Figure 3. Average Monthly Totals for [www.haloresearch.ca](http://www.haloresearch.ca) (October-December 2011).

# CURRENT RESEARCH INITIATIVES

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

1. Physiological and psychological predictors and determinants of metabolic complications of pediatric obesity: A Cohort Study
2. Validation of a sub-maximal treadmill protocol to measure cardiorespiratory fitness in overweight and obese children and youth
3. Body Composition Measured by Dual-Energy X-ray Absorptiometry Half-body Scans in Obese Children
4. Maternal Obesity Management – The MOM Trial (PILOT)
5. Obesity Prevention from Conception: A workshop to guide the development of a pan Canadian trial targeting the gestational period
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. Exploring placental lipid transport in pregnancies complicated by overweight and obesity
10. Evaluation of the “Freggie Fridays Program” in Ottawa Schools
11. Understanding the Factors That Enable or Inhibit Physical Activity Engagement in Obese and Non-Obese Children
12. Co-Existent Obstructive Sleep Apnea and Obesity: Finding NEAT Targets for Intervention
13. Sleep, diet and physical as well as modern sedentary activities as integrated risk factors of adiposity in children
14. Effects of playing video games on appetite control in adolescents
15. Effects of sleep restriction on energy balance: a randomized, 2-condition, crossover study in adolescents
16. Sleep and obesity in children and adolescents: identifying pathogenic pathways
17. Family-Based Behavioural Treatment of Childhood Obesity Via Internet: A Randomized Controlled Trial.
18. Healthy Eating, Aerobic and Resistance Training in Youth (HEARTY)
19. The Preschoolers Activity Trial (PAT)
20. Effects of Methylphenidate (Ritalin) on Energy Balance in Obese Adolescents
21. A Tertiary Care Approach to the Management of Pediatric Obesity and its Co-morbidities
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 2011 Report Card
25. Revising Canada's Physical Activity Guidelines
26. Development of the first Canadian Sedentary Behaviour Guidelines for Children and Youth
27. Development of the first Canadian Physical Activity Guidelines for the Early Years (aged 0-4 years)
28. Development of the first Canadian Sedentary Behaviour Guidelines for the Early Years (aged 0-4 years)
29. Built and Social Environmental Determinants of Physical Activity and Obesity in Ottawa Neighbourhoods – The Neighbourhood Physical Activity Study
30. Examining the Folate Status of Canadians
31. Canadian Assessment of Physical Literacy (CAPL)
32. Canada – Mexico Battling Childhood Obesity (CAMBIO)
33. Canadian Health Measures Survey: Analyses of healthy active living indicators of Canadians
34. Sedentary time and markers of cardiometabolic risk in children and youth: a randomized cross-over study
35. Calibrating early lifestyles to manage obesity: a health and education practitioner intervention approach
36. Collaboration to achieve healthier weights for children and youth: innovation through measurement and knowledge exchange
37. Validity of the SC-StepMX pedometer during treadmill walking and running
38. Measuring the relationship between indicators of place and trajectories of child weight change: a prospective analysis

## **1. Physiological and psychological predictors and determinants of metabolic complications of pediatric obesity: A Cohort Study (POC)**

*Principal investigator:* **Dr. Kristi Adamo**

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

*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, VO<sub>2</sub> 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:* The POC project has been amalgamated with the new Centre for Health and Active Living (CHAL) obesity management program. As an extension of the original cohort study, we are continuing to play a role in the evaluation of the pediatric obesity treatment program. Dr. Adamo's master's student Kevin Belanger will be examining the natural progression of obesity related co-morbidities in POC participants prior to their involvement in the CHAL treatment program and then over the course of the CHAL treatment program.

A comparison of the physical activity levels of POC/CHAL participants with CHMS participants was presented at The Obesity Society meeting in Orlando in October 2011 and a manuscript related to this data is currently in preparation.

## **2. 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 POC Study described 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 VO<sub>2</sub> 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 VO<sub>2</sub> to that measured using validated maximal and sub-maximal, equation-based, protocols.

*Status:* Recruitment and assessment for this trial is complete, results have been presented at the 2011 Canadian Society for Exercise Physiology and 2 papers have been accepted for publication as part of Peter's thesis.

We are currently performing secondary data analyses of the maximal and sub-maximal fitness tests to explore whether or not the rate of perceived exertion is similar or significantly different between protocols in children with obesity. Essentially, we are investigating if a similar work intensity (as measured by VO<sub>2</sub>) during a sub-maximal fitness test is perceived as less challenging for children with obesity, compared to that during a 'maximal' test. This information will be valuable in developing and selecting alternative testing protocols.





### 3. 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 published in *Acta Paediatrica*:

### 4. 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:* Recruitment is ongoing for this trial and while there have been many obstacles related to recruitment and retention we have randomized 49 women. 17 women have dropped out of the trial. 22 trial participants have delivered

We have expanded our recruitment to include those delivering at the Montfort Hospital and have also applied to the Queensway Carleton Hospital REB to include their site in our target population. We have also reached out to the Midwives organizations and several ultrasound clinics in hopes that we can expedite recruitment.

### 5. Obesity Prevention from Conception: a workshop to guide the development of a pan Canadian trial targeting the gestational period

*Principal investigator:* **Drs. Kristi Adamo**

*Co-investigators:* Prof. Jodie Dodd, Dr. S Atkinson, Ms. M Duggan, Dr. L Gaudet, Dr. L Magee, Dr. M. Mottola, Docteur R. Rabasa-Lhoret, Dr. M. Rossiter, Prof. A. Sharma, Dr. G. Shen, Dr. D. Stacey, Dr. I. Strychar, Dr. Sandra Davidge

We have just recently received CIHR funding to bring together a set of Canadian maternal, fetal and pediatric health experts and relevant knowledge users who, building upon international experiences, will share expertise in developing a multicentre Canadian RCT



targeting maternal obesity management and downstream child health (i.e., obesity prevention). This process will be facilitated through collaboration with our Australia colleagues who have successfully launched the 'Limiting weight gain in pregnancy for women who are overweight or obese to improve maternal and infant health outcomes: the LIMIT randomised trial'. We intend to establish a formal research collaboration between sites and investigators representing various regions of Canada who will work together, using the recommendations from the workshop sessions, to design a multi-centre intervention trial targeting the lifestyle of overweight or obese pregnant women in attempt to attenuate downstream obesity in their offspring. The end goal is for the team to produce a CIHR grant submission proposing this multicentre trial.

*Status:* This meeting will be held on May 16th at the courtyard Marriott in downtown Ottawa. It is possible that we may consider expanding this trial to include international site as potential investigators from Australia and Brazil will be present.

#### **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, perimenopause 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:* Zach Ferraro's dissertation, which falls under this umbrella theme has been submitted to the FGPS. 2 papers were published this year related to this project and a third is in press. A comprehensive review paper on the intergenerational cycle of obesity is in press with the International Journal of Environmental Research and Public Health

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

*Principal investigator:* **Dr. Kristi Adamo & Zach Ferraro**

*Co-investigators:* Drs. Andree Gruslin, 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. From this study we have submitted two papers for publication that are currently under review. Furthermore, we have made several presentations and published abstracts from this study.

### **9. Exploring placental lipid transport in pregnancies complicated by overweight and obesity**

*Principal investigators:* **Drs. Kristi Adamo & Andree Gruslin**

*Co-investigators:* **Kendra Brett, Zach Ferraro**

*Funding source:* MRI- ERA & Dragon Boat Foundation (application submitted to Garfield Weston Foundation)

*Description:* Maternal obesity and excessive gestational weight gain (GWG) dramatically increase the risk of fetal overgrowth. This is problematic as children born large tend to remain that way as adults and propagate the intergenerational cycle of obesity. We aim to better

understand the relationships between maternal obesity and excessive GWG with respect to nutrient transfer across the placenta. Given that much attention has historically been directed to glucose and amino acids transport, this study focuses on the role of lipid transport and its impact on fetal growth. Specifically, our project will characterize placental fatty acid transporter gene and protein expression patterns in pregnancies complicated by obesity and those with excessive GWG. Furthermore, it will complement existing literature on placental amino acid and glucose transporters by examining the molecular pathways involved with fatty acid metabolism at the maternal-fetal interface and their relationship with maternal obesity and fetal growth. By using microarray technology to quantify gene expression in placental tissue we hope to identify candidate genes affected by obesity and excessive weight gain. In addition, by utilizing immunohistochemical and western blot techniques we can better understand the distribution and expression of vital nutrient transporters, respectively. This work will allow us to examine structural and functional differences in the placentas, a vital mediator of fetal growth, of lean and obese women. From here, future work will then examine maternal response to various therapies, including lifestyle modification, to determine if fetal outcomes may be improved when maternal phenotype is altered.

*Status:* We will be using the same samples collected as part of research initiative 8. Cross sections of the maternal-fetal interface have been fixed in paraffin wax blocks and slicing of the blocks and the creation of microscope slides for immunohistochemistry analyses has commenced.

### **10. 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

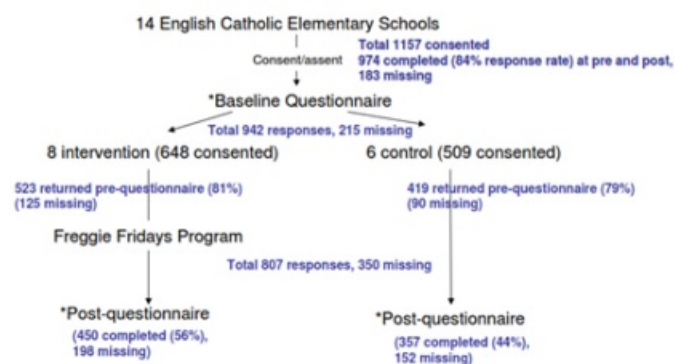
think creatively about the benefits of healthy eating and to encourage Canadian children to eat their recommended number of fruit and vegetable servings each day as recommended by Health Canada in Eating Well with Canada's Food Guide.

**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 had 14 schools participate in this study. In total, 1157 parents/children consented to participate. The loss to follow-up (did not return baseline questionnaire, were not present on data collection days, did not return follow-up questionnaire) can be found in the diagram below. Although we lost a considerable number of children over the course of the study process, our response rates were actually very respectable in comparison to other studies of similar design. This is likely due to the hard work of our staff who were in communication with the schools on a regular basis and went out of their way to ensure we received as many completed questionnaires as possible (i.e. reminders, multiple return trips to the schools, provision of extra questionnaires for those that were lost etc.)

### Study Design & Methodology



Preliminary analyses have been completed and a report was produced for the Canadian Produce Marketing Association. We plan to submit a manuscript by April 1st to the special issue of *Childhood Obesity* that is focusing on food in schools.

## 11. 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 2011. The data collection will cease in April 2012. An abstract is being prepared for the North American Society for Pediatric Exercise Medicine (NASPEM).

## 12. 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. The study was initiated in October 2011. As of December 2011, one participant had completed the study.

### **13. 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.

### **14. Effects of playing video games on appetite control in adolescents**

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

*Co-investigators:* A. Astrup, A. Sjödén 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 completed and manuscript has been published in the American Journal of Clinical Nutrition in 2011.

### **15. 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. Sjödén

*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 completed and first paper submitted for publication.

#### **16. 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.

#### **17. 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 and knowledge dissemination will be done via publications and presentations in 2012.

## **18. 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)

*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:* Data collection was completed in June 2011. We are currently undertaking data analysis and have 2 cross-sectional paper published and several under review. We plan to conduct data analysis on primary outcomes shortly and submit main manuscripts for publication in 2012.

## **19. The Preschoolers Activity Trial (PAT)**

*Principal Investigator:* **Dr. Gary Goldfield**

*Co-Investigators:* **K. Adamo, R Colley**

*Collaborators:* V. Temple, P.J. 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.

*Objectives:* 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.

**Design/Methods:** 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.

**Outcome Measures:** 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.

**Relevance:** 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:** We have completed 6- month data collection of cohort 1, and currently collecting 3-month data in cohort 2 and final data collection will be complete in May 2012.

## **20. 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)

**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:** We have received ethics approval from Health Canada, CHEO, and University of Ottawa, and are awaiting approval from the Ottawa Hospital. We plan to launch the study in the Fall, 2012.

## **21. 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.

## **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 Anura Kurpad (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 from CHEO obtained and School Boards underway. Equipment has been purchased and staff hired. Data collection to begin in January, 2012 in Kenya and September, 2012 in Canada

## **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. Waudo, S. Muthuri, W.J. Wachira**

*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.

In May 2011 we released the first Kenyan Report Card on the Physical Activity and Body Weight of Children and Youth. The release of the Report Card garnered national media attention. Healthy Active Kids Kenya was created as a not-for-profit organization committed to advocating for the promotion and preservation of healthy active living behaviours of all children and youth in Kenya. Led by Bill Sheel from the University of British Columbia, additional research projects were performed on Kenyan elite distance runners in 2011. Stella Muthuri and Joy Wachira are the first two PhD students working directly within the KIDS-CAN Research Alliance.

*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. Tremblay has been appointed as a Visiting 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. ISCOLE Kenya data collection is scheduled to begin in January 2012. Stella Muthuri and Joy Wachira are leading the data collection as part of their dissertation research.

## 24. Active Healthy Kids Canada 2011 Report Card

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

*Co-investigator:* **J. Barnes**

*Funding Source:* Active Healthy Kids Canada (\$110,000)

*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, 2010 and the report card was released in April 2011. The media reach of the release of the 2011 Report Card exceeded 100 million impressions.

## 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 ([www.ijbnpa.org/series/canada\\_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. After extensive background research, in January 2011 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 released. 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. The release of the guidelines garnered significant national media attention.

*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 released publicly by the Canadian Society for Exercise Physiology in January 2011 and published in manuscript format in Applied Physiology, Nutrition and Metabolism.

## 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. 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 (aged 5-17 years).

