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NATIONAL PREVENTION STRATEGY MEETING:

*Linking research, practice and policy in the
prevention of weight-related disorders.*

The Hospital for Sick Children
November 17 & 18, 2011

Discussion Document

**Document prepared and circulated to delegates
of the two day meeting to springboard discussions.*

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Key Issue. Obesity (OB) is recognized as a serious public health issue in Canada, and the trends and health consequences are well known. The Public Health Agency of Canada (PHAC) recently released a report entitled “Curbing Childhood Obesity” which relays that childhood overweight /obesity rates have nearly doubled between 1978 and 2004 (15-26%), and calls for a “sustained, multi-sectoral response” to this complex issue (PHAC, 2010). Policy-makers and practitioners face huge and immediate challenges in intervening on a health problem that has reached epidemic proportions. A competing public health issue is intense body dissatisfaction that often results in restrictive dieting among children and youth. For example, in a sample of Ontario children, as many as 30% of girls and 25% of boys between the ages of 10 and 14 years report engaging in restrictive dieting to lose weight despite being within a healthy weight range (McVey, et al., 2004; 2005). Similar statistics have been reported in Nova Scotia and British Columbia (Gusella, 2008; Smith et al., 2009). By the time children reach the teen years, one in four engage in at least one symptom of an eating disorder (self-induced vomiting, laxative use, etc) (Jones et al., 2001).

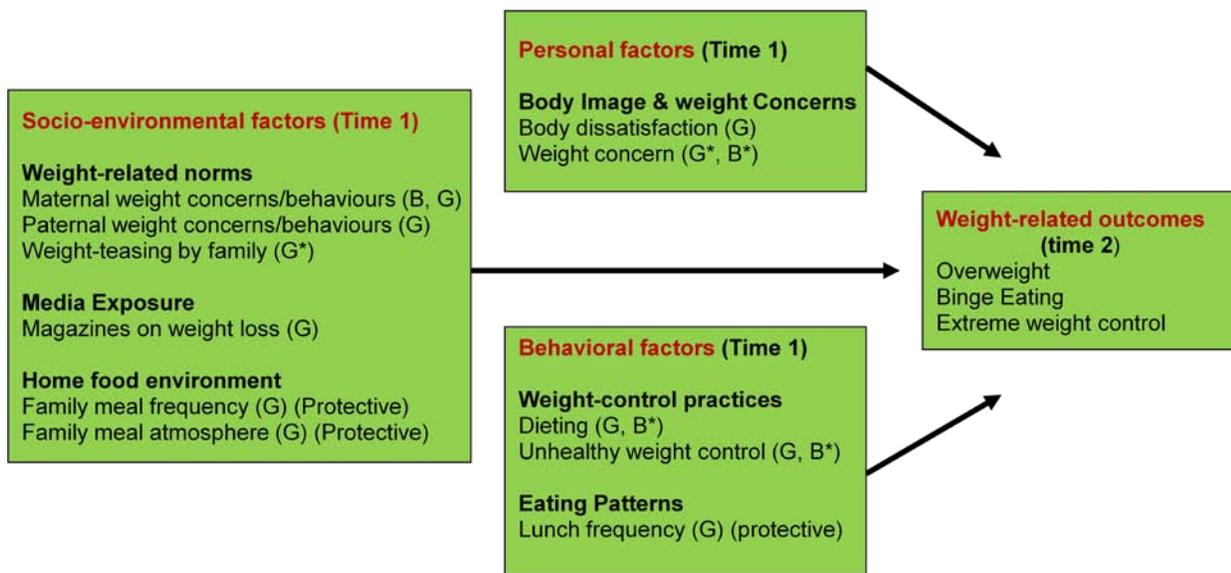
Restrictive dieting has been shown to trigger binge eating, weight gain and other forms of unhealthy eating (Field et al., 2003; Neumark-Sztainer, et al., 2002; Tanofsky-Kraff et al., 2009). To add to this burden is the research showing that restrictive dieting spurs on mental health problems such as depression, anxiety disorders, and substance abuse (Gadalla & Piran, 2007; Piran & Gadalla, 2006; Seeley et al., 2009; Stice et al., 2007). In turn poorer psychosocial functioning is associated with obesity (Cornette, 2008; Gray & Leyland, 2008). Research conducted on the healthy weights curriculum revealed that body-based comments spurred on by the curriculum, played a significant role in girls’ attitudes about their body and the eating patterns and regulation practices they undertook (Larkin & Rice, 2005). Based on in-depth interviews conducted with female students the researchers concluded that the curriculum increased anxieties about body weight, ignored the multiple causes of eating problems, marginalized issues most relevant to racialized girls, and ignored dilemmas associated with physical development.

