



Ontario Chronic Disease Prevention Alliance

Evidence-Informed Messages:
Active Living and Physical Activity



For more information, please visit: www.ocdpa.on.ca

Context

The Ontario Chronic Disease Prevention Alliance (OCDPA), in consultation with external experts, has developed messages for use by individuals, groups and organizations to focus attention and promote collective action on chronic disease prevention issues and to improve the health of Ontarians. The evidence-informed messages address the following chronic disease risk factors:

- High-Risk Alcohol Consumption
- Physical Inactivity
- Poor Mental Health
- Tobacco Use/Exposure
- Unhealthy Eating

The messages use a “socio-environmental approach” (Birser, 1998) to chronic disease prevention and are framed around the central themes of “availability and accessibility”. Each of the evidence-supported messages relate to actions that can be taken as part of a comprehensive approach to support healthier living conditions and to make healthy choices the easy choice for Ontarians.

It is important to note that the messages represent a comprehensive package, all of which need to be pursued over time in order to achieve a comprehensive approach to health promotion and chronic disease prevention. Partnership and shared responsibility across sectors are needed to influence sustainable system change. Different organizations might be involved in the various aspects of the promotion, use, and action of the messages which may not occur simultaneously. In order to maximize impact, all messages are necessary.

Benefits in Advancing Key Messages

Working in parallel to advance OCDPA's evidence-informed messages can result in:

- Focused attention and action on chronic disease prevention issues;
- Strategic alignment of policy, planning and practice to support chronic disease prevention efforts;
- A shift in policy and practice to an evidence-informed, multiple-risk factor, multiple-setting approach that strengthens the chronic disease prevention agenda;
- Increase impact of chronic disease prevention efforts; and
- A comprehensive, system-wide approach to chronic disease prevention.

The production of OCDPA's evidence-informed message documents was made possible through in-kind contribution from the OCDPA membership and its stakeholders.

Physical Inactivity & Chronic Disease

Being physically active is important for overall health and well-being. According to Canada's Physical Activity Guide to Healthy Active Living, 60 minutes of physical activity everyday or 30 minutes of moderate activities for four days a week is needed for a person to stay healthy and to improve health. The benefits of regular activity include: better health; improved fitness; better posture and balance; better self-esteem; weight control; stronger muscles bones; feeling more energetic; feeling more relaxed and experiencing less stress (Public Health Agency of Canada, 1998).

Participating in various types of physical activities (including endurance, strength and flexibility) is important for healthy living (Public Health Agency of Canada, 1998). Endurance activities are continuous activities for your heart, lungs and circulatory system; strength activities are activities against resistance to strengthen muscles and bones and improve posture; and flexibility activities are gentle reaching, bending and stretching activities to keep your muscles relaxed and joints mobile.

Health Related Consequences

Lack of physical activity increases the risk of developing several chronic diseases. In Canada, it is estimated that physical inactivity attributes to 35.8% of coronary artery disease; 19.9% of stroke; 19.9% of hypertension; 19.9% of colon cancer; 11.0% of breast cancer; 19.9% of type 2 diabetes; and 27.1% osteoporosis (Katzmarzyk, et al., 2000).

Prevalence

Physical inactivity is widespread in our population. Recent estimates indicate that 53.5% of Canadian adults are physically inactive while 14.8% are obese (Statistics Canada, 2002). In Canada, 87% of children and youth are not meeting the guidelines set forth in Canada's Guide for Physical Activity (Active Healthy Kids Canada, 2009). As children reach adolescence, their activity levels begin to drop dramatically and girls are less active than boys. Moreover, low socio-economic status of the family is associated with lower physical activity levels.

In Ontario, 48% of adults (aged 20 and over) and 27% of youth (aged 12-19) were physically inactive in 2005 (Statistics Canada, 2005). In 2004, 13.4% of Ontario children (aged 6-11) accumulated less than 7 hours a week of physical activity, while 34.4% of Ontario youth (aged 12-17) accumulated 20-29 hours of sedentary activity a week, and 15.3% of Ontario youth accumulated 30-39 hours of sedentary activity a week (Statistics Canada, 2004). In 2003, 26.1% of Ontarians reported being physically active; 23.9% reported being moderately physically active; and 47.3% reported being physically inactive (Ontario Ministry of Health and Long-term Care, 2004).