*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 published in 2011 (International Journal of Behavioural Nutrition and Physical Activity), 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 and published on the guideline development process (Applied Physiology, Nutrition and Metabolism). The final new Sedentary Behaviour Guidelines for school-aged children and youth were released in February 2011 by the Canadian Society for Exercise Physiology in partnership with HALO and ParticipACTION.

## **27. Development of the first Canadian Physical Activity Guidelines for the Early Years (aged 0-4 years)**

*Principal investigator:* **Dr. Mark Tremblay**

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

*Funding Source:* Canadian Institutes of Health Research, 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. Adding to the family of physical activity guidelines already completed, this project followed rigorous clinical practice guideline development procedures to develop the first Canadian Physical Activity Guidelines for the Early Years (aged 0-4 years). A systematic review of the literature was completed and the guideline development process was informed by the AGREE II procedures.

*Status:* Through 2011 a systematic review of available evidence on the relationship between physical activity and health indicators in the early years was completed, a consensus meeting was held to craft the physical activity guidelines, a survey of stakeholders opinions of the crafted guidelines was completed, and the final guidelines developed. In 2012 manuscripts will be prepared and submitted on the systematic review and the guideline development process and outcome. The guidelines are planned to be officially released in March 2012 by the Canadian Society for Exercise Physiology in partnership with HALO and ParticipACTION.

## **28. Development of the first Canadian Sedentary Behaviour Guidelines for the Early Years (aged 0-4 years)**

*Principal investigator:* **Dr. Mark Tremblay**

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

*Funding Source:* HALO and Canadian Society for Exercise Physiology

*Description:* This project builds on the substantial work already done on the “future of physical activity

measurement and guidelines” project. Adding to the sedentary behaviour guidelines already completed for school-aged children and youth, this project followed rigorous clinical practice guideline development procedures to develop the first Canadian Sedentary Behaviour Guidelines for the Early Years (aged 0-4 years). A systematic review of the literature was completed and the guideline development process was informed by the AGREE II procedures.

*Status:* Through 2011 a systematic review of available evidence on the relationship between sedentary behaviours and health indicators in the early years was completed, a consensus meeting was held to craft the sedentary guidelines, a survey of stakeholders opinions of the crafted guidelines was completed, and the final guidelines developed. In 2012 manuscripts will be prepared and submitted on the systematic review and the guideline development process and outcome. The guidelines are planned to be officially released in March 2012 by the Canadian Society for Exercise Physiology in partnership with HALO and ParticipACTION.

## **29. 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 was completed in 2011 and the findings formed part of Stephanie Prince's dissertation and were published in the Open Journal of Preventive Medicine in 2011.

### 30. 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 4th 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. A second manuscript on the correlates of folate adequacy in women of child-bearing age is accepted for publication in Applied Physiology, Nutrition and Metabolism. A third manuscript is in press in Health Reports and examines the correlates of folate supplement use among Canadians.

### 31. Canadian Assessment of Physical Literacy (CAPL)

*Principal investigators:* **Dr. Patricia Longmuir** and **Dr. Mark Tremblay**

*Co-investigator:* **C. Boyer**, W. Zhu

*Funding Sources:* Multiple sources including Canadian Institutes of Health Research (CIHR) and the Ontario Ministry of Health Promotion and Sport. 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 and Understanding, Attitude and Motivation – 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 1500 children have been tested using various iterations of the CAPL. Work to establish the validity and reliability of two new assessment components of the CAPL (plank assessment of torso strength, obstacle course assessment of motor skill) was completed in the summer 2011. This project is currently recruiting additional participants through schools and community sport/recreation programs to evaluate the psychometric properties of the comprehensive CAPL assessment battery for children 8 to 12 years of age. Current assessments are also investigating use of the CAPL in older and younger children. Five manuscripts have now been published on the CAPL background work and initial results. Many research conference abstracts have been prepared and presented from the work to date.





### **32. 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. The first Mexican Report Card on the Physical Activity of Children and Youth is being developed as a part of this project and is expected to be released in Guadalajara in February 2012.

### **33. Canadian Health Measures Survey: Analyses of Healthy Active Living Indicators of Canadians**

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

*Co-investigators:* M. Shields, I. Janssen, S. Wong, D. Garriguet, S. Connor Gorber

*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 20 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 to support these analyses is being sought.

### **34. Sedentary Time and Markers of Cardiometabolic Risk in Children and Youth: A Randomized Cross-over Study**

*Principal investigators:* **Dr. Jean-Philippe Chaput and Dr. Mark Tremblay**

*Co-investigators:* **T. Saunders, R. Colley**, E. Doucet, G. Kenny, **G. Goldfield**

*Funding Source:* CHEO Research Institute (\$30,000)

*Description:* Canadian children spend more than 7 hours per day – half of their waking hours – sitting. While it is well established that physical activity is associated with reduced health risk in children, recent evidence suggests that high levels of sedentary behaviours (e.g. sitting) are a significant risk factor for both obesity and

metabolic dysfunction in the paediatric population, independent of total levels of physical activity. Additionally, it has been reported that interruptions in sedentary time (e.g. standing for brief periods of time) are associated with reduced abdominal fat and improved cardiovascular disease (CVD) risk profile, independent of both total time spent sitting and physical activity in adults. These observational associations are supported by research in animal models, which suggests that as little as 4-6 hours of continuous sedentary behaviour results in dramatic adverse metabolic consequences. However, at present no study has examined the influence of an acute, laboratory-controlled, bout of sedentary behaviour on markers of CVD risk in humans. The objective of this study is to examine the effects of prolonged sitting for one day on markers of CVD risk, appetite and food intake in children and youth. We hypothesize that a day which includes short breaks in sedentary time or structured physical activity will result in significantly lower levels of CVD risk factors, appetite and food intake (relative to energy expenditure) compared to a day which includes 8 hours of uninterrupted sitting. Furthermore, we hypothesize that these differences will be exaggerated in obese participants, in comparison to their healthy weight peers. Using a design in which each subject will participate in all conditions in a random order, 10 normal weight and 10 obese male participants between the ages of 10 and 14 years will complete three experimental conditions, namely (i) a sedentary condition (8 hours of uninterrupted sitting), (ii) a sedentary with breaks condition, and (iii) a sedentary with breaks and structured physical activity condition. The primary outcome will be insulin area-under-the-curve (AUC) during the three experimental conditions. Secondary outcomes will include other markers of CVD and metabolic risk (plasma glucose, HDL and LDL cholesterol and triglyceride concentrations), food intake from an all you can eat buffet meal, appetite sensations, and behavioural compensation and reactivity (e.g. increases or decreases in physical activity and food intake). This study is innovative and likely to contribute towards understanding the physiological processes that link sedentary behaviour with increased health risk, which will aid in developing strategies to prevent or reduce CVD risk in Canadian children and youth.

*Status:* This project has completed testing on 50% of the target participants and is expected to be completed data collection by summer 2012.

### **35. Calibrating Early Lifestyles to Manage Obesity: A Health and Education Practitioner Intervention Approach**

*Principal investigator:* **Dr. Mark Tremblay**

*Co-investigators:* **G. Goldfield, A-M. Hospod, J.P. Chaput, K. Adamo, J. Barnes, S. Hadjiyannakis, A. Buchholz**

*Funding Source:* Public Health Agency of Canada – Innovation Fund (\$248,333)

*Description:* The prevalence of obesity in children and adolescents is reaching epidemic proportions with almost one third of the pediatric population overweight or obese. This has serious public health implications given obesity's association with increased risk of chronic disease, premature mortality, and adverse psychosocial outcomes. Further, obesity presents a severe economic burden on the healthcare system. Experts believe the increasing rates of obesity in the past few decades are due to lifestyle behaviour transitions and our obesogenic environment, indicating the need for creative, innovative, multi-sectoral interventions. Many health practitioners (e.g., family physicians, allied health professionals, and pediatricians) do not routinely assess obesity and often use inappropriate measures, thereby under-diagnosing the prevalence of obesity and missing opportunities to intervene. Even those healthcare providers who try to intervene are often ill-prepared to manage the complex multifactorial nature of obesity, especially during early childhood. Measures of lifestyle behaviours that precipitate childhood obesity are rarely done and practitioners admit they are ill-prepared to provide effective obesity management to their patients – they need help. Therefore, the primary objectives of this study were to: 1) Develop, deliver, evaluate, and modify comprehensive education and training workshops (live and web-based) for various members of the multi-disciplinary public health team required to effectively manage childhood obesity (e.g., family physicians, pediatricians, nurses, dietitians, exercise physiologists, physiotherapists, psychologists, social workers), and for educators and early childhood care providers who regularly encounter obese children (target ages 0-8 years) in order to help them better manage obese students/children; 2) Examine the feasibility, uptake, and quality assurance of this training among health and education practitioners using both quantitative (questionnaires, direct assessments) and qualitative methods (interviews, focus groups) to assess knowledge of lifestyle behaviour change strategies, attitudes, beliefs, self-efficacy, and intentions to implement the training into their practice or curriculum to better manage childhood obesity; and 3) Make progressive modifications during Phase 1 to refine and improve the content and delivery of the education and training workshops in both official languages.

*Status:* This project is on schedule with workshops and webinars developed and delivered in both languages, in both the Ottawa area and in New Brunswick. Plans to submit a proposal to extend and enhance this project through Phase2 funding is in place.





### 36. Collaboration to Achieve Healthier Weights for Children and Youth: Innovation Through Measurement and Knowledge Exchange

*Principal investigator:* **Dr. Mark Tremblay**

*Co-investigators:* **A. LeBlanc** (HALO), M. Duggan (CSEP), K. Murumets (ParticipACTION), C. Cameron (CFLRI), E. Antunes (AHKC)

*Funding Source:* Public Health Agency of Canada – Innovation Fund (\$231,561)

*Description:* The primary aim of this initiative is to increase physical activity and decrease sedentary behaviours of Canadian children and youth, through new inter-organizational coordination and collaboration on innovative measurement and knowledge exchange initiatives. Collectively these initiatives will also inform policy and strategic programs, further provoking healthy behaviour change among children and youth. If successful, the interventions of robust measurement and effective knowledge exchange will help prevent future childhood obesity, reduce existing childhood obesity, improve lifestyle behaviours and reduce chronic disease risk among Canadian children and youth.

The objectives of the Phase I pilot initiative will be to solidify and formulate the coalition to:

1. Modify the CFLRI School Survey Instruments to explore further vulnerable and under-represented populations and extend the scope to include school-based after school programs.
2. Complete development of the Canadian Assessment of Physical Literacy (CAPL), a direct measurement instrument that assesses and aggregates physical activity behaviour, physical fitness, motor skill development and knowledge and understanding in school-aged children.
3. Enhance and translate scientific knowledge emerging in the area of sedentary behaviour through a CSEP-led systematic review and dissemination of findings.
4. Facilitate knowledge exchange through the Active Healthy Kids Canada Report Card on Physical Activity for Children and Youth and "improve the grade" tools and resources, with a particular focus on capturing information on after-school initiatives, a knowledge gap area.

*Status:* All aspects of this project were completed successfully, on-time and on-budget. Plans for a submission for Phase 2 funding are in place and it is hoped that this project will be extended and enhanced.

### 37. Validity of the SC-StepMX pedometer during treadmill walking and running

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

*Co-Investigator:* **J. Barnes**

*Funding Source:* StepsCount Inc., Deep River, Ontario

*Description:* A convenience sample of 40 participants wore 4 SC-StepMX pedometers, 2 Yamax DigiWalker™ (Yamax Corporation, Toyko, Japan) pedometers and 2 Actical™ (Phillips – Respironics, Oregon, USA) accelerometers during treadmill walking and running at 4 different speeds (range: 0.9-8.8 mph): 50%, 100%, 180% and 250% of each participant's self-paced walking speed. Validity of the monitors was determined through a comparison of the mean step counts•minute<sup>-1</sup> for each activity monitor to manually counted steps taken at the 4 treadmill speeds.

*Status:* Data collection was completed in August 2011. As of December 2011, an abstract had been submitted to the International Conference on Diet and Activity Methods in Rome in May 2012 and a full manuscript was in draft form.

### 38. Measuring the relationship between indicators of place and trajectories of child weight change: a prospective analysis

*Principal investigator:* **Megan A. Carter**

*Co-investigators:* Lise Dubois, **Mark S. Tremblay**, Monica Taljaard

*Funding Source:* Banting & Best Canada Graduate Scholarship, CIHR (\$35,000/yr for 3 yr)

*Description:* The Quebec Longitudinal Study of Child Development (QLSCD) is conducted by the Government of Quebec and was originally designed to better understand the growth and development of young children born and raised in Quebec. Children have been participating since five months of age in 1998, with data collection occurring annually until the age of eight years. From eight to the present year, data collection occurs biannually. The main objective of the present study is to explore the relationship between five indicators of place and child weight change from four to 10 years of age, while accounting for other important explanatory variables. Place factors include area measures of material and social deprivation based on postal codes and census data, mothers' perceptions of the quality of neighbourhoods, and degree of area development (e.g. rural) based on census definitions and postal codes. Weight will be measured via Z-scores based on standardized body mass index (BMI). Children's heights and weights were directly measured at four, six, seven, eight, and 10 years of age; thus, five time-points are available for analysis. Two methods of examining

change in weight over time will be employed. The first, mixed-effects modeling, assumes that children follow an average trajectory of weight change over time, and that variation in growth from the mean can be explained by a combination of population-level covariates and subject-specific effects that are unique to a particular individual. The second, group-based trajectory modeling, assumes that there are a number of discrete underlying weight trajectory groups within the population, each with its own shape and population prevalence. Covariates may increase or decrease the odds of children being in one group relative to another, or if considered over time, may change the shapes of the trajectories themselves.

*Status:* Both analyses have been completed. A paper detailing the mixed-effects method has been accepted at the Journal of Urban Health. Results from this study have also been presented at the 2011 meeting of the Canadian Obesity Network, held in Montreal, Canada. A paper based on the second method will be submitted shortly to Pediatric Obesity. Preliminary results from this study were presented at the 2011 World Congress in Epidemiology, held in Edinburgh, Scotland.





