Tackling the Obesity Pandemic
A Call for Sedentary Behaviour Research

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ABSTRACT

An emerging threat to public health is seen in the dramatic rise in obesity status of Canadians, especially among young people. In addressing the possible factors responsible for these dramatic increases, this paper outlines the importance of understanding sedentariness as an important health behaviour, distinct from physical activity, and identifying the modifiable determinants of sedentary behaviours.

MeSH terms: Obesity; child; television; video games; exercise

Sedentary behaviour

The inconsistency of results could be attributed to a lack of accurate and robust measures of energy intake and energy expenditure. This may suggest that the rise in obesity may be partly influenced by a decrease in energy expenditure not measured by current instruments, such as reduced dependence on walking/cycling for transportation, increased use of labour-saving devices in the home and at work, and increased involvement in sedentary behaviours, such as television watching and video game playing. As such, sedentary behaviour should reflect more than the mere absence of activity alone (i.e., not physically active), but specific behaviours (see also computer usage, motorized transportation) of very low to low intensity and
having an approximate MET (multiple of the resting metabolic rate) value <2.0 (i.e., sitting or lying down) but >0.9 (sleeping).

The importance of studying the influence of sedentary behaviours on health is reflected in the following directives and policy statements. “Physical Activity Guides” provided by Health Canada recommend that children and youth increase their levels of physical activity at least 30 minutes per day, but also decrease time spent in specific sedentary activities such as television watching, playing computer games and surfing the internet by at least 30 minutes per day. Similarly, the American Academy of Pediatrics recommends limiting media time for children to less than 2 hours per day of quality programming, while children less than 2 years should be discouraged from any viewing time.

These recommendations reflect a growing concern about the total amount of TV/computer usage reported by children, youth and adults, as well as the impact these behaviours have on health. For example, Canadian data show that for the year 2002, the average amount of television watching was over 3 hours per day and increased relatively with age. Canadian youth are also highly involved in screen-based sedentary behaviours, and especially among boys and young men. Furthermore, it is estimated that 20 to 30% of Canadian children (11-15 year olds) are watching 4 or more hours of television per day, while large numbers of children are beginning to watch television at an earlier age and in greater amounts, and more Canadian children report playing video games (>4 hours/week) than children from other countries. In addition, using computers to access the Internet has increased dramatically among adults (from 1994 to 2000); however the greatest increases appear to be among youth (15 to 24 years of age), from 16.5% in 1994 to 84.5% for the year 2000.

Reducing sedentary behaviour
Support for the health-enhancing benefit of reducing sedentary behaviour comes from a growing body of research that links specific sedentary behaviours to health and physical activity. For example, it appears that reducing the time spent in behaviours involving screen-based entertainment and motorized transport may help, independent of physical activity, attenuate excessive weight gain and reduce the risk of developing cardiovascular disease and diabetes among children and adults.

Additionally, experimental studies by Epstein and colleagues showed that obese children (8 to 12 years old) who were reinforced only for being less sedentary (e.g., watching less television/video, playing less computer games) showed equal or better changes in weight or fitness compared to those who were reinforced only for being more physically active. Furthermore, obese children spent more time being physically active when sedentary behaviours were targeted for reduction, which helped improve weight control along with decreased energy intake. Other interventions (i.e., school/primary care setting) exclusively targeting reductions in sedentary behaviour (television viewing, video games) have also shown promising results in reducing adiposity levels and increasing physical activity among youth.

Call for sedentary behaviour research
With the understanding that behavioural interventions aimed at reducing sedentary leisure activities have been beneficial in reducing weight status and improving fitness and physical activity at the individual level, and that sedentary behaviours may be distinctly related to health, it is somewhat surprising that most behavioural research in exercise science continues to focus on what people are not doing (physical activity) rather than what they are doing (sedentary activities). An analogous process would be trying to understand smoking behaviour by looking at the determinants of non-smoking! In agreement with Owen and colleagues, we would argue that sedentary behaviour should be addressed as a problem in reducing adipsity levels and increasing physical activity among youth.

CONCLUSION
There is a strong case to consider sedentary behaviour as an important health behaviour that is distinct from physical activity. We urge greater research attention to what we commonly assume Canadians to be doing more of, i.e., engaging in increasing amounts of sedentary behaviour. Research into sedentary behaviour is at an early stage and we actually know very little about the nature of sedentary behaviour, its dimensions, determinants and relationships to important health outcomes. In particular,
Addressing sedentary behaviour is conceptually important because our theories and models, which are predominantly social cognitive (of physical activity) in nature, are possibly inadequate for understanding inactivity. It is empirically important because we have so little behavioural data about sedentariness. For example, what are Canadians doing, for how long, with whom, when and why? Finally, it is practically important because we may need to develop interventions that principally reduce sedentary behaviour rather than just target increasing physical activity. A complementary research focus on sedentary behaviour is now needed if we are to effectively tackle the pandemic of obesity among youth.

REFERENCES


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