Cost

Physical inactivity costs an estimated \$5.3 billion or 2.6% of total health care costs in Canada in 2001 (Katzmarzyk & Janssen, 2004). It is estimated that 21,000 premature deaths were related to physical inactivity in Canada in 1995. A 10% reduction in the prevalence of physical inactivity can potentially reduce \$150 million annually in direct health care costs.

Reason for Action

Studies suggest that early life experiences, including achieving adequate activity levels, have an impact on children's health later in life (Strauss, 1999). Several notable factors contribute to physical inactivity in Canadian children. For example, Canadian children and youth are engaged in too much TV viewing and screen time activities; even preschool aged children are getting high amounts of screen time (Active Healthy Kids Canada, 2009). Canadian children are not as engaged in sports as they used to - participation in sport has dropped since the early 1990's. In addition, increased time away from home (e.g., school, day care, after-school programs and organized sport), as well as concerns with safety, have taken time away from active play. Therefore, it is important to address physical inactivity early in life.

In addition, physical inactivity and poor eating habits along with many other factors contribute to the rising rate of overweight and obesity in Ontario. In general, adults who are less active are more likely to be obese while active individuals are more likely to have healthy weight (Canadian Fitness and Lifestyle Research Institute, 2007). Annually, obesity costs Ontario \$1.6 billion including \$647 million in direct costs - such as hospital care, pharmaceuticals and physician services - and \$905 million in indirect costs - such as lost earnings due to illnesses and premature deaths associated with obesity (Katzmarzyk & Janssen, 2001).

OCDPA's Messages to Address Physical Inactivity

The OCDPA encourages the dissemination, promotion, integration and use of OCDPA's Messages to ensure consistent communication that addresses physical inactivity. Depending on the purpose, please integrate and/or use the information provided below:

1. For Actions at the Individual Level:

Provide individuals a resource to help make wise choices about physical activity:

- Follow the appropriate Canada's Physical Activity Guide, available at:
www.phac-aspc.gc.ca/pau-uap/fitness/downloads.html

2. To Influence System Level Change:

Foster action that supports and encourages active living and physical activity:

- Make active living a priority through the funding and promotion of walking clubs, physical activity initiatives with a focus on youth engagement, programs that use active transportation, and corporate challenges as part of a comprehensive approach to workplace health that includes attention to voluntary health practices, occupational health and safety, and organizational culture. Encourage community agencies and businesses to develop policies that support active living, finance, and actively implement these initiatives.
- Support and advance community planning and funding that ensures communities are safe and supportive of healthy active living by promoting mixed use of land, green spaces, provision and upkeep of safe walking routes.
- Invest in adequate facilities and programs to promote and ensure access to active living and physical activity (i.e. recreation centres, community trails, swimming facilities, playgrounds, bike paths and school facilities).
- Improve access to recreational activities and quality physical education programs for low-income groups and priority populations.

Evidence Supporting OCDPA's Messages

1. Individual Level

Message: Follow the appropriate Canada's Physical Activity Guide.

Several researchers have provided summaries of evidence for the Canada's Physical Activity Guide (Janssen, 2007; Sharratt & Hearst, 2007; Tremblay et al., 2007). Current literature suggests that following the current physical activity guidelines could prevent approximately one third of deaths related to coronary heart disease, one quarter of deaths related to stroke and osteoporosis, 20% of deaths related to colon cancer, hypertension, and type 2 diabetes, and 14% of deaths related to breast cancer (Warburton et al., 2007).

2. System Level

Message: Make active living a priority through the funding and promotion of walking clubs, physical activity initiatives with a focus on youth engagement, programs that use active transportation, and corporate challenges as part of a comprehensive approach to workplace health that includes attention to voluntary health practices, occupational health and safety, and organizational culture. Encourage community agencies and businesses to develop policies that support active living, finance, and actively implement these initiatives.