## SUMMARY OF RESEARCH FUNDING AND GRANTS 2011

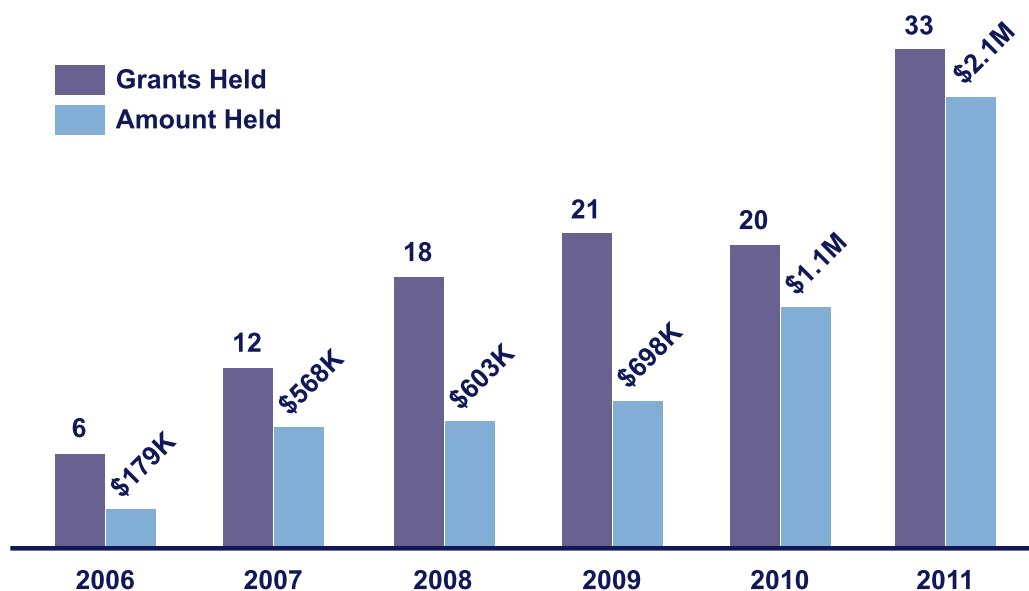
Name of the PI(s)	Organization/Agency	Title of Submission	Amount (Year)
<b>Adamo</b>	Ministry of Research and Innovation	Tackling Obesity – starting with MOM	\$190,000 (2009-2014)
<b>Adamo</b>	Ottawa Dragon Boat Foundation	Research- intervention Trial 'MOM trial'	\$90,000 (2010-2013)
<b>Adamo</b>	Canadian Institutes of Health Research Team (SOMET)	Maternal Obesity Management 'MOM' Trial	300,000 (2009-2013)
<b>Adamo</b>	Canada Foundation for Innovation - IOF	Infrastructure Operating Fund: HALO Research Lab	\$24,000 (2010-2013)
<b>Adamo</b>	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)
<b>Chaput</b>	CHEO-RI	Sedentary time and markers of cardiometabolic risk in children and youth: a randomized crossover study	\$30,000 (2011-2012)
<b>Chaput</b>	Nordea Foundation	Effects of playing video games on energy balance in adolescents	\$450,750 (2009-2011)
<b>Chaput</b>	Nordea Foundation	Effects of impaired sleep on energy balance: a randomized, 2-condition, crossover study in adolescents	\$750,200 (2009-2012)
<b>Colley</b>	Ontario Thoracic Society / Canadian Lung Association	Co-Existent Obstructive Sleep Apnea and Obesity: Finding NEAT Targets for Intervention	\$49,177 (2010-2011)
<b>Colley</b>	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 (2010-2011)
<b>Colley</b>	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 (2011)
<b>Goldfield</b>	Heart & Stroke Foundation of Canada	Behavioural Engineering of Physical Activity in Obese Children: A randomized Controlled Trial	\$139,645 (2010-2012)

Name of the PI(s)	Organization/Agency	Title of Submission	Amount (Year)
<b>Goldfield</b>	CHEO/Faculty Health Sciences at University of Ottawa	Effects of Methylphenidate (Ritalin) on Energy Balance in Obese Adolescents	\$15,000 (2010-2011)
<b>Longmuir</b>	Ontario Ministry of Health Promotion and Sport, Healthy Communities Fund	Healthy lifestyles for children with complex heart problems	\$63,950 (2011-2013)
<b>Tremblay</b>	CIHR	Examining the Folate Status of Canadians	\$95,000 (2011-2012)
<b>Tremblay</b>	CAMBIO (IDRC)	Strengthening CAMBIO - KIDS-CAN Collaboration to Fight Childhood Obesity in Canada, Mexico, Kenya	\$7,000 (2010-2011)
<b>Tremblay</b>	Borealis Foundation CHEO Foundation	Healthy Active Living and Obesity Research	\$200,000 \$200,000 (matched by CHEO Foundation) (2009-2012)
<b>Tremblay</b>	The Lawson Foundation CHEO Foundation	HALO Junior Research Chair Program	\$508,250 \$508,250 (matched by CHEO Foundation) (2010-2015)
<b>Tremblay</b>	Active Healthy Kids Canada	2012 Active Healthy Kids Canada Report Card	\$110,000 (2011-12)
<b>Tremblay</b>	University of Ottawa and Children's Hospital of Eastern Ontario	Built and Social Environmental Determinants of PA and Obesity in Ottawa Neighbourhoods	\$14,986 (2008-2011)
<b>Tremblay</b>	Trevor Doyle	Healthy Active Living and Obesity Research	\$500,000 \$500,000 (matched by CHEO Foundation) (2010-2015)
<b>Tremblay</b>	Public Health Agency of Canada	Calibrating Early Lifestyles to Manage Obesity: A Health and Educational Practitioner Approach	\$248,333 (2011-2012)
<b>Tremblay</b>	Public Health Agency of Canada	Collaboration to Achieve Healthier Weights for Children and Youth: Innovation through Measurement and Knowledge Exchange	\$231,561 (2011-2012)
<b>Tremblay/Chaput</b>	Pennington Biomedical Research Center	International Study of Childhood Obesity, Lifestyles and the Environment – Canada	\$420,000 (2011-2014)





Name of the PI(s)	Organization/Agency	Title of Submission	Amount (Year)
<b>Tremblay and Onywera</b>	Pennington Biomedical Research Center	International Study of Childhood Obesity, Lifestyles and the Environment – Kenya	\$144,500 (2011-2014)
<b>Tremblay and Timmons</b>	Canadian Institutes of Health Research	Development of Canadian Physical Activity Guidelines for the Early Years	\$100,000 (2011-2012)
<b>Tremblay</b>	Ontario Ministry of Health Promotion and Sport	Development of the Canadian Assessment of Physical Literacy	\$40,000 (2011-2012)
<b>Tremblay</b>	ParticipACTION	Development of the Canadian Assessment of Physical Literacy	\$30,000 (2011)
<b>Tremblay</b>	Diabeters, Inc.	Validity and Reliability testing of the new SC-StepMX Pedometer	\$10,000 (2011)



**Figure 4.** Number of grants held and amount of funds held as principal or co-principal investigator (attributed to 2011) by HALO Research Group from 2006 to 2011. Between 2006 and 2011, there was a 450% increase in the number of grants held and a 1089% increase in the amount held. Between 2010 and 2011, there was a 65% increase in the number of grants held and an 86% increase in the amount held.

## STAFF AWARDS 2011

Name of the PI(s)	Organization/Agency	Grant/Award
<b>Adamo</b>	Paediatrics & Child Health - Journal of the Canadian Pediatric Society	Dr. Noni MacDonald Award given annually to an author(s) whose article published in the journal within the previous year, made an important contribution to paediatric practice
<b>Chaput</b>	Sport Information Resource Center (SIRC)	SIRC Research Award (Outstanding Sport Research in Canada)
<b>Chaput</b>	CHEO-RI	Award of Excellence (Outstanding New Investigator)
<b>Chaput</b>	Canadian Obesity Network	New Investigator Award
<b>Longmuir</b>	Canadian Cardiovascular Congress, Vancouver	Richard Rowe Outstanding Student Research Competition finalist (October 2011)
<b>Sinclair</b>	International Association of Administrative Professionals	Member of Excellence
<b>Tremblay</b>	Nipissing University	Honorary Doctorate

## STUDENT FUNDING, SCHOLARSHIPS AND AWARDS 2011

Student Name	Organization/Agency	Grant/Award
<b>Breithaupt</b>	Canadian Obesity Network	Student Travel Award
<b>Brett</b>	University of Ottawa	Admission Scholarship
<b>Carter</b>	CIHR	Canada Graduate Scholarship
<b>Carter</b>	University of Ottawa	Excellence Scholar and Doctoral Research Award
<b>Colapinto</b>	CIHR	Health Professional Fellow in Public Health
<b>Colapinto</b>	University of Ottawa	Excellence Scholar
<b>Ferraro</b>	Ontario Ministry of Training, Colleges & Universities	Ontario Graduate Scholar
<b>Ferraro</b>	Canadian Obesity Network	Student Travel Award
<b>Ferraro</b>	University of Ottawa	Excellence Scholarship
<b>Ferraro</b>	CIHR	Cafe Scientifique





Student Name	Organization/Agency	Grant/Award
Larouche	CIHR	Banting and Best Doctoral Scholar
Larouche	University of Ottawa	Excellence Scholarship and Doctoral Research Award
LeBlanc	Canadian Obesity Network	New Professional Oral Presentation Award
Leclair	CIHR	Doctoral Clinical Scholar
Maras	Ontario Ministry of Training, Colleges & Universities	Ontario Graduate Scholar
Maras	Carleton University	Teaching Assistantship
Murray	Ontario Ministry of Training, Colleges & Universities	Ontario Graduate Scholar
Murray	University of Ottawa	Teaching Assistantship
Murray	University of Ottawa	Excellence Scholarship and Doctoral Research Award
Muthuri	Government of Ontario	Ontario Graduate Scholarship in Science and Technology
Muthuri	University of Ottawa	Excellence Scholarship and Doctoral Research Award
Prince-Ware	Social Sciences and Humanities Research Council (SSHRC)	Doctoral Fellowship
Prince-Ware	Ontario Ministry of Training, Colleges & Universities	Ontario Graduate Scholar
Prince-Ware	University of Ottawa	Excellence Scholarship and Doctoral Research Award
Saunders	CIHR	Doctoral Clinical Scholar
Saunders	CIHR	Cafe Scientifique
Saunders	University of Ottawa	Excellence Scholarship and Doctoral Research award
Saunders	Canadian Diabetes Association	Doctoral Research Award
Wilson	University of Ottawa	Admission Scholarship

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 2011).

1. **Adamo KB, AW Sheel, V Onywera, J Waudou, M Boit, MS Tremblay.** Child obesity and fitness levels among Kenyan and Canadian children from urban and rural environments: A KIDS-CAN Research Alliance study. *International Journal of Pediatric Obesity* 6:e225-e232, 2011.
2. **Amed S, HJ Dean, C Panagiotopoulos, EA Sellers, S Hadjiyannakis, TA Laubscher, D Dannenbaum, BR Shah, GL Booth, JK Hamilton.** Risk Factors for Medication Induced Diabetes and Type 2 Diabetes. *Journal of Pediatrics* 159(2):291-6, 2011.
3. **Borghese M, M Brooks, S Earl, J Naddaf.** Ride Forward – An Evaluation of Cycling in Two Ottawa Neighborhoods. *Interdisciplinary Student Journal of Health Sciences* 2(2):7, 2011.
4. **Breithaupt P, RC Colley, KB Adamo.** Body Composition Measured by Dual-Energy X-ray Absorptiometry Half-body Scans in Obese Children. *Acta Paediatrica*: 100(12): e260-e266.
5. **Chaput JP, AM Sharma.** Is physical activity in weight management more about “calories in” than “calories out”? *British Journal of Nutrition* 106:1768-1769, 2011.
6. **Chaput JP, JP Després, C Bouchard, A Tremblay.** The association between short sleep duration and weight gain is dependent on disinhibited eating behavior in adults. *Sleep* 34:1291-1297, 2011.
7. **Chaput JP, AM Sjödin.** Active video games for body weight control: is it really a good solution? *American Journal of Clinical Nutrition* 94:1151-1152, 2011.
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9. **Chaput JP, M Lambert, K Gray-Donald, JJ McGrath, MS Tremblay, J O’Loughlin, A Tremblay.** Short sleep duration is independently associated with overweight and obesity in Quebec children. *Canadian Journal of Public Health* 102: 369-374, 2011.
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11. **Chaput JP, L Klingenberg, A Astrup, AM Sjödin.** Modern sedentary activities promote overconsumption of food in our current obesogenic environment. *Obesity Reviews* 12: 12-20, 2011.
12. **Chaput JP.** Short sleep duration as a cause of obesity: myth or reality? *Obesity Reviews* 12: 2-3, 2011.
13. **Chaput JP, L Klingenberg, M Rosenkilde, JA Gilbert, A Tremblay, A Sjödin.** Physical activity plays an important role in body weight regulation. *Journal of Obesity* 2011;360257, 2011.
14. **Chaput JP, JP Després, C Bouchard, A Tremblay.** Short sleep duration preferentially increases abdominal adiposity in adults: preliminary evidence. *Clinical Obesity* 1: 141-146, 2011.
15. **Colapinto CK, DL O’Connor, MS Tremblay.** Folate status of the population in the Canadian Health Measures Survey. *Canadian Medical Association Journal* 183(2):E100-E106, 2011.
16. **Colley RC, M Brownrigg, MS Tremblay.** Canada’s report card on physical activity for children and youth. G. Baquet and S. Berthoin (Eds.) Children and Exercise XXV: Proceedings of the 25th Pediatric Work Physiology Meeting, Routledge Taylor and Francis Group (London) pp. 223-226, 2011.
17. **Colley RC, D Garriguet, I Janssen, CL Craig, J Clarke, MS Tremblay.** Physical activity of Canadian children and youth: Accelerometer results from the 2007 to 2009 Canadian Health Measures Survey. *Health Reports* 22(1):15-24, 2011.
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19. **Colley RC, MS Tremblay.** Moderate and vigorous physical activity intensity cut-points for the Actical accelerometer. *Journal of Sports Sciences* 29(8):783-789, 2011.
20. **Faulkner G, C McCloy, R Plotnikoff, MS Tremblay.** Relaunching a national social marketing campaign: expectations and challenges for the ‘new’ ParticipACTION. *Health Promotion Practice* 12(4):569-576, 2011.
21. **Ferraro Z, J Rutherford, EJ Keely, L Dubois, KB Adamo.** An Assessment of patient information channels and knowledge of physical activity and