Prevention researchers recognize that psychological, health, and social problems result from the interaction between individuals and their larger environments, as shaped by familial, academic, social, cultural, economic, and political factors. Complex health issues such as weight-related problems require complex health solutions, and researchers are charged now with the job of documenting efficacy of these complex interventions. This task involves acknowledgement and measurement of the various levels of intervention, the doses and fidelity of the intervention, and the partnership across levels.

A layered social-ecological approach (intervening at multiple levels/contexts and with multiple influencers) has recently been adopted by researchers working in the area of body image and healthy weights (Austin, 2005; Haines et al., 2006; McVey et al., 2007; Piran, 1999; 2001). This approach carries with it several advantages (Evans et al., 2008). First, it offers a non-stigmatizing way to reach out to overweight/obese children and youth since healthy lifestyle strategies are being shared equally across all children (e.g., universal prevention). Second, the focus is on building an optimal environment for children and youth to be healthy as opposed to individually targeting larger children and focusing solely on their eating and/or activity levels. One added feature of the body image/eating disorder prevention work that can be transferred to the field of obesity prevention is a focus on mental health promotion (e.g., how to ward off negative effects of stress) (McVey et al., 2003; 2004; 2007). Currently, there is a need to assist health promoters gain a deeper understanding of the complexities of weight-related disorders including an understanding of the association between social determinants of health and health outcomes, and how to adopt a broader more comprehensive understanding to prevention. Moreover, there is a pressing need to develop successful mechanisms that readily translate the research findings into weight-related prevention messaging.

Obesity and eating disorders: Opportunities for integration of prevention initiatives.

Research indicates individuals with eating disorders and those who struggle with obesity share common risk factors such as body dissatisfaction, low self-esteem, dieting, binge eating, media exposure, being teased about ones’ weight and personal weight concerns (Haines & Nuemark-Sztainer, 2006; Neumark-Sztainer, Wall, Haines, Story, Sherwood, & van den Berg, 2007) (see figure below).



Neumark-Sztainer et al. American Journal of Preventive Medicine, 2007, 33(5)

Integrating both issues into one ecological approach can help maximize the use of limited resources. Such integration may produce even greater prevention returns by limiting conflict between them (Bauer, Haines, & Neumark-Sztainer et al., 2009; Neumark-Sztainer et al., 2007). The low success rates of prevention programs that have focused on individual change factors further supports the adoption of ecological models (Stice, Shaw & Marti, 2006).¹

Examples of promising interventions from both the body image/eating disorder and obesity/healthy weights fields include:

Dr. Piran's seminal intensive case study (Piran, 1999b, 2001) and outcome research (Piran, 1999a) examined a whole school prevention program implemented in a **residential ballet school**. This first of its kind intervention was designed to change the contexts within which body image and eating problems develop. Specifically, Piran (1998, 1999c, 2001) was the first in the body image and eating disorders fields to focus her prevention work on peer group norms, conducting over 300 focus groups with students aged 10-18 years in a competitive, residential and coeducational dance school. Using participatory action research, Piran worked collaboratively with the girls to (a) solicit their descriptions of events that affected how they felt about their bodies, (b) critically interpret those events, and (c) develop action plans to create system wide changes. The primary prevention program conducted by Piran (1999a, 1999b, 1999c) in a high-risk residential school setting led to system-wide changes that were sustained for over a decade. Moreover, Piran's 15 years of prevention work at

¹ A number of prevention specialists, most notably Drs. Levine and Smolak, and Dr. Piran have provided detailed analyses of the current state of affairs in the prevention of eating disorders (Becker, Stice, Shaw, & Woda, 2009; Holt & Ricciardelli, 2008; Levine & Smolak, 2006, 2008, 2009; Piran, 2005; Piran et al., 2011; Sinton & Taylor, 2010; Stice et al., 2006; Wilksch & Wade, 2009; Yager & O'Dea, 2008). In addition, meta-analyses and other review articles are available on obesity prevention studies, eating disorder prevention studies, and cardiovascular health promotion studies (Adair, McVey et al., 2007; Hayman, McCrindle et al., 2004; Stice et al., 2006; 2007).

the school produced sustained decreases in the incidence of disordered eating (see Levine & Smolak, 2006, chapter 8).