Informational interventions, behavioral and social interventions, and environmental and policy interventions can effectively increase physical activity levels (Kahn et al., 2002). Research suggests that physical activity promotion strategies should be tailored to enhance people's confidence to engage in physical activity, motivate people to be more active, educate people on physical activity's health benefits and reduce barriers, as well as target different factors for different population groups (Pan et al., 2009).

In addition, physical activity promotion should incorporate cultural shift attempts to support individual health-promotion efforts (Zimmerman, 2009). It is important to make active living a priority through the development of policies, as well as funding and promotion of programming which supports active living and physical activity.

Message: Support and advance community planning and funding that ensures communities are safe and supportive of healthy active living by promoting mixed use of land, green spaces, provision and upkeep of safe walking routes.

Neighbourhood characteristics such as safety and walkability influence physical activity levels. Studies show that access to a safe park is positively associated with regular physical activity and negatively associated with inactivity for adolescents in urban areas (Babey et al., 2008), while neighbourhood walkability is positively associated with active transport and physical activity levels (Frank et al., 2006; Owen et al., 2007; Van Dyck et al., 2009). Living in areas with walkable green spaces is associated with lower body mass index in children (Bell et al., 2008) and positively associated with the longevity of urban senior citizens (Takano et al., 2002). Studies also show that residents from communities with higher density, greater connectivity, and more land use mix have higher rates of walking/cycling for utilitarian purposes than low-density, poorly connected, and single land use neighbourhoods (Saelens et al., 2003). Therefore, it is important to support and advance community planning and funding that ensures communities are safe and walkable by promoting mixed use of land, green spaces, provision and upkeep of safe walking routes.

Message: Invest in adequate facilities and programs to promote and ensure access to active living and physical activity (i.e. recreation centres, community trails, swimming facilities, playgrounds, bike paths and school facilities).

Availability of and accessibility to facilities and programs are important determinants of physical activity (Craig et al., 2001). Barriers for adults and children to become more physically active include skill and ability, cost, information, convenience, program availability, social support, safety and maintenance of facilities (Craig et al., 2001).

Studies show that increasing density of neighbourhood recreational destinations is associated with the use of facilities and participation in sufficient levels of physical activity (McCormack, Giles-Corti & Bulsara, 2007). The perception of greater park availability, quality, and use by friends is associated with greater likelihood of park use (Ries et al., 2009). Moreover, accessibility of facilities and programs (i.e. recreation centres, community trails, swimming facilities, playgrounds, bike paths and school facilities) are important predictors of physical activity (Dunton et al., 2003; Cohen et al., 2006; Evenson et al., 2006; Gordon-Larsen et al., 2006; Norman et al., 2006; Romero 2005; Scott et al., 2007; Timperio et al., 2004; Troped et al., 2001). Raising the profile of existing facilities and programs may help increase physical activity (Scott et al., 2007). Therefore, it is important to invest in adequate facilities and programs to promote and ensure access to active living and physical activity.

Message: Improve access to recreational activities and quality physical education programs for low-income groups and priority populations.

Barriers which low-income families and priority populations face in accessing recreation programs include costly program fees and equipment, distant program locations, lack of transportation, inflexible program structures and schedules, lack of program and subsidy policies awareness, experience with discrimination, and attitudes from staff and other participants (Hanvey, 2001; Ross & Roberts, 1999; Cameron et al., 2007; Determinants of Health Working Group, 2000). Studies show that opportunities for physical activity are relatively less available in communities with lower income and larger proportions of racial/ethnic minority populations (Chaloupka & Powell, 2009). Moreover, children from families of low socio-economic status more frequently indicate the need for an increase in accessible, affordable, safe physical activity opportunities in quality facilities than children from families of high social economic status (Tremblay et al., 2005). Therefore, it is important to improve access to recreational activities and quality physical education programs for low-income groups and priority populations.