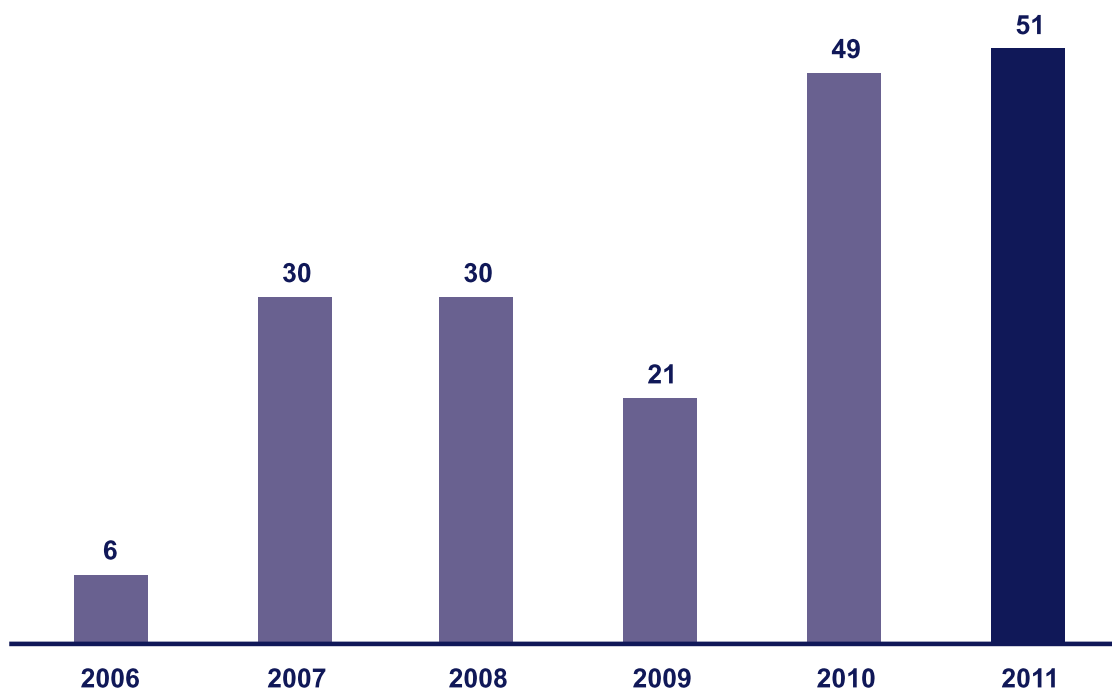


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  24. **Goldfield GS**, MA Murray, K Henderson, **A Buchholz**, N Obeid, A Kukaswadia, MF Flament. Family meals and body mass index among adolescents: Effects of gender. *Applied Physiology, Nutrition & Metabolism* 36: 539-546, 2011.
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  26. **Goldfield, GS**, AL Lumb, **CK Colapinto**. Body Mass Index and the relative reinforcing value of snack food in overweight and obese individuals: A linear Relationship? *Canadian Journal of Dietetic Practice and Research* 72(4): 170-174, 2011.
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  28. Janssen I, M Shields, CL Craig, **MS Tremblay**. Prevalence and secular changes in abdominal obesity in Canadian adolescents and adults, 1981 to 2007-2009. *Obesity Reviews* 12(6):397-405, 2011.
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  31. **Longmuir PE**, JL Russell, M Corey, G Faulkner, BW McCrindle. Factors associated with the physical activity level of children who have the Fontan procedure. *American Heart Journal* Feb;161(2):411-7, 2011.
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44. Shields M, S Connor Gorber, I Janssen, **MS Tremblay**. Obesity estimates for children based on parent-report versus direct measures. *Health Reports* 22(3):47-58, 2011.
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46. Tobe SW, JA Stone, M Brouwers, O Bhattacharyya, KM Walker, M Dawes, J Genest, S Grover, G Gubitz, D Lau, A Pipe, P Selby, **MS Tremblay**, D Warburton, R Ward, V Woo, LA Leiter, PP Liu. Harmonization of guidelines for the prevention and treatment of cardiovascular disease: the C-CHANGE Initiative. *Canadian Medical Association Journal* 183:E1135-E1150, 2011.
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**Figure 5.** Number of peer-reviewed, refereed publications by HALO Research Group from 2006 to 2011. Between 2006 and 2011 there was a 750% increase in number of publications; between 2010 and 2011, there was a 4% increase.

## NON-PEER-REVIEWED PUBLICATIONS

1. **Adamo KB.** Children's Health in Canada. The International Fruit and Vegetable Alliance Scientific Newsletter, 2011.
2. **Chaput JP,** MG Jensen, MC Thivierge, A Tremblay. Metabolic effects of propionic acid-enriched breads. In: Preedy VR, Watson RR, Patel VB, eds. Flour and Breads and their Fortification in Health and Disease Prevention. London, Burlington, San Diego; Academic Press. p.475-484, 2011.
3. **Chaput JP.** Les activités sédentaires du monde moderne stimulent la prise alimentaire. Nutrition science en évolution 9: 15-16, 2011.
4. **Chaput JP.** Video game playing promotes overconsumption of food in adolescents. Sport Information Resource Centre 2011 [online]. Available at: [www.sirc.ca/research\\_Awards/documents/video\\_games.pdf](http://www.sirc.ca/research_Awards/documents/video_games.pdf)
5. **Larouche R.** Are today's kids fit and active? Education and Health, 29(2): 32-35, 2011.
6. **Saunders TJ.** Too much sitting is not the same as too little physical activity. Diabetes Communicator Summer p.9-11, 2011.
7. **Saunders TJ.** Can Sitting Too Much Kill You? ScientificAmerican.com January 6, 2011.
8. Timmons BW, **AG LeBlanc,** V Carson, **M Tremblay.** Physical Activity and Sedentary Behaviour Guidelines for Preschool-aged Children: What we know, what we don't know, and what we're doing about it. Interaction Magazine 25(2):31-34, 2011.

## PUBLISHED ABSTRACTS

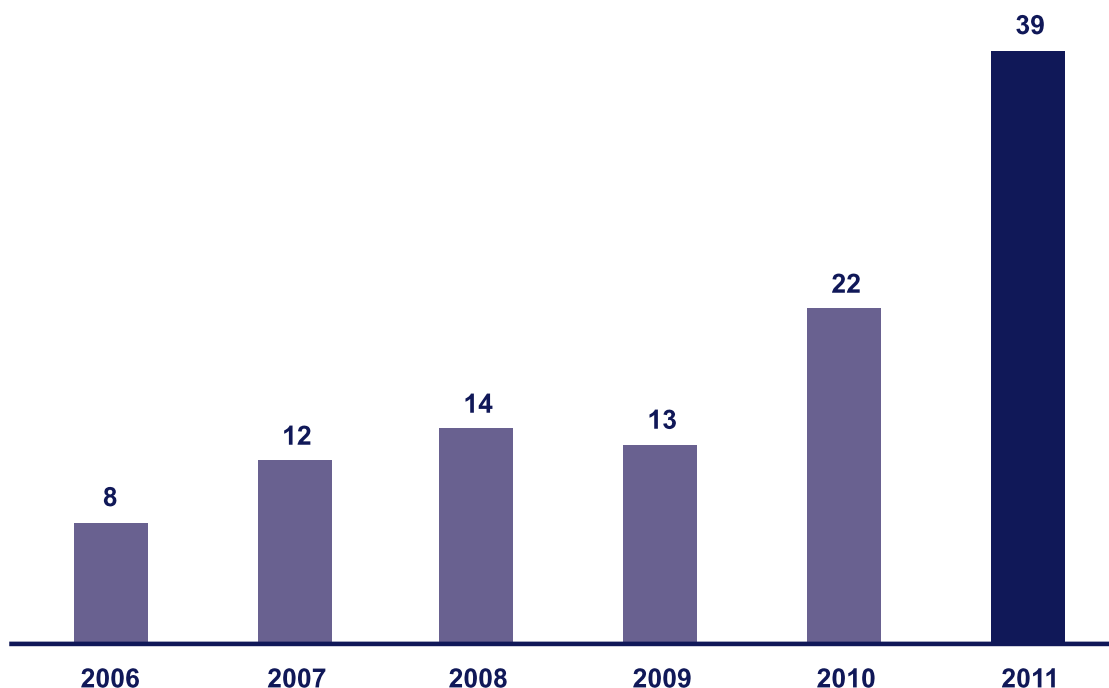
In recognition of all the great work done by all HALO students and staff (some of which may have occurred outside of HALO) this report includes all abstracts from 2011.

1. **Adamo K, R Colley, S Hadjiyannakis, G Goldfield.** Accelerometer-measured physical activity levels in a clinical sample of obese children and youth: A comparison to the Canadian Health Measures Survey. *Obesity* 19(Suppl. 1):S206, 2011.
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3. Banks L, BW McCrindle, J Russell, **PE Longmuir.** Physiological response to sub-maximal exercise in children after the Fontan procedure. *Canadian Journal of Cardiology* 27(Suppl 5S):S79-80, 2011.
4. **Borghese M, Lloyd M, Knight E, Colley RC.** The Physical Activity Engagement Study: Interim Results. Proceedings of the Children's Hospital of Eastern Ontario Research Institute Research Day, October 26, 2011.
5. **Breithaupt P, R Colley, KB Adamo.** OUES is a useful alternative to maximal exercise testing in the obese pediatric population *Applied Physiology, Nutrition, and Metabolism* 36:S306, 2011.
6. **Breithaupt P, R Colley, KB Adamo.** Validation of a sub-maximal treadmill protocol to measure fitness in overweight and obese children and youth. *Applied Physiology, Nutrition and Metabolism* 36:S306, 2011.
7. **Carter MA, L Dubois, MS Tremblay, M Taljaard.** The influence of place on the development of excess weight during childhood: a longitudinal study of young children living in Quebec, Canada. *Canadian Journal of Diabetes* 35(2):156, 2011.
8. **Carter MA, L Dubois, MS Tremblay.** Contextual circumstances and patterns of childhood weight change. *Journal of Epidemiology and Community Health* 65:A96, 2011.
9. **Chaput JP, M Lambert, K Gray-Donald, JJ McGrath, MS Tremblay, J O'Loughlin, A Tremblay.** Short sleep duration is independently associated with overweight and obesity in Canadian children. *Canadian Journal of Diabetes* 35(2):143-144, 2011.
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14. **Colley RC, D Garriguet, I Janssen, C Craig, J Clarke, MS Tremblay.** Physical activity of Canadian adults: Accelerometer results from the 2007-2009 Canadian Health Measures Survey. Proceedings of the International Conference on Ambulatory Monitoring of Physical Activity and Movement (Glasgow, UK), 2011.
15. **Colley RC, D Garriguet, I Janssen, C Craig, J Clarke, MS Tremblay.** Physical activity of Canadian children and youth: Accelerometer results from the 2007-2009 Canadian Health Measures Survey. Proceedings of the International Conference on Ambulatory Monitoring of Physical Activity and Movement (Glasgow, UK), 2011.
16. **Colley RC, Garriguet D, Wong S.** Exploring alternative methods to estimate sleep duration using accelerometry. Proceeding of the International Conference on Ambulatory Monitoring of Physical Activity and Movement, Glasgow, UK., May 24-27, 2011.
17. **Colapinto CK, DL O'Connor, L Dubois, MS Tremblay.** Determinants of high folate concentration in the Canadian population. *Journal of Epidemiology and Community Health* 65:A17, 2011.
18. **Colapinto CK, DL O'Connor, L Dubois, MS Tremblay.** Determinants of folate concentration in Canadian women of childbearing age. *Journal of Epidemiology and Community Health* 65:A99, 2011.
19. Davis I, M Gick, RJ Sigal, GP Kenny, **S Hadjiyannakis, S Alberga, P Phillips, J Malcolm, GS Goldfield.** The relationship between aerobic fitness and psychological adjustment in overweight and obese adolescents. *Obesity* 19(Suppl. 1):S29, 2011.
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21. **Ferraro Z**, C Qing, A Gruslin, **KB Adamo**. 'Maternal obesity is associated with increased activators of MAPK/ERK signalling in fetal circulation *Obesity* 19(Suppl. 1):S89, 2011.
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25. Gilbert JA, DR Joanisse, **JP Chaput**, P Miegueu, K Cianflone, N Alm  ras, A Tremblay. Milk supplementation facilitates appetite control in obese women during weight loss: a randomized, single blind, placebo-controlled trial. *British Journal of Nutrition* 105:133-143, 2011.
26. **Goldfield GS**, C Lorello, J Cameron, **JP Chaput**. Gender differences in the effects of methylphenidate on energy intake in young adults: a preliminary study. *Applied Physiology, Nutrition, and Metabolism* 36:1009-1013, 2011.
27. Klingenberg L, **JP Chaput**, P Jennum, U Holmb  ck, A Astrup, AM Sj  din. Effects of sleep restriction on energy balance in male adolescents. *Obesity* 19 (Suppl. 1): 88, 2011.
28. **Larouche R, T Saunders**, G Faulkner, **R Colley, M Tremblay**. Impact of active school transport on physical activity levels, cardiovascular fitness and body composition: a systematic review. Proceedings of the International Congress on Enhancement of Physical Activity of Children and Youth p.73, 2011.
29. **Larouche R, RC Colley, MS Tremblay**. Actical accelerometers are limited in their ability to accurately quantify the movement intensity of cycling. *Applied Physiology, Nutrition, and Metabolism* 36(Suppl.):S334, 2011.
30. **Longmuir PE**, F Bangawan, G Smith, JL Russell, BW McCrindle. Monitoring of resting energy expenditure in children with complex heart defects: Implications for nutrition and growth. *Canadian Journal of Cardiology* 27(Suppl 5S):S333-S334, 2011.
31. McMullen JA, BW McCrindle, SD Dell, BM Feldman, **PE Longmuir**. Understanding parent perceptions of healthy physical activity for their child with a chronic medical condition. *Canadian Journal of Cardiology* 27(Suppl 5S ):S293, 2011.
32. P  russe-Lachance E, P Brassard, **JP Chaput**, V Drapeau, N Teasdale, A Tremblay. Sex differences in the effects of mental work and moderate-intensity physical activity on energy intake in young adults. *Applied Physiology, Nutrition, and Metabolism* 36: S345, 2011.
33. P  russe-Lachance E, **JP Chaput**, P Brassard, P Poirier, V Drapeau, N Teasdale, C S  n  cal, A Tremblay. Mental work influences cardiovascular responses through a reduction in cardiac parasympathetic modulation in healthy subjects. *Medicine & Science in Sports & Exercise* 43 (Suppl. 5): S517, 2011.
34. **Prince Ware S**, E Kristjansson, K Russell, J-M Billette, A Ali, M Sawada, **MS Tremblay**, D Prud'homme. Do neighbourhood built and social environments have an influence on adult self-reported physical activity and overweight/obesity in the Nation's capital? *Canadian Journal of Diabetes* 35(2):155, 2011.
35. **Prince Ware S**, E Kristjansson, K Russell, J-M Billette, M Sawada, A Ali, **MS Tremblay**, D. Prud'homme. Is it where you live or who you are that is important? An analysis of neighbourhood environments, self-reported physical activity and overweight/obesity in Canada's capital. *Journal of Epidemiology and Community Health* 65:A49, 2011.
36. Shields M, S Connor Gorber, I Janssen, **MS Tremblay**. The bias in self-reported estimates of obesity in Canadian health surveys: an update on establishing correction equations. *Canadian Journal of Diabetes* 35(2):200, 2011.
37. Shields M, S Connor Gorber, I Janssen, **MS Tremblay**. Obesity estimates for children based on parent-report versus direct measures. *Canadian Journal of Diabetes* 35(2):142-143, 2011.
38. Stacey D, S Mullan, J Jull, A Dumas, I Strychar, **K Adamo**, M Brochu, D Prud'homme. Perimenopausal women's perception of decision making needs related to body weight changes during the transition to menopause. International Shared Decision Making Conference, The Netherlands, 2011 .
39. **Tremblay MS**. Measure and Measure Carefully – to interpret, intervene and inform physical activity strategies. Proceedings of the International Congress on Enhancement of Physical Activity of Children and Youth p.18-19, 2011.