Dr. Haines (Haines et al., 2006) examined the effectiveness of the **Very Important Kids (V.I.K)**, school based, multi-level intervention aimed at promoting a no-teasing environment and preventing unhealthy weight-control behaviours in an ethnically diverse, primarily low-income sample of fourth to sixth grade students. Using a participatory approach, the intervention focused on individual, family and school climates. Specifically, there were 10 after-school sessions including physical activity, provision of a healthy snack, and activities aimed to increase body image, improve media literacy, improve ability to deal with weight-based teasing, and 10 one-hour sessions with a local theatre company to create a production around appropriate and inappropriate times to tease. There was also school staff training, a no-teasing campaign, a book of the month, and a theatre production for the school and for families. Finally there were family nights, parent postcards, and a booth presentation at parent-teacher night. The intervention was associated with significant decreases over time in peer-based weight-based teasing (effect size = 0.63). The after-school program was determined to be most the effective aspect of the intervention. The program was determined to be sustainable and feasible since it was continued by the intervention school following the study, and initiated by another school (unrelated to the study). There was a high rate of attendance at the theatrical presentation night (parents), and high student satisfaction with the programs.

Dr. McVey's multi-component **Healthy Schools-Healthy Kids (HS-HK)** intervention included a whole-school approach similar to the one conducted by Haines and colleagues (McVey et al., 2007). All of the students in the intervention schools (male and female students in grades 6, 7, and 8) as well as their school personnel (teachers and any other staff member) and parents were included in the full school year (8 months) intervention and 14-month follow up period. Curriculum designed to promote media literacy, stress management, assertive communication, weight bias awareness and a Health-At-Every-Size philosophy was embedded in daily classroom teaching by all of the teachers in the school (and matched to provincial learning outcomes). Other components included the creation and performance of a musical play to all students at each grade level on the negative influence of weight-based teasing and peer-media pressures to diet with follow up group discussions; evening and day workshops for parents/families, newsletter articles for parents as well as a booth presentation during parent-teacher night, sensitivity training for school personnel on weight bias awareness and factors that influence body image and disordered eating in children and youth; poster and video presentations, and small focus groups on bullying prevention with male students. As part of the intervention, local public health practitioners delivered in-school all-girl peer support groups using an intervention previously shown to improve self-esteem and body satisfaction and decrease disordered eating among early adolescent girls (McVey et al., 2003). Significant HS-HK intervention effects were reported for disordered eating (effect sizes = 0.39 at 8-month follow up and 0.27 at 14-month follow-up) and internalization of media stereotypes (effect sizes = 0.02 at 8-month follow up and 0.22 at 14-month follow up).

The Healthy Schools-Healthy Kids is one of a series of studies of Ontario-based prevention programs aimed at specific age groups of children, youth, and young adults, as well as the adults who mentor them (McVey, 2005). The project's diverse prevention studies have spanned efficacy trials (McVey & Davis, 2002; McVey, Davis, Tweed, & Shaw, 2004; McVey et al., 2007); effectiveness trials to demonstrate success in real-life settings (McVey et al., 2003a, 2003b); implementation research to break down common barriers and promote sustainability of best practices (McVey et al., 2010); grounded theory for program development (Ferrari, Tweed, Rummens, Skinner, & McVey, 2009); and translational research to align with existing organizational structures that are responsible for policy development (McVey et al., 2005; McVey et al., 2009) in an effort to build capacity across various health and mental health systems in the province. Coordination of prevention research and knowledge translation activities has been made possible by McVey's active membership in various coalitions and through her delivery of many face-to-face, community-based prevention workshops across the province of Ontario (McVey et al., 2005). These cross-disciplinary, academic/community, and

inter-ministerial collaborations have led to established partnerships that in turn have increased the sustainability of the prevention research.