References:

- Active Healthy Kids Canada. (2009). *Canada's Report Card on Physical Activity for Children for 2009*. Retrieved April 21, 2010 from http://www.activehealthykids.ca/ecms.ashx/ReportCard2009/AHKC-Longform_WEB_FINAL.pdf
- Babey SH, Hastert TA, Yu H, and Brown ER. (2008). Physical activity among adolescents. When do parks matter? *American Journal of Preventative Medicine*, 34(4),345-8.
- Brise, E. (1998). The role of health promotion within an integrated health system. *Leadership in Health Services*, 12(1), 1-5.
- Bell JF, Wilson JS, and Liu GC. (2008). Neighborhood greenness and 2-year changes in body mass index of children and youth. *American Journal of Preventative Medicine*, 35(6),547-53.
- Cameron C, Wolfe R, and Craig CL. (2007). *Physical activity and sport: Encouraging children to be active*. Ottawa, ON: Canadian Fitness and Lifestyle Research Institute
- Canadian Fitness and Lifestyle Research Institute. (2007). Physical activity among Canadian workers: Trends 2001-2006. Ottawa ,ON.
- Chaloupka FJ, and Powell LM. (2009). Price, availability, and youth obesity: evidence from Bridging the Gap. *Preventing Chronic Disease*, 6(3):A93.
- Cohen DA, Ashwood JS, Scott MM, et al. (2006). Public parks and physical activity among adolescent girls. *Paediatrics*. 118(5):e1381–e1389.
- Craig CL, Cameron C, Russell SJ, and Beaulieu A. (2001). Increasing physical activity: Building a supportive recreation and sport system. Ottawa, ON: Canadian Fitness and Lifestyle Research Institute.
- Determinants of Health Working Group & the Child and Youth Health Network of Eastern Ontario, (2000). The challenges our children face: Are we building healthy communities? Is there room for improvement? A report card on child poverty in Renfrew, 1-17.
- Dunton GF, Jamner MS, and Cooper DM. (2003). Assessing the perceived environment among minimally active adolescent girls: validity and relations to physical activity outcomes. *American Journal of Health Promotion*. 18(1), 70–73.
- Evenson KR, Birnbaum AS, Bedimo-Rung AL, et al. (2006). Girls' perception of physical environmental factors and transportation access: reliability and association with physical activity and active transport to school. *International Journal of Behavioural Nutrition and Physical Activity*. 3(28).
- Frank LD, Sallis JF, Conway TL,; Chapman JE, Saelens BE, Bachman W. (2006). Many pathways from land use to health: Associations between neighbourhood walkability and active transportation, body mass index, and air quality. *Journal of the American Planning Association*, 72 (1), 75–87.
- Gordon-Larsen P, Nelson MC, Page P, and Popkin BM. (2006). Inequality in the built environment underlies key health disparities in physical activity and obesity. *Paediatrics*, 117(2), 417–424.
- Hanvey, L. (2001). Access to recreation programs in Canada. *Perception*, 24, (4).