**Figure 6.** Number of published abstracts by HALO Research Group from 2006 to 2010. Between 2006 and 2011 there was a 388% increase in the number of published abstracts; between 2010 and 2011, there was a 77% 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 2011.

### 2011 International Presentations

1. **Adamo KB.** Pediatric and Maternal Metabolic Studies in Obesity and Diabetes. International Graduate Course in Clinical & Exercise Physiology (Québec), 2011.
2. **Adamo KB.** Early Specialization vs. Early Diversification. Invited round table at International Graduate Course in Clinical & Exercise Physiology (Québec), 2011.
3. **Adamo KB, K Langlois, K Bett, R Colley.** Does having children make us inactive? Obesity Society 29th Annual Scientific Conference (Orlando, FL), 2011.
4. **Adamo KB, R Colley, S Hadjiyannakis, G Goldfield.** Accelerometer-measured physical activity levels in a clinical sample of obese children and youth: A comparison to the Canadian health measures survey. Obesity Society 29th Annual Scientific Conference, (Orlando, FL), 2011.
5. **Brandao L, L Yap, C Bravo, B Lee, BW McCrindle, Longmuir PE.** Body Contact in Childhood Physical Activity: Recommendations for Children Prone to Bleeding Injuries. International Society of Thrombosis and Haemostasis (Kyoto, Japan), 2011.
6. **Carter MA, L Dubois, MS Tremblay.** Contextual circumstances and patterns of childhood weight change. World Congress on Epidemiology (Edinburgh, Scotland), 2011.
7. **Chaput JP.** Longer sleep duration associates with lower adiposity gain in adult short sleepers. The Obesity Society Annual Scientific Meeting (Orlando, USA), 2011.
8. **Chaput JP.** The association between short sleep duration and weight gain is dependent on disinhibited eating behavior in adults. World Association of Sleep Medicine & Canadian Sleep Society Congress (Quebec City), 2011.
9. **Chaput JP.** Does thinking make us fatter? Nutrition Obesity Research Center Seminar Series, University of Alabama at Birmingham (Birmingham, USA), 2011.
10. **Colapinto CK, D.L O'Connor, L Dubois, MS Tremblay.** Determinants of high folate concentration in the Canadian population. World Congress on Epidemiology (Edinburgh, Scotland), 2011.



11. **Colapinto CK**, DL O'Connor, L Dubois, **MS Tremblay**. Determinants of folate concentration in Canadian women of childbearing age. World Congress on Epidemiology (Edinburgh, Scotland), 2011.
12. **Colley RC**, D Garriguet, S Wong. Exploring alternative methods to estimate sleep duration using accelerometry. International Conference on Ambulatory Monitoring of Physical Activity and Movement (Glasgow, UK), 2011.
13. **Colley RC**, D Garriguet, I Janssen, CL Craig, J Clarke, **MS Tremblay**. Physical activity levels of Canadian Adults: Results from the 2007-2009 Canadian Health Measures Survey. International Conference on Ambulatory Monitoring of Physical Activity and Movement (Glasgow, Scotland), 2011.
14. **Colley RC**, D Garriguet, I Janssen, CL Craig, J Clarke, **MS Tremblay**. Physical activity levels of Canadian Children and Youth: Results from the 2007-2009 Canadian Health Measures Survey. International Conference on Ambulatory Monitoring of Physical Activity and Movement (Glasgow, Scotland), 2011.
15. Davis I, M Gick, RJ Sigal, GP Kenny, **S Hadjiyannakis**, A Alberga, P Phillips, J Malcolm, **GS Goldfield**. The relationship between aerobic fitness and psychological adjustment in overweight and obese adolescents. Obesity Society Annual Conference (Orlando, FL), 2011.
16. Flanagan W, C Nadeau, J Oderkirk, G Rowe, V Edge, D Gillis, R Wall, D Manuel, **M Tremblay**, J Trumble Waddell. Canadian projections of physical activity and impact on health outcomes. International Microsimulation Association Conference (Stockholm, Sweden), 2011.
17. Garriguet D, **RC Colley**. Using accelerometry to understand when Canadian are most (and least) active. International Conference on Ambulatory Monitoring of Physical Activity and Movement (Glasgow, Scotland), 2011.
18. **Larouche R**, T Saunders, G Faulkner, **R Colley**, **M Tremblay**. Impact of active school transport on physical activity levels, cardiovascular fitness and body composition: a systematic review. International Congress on Enhancement of Physical Activity of Children and Youth (Vuokatti, Finland), 2011.
19. **LeBlanc AG**, I Janssen, ME Kho, A Hicks, K Murumets, M Duggan, **RC Colley**, **MS Tremblay**. Development of Canadian Sedentary Behaviour Guidelines for Children and Youth. International Society for Behavioral Nutrition and Physical Activity Conference (Melbourne, Australia), 2011.
20. **LeBlanc AG**, M Duggan, A Hicks, I Janssen, ME Kho, A Latimer, K Murumets, D Paterson, R Rhodes, D Warburton, L Zehr, **MS Tremblay**. New Physical Activity Guidelines for Canadians. International Society for Behavioral Nutrition and Physical Activity Conference (Melbourne, Australia), 2011.
21. **Longmuir PE**. Health for Children with Complex Heart Problems is More than the Absence of Disease. International Lunch Forum, Scientific Sessions 2011, American Heart Association, (Orlando, FL), 2011.
22. **Onywera V**, **MS Tremblay**. The Emerging Evidence of Physical Inactivity and Childhood Obesity in Kenya. World Confederation for Physical Therapy Congress (Amsterdam, The Netherlands), 2011.
23. **Prince Ware S**, E Kristjansson, K Russell, J-M Billette, M Sawada, A Ali, **MS Tremblay**, D Prud'homme. Is it where you live or who you are that is important? An analysis of neighbourhood environments, self-reported physical activity and overweight/obesity in Canada's capital. World Congress on Epidemiology (Edinburgh, Scotland), 2011.
24. Rowe G, **MS Tremblay**, DG Manuel. Decomposing simulation variability: an example from PASSM (Physical Activity Static Simulation Model). International Microsimulation Association Conference (Stockholm, Sweden), 2011.
25. **Tremblay MS**. Major initiatives related to childhood obesity and physical inactivity in Canada: The year in review. 2nd Forum on Child Obesity Interventions (Fundacion Mexicana para la Salud) (Mexico City), 2011.
26. **Tremblay MS**. Global Physical Activity Transition: Evidence and Implications. World Confederation for Physical Therapy Congress (Amsterdam, The Netherlands), 2011.
27. **Tremblay MS**. Physical Activity Guidelines: The Global Movement has Begun – are physical therapists part of it? World Confederation for Physical Therapy Congress (Amsterdam, The Netherlands), 2011.
28. **Tremblay MS**. Active Healthy Kids Canada Report Card. Kenyatta University, School of Applied Human Sciences Seminar (Nairobi, Kenya), 2011.
29. **Tremblay MS**. Measure and Measure Carefully – to interpret, intervene and inform physical activity strategies. International Congress on Enhancement of Physical Activity of Children and Youth (Vuokatti, Finland), 2011.



30. Wilson PM, JD Gilchrist, DE Mack, CM Blanchard, **KP Grattan**. Do women enrolled in commercial weight loss programs meet public health recommendations for weight-control behaviours? Annual meeting of the Society of Behavioral Medicine (New Orleans, LA), 2011.

### 2011 National Presentations

31. **Adamo KB**. Maternal lifestyle variables, gestational weight gain and obesity risk in the offspring. Invited presentation- Plenary Session entitled: Maternal and Fetal Origins of Obesity at the Canadian Obesity Network's 2nd National Obesity Summit, (Montreal QC), 2011.
32. **Adamo KB**. Tackling Childhood Obesity- starting with MOM. Canadian Nutrition Society's Annual Meeting (Guelph), 2011.
33. **Adamo KB**. Are obese children working as hard as they think? Canadian Society for Exercise Physiology's Annual Meeting. (Quebec City), 2011.
34. Alberga AS, H Tulloch, GP Kenny, D Prud'homme, **GS Goldfield, S Hadjiyannakis**, S Sweet, RJ Sigal. What predicts drop-out of an exercise intervention with obese adolescents? Canadian Obesity Network Summit (Montreal), 2011.
35. Banks L, BW McCrindle, JL Russell, **PE Longmuir**. Normal Physiological Response to Sub-Maximal Exercise in Children after the Fontan Procedure. Canadian Cardiovascular Congress (Vancouver), 2011.
36. **Breithaupt, P, RC Colley, KB Adamo**. Submaximal OUES is a useful alternative to maximal exercise testing in the obese pediatric population. Canadian Society for Exercise Physiology Annual Meeting (Quebec City, Quebec), 2011.
37. **Breithaupt, P, RC Colley, KB Adamo**. Validation of the HALO submaximal treadmill protocol to measure fitness in obese children and youth. (Oral). Canadian Society for Exercise Physiology Annual Meeting (Quebec City, Quebec), 2011.
38. **Carter MA**, L Dubois, **MS Tremblay**, M Taljaard. The influence of place on the development of excess weight during childhood: a longitudinal study of young children living in Quebec, Canada. Canadian Obesity Summit (Montreal), 2011.
39. **Chaput JP**. Do all sedentary activities lead to weight gain: sleep does not. 2nd National Obesity Summit (Montreal), 2011.
40. **Chaput JP**, M Lambert, K Gray-Donald, JJ McGrath, **MS Tremblay**, J O'Loughlin, A Tremblay. Short sleep duration is independently associated with overweight and obesity in Canadian children. 2nd National Obesity Summit (Montreal), 2011.
41. **Chaput JP**. Beyond inactivity and unhealthy diets: unusual determinants of obesity. 2nd National Obesity Summit (Montreal), 2011.
42. **Chaput JP**. My innovative contribution to obesity research and challenges faced by new investigators. 2nd National Obesity Summit (Montreal), 2011.
43. **Chaput JP**. Canadian Sedentary Behaviour Guidelines for Children and Youth. Presented in an information webinar to the population in order to introduce the first systematic evidenced-based sedentary behaviour guidelines in the world, 2011.
44. **Chaput JP**. 2011 Canadian Physical Activity Guidelines. Presented in an information webinar to the population in order to introduce the new Canadian Physical Activity Guidelines and background process, 2011.
45. **Chaput JP**. Childhood obesity: what have we been doing wrong and where should we go from here? 10th Annual National Child Day Conference (Saint John, New Brunswick), 2011.
46. **Chaput JP**. Beyond inactivity and unhealthy diet: new determinants of obesity. Annual Symposium on Nutrition and Health hosted by the Dairy Farmers of Canada (Edmonton, Alberta), 2011.
47. **Chaput JP**. Beyond inactivity and unhealthy diet: new determinants of obesity. Annual Symposium on Nutrition and Health hosted by the Dairy Farmers of Canada (Toronto), 2011.
48. **Chaput JP**. Au-delà de la sédentarité et de la malbouffe: nouveaux facteurs déterminants de l'obésité. Annual Symposium on Nutrition and Health hosted by the Dairy Farmers of Canada (Montreal), 2011.
49. **Chaput JP**. Beyond inactivity and unhealthy diet: new determinants of obesity. Annual Symposium on Nutrition and Health hosted by the Dairy Farmers of Canada (Moncton, New Brunswick), 2011.
50. **Chaput JP**. Can short sleep duration lead to type 2 diabetes? Lawson Diabetes Workshop (Toronto), 2011.
51. **Colapinto CK**, D O'Connor, **MS Tremblay**. Folate status of the population in the Canadian Health Measures Survey. Annual Canadian Association for Health Services and Policy Research Conference (Halifax), 2011.