Planet Health is an example of a school-based interdisciplinary intervention designed to reduce obesity among youth (Austin, Field, Wiecha, Peterson, & Gortmaker, 2005). Weight reduction was not explicitly stated as a behavioural goal during the program sessions. Instead, sessions focused on decreasing television viewing, decreasing consumption of high-fat foods, increasing fruit and vegetable intake, and increasing moderate and vigorous physical activity. Each intervention school received the Planet Health program of teacher training workshops, classroom lessons (16 core lessons per year over 2 years across different course topics), physical education materials, wellness sessions, and fitness funds. The implementation of the program across multiple classes was believed to have reduced the burden on any one teacher. The objectives were relevant to all students and did not single out those who were overweight. The findings of the study revealed that obesity prevalence among female students in the intervention schools declined from 23.6% to 20.3%, and increased in the control group. Obesity prevalence among male students decreased in both the control and intervention group. Moreover, in a 2-year follow up evaluation of the Planet Health intervention, Austin et al (2007) examined measures of extreme dieting behaviour at both the baseline and follow-up periods to assess whether the OB intervention could have produced unintended side effects. Overall, students in the intervention and control schools reported similarly low levels of extreme dieting behaviour at both baseline and follow-up measurements.

The **Annapolis Valley Project** is a Canadian school-wide project created in 1997 in Nova Scotia to enable children to make healthy choices about nutrition and physical activity on a daily basis (and develop healthy food and activity behaviours for life) (Canadian Diabetes Strategy, Health, March 2004). The school-wide initiatives included wellness fairs, a playground games handbook, increased availability of school gyms during and after school for non-competitive sport, resources for classroom teachers to weave into daily activity programs, low cost recess/lunch program for all students, increased availability of fruits and vegetables, and parent and student surveys to solicit ideals for future healthy food and physical activity program initiatives. In 2003, a large-scale study was conducted with students and parents comparing schools who had adopted the “healthy schools” approach to those who did not (Veugeliers & Fitzgerald, 2005). The Children’s Lifestyle and School Performance Study conducted with 5,200 grade 5 students along with their parents and school principals revealed that students from schools who adopted the recommendations for school-based healthy eating programs exhibited significantly lower rates of overweight and obesity, had healthier diets, and reported more physical activities than students from schools without such programs.

The **Child and Adolescent Trial for Cardiovascular Health (CATCH)** was the largest randomized controlled field trial designed to evaluate the effects of theoretically derived multicomponent (individual-, school-, and family-based) interventions on risk factors for cardiovascular disease in elementary school children (see Hayman, McCrindle et al., 2004 for a review). Included in this multisite trial were 96 schools (56 intervention, 40 control) from 4 geographic areas (California, Louisiana, Minnesota, and Texas). The sample at baseline included third-grade students from ethnically diverse backgrounds. The CATCH intervention consisted of school-based (classroom curricula, foodservice, PE) and family-based (home curricula) components. Primary end points/outcomes at the school level were changes in the fat content of food service lunch offerings and the amount of moderate-to-vigorous physical activity (MVPA) in PE. At the individual-student level, serum cholesterol change was the primary end point; psychosocial factors, recall measures of eating and physical activity behaviors, and other physiological measures were secondary endpoints. Three-year outcomes indicated that CATCH interventions were able to modify the fat content of school lunches, increase MVPA, and improve eating and physical activity behaviours. No significant between-group (intervention–control school) differences were observed in any of the physiological indicators of CVD risk, including serum cholesterol, blood pressure, and BMI.

Linking research, practice and policy at the national level: A Canadian perspective.