- Janssen I. (2007). Physical activity guidelines for children and youth. *Canadian Journal of Public Health*, 98 Suppl 2:S109-21.
- Kahn EB, Ramsey L, Brownson R, et al. (2002). The effectiveness of interventions to increase physical activity: A systematic review. *American Journal of Preventative Medicine*, 22,73-107.
- Katzmarzyk PT, Gledhill N, and Shepard RJ. (2000). The economic burden of physical inactivity in Canada. *Canadian Medical Association Journal*, 163(11), 1435-40.
- Katzmarzyk PT, and Janssen I. (2001). The economic costs associated with physical inactivity and obesity in Ontario. Submitted to the Leisure Information Network. Kingston, Ontario.
- Katzmarzyk PT, and Janssen I. (2004). The economic costs associated with physical inactivity and obesity in Canada: an update. *Canadian Journal of Applied Physiology*, 29(a), 90-115.
- McCormack GR, Giles-Corti B, and Bulsara M. (2007). Correlates of using neighbourhood recreational destinations in physically active respondents. *Journal of Physical Activity and Health*, 4(1),39-53.
- Norman GJ, Nutter SK, Ryan S, Sallis JF, Calfas KJ, and Patrick K. (2006). Community design and access to recreational facilities as correlates of adolescent physical activity and body-mass index. *Journal of Physical Activity and Health*, 3(1), s118-s128.
- Ontario Ministry of Health and Long-term Care. (2004). *Ontario's Health System Performance Report*. Retrieved April 21, 2010 from http://www.health.gov.on.ca/english/public/pub/ministry_reports/pirc_04/pirc_04.pdf
- Owen N, Cerin E, Eva L, et al. (2007). Neighbourhood walkability and the walking behaviour of Australian adults. *American Journal of Preventative Medicine*, 33(5), 387-95
- Pan SY, Cameron C, DesMeules M, Morrison H, Craig CL, and Jiang XH. (2009). Individual, social, environmental, and physical environmental correlates with physical activity among Canadians: a cross-sectional study. *BioMed Central Public Health*, 16(9), 21.
- Parks and Recreation Ontario. (2007). Investing in healthy Ontarians through recreation and parks infrastructure. Retrieved April 21, 2010 from http://www.welland.ca/Hottopics/Infrastructure_Report_Jul07.pdf
- Public Health Agency of Canada. (1998). Canada's physical activity guide to healthy active living. Retrieved April 21, 2010 from <http://www.phac-aspc.gc.ca/hp-ps/hl-mvs/pag-gap/index-eng.php>
- Ries AV, Voorhees CC, Roche KM, Gittelsohn J, Yan AF, and Astone NM. (2009). A quantitative examination of park characteristics related to park use and physical activity among urban youth. *Journal of Adolescent Health*, 45(3), S64-70.
- Romero AJ. (2005). Low-income neighbourhood barriers and resources for adolescents' physical activity. *Journal of Adolescent Health*, 36(3), 253-9.
- Ross D.P, and Roberts P. (1999). Income and child well-being: A new perspective on the poverty debate, Canadian Council on Social Development. pp. 35.
- Saelens BE, Sallis JF, and Frank LD. (2003). Environmental correlates of walking and cycling: findings from the transportation, urban design, and planning literatures. *Annals of Behavioral Medicine*, 25(2), 80-91.

- Scott MM, Evenson KR, Cohen DA, Cox CE. (2007). Comparing perceived and objectively measured access to recreational facilities as predictors of physical activity in adolescent girls. *Journal of Urban Health*, 84(3):346-59.
- Sharratt MT, Hearst WE. (2007). Canada's physical activity guides: background, process, and development. *Canadian Journal of Public Health*, 98 (2), S9-15.
- Statistics Canada. (2002) Health Indicators, May 2002. catalogue No. 82-221-XIE
- Statistics Canada. (2004). Canadian Community Health Survey.
- Statistics Canada. (2005). Canadian Community Health Survey.
- Strauss, R. (1999). Childhood obesity. *Current Problems in Pediatrics*, 29(1), 1-29.
- Takano T, Nakamura K, and Watanabe M. (2002). Urban residential environments and senior citizens' longevity in megacity areas: the importance of walkable green spaces. *Journal Epidemiology Community Health*, 56(12), 913-8.
- Timperio A, Crawford D, Telford A, and Salmon J. (2004). Perceptions about the local neighbourhood and walking and cycling among children. *Preventative Medicine*, 38(1), 39-47.
- Tremblay MS, Shephard RJ, and Brawley LR. Research that informs Canada's physical activity guides: an introduction. *Canadian Journal of Public Health*. 2007;98 Suppl 2:S1-8.
- Tremblay MS, Barnes JD, Copeland JL, and Esliger DW. (2005) Conquering childhood inactivity: Is the answer in the past? *Medicine and Science in Sports and Exercise*. 0195-9131/05/3703-1187-1194.
- Troped PJ, Saunders RP, Pate RR, Reininger B, Ureda JR, and Thompson SJ. (2001). Associations between self-reported and objective physical environmental factors and use of a community rail-trail. *Preventative Medicine*. 32(2):191-200.
- Van Dyck D, Cardon G, Deforche B, Sallis JF, Owen N, and De Bourdeaudhuij I. (2009) Neighborhood SES and walkability are related to physical activity behavior in Belgian adults. *Preventative Medicine*.
- Warburton DE, Katzmarzyk PT, Rhodes RE, and Shephard RJ. (2007). Evidence-informed physical activity guidelines for Canadian adults. *Canadian Journal of Public Health*. 98 Suppl 2:S16-68.
- Zimmerman FJ. (2009). Using behavioral economics to promote physical activity. *Preventative Medicine*. 49(4):289-91.