52. **Colley RC.** The physical activity of Canadian children and youth: Results from the 2007-2009 Canadian Health Measures Survey. Invited oral presentation at the Canadian Society for Exercise Physiology Conference (Quebec City), 2011.
53. **Colley RC.** Promoting healthy active living in children and youth. Invited presentation at the Lawson Foundation Diabetes Workshop (Toronto), 2011.
54. **Colley R, D Garriguet, I Janssen, CL Craig, J Clarke, MS Tremblay.** The physical activity of Canadian children and adults. Invited workshop presentation at the Canadian Obesity Summit (Montreal), 2011.
55. **Colley RC, MS Tremblay.** 2011 Active Healthy Kids Canada Report Card on – Ontario Supplement Teaser. PARC Symposium (Toronto), 2011.
56. **Colley RC.** 2011 Active Healthy Kids Canada Report Card on Physical Activity for Children and Youth. Keynote address at the 2011 Health and Physical Education Council (HPEC) Conference (Calgary), 2011.
57. **Colley RC,** “Childhood Obesity: How did we get here and what are we doing about it?” National Child Day (Saint John, New Brunswick), 2011.
58. **Ferraro Z, D Prud'homme, N Barrowman, M Walker, KB Adamo.** The Effect of Maternal Body Mass Index and Gestational Weight Gain on Neonatal Birth Weight: Support for Obstetrical Weight Management? Canadian Obesity Network's 2nd National Obesity Summit (Montreal QC), 2011.
59. **Ferraro ZM.** The past, present and future of trainee and young professional involvement within the Canadian Obesity Network (CON). Invited oral address to CON-Student and new professional delegates. Canadian Obesity Network 2nd National Obesity Summit (Montreal QC), 2011.
60. **Fisher KL, B Von Tigerstrom, C Cameron, KE Chad, T Larre, A Mawani, J Sauder, MS Tremblay.** The Children's Fitness Tax Credit: Does it influence parents' decisions regarding physical activity. Canadian National Obesity Summit (Montreal), 2011.
61. **Gainforth HL, T Berry, C Craig, G Faulkner, R Rhodes, J Spence, M Tremblay, AE Latimer.** Let's Get Moving: evaluating the uptake of Canada's New Physical Activity Guidelines. Eastern Canadian Sport and Exercise Psychology Symposium (Waterloo), 2011.
62. **Goldfield GS, K Adamo, R Colley, D Garriguet, PJ Naylor, V. Temple.** Can we increase physical activity and reduce sedentary behaviour in preschoolers? Invited symposium presented at the Canadian Society for Exercise Physiology Annual Conference (Quebec City, Canada), 2011.
63. **Hadjiyannakis S.** Best Practices in the treatment of childhood obesity - what do we know? What do we not know? 2nd National Obesity Summit (Montreal), 2011.
64. **Larouche R, RC Colley, MS Tremblay.** Actical accelerometers are limited in their ability to accurately quantify the movement intensity of cycling. Canadian Society for Exercise Physiology Annual Meeting (Quebec City), 2011.
65. **LeBlanc AG, M Duggan.** Canadian Physical Activity Guidelines. Canadian Society for Exercise Physiology (Quebec City), 2011.
66. **LeBlanc AG.** Healthier Weights in Children: Innovation through Measurement and Knowledge Exchange. Public Health Agency of Canada Innovation Strategy (Toronto), 2011.
67. **Leclair S, D Maras, G Goldfield, E Kristjansson.** The needs and barriers of families seeking treatment for childhood overweight: A social-ecological perspective. Canadian Psychological Association Convention (Toronto), 2011.
68. **Longmuir PE, F Bangawan, G Smith, JL Russell, BW McCrindle.** Clinical Monitoring of Energy Expenditure for Children with Complex Heart Problems: Implications for Nutrition and Growth. Canadian Cardiovascular Congress (Vancouver), 2011.
69. **Maras D, M Norris, A Buchholz, W Spettigue, K Henderson, R Gomez.** Olanzapine as an adjunctive treatment for adolescent female inpatients with an eating disorder: A retrospective chart review. 72nd annual Canadian Psychological Association Convention (Toronto), 2011.
70. **McMullen JA, BW McCrindle, SD Dell, BM Feldman, PE Longmuir.** Understanding Parent Perceptions of Healthy Physical Activity for their Child with a Chronic Medical Condition. Canadian Cardiovascular Congress (Vancouver), 2011.
71. **Morrison K, J-P Chanoine, G Ball, MS Tremblay, M Lambert.** CANPWR: Canadian Pediatric Weight Management Registry. Annual CANNeCTIN Scientific Meeting (Banff), 2011.
72. **Prince Ware S, E Kristjansson, K Russell, J-M Billette, A Ali, M Sawada, MS Tremblay, D Prud'homme.** Do neighbourhood built and social environments have an influence on adult self-reported physical activity and overweight/obesity in

the Nation's capital? Canadian Obesity Summit (Montreal), 2011.

73. **Saunders TJ**, A Palombella, KA McGuire, PM Janiszewski, JP Després, R Ross. Acute exercise increases adiponectin levels in abdominally obese men. Canadian Society for Exercise Physiology Annual General Meeting (Quebec City), 2011.
74. Shields M, S Connor Gorber, I Janssen, **MS Tremblay**. Obesity estimates for children based on parent-report versus direct measures. Canadian Obesity Summit (Montreal), 2011.
75. Shields M, S Connor Gorber, I Janssen, **MS Tremblay**. The bias in self-reported estimates of obesity in Canadian health surveys: an update on establishing correction equations. Canadian Obesity Summit (Montreal), 2011.
76. **Tremblay MS**. Partnering for Change: The Partnership Protocol. Invited workshop presentation at the Canadian Obesity Summit (Montreal), 2011.
77. **Tremblay MS**. Process for Developing Canada's Physical Activity Guidelines and Linkages to International Initiatives. Invited workshop presentation at the Canadian Obesity Summit (Montreal), 2011.
78. **Tremblay MS**. Canada's Sedentary Behaviour Guidelines: The Other Side of the Coin. Invited workshop presentation at the Canadian Obesity Summit (Montreal), 2011.
79. **Tremblay MS**. Canadian Pediatric Weight Management Registry (CANPWR): Interactive Feedback Session. Invited workshop presentation at the Canadian Obesity Summit (Montreal), 2011.
80. **Tremblay MS, RC Colley**. Teaser for the 2011 Active Healthy Kids Canada Report Card – Ontario Supplement. Invited featured presentation at the PARC Physical Activity Symposium 2011 (Toronto), 2011.

## 2011 Local Presentations

81. **Adamo KB**. Healthy Active Living in the Early Years. Invited Presentation at the Ottawa Red Flags workshop: A Reference Guide for Early Years Professionals Early Identification in Child Development Prenatally to Age Six (Ottawa), 2011.
82. **Adamo KB**. The Maternal Obesity Management Trial. Invited satellite presentation to the Society of Clinical Research Associates (Ottawa), 2011.
83. **Adamo KB**. Health Active Living in the Early Years. Invited Presentation to Ontario Early Years Centre

Nepean- Carleton Steering Committee for Best Start group (Ottawa), 2011.

84. **Adamo KB**. Health Active Living in the Early Years. Invited Presentation to Ottawa Childcare Association (Ottawa), 2011.
85. **Adamo KB**. Encouraging Healthy Active Living in Teenagers. CHEO Connects Adult High School (Ottawa), 2011.
86. **Adamo KB**. Upstream Obesity Prevention- targeting MOM! Champlain Maternal Newborn Regional Program OTN lunch and learn (Ottawa), 2011.
87. **Borghese M, M Lloyd, E Knight, R Colley**. The Physical Activity Engagement Study: Interim Results. 4th Annual CHEO Research Day (Ottawa), 2011.
88. **Brett KE**. Maternal obesity and the placenta – are changes in nutrient transport contributing to fetal overgrowth. 2nd Annual SOMET-MONET Research Day (Montreal), 2011.
89. **Brett KE**. Exploring the impact of maternal obesity on the expression of fat transport proteins in the placenta. 3rd Human Kinetics Graduate Student Conference, University of Ottawa (Ottawa), 2011.
90. **Buchholz , A**. Promoting positive body image in schools. YOUth Power. Workshop for educators: Ottawa-Carleton District School Board (Ottawa), 2011.
91. **Buchholz, A**. CHEO Connects: Promoting healthy active living in school age children. Ottawa Public Lecture (Ottawa), 2011.
92. **Buchholz, A**. Promotion of healthy body image in schools. Invited guest speaker for Ottawa Public Health (Ottawa), 2011.
93. **Buchholz A, Rutherford J**, Clark L, Heffernan K. Calibrating Early Lifestyles to Manage Obesity: Healthy Active Living for the Early Childhood Setting. Public workshop for the Children's Hospital of Eastern Ontario (Ottawa), 2011.
94. **Chaput JP**. Programme d'excellence professionnel de l'Hôpital Montfort (Ottawa), 2011.
95. **Chaput JP**. Persistent organic pollutants and obesity. Children's Hospital of Eastern Ontario Research Institute (Ottawa), 2011.
96. **Chaput JP**. New determinants of obesity. Centre for Healthy Active Living (Ottawa), 2011.