Dr. Bryn Austin argues that calls to action for better integration of OB and ED prevention efforts need to extend to health researchers and national and international health policy-makers and funders alike (Austin, 2007; 2011; McLaren & Piran, 2011). In an effort to translate knowledge into action and to foster interdisciplinary partnerships and linkages between researchers, practitioners and policy makers across the fields of ED and OB, McVey and colleagues from Canada hosted two national knowledge exchange events. The first was a CIHR-funded symposium (INMD, INMH, and IPPH) held in 2007 in Calgary entitled Obesity and Eating Disorders: Seeking Common Ground to Promote Health with Drs. McVey, Adair, McLaren, de Groot, Plotnikof and Gray-Donaldson) (see Adair et al., 2007; McVey et al., 2008). The second was an international symposium held in Toronto in 2008 entitled Prevention Eating-Related Disorders: Linking Collaborative Research, Advocacy, and Policy Change. This event was hosted by the Community Health Systems Resource Group at SickKids with Drs. McVey, Levine, Piran and Ferguson (see McVey, Levine, Piran, & Ferguson, 2011; www.chsrgevents.ca). These knowledge exchange events, collectively, have since evolved into an Ontario-Alberta collaborative implementation program of research currently underway (McVey, Walker, Beyers, Simkins, Russell-Mayhew, Scythes, Cowie-Bonne, Westland et al., 2010).

This interdisciplinary team of researchers and knowledge users span the disciplines of Psychology, Public Health, Sociology, Social Work, Education, Adolescent Medicine, Nutrition, and Mental Health. The team partnered to develop, implement, and evaluate a professional development model entitled **LENS (Leveraging Equitable Non-Stigmatizing health promotion delivery)**. As a first step in this program of research, professional development activities have centered around the attitudes and practice skills of health promoters and their impact on the delivery of evidence-informed interventions. The driving force behind this approach stems from the research literature which states that social attitudes about the causes of obesity (individual responsibility vs. social and economic factors) and perceptions of those afflicted (personal biases about overweight or obese individuals) can lead to suboptimal attempts at prevention (Brownell et al., 2009). Weight biases among health professionals are equal to or exceed those in the general population (e.g. O'Brien et al., 2007; Schwartz et al., 2003) where rates of weight discrimination already surpass rates of racial discrimination and discrimination based on sexuality (Latner et al., 2008; Puhl et al., 2008). Weight bias no doubt colours the lens through which health promoters view the problem of obesity or seek effective solutions (Brownell et al., 2009). The focus on weight alone, in the absence of consideration of the broader social and economic issues that influence people's lives, not only has the potential to trigger stigma but it also discounts aspects of the obesogenic environment that is full of influences that lead individuals to engage in health-damaging behaviours (Gortmaker et al., 2011). Regrettably, there is tension between empowering individuals to manage their weight through diet and exercise and blaming them for failure to do so (Adler & Stewart, 2009). Being on the receiving end of weight bias triggers anxiety, depression, low self-esteem, body dissatisfaction and suicidal thoughts among children and youth (Muening, 2008; Neumark-Sztainer et al., 2002; Puhl & Latner, 2007). These mental health challenges, in turn, undermine a person's ability to uptake and implement health promoting behaviours. Children and youth are not likely to be spared the negative consequences of prejudice without changes to the larger societal factors that reinforce weight stigma, key among those are the attitudes of health promoters (Brownell et al., 2009; MacLean et al., 2009).

The focus of the LENS professional development training is threefold: (a) weight bias awareness (Puhl & Heuer, 2010), (b) teaching a balanced approach to healthy eating and active living, and (c) promoting mental health/resiliency building skills. Important research findings from the weight science literature are also translated to health promoters. For example, a growing trans-disciplinary movement called Health-at-Every-Size (HAES) challenges the value of promoting weight loss and dieting behaviour and argues for a shift in focus to weight-neutral outcomes. HAES achieves positive health outcomes, in terms of physiological and psychosocial measures, more successfully than weight loss recommendations and without the contraindications associated with a weight focus (see Bacon & Aphramor, 2011 for a review). This shift in paradigm from weight loss to a weight neutral focus has important implications for the prevention of obesity.

Canadian-based trials of the HAES model have been initiated and are deserving of more in-depth future investigation (Provencher et al., 2007; 2009; Gagnon-Girouard et al., 2010).