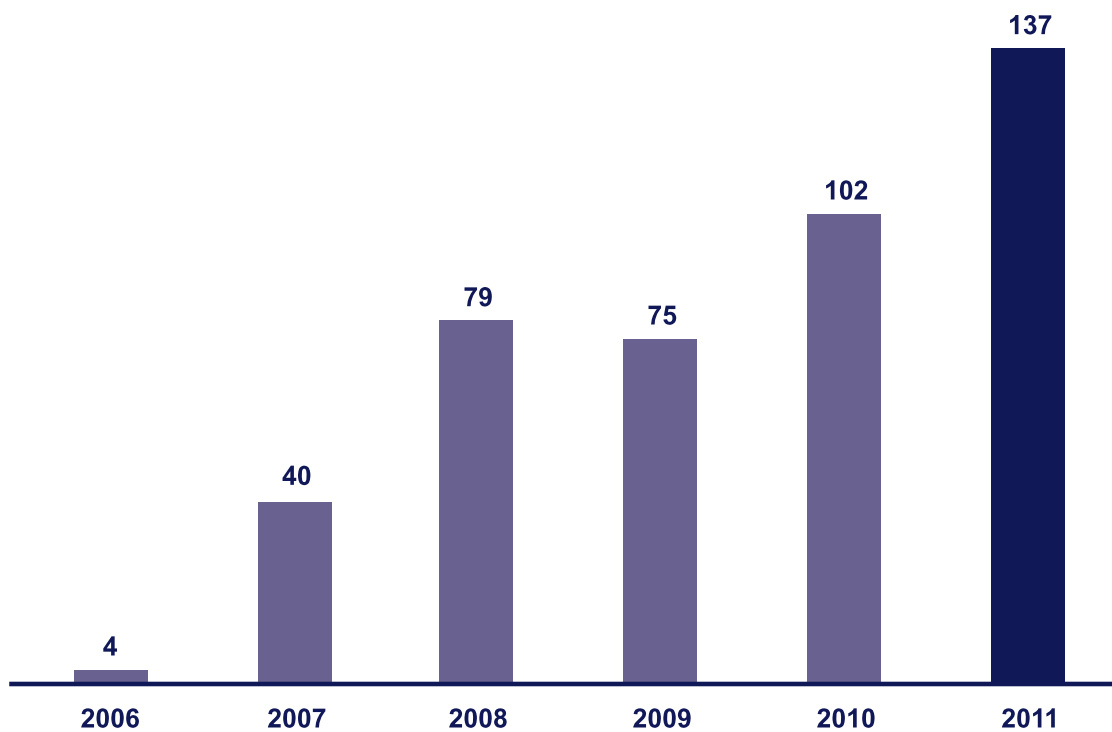




97. **Chaput JP.** Pediatric obesity – What family doctors can do? 60th Annual Refresher Course for Family Physicians (Ottawa), 2011.
98. **Chaput JP.** Are Canadians healthy? Media Forum to support the wellness movement in New Brunswick (Moncton), 2011.
99. **Chaput JP.** Physical activity and obesity as related to children 0-6 years. Ottawa Red Flags Workshop (Ottawa), 2011.
100. **Chaput JP.** Le manque de sommeil fait-il engraisser? Videoconference presented to the SOMET Research Group (University of Ottawa, Ottawa), 2011.
101. **Chaput JP.** Aborder l'obésité juvénile dans le milieu clinique. CALIBRATE Workshop (Ottawa), 2011.
102. **Chaput JP.** La promotion des saines habitudes de vie dans le milieu scolaire. HOPE Center (Saint John, New Brunswick), 2011.
103. **Chaput JP.** L'activité physique et le temps sédentaire chez les 0-5 ans. Direction de santé publique de l'Agence de la santé et des services sociaux de Montréal (Montréal), 2011.
104. **Chaput JP.** Obesity and wellness: a big problem! Key-note lecture presented at the 2011 Provincial Wellness Conference (Moncton), 2011.
105. **Chaput JP.** L'édition 2011 du Bulletin de l'activité physique chez les jeunes de Jeunes en forme Canada. Healthy Eating Physical Activity Coalition of New Brunswick (Moncton), 2011.
106. **Colley RC.** 2011 Active Healthy Kids Canada Report Card on Physical Activity for Children and Youth. School of Human Kinetics, Faculty of Health Sciences, University of Ottawa (Ottawa), 2011.
107. **Colley RC.** 2011 Active Healthy Kids Canada Report Card on Physical Activity for Children and Youth. Grand Rounds, Children's Hospital of Eastern (Ottawa), 2011.
108. **Colley RC.** 2011 Active Healthy Kids Canada Report Card on Physical Activity for Children and Youth. Faculty of Physical Education and Health at the University of Toronto (Toronto), 2011.
109. **Ferraro ZM.** Maternal obesity contributes to excessive fetal growth. Sherbrooke-Ottawa-Montreal Emerging Team (SOMET) Annual Research Day for the symposium on 'Women and body weight changes during hormone transitions: sharing evidence from bench through clinical trials to action' (Montreal), 2011.
110. **Ferraro ZM, Q Qiu, A Gruslin, KB Adamo.** Maternal obesity is associated with increased activators of ERK1/2 signaling in fetal circulation. Children's Hospital of Eastern Ontario 4th Annual Research Day (Ottawa), 2011.
111. **Ferraro ZM.** The preventive role of exercise for Gestational Diabetes Mellitus. Diabetes Regional Coordinating Centre Annual Symposium (Ottawa), 2011.
112. **Goldfield GS, A Buchholz.** Child obesity management strategies. Children's Aid Society (Ottawa), 2011.
113. **Goldfield, GS, T Saunders, GP Kenny, S Hadjiyannakis, A Alberga, P Phillips, MS Tremblay, RJ Sigal.** TV viewing and diabetes risk factors in overweight and obese adolescents. Children's Hospital of Eastern Ontario 4th Annual Research Day (Ottawa), 2011.
114. **Goldfield GS.** Overview of child obesity treatment research. Invited presentation, Children's Hospital of Eastern Ontario Volunteer Association Annual General Meeting (Ottawa), 2011.
115. **Goldfield, GS, S Hadjiyannakis, A Buchholz, J Rutherford, K Heffernan, L Clark.** Biological and Environmental contributors to child obesity; CALIBRATE Workshop: Calibrating Early Lifestyles to Manage Obesity: A Health and Education Practitioner Intervention Approach. H.O.P.E Community Centre (St. John, New Brunswick), 2011.
116. **Goldfield, GS, S Hadjiyannakis, A Buchholz, J Rutherford, K Heffernan, L Clark** The Biological and Psychological Determinants and consequences of pediatric obesity. CALIBRATE Workshop: Calibrating Early Lifestyles to Manage Obesity: A Health and Education Practitioner Intervention Approach. Andrew Fleck Organization (Ottawa, ON), 2011.
117. **Hadjiyannakis S, A Buchholz, K Heffernan, J Rutherford.** Managing Obesity: The Realities Recognizing Overweight and Obesity Recognizing which Children and Youth are at Highest Risk for Complications of Obesity Screening for Complications of Overweight and Obesity- How and When? Treating Common Complications of Overweight and Obesity Treating and Managing Obesity. 9th Annual Advances in Pediatric Medicine (Gatineau), 2011.
118. **Hadjiyannakis, S, A Buchholz.** The Realities: Managing paediatric obesity. Grand Rounds at the Children's Hospital of Eastern Ontario (Ottawa), 2011.

119. **Hadjiyannakis S, A Buchholz, J Rutherford,** Heffernan K. Tackling Obesity in the Clinical Setting. Invited presentation at Annual Pediatric Medicine Update (Ottawa), 2011.
120. **Hadjiyannakis S, A Buchholz, J Rutherford,** Heffernan K. Calibrating Early Lifestyles to Manage Obesity: A Health and Education Practitioner Intervention Approach. Public workshop for the Children's Hospital of Eastern Ontario (Ottawa), 2011.
121. **Hadjiyannakis, S.** Family Based Screening Program for Type 2 Diabetes, Division of Endocrinology and Metabolism Grand Rounds, Ottawa Hospital (Ottawa), 2011.
122. **Hadjiyannakis, S, A Buchholz, AM Hospod,** et al. CALIBRATE: Calibrating Early Lifestyles to Manage Obesity. A Health and Education Practitioner Intervention. Interdisciplinary team workshops presented to health practitioners and educators (Eastern Ontario and New Brunswick), 2011.
123. **LeBlanc AG,** M Duggan. Canadian Physical Activity Guidelines. Ottawa District School Board (Ottawa), 2011.
124. **LeBlanc AG.** Canadian Physical Activity Guidelines. Ontario Kinesiology Association Annual General Meeting (Markam), 2011.
125. **Longmuir PE.** Physically Active Peer Play: The Health of Children with Heart Problems Depends on It, So Why Doesn't It Happen. Scientific Retreat 2011, SickKids Research Institute (Toronto), 2011.
126. **Longmuir PE.** Enhanced Quality of Life for Young Children with Disabilities and Chronic Illness: Inclusion and Treatment Through Physical Activity. Research Rounds, Holland Bloorview Rehabilitation Centre (Toronto), 2011.
127. **Longmuir PE.** Balls, Crayons and Mr. Potato Head: Crafts and Play as Research Method. Child Health Evaluative Sciences Research Day, SickKids Research Institute (Toronto), 2011.
128. **Longmuir PE.** Healthy ME: Moving daily, Eating healthy. Take TIME Parent Education Event (Township of Uxbridge), 2011.
129. Norris M, W Spettigue, **A Buchholz,** K Henderson, M Jovanovic, **D Maras,** R Gomez, A Ni. Quetiapine use for the adjunctive treatment of adolescents with anorexia nervosa: A retrospective case control study. University of Ottawa Department of Psychiatry's 31st Annual Academic Research Day (Ottawa), 2011.
130. **Rutherford J.** Physical Activity for Health. Invited presentation at South Asian Health Symposium (Ottawa), 2011.
131. Stieber N, S Gilmour, A Morra, J Rainbow, S Robitaille, G Van Arsdell, BW McCrindle, BE Gibson, **PE Longmuir.** Motor Development Among Toddlers with Complex Heart Defects: Feasibility of Home-based, Parent-provided Physical Activity. Child Health Evaluative Sciences Research Day, SickKids Research Institute (Toronto), 2011.
132. **Saunders, TJ, R Larouche, RC Colley, MS Tremblay.** (2011). Acute sedentary behaviour and markers of cardiometabolic risk: a systematic review of intervention studies. 4th Annual Research Day of the Children's Hospital of Eastern Ontario (Ottawa), 2011.
133. **Tremblay MS.** Nipissing University Convocation Address – Five Wellness Lessons for Life after University. Invited convocation address to 2011 graduating class of Nipissing University (North Bay), 2011.
134. **Tremblay MS.** Canada's Inactive Kids: An Urgent Call for Action. Invited presentation to the education students/student teachers at the Laurentian University, School of Education (Sudbury), 2011.
135. **Tremblay MS.** How can we get kids active? Invited presentation to Sudbury District School Board elementary school students and teachers (Sudbury), 2011.
136. **Tremblay MS.** Potential Solutions to Canada's Childhood Inactivity Crisis: Mark's Top 10. Invited presentation to the Physical Education Department Heads and Program Leaders, Sudbury District School Board (Sudbury), 2011.
137. **Tremblay MS.** Canada's Inactive Kids: An Urgent Call for Action. Invited public lecture at Laurentian University (Sudbury), 2011.





**Figure 7.** Number of scholarly presentations by HALO Research Group from 2006 to 2011. Between 2006 and 2011, there was a 3325% increase in the number of scholarly presentations; between 2010 and 2011, there was a 34% 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

- Editorial Board Member – *Bioenergetics*
- Editorial Board Member – *Journal of Sleep Disorders & Therapy*
- Steering and Scientific Committee Member, Chronic Disease Prevention Alliance of Canada (CDPAC) Fourth Pan-Canadian Conference, Ottawa, Canada.
- Chair, Symposium on "Childhood obesity prevention: new insights into (in)activity behaviours", Canadian Society of Exercise Physiology, Quebec City, Canada.
- Abstract Reviewer, The Obesity Society's 2011 Annual Scientific Meeting, Orlando, Florida, USA.
- Advisory Board Member, Canadian Sleep Society

- Peel Public Health Obesity Strategy Expert Panel Board Member on the Strategic Priority titled "Supportive Environments and Healthy Weight".
- The Obesity Society – Early Career Investigator Committee Board Member. The mandate of this committee is to organize activities at meetings and foster networking opportunities with other early career investigators and senior researchers working in the field of obesity research.
- Canadian Obesity Network – Students & New Professionals (CON-SNP) University of Ottawa Faculty Representative.
- Expert Advisory Committee Board Member for the Canadian Institute of Child Health (CICH) overseeing development of the Child and Youth Healthy Lifestyles module.
- National Advisory Committee Board Member for the Dietitians of Canada on the Training Program for Primary Health Care Practitioners on the Use and Interpretation of the WHO Growth Charts Adapted for Canada.
- 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 1 paper)
  - *Obesity* (reviewed 1 paper)
  - *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 3 papers)
  - *Obesity Facts* (reviewed 1 paper)



## Dr. Rachel Colley

- Chair of Active Healthy Kids Canada Research Work Group
- Scientific Officer, Active Healthy Kids Canada
- Research Analyst, Health Analysis Division, Statistics Canada (2007-2011)
- Invited Contributor: Federal Provincial and Territorial (F/P/T) Physical Activity and Sport Surveillance Advisory Meeting, November 2, 2011 in Ottawa, Ontario.
- Invited Contributor: Canada Sport Policy Renewal, June 23, 2011, Ottawa, Ontario
- Debate Moderator: “Forks vs. Feet – Yoni Freedhoff and Bob Ross”, University of Ottawa, May 12, 2011
- Invited Contributor: Curbing Childhood Obesity: Towards a Measurement & Monitoring Strategy, Expert Planning Meeting, March 21, 2011.
- Invited Contributor: Ontario Youth Population Health Assessment Roundtable, February 16-17
- Member, CAMBIO (Canada-Mexico Battling Childhood Obesity), International Development Research Centre, Queen’s University
- Member: North American Society for Pediatric Exercise Medicine
- Journal Reviewer for:
  - *Medicine and Science in Sports and Exercise*
  - *Journal of Sport Sciences*
  - *Applied Physiology, Nutrition & Metabolism*
  - *International Journal of Behavioral Nutrition and Physical Activity (IJBNPA)*
  - *Journal of Science and Medicine in Sport*
  - *Research Quarterly for Exercise and Sport*
  - *International Journal of Exercise Science*
  - *Canadian Medical Association Journal*
- Panel Member (2008-2011) – Monitoring, Surveillance and Evaluation Expert Panel for the Champlain Cardiovascular Disease Network (CCPN)

## Dr. Gary Goldfield

- Grant reviewer, CIHR Post-Doctoral Fellowship Awards Committee – 2010/2011
- Grant Reviewer for CHEO Research Institute Science Sub-Committee (3 grants)
- Grant Reviewer for CHEO Research Institute CHAMO Innovation Fund (2 grants)
- Grant reviewer for CHEO Research Institute Studentship Awards (16 grants)
- Journal Reviewer for:
  - *International Journal of Neuropsychopharmacology* (1 paper)
  - *Acta Paediatrica* (1 paper)
  - *Applied Physiology, Nutrition & Metabolism* (2 papers)
  - *Obesity* (1 paper)
  - *Canadian Medical Association Journal* (1 paper)
  - *International Journal of Behavioral Nutrition and Physical Activity* (1 paper)
  - *Journal of Obesity* (1 paper)
  - *Nutrition, Metabolism, and Cardiovascular Disease* (1 paper).
- Chair, MSc thesis Defense, Human Kinetics (Chantal Gosselin), University of Ottawa
- Member of the American Heart Association’s Behavioural Change Committee
- Member of the Registered Nurses Association of Ontario Pediatric Obesity Committee
- Member of the Advisory Board of CHEO’s Centre for Healthy Active Living
- Clinical Psychologist – Private Practice providing services to children, youth and adults
- Clinical psychologist – Supervision of Master’s level therapists and psychometrists

### Dr. Stasia Hadjiyannakis

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

### Dr. Pat Longmuir

- Journal Reviewer for:
  - *European Journal of Applied Physiology*
  - *Pediatric Exercise Science*
- Canadian Society for Exercise Physiology, Certified Exercise Physiologist

### Jane Rutherford

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

### Dr. Mark Tremblay

- Peer-Reviews
  - *Canada Research Chair* – candidate renewal review
  - *Western Canadian University* – external assessor for tenure application
  - *American University* – external assessor for full professor application

- *Canadian Medical Association Journal* – 1 paper
- *International Journal of Pediatric Obesity* – 1 paper
- *Canadian Journal of Public Health* – 1 paper
- *International Journal of Circumpolar Health* – 1 paper
- *Obesity* – 1 paper
- *International Journal of Epidemiology* – 1 paper
- *Research Quarterly for Exercise and Sport* – 1 paper
- *International Journal of Behavioral Nutrition and Physical Activity* – 1 paper