The overarching goal of the Ontario-based LENS professional development research is to assist health promoters gain a deeper understanding of the complexities of obesity including an understanding of the association between social determinants of health and health outcomes, and how to adopt a broader more comprehensive understanding to prevention. The decision to start with public health professionals as knowledge users is in recognition of their role as knowledge disseminators to the general public. They are best poised to empower and build psychosocial resilience among individuals and communities. Specifically, the intervention is designed to (a) raise awareness about the negative impact of weight bias and environmental factors on the uptake of health promoting behaviours; (b) foster reflective practice about how personal attitudes about food, weight, mental health influence the delivery of health promotion; (c) strategize about ways to refine health promotion messaging to avoid the triggering of weight preoccupation; and (d) mentor skill development in mental health promotion and resiliency building to encourage a more comprehensive strategy to help prevent obesity (McVey et al., 2010).

The participatory design of the LENS implementation research links key knowledge users (such as decision-makers and practitioners) with academic researchers together in a dissemination process. Our interdisciplinary research team is exploring ways to build strong partnerships across sectors and disciplines as we roll out the different phases of our implementation research (Jacobson et al., 2003). With leadership from Dr. Jenny Godley from the University of Calgary, a future research goal is to identify and transfer knowledge about the active ingredients of effective partnerships that facilitate the roll out of evidence-based prevention practice in the area of obesity. This network research will furthermore facilitate translating this model to other provinces. Of note, the inter-disciplinary and cross sector team approach used in the LENS project can go a long way in helping to prevent a myriad of health and mental health issues facing our Canadian children and youth e.g., bullying, mood and anxiety problems, weight-related issues - simply by paying attention to the well documented risk and protective factors that underlie so many risky behaviours (e.g., connectedness) (see Smith et al., 2009 for report on BC Adolescent Health Survey).

Additional professional development research underway.

- Similar professional development research has been initiated with school-based teachers in Australia (Yager, 2010). This research is exploring optimal ways to train pre-service and practicing teachers to minimize the transmission of weight bias in their daily teaching about healthy weights and nutrition (Yager & O’Dea, 2010).
- In their research, Drs. Godley and Russell Mayhew (2010) are examining attitudes towards interdisciplinary practice among health practitioners who work in obesity in recognition of the fact that professionals need to draw expertise from across different health science disciplines to “get the job done”. Previously, Mayhew-Russell et al. (2007) included adult roles models such as parents and teachers in their school-based wellness intervention and found this to be advantageous over and above the student-only arm of the intervention.
- Dr. Mary Forhan has initiated inter-disciplinary dialogue among a diverse group of researchers, practitioners, industries and decision makers who work in the treatment of OB with the goal of identifying gaps in rehabilitation practice knowledge that have implications for the care of obese individuals (Forhan et al., 2010).
- Drs. McVey and Gusella teamed up with AboutKidsHealth at SickKids to develop and evaluate an interactive online prevention training curriculum for teachers and public health professionals entitled **The Student Body: Promoting Health At Every Size**. A controlled evaluation of the intervention, conducted in both Ontario and Nova Scotia, revealed that the online program was successful in shifting the eating attitudes of the adult participants themselves in favour of the goal of the intervention, as well as improving their overall body satisfaction (McVey, Gusella, Tweed, & Ferrari, 2009).

- Ferrari is conducting qualitative research with health care professionals and researchers from across Canada who work in the fields of OB and ED to glean insight about the influence of their personal attitudes about food, weight and shape on their daily practice (Ferrari, 2011).
- Important knowledge translation activities are underway with physicians via the **TARGet Kids** research initiative co-led by Dr. Catherine Birken at SickKids. This consists of a large network of collaborating child health researchers and practitioners in the Greater Toronto Area (GTA) including: the Paediatric Outcomes Research Team (PORT, Hospital for Sick Children), and primary care providers from the Section of Community Paediatrics, and the Department of Family and Community Medicine, Faculty of Medicine at the University of Toronto. Under the mandate of “health research for every child”, this network is collecting longitudinal medical evidence on common nutrition and health problems affecting urban Canadian children. Unique to TARGet Kids! is the concept and capacity to embed research within primary care practice, providing a large, heterogeneous sample and providing opportunity for children from diverse socioeconomic and cultural backgrounds to participate in health research.
- Research and mentoring of medical residents is underway at The Hospital for Sick Children under the leadership of Dr. Elizabeth Ford-Jones. Blending medicine with public health, Dr. Ford-Jones is training new generations of medical trainees on innovative models of medicine that expose them to the real environments that children and youth live in. This Social Paediatrics model of care embeds social determinants of health directly into daily practice, and has implications for the prevention of obesity and other weight-related problems.
- Lastly, this October, 2011 marked the official launch of the Strategic Training Initiative for the Prevention of Eating Disorders: A Public Health Incubator (STRIPED) based at the Harvard School of Public Health and Children’s Hospital Boston under the leadership of Dr. Bryn Austin. This initiative is designed to bring eating disorders prevention into the mainstream of public health and preventive medicine graduate education www.hsph.harvard.edu/striped