- Invited Expert Advisory Panel member for the Taking Action to Prevent Chronic Disease: Recommendations for a Healthier Ontario Report (Public Health Ontario and Cancer Care Ontario)
- Moderator of Expert Panel discussion at the launch of the Active Healthy Kids Canada Ontario Report Card Supplement (Alliston, ON)
- Invited expert panelist and presenter for the Institute of Medicine (National Academy of Sciences) fitness measures in youth and health outcomes committee.
- Chair of focused symposium “Global Physical Activity Transitions: Emerging Measurement and Therapeutic Opportunity?” at the World Confederation for Physical Therapy Congress (Amsterdam)
- Editorial Board, *African Journal of Applied Human Sciences*
- Contributing author, 2011 Kenya’s Report Card on the Physical Activity and Body Weight of Children and Youth
- Co-Chair of Workshop titled *Canadian Pediatric Weight Management Registry – Towards Improving Practice Nationwide* at the Canadian Obesity Summit (Montreal)
- Steering Committee for revisions to the Canadian Clinical Practice Guidelines for the Management and Prevention of Obesity in Children and Youth
- Mock-Senator for “Population Interventions for Children and Adolescents Parliamentary Senate Committee” – PhD in Population Health Program – assessed 9 presentations





- Invited member of the CBC “Live Right Now” Advisory Board
- Visiting Professor, Department of Recreation Management and Exercise Science, Kenyatta University, Nairobi Kenya
- Spokesperson for the release of the seventh annual *Active Healthy Kids Canada Report Card on Physical Activity for Children and Youth* (>100 million media impressions)
- Chief Scientific Officer, *Active Healthy Kids Canada*
- Chair, Canadian Physical Activity Guidelines Committee, *Canadian Society for Exercise Physiology*
- Member of the Board of Directors, *Child and Nature Alliance*
- Research Affiliate with the *Alberta Centre for Active Living*
- Editorial Board member of *Acta Kinesiologiae Universitatis Tartuensis* (University of Tartu, Estonia)
- 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 Summit (Montreal Quebec)
- Canadian Nutrition Society annual meeting (Guelph Ontario)

- The Obesity Society (Orlando, Florida)
- Canadian Society for Exercise Physiology Annual meeting (Quebec City, Quebec)
- 4th Annual Research Day – CHEO Research Institute (Ottawa)
- International Graduate Course in Clinical & Exercise Physiology, Auberge Duchesnany, Quebec

### Dr. Jean-Philippe Chaput

- The Obesity Society Annual Meeting (Orlando, Florida)
- World Association of Sleep Medicine & Canadian Sleep Society Congress (Quebec City)
- 2nd National Obesity Summit (Montreal)
- Canadian Society for Exercise Physiology Annual Meeting (Quebec City)
- 10th Annual National Child Day Conference (Saint John, New Brunswick)
- Provincial Wellness Conference (Moncton, New Brunswick)
- Lawson Diabetes Workshop (Toronto)

### Dr. Rachel Colley

- Audited “Managing Large Data-Sets in SAS” (EPI 5143) at the University of Ottawa
- Intermediate French 5A-B, New Avenues Linguistic Services
- International Conference on Ambulatory Monitoring of Physical Activity (ICAMPAM), Glasgow, Scotland, May 2011
- Canadian Society for Exercise Physiology (CSEP) Conference, Quebec City, October 2011

### 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 (Orlando, FL)

- The Canadian Society for Exercise Physiology (CSEP) conference (Quebec City)
- 4th Annual Research Day –CHEO Research Institute (Ottawa)
- 32nd Annual Research Day, University of Ottawa, Department of Psychiatry (Ottawa)

#### **Dr. Stasia Hadjiyannakis**

- Canadian Obesity Network National Summit (Montreal)
- Diabetes Expo (Ottawa)

#### **Dr. Pat Longmuir**

- Canadian Cardiovascular Congress (Vancouver)
- American Heart Association Scientific Sessions (Orlando)
- SickKids Research Institute Scientific Retreat (Toronto)

#### **Dr. Mark Tremblay**

- Attended the following conferences, symposia and workshops:
  - Institute of Medicine of the National Academies Workshop on Fitness Measures and Health Outcomes in Youth (Washington, D.C.)
  - 3rd Annual Actionsanté Conference (Bern, Switzerland)
  - Switzerland Federal Office of Public Health Physical Activity and Obesity Monitoring Workshop (Bern, Switzerland)
  - 2nd Forum on Child Obesity Interventions (Fundacion Mexicana para la Salud) (Mexico City)
  - World Confederation for Physical Therapy Congress (Amsterdam, The Netherlands)
  - Kenyatta University, School of Applied Human Sciences Seminar (Nairobi, Kenya)
  - Canadian Obesity Summit (Montreal)
  - International Congress on Enhancement of Physical Activity of Children and Youth (Vuokatti, Finland)
  - PARC Physical Activity Symposium 2011 (Toronto)

## **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, Department of Pediatrics, Faculty of Medicine, University of Ottawa
- Cross-appointed Assistant Professor, School of Human Kinetics, Faculty of Health Sciences, University of Ottawa
- Junior Research Scientist, HALO, Children's Hospital of Eastern Ontario Research Institute

#### **Dr. Rachel Colley**

- Junior Research Scientist, Children's Hospital of Eastern Ontario Research Institute
- Assistant Professor, Faculty of Medicine, Pediatrics, University of Ottawa
- Cross appointed Assistant Professor, Faculty of Health Sciences, School of Human Kinetics, University of Ottawa

#### **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, Children's Hospital of Eastern Ontario Research Institute
- Senior Investigator, Children's Hospital of Eastern Ontario Research Institute



### **Dr. Stasia Hadjiyannakis**

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

### **Dr. Pat Longmuir**

- Assistant Professor, Department of Physical Therapy, Faculty of Medicine, University of Toronto

### **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 Professor, School of Graduate Studies, University of Toronto
- Visiting Professor, Kenyatta University, Nairobi, Kenya

- Kevin Belanger (MSc. candidate) U of Ottawa, School of Human Kinetics, Supervisor, September 2011-ongoing
- Peter Breithaupt (MSc. awarded 2011). U of Ottawa, School of Human Kinetics, Supervisor.
- Kendra Brett (PhD Candidate) U of Ottawa, School of Human Kinetics, Supervisor, September 2010-ongoing
- Zach Ferraro (PhD- dissertation submitted Feb 2012) U of Ottawa, School of Human Kinetics, Supervisor
- Shalane Ha (MSc- c) 2011- ongoing Faculty of Health Sciences, School of Human Kinetics, Thesis Committee
- Yannick Molgat-Seon (MSc- c), 2010- ongoing Faculty of Health Sciences, School of Human Kinetics, Thesis Committee
- Nathan Morris (MSc- c) 2011- ongoing Faculty of Health Sciences, School of Human Kinetics, Thesis Committee
- Marie-Eve Rioux (PhD-c), 2009- ongoing Faculty of Health Science, School of Human Kinetics, Thesis Committee
- Marie-Eve Rioux (PhD-c), 2010 Faculty of Health Science, School of Human Kinetics, Examiner
- Jane Yardly (PhD), 2011 Population Health, Thesis/Dissertation Examiner
- Alexander Schwartz (MSc.) 2011, Chair – Thesis/Dissertation Examination

## **GRADUATE STUDENTS SUPERVISION AND TRAINING**

### **Dr. Kristi Adamo**

- Angela Alberga (PhD-c), 2010 Faculty of Health Science, School of Human Kinetics, Examiner
- Angela Alberga (PhD- c), 2008- ongoing Faculty of Health Sciences, School of Human Kinetics, Thesis Committee
- Martine Belliveau (MSc-c), 2012- ongoing Faculty of Health Science, School of Human Kinetics, Thesis Committee
- Brittany Beauchamp (PhD-c), 2011 Faculty of Medicine, Dept. Biochemistry, Microbiology & Immunology, Examiner
- Brittany Beauchamp (PhD- c) 2010- ongoing Faculty of Medicine, Dept. Biochemistry, Microbiology & Immunology, Thesis Committee

### **Dr. Jean Philippe Chaput**

- Mads Fiil Hjorth, Department of Human Nutrition, University of Copenhagen, PhD Co-supervisor (2010-2013)
- Lars Klingenberg, Department of Human Nutrition, University of Copenhagen, PhD Co-supervisor (2009-2012)
- Nazia Darvesh, School of Public Health, University of Alberta, Graduate student advisory committee (2011-2013)
- Sébastien Cadieux, School of Human Kinetics, University of Ottawa, Graduate student advisory committee (2011-2013)
- Stephanie Prince, Population Health, University of Ottawa, Graduate student thesis examination committee (2012)



### **Dr. Rachel Colley**

- Peter Breithaupt (MSc.) U of Ottawa, School of Human Kinetics, 2009-2011 (Co-Supervisor)
- Nikolina M. Duvall Antonacopoulos (PhD Candidate) Carleton University, Department of Psychology, 2011(Proposal Committee Member).
- Michael Hopkins (MSc Candidate), U of Ottawa, School of Human Kinetics, Proposal Committee Member
- Emily Knight (M.Sc. Candidate) U of Ottawa, School of Human Kinetics, Discontinued program in 2011 (Supervisor)

### **Dr. Gary Goldfield**

- Jameason Cameron, Human Kinetics, University of Ottawa, Ph.D Thesis Committee
- Michael Hopkins, Human Kinetics, University of Ottawa, MSc Thesis, committee (2011)
- Stephanie Leclair, Ph.D student, Clinical Psychology, University of Ottawa, Supervisor (2006-2012)
- Danijela Maras, MA student, Experimental psychology, Carleton University, Supervisor (2011-2013)
- Jessica McNeil, Human Kinetics, University of Ottawa, MSc thesis committee (2011)
- Marisa Murray, Ph.D. Candidate, Clinical psychology, University of Ottawa, Supervisor (2011-2017)
- Travis Saunders, Human Kinetics, University of Ottawa, Ph.D. Thesis committee (2011)
- Jakub Racek, Dept. of Psychology, Carleton University, MA thesis committee (2011)
- Angela Wilson – Ph.D. student, Clinical Psychology, University of Ottawa, Supervisor (2010-2016)

### **Dr. Stasia Hadjiyannakis**

- Dr. Sarah Tsai - Pediatric Endocrine Fellow, Children's Hospital of Eastern Ontario- Completing her third year of fellowship
- Marwa Ebrahim- Pediatric Endocrine Fellow
- Hossam Al Massary- Pediatric Endocrine Fellow

### **Dr. Mark Tremblay**

- Megan Carter (University of Ottawa) – Ph.D. Co-supervisor (2008! 2012) (CIHR Scholarship; University of Ottawa Excellence Scholarship )
- Cynthia Colapinto (University of Ottawa) – Ph.D. Supervisor (2008! 2013) (CIHR Fellowship in Public Health; Statistics Canada Tom Symon's Ph.D. Fellowship; University of Ottawa Excellence Scholarship )
- Richard Larouche (University of Ottawa) – Ph.D. Supervisor (2009! 2013) (CIHR Banting and Best Doctoral Scholarship; University of Ottawa Excellence Scholarship)
- Stella Muthuri (University of Ottawa) – Ph.D. Supervisor (2010-2014) (Graduate Scholarship in Science and Technology, Government of Ontario)
- Stephanie Prince-Ware (University of Ottawa) – Ph.D. Co-supervisor (2006! 2011) (SSHRC Doctoral Scholarship; Ontario Graduate Scholarship; University of Ottawa Doctoral Research Award and University of Ottawa Excellence Scholarship)
- Travis Saunders (University of Ottawa) – Ph.D. Supervisor (2009! 2013) (CIHR Scholarship; Canadian Diabetes Association Doctoral Scholarship; University of Ottawa Excellence Scholarship)
- Samantha Stephens (University of Toronto) – Ph.D. Committee (2008! 2012)
- Lucy Joy Wachira (Kenyatta University, Nairobi, Kenya) – Ph.D. Committee (2010-2013)
- Timo Jaakkola (University of Jyväskylä, Finland) – Ph.D. Committee (2011-2014)
- Makda Araia (University of Ottawa) – M.Sc. Examiner
- Monique Potvin-Kent (University of Ottawa) – Ph.D. Examiner



## 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) member and junior faculty advisor
- 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
- Children's Hospital of Eastern Ontario Research Institute
- University of Ottawa- Faculty of Graduate and Postgraduate Studies

## Dr. Rachel Colley

- Children's Hospital of Eastern Ontario Research Institute
- University of Ottawa - Faculty of Graduate and Postgraduate Studies

- CAMBIO (Canada-Mexico Battling Childhood Obesity), International Development Research Centre, Queen's University
- SPARK: Sleep-Disordered Breathing in Populations of At-Risk Kids Research Group
- 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
- Canadian Obesity Network
- Treatment and Research of Obesity in Paediatrics in Canada (TROPIC)

## 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
- Pediatric Endocrine Society
- International Society for Pediatric and Adolescent Diabetes
- Canadian Obesity Network
- Obesity Society





**Dr. Pat Longmuir**

- North American Society for Pediatric Exercise Medicine
- Canadian Society for Exercise Physiology
- American College of Sports Medicine
- Canadian Cardiovascular Society
- American Heart Association
- Ontario Society for Health and Fitness
- North American Federation of Adapted Physical Activity
- Active Living Alliance for Canadians with a Disability
- Children's Hospital of Eastern Ontario Research Institute

**Jane Rutherford**

- Canadian Obesity Network

**Hélène Sinclair, CAP-OM**

- International Association of Administrative Professionals, Ottawa Chapter

**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
- Treatment and Research of Obesity in Pediatrics in Canada (TROPIC)

# CONTACT US

## Current Staff List (as of March 31, 2012)

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.haloresearch.ca](http://www.haloresearch.ca)

### Kristi Adamo

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### Joel Barnes

Knowledge Synthesis and Analysis Manager  
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### Annick Buchholz

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### Jean-Philippe Chaput

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### Rachel Colley

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### Gary Goldfield

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613-737-7600, ext. 3288  
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### Stasia Hadjiyannakis

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613-737-7600, ext. 3939  
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### Alysha Harvey

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### Allana Leblanc

Research Coordinator  
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### Jane Rutherford

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### Hélène Sinclair

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613-737-7600, ext. 4102  
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### Mark Tremblay

Director, HALO  
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[mtremblay@cheo.on.ca](mailto:mtremblay@cheo.on.ca)