Within Canada, efforts have been made at the policy level to integrate OB and ED prevention by way of:

1. The **Quebec Charter for a Healthy and Diverse Body Image** (Charte québécoise pour une image corporelle saine et diversifiée) is part of the Government of Quebec’s innovative Action Plan to integrate (1) la prévention des problèmes reliés au poids (prevention of weight related disorders) with (2) l’égalité entre les hommes et les femmes (promoting equality between men and women) (see Baril, Paquette, Gendreau, 2011 for a review). The working group consisted of representatives from the fashion and body image industries. Research led by Baril et al. is being conducted to examine to what extent do industry actors accept their share of responsibility for the risk represented by excessive preoccupation with weight?
2. The first **Canadian Summit on Weight Bias and Discrimination** (2011) coordinated by Dr. Mary Forhan from McMaster University with the Canadian Obesity Network (CON) in partnership with PrevNet (a Canadian national bullying prevention initiative co-led by Drs. Deb Pepler and Wendy Craig). As quoted by Dr. Arya M. Sharma, scientific director of CON- “The bias against obese people feeds widespread discriminatory behaviours in health care settings, the workplace, schools, media and more. It’s as serious as racism, and it is just as common.” The summit was instrumental in fostering dialogue among researchers and practitioners about ways to integrate our prevention approaches.
3. A provincial strategy and briefing report developed by the province of British Columbia on **Disordered eating and obesity prevention: Working together to promote the health of British Columbians (2011)**, under the leadership of Dr. Connie Coniglio from BC Children’s Hospital.

Theoretical contributions by Canadian researchers to consider during our meeting discussions.

1. Dr. Sarah Kirk from Dalhousie University in Nova Scotia who co-authored the article entitled “Moving government policies beyond a focus on individual lifestyle: some insights from complexity and critical theories” (Alvaro et al., 2010). Dr. Kirk’s program of research explores the role of the obesogenic environment such as the cultural, social, and geographical features of our surroundings that promote obesity (Kirk et al., 2009).
2. Dr. Diane Finegood, from Simon Fraser University in British Columbia, is involved in modeling the determinants of obesity. Initially known in the academic community for her unique use of mathematical modeling to understand the pathogenesis of both type 1 and type 2 diabetes, Dr. Finegood is now applying a complex systems lens to find novel solutions to the obesity epidemic. Her group, the Chronic Disease Systems Modeling Lab uses both qualitative and quantitative data analysis, conceptual, mathematical and computer models to suggest innovative solutions for improving health and preventing chronic disease (Finegood et al., 2008; 2010; 2011).
3. Dr. Lynne MacLean and Dr. Nancy Edwards from the University of Ottawa are co-authors on the published article entitled, Unpacking vertical and horizontal integration: Childhood overweight/obesity programs and planning: A Canadian perspective (MacLean et al., 2010). Their work focuses on multiple intervention research programs in community health. Likewise, they have published work on obesity, stigma, and public health planning (MacLean et al., 2009).
4. Dr. Lindsay McLaren from the University of Calgary is conducting research on the social determinants of weight and health and their implications for a public health approach to prevention (McLaren et al, 2011). Together with Dr. Penny Hawe, she has also examined ecological perspectives in health research (McLaren & Hawe, 2005). Dr. McLaren has written on the association between socioeconomic status and obesity (McLaren, 2007). Her unique contributions to this literature are timely given recent publications of empirically- based studies conducted with Canadian children and youth that link sociodemographic determinants (such as lower socioeconomic status) with body weight (Austin, Haines, & Veugelers, 2009) and cardiovascular risk factors and health behaviours (Lord, McCrindle et al., 2011).
5. Dr. Natalie Beausoleil from Memorial University in Newfoundland, the lead author of the published article entitled “Fat panic in Canadian public health policy: Obesity as different and unhealthy” (Beausoleil & Ward, 2010), brings a feminist lens and other critical approaches to our understanding of obesity. Her research interests include the social production of gender, body, health and illness through popular, medical and scientific discourses. As part of her extensive writings, Dr. Beausoleil raises important questions for researchers, practitioners and policy makers about how to prevent disordered eating in the context of the current obesity panic (Beausoleil, 2009).
6. Dr. Niva Piran from the University of Toronto offers a feminist perspective on risk factor research and on the prevention of eating disorders (Piran, 2010). Dr. Piran’s (1999, 2001a, 2001b) decade-long work within a co-educational, competitive residential ballet school lead to Piran’s (2001a) critical theory of body weight and shape preoccupation, entitled the Developmental Theory of Embodiment. Extensive focus groups conducted with students explored gender- and age- cohesive group factors in the school environment that students found to adversely affect their body experiences at the school. A hierarchical thematic analysis of focus groups *content* led to the emergence of three main content categories of adverse social experiences: ‘*violation of body ownership*’ (physical domain), ‘*internalization of constraining social labels*’ (mental or social construction domain), and ‘*exposure to prejudicial treatment*’ (social power domain) (Piran, 2001). This innovative three pathway model, the Adverse Social Experiences Model (ASEM) includes a broader range of social experiences typically addressed in existing social models of eating disorders (Piran, 2001; Piran & Cormier, 2005; Piran & Thompson, 2008). Some of these writings can be found in an upcoming publication of a co-edited volume by Drs. McVey, Levine, Piran, & Ferguson (2011) entitled Prevention of eating and weight-related disorders: Linking collaborative research, advocacy and policy change.

Some key reports in the grey literature on frameworks that integrate OB and ED efforts.

1. Mental Health, Wellness, and Childhood Overweight/Obesity: A Complex Relationship, 2011 (Literature review by Dr. Shelly-Russell- Mayhew for Public Health Agency of Canada).
2. Obesity and Eating Disorders: Seeking Common Ground to Promote Health. Discussion Document (Adair et al., 2007) and Final Report of Proceedings (McVey et al., 2008) (Contact: Dr. G McVey).
3. Ontario business case report on the Dangers of Disordered Eating (outcome of 2008 CHSRG conference (Contact: Dr. McVey)
4. The Quebec Charter for a Healthy and Diverse Body Image (2010) (Contact: Dr. Marie Claude Paquette)
5. Disordered Eating and Obesity: Working together to promote the health of British Columbians (2011) (Contact: Dr. Conniglio)
6. National Eating Disorder Information Centre – Biennial conferences on prevention research and work (Contact: Meryll Bear).
7. NutriSTEP: Nutrition Screening Tool for Every Pre-Schooler (Contact: Joanne Beyers).

Some relevant policy documents to help inform our practice and research

1. Open Minds, Healthy Minds: Ontario's comprehensive mental health and addictions strategy
2. Curbing Childhood Obesity: Towards a measurement and monitoring strategy- Public Health Agency of Canada.
3. Growing up healthy: Discussion framework for a childhood obesity prevention strategy, Nova Scotia (July, 2011).
4. Ontario Ministry of Education's Revised Health and Physical Education. Mental health promotion weaved into the healthy living curriculum
5. Ophea: linking education and public health on ways to foster healthy schools and healthy communities
6. 2008 BC Adolescent Health Survey – McCreary Centre Society (Smith et al, 2009)

Additional Initiatives underway

1. *Stepping It Up: Moving the Focus from Health Care in Canada to a Healthier Canada*, Health Council of Canada, December 2010
2. *Our Health Our Future: A National Dialogue on Healthy Weights*. Federal, provincial and territorial framework for action to promote healthy weights by the Public Health Agency of Canada.
3. Canadian Community Health Survey (CCHS) 2015- Statistics Canada
4. Ontario Chronic Disease Prevention Alliance (OCDPA) launched a campaign called *Make Ontario the Healthiest Province in Canada*. Entitled *Ontario not as healthy as other provinces across Canada*, it includes a video news release that tells the healthiest province story.

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