

# Obesity and physical activity in children

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## Abstract

**Question** What advice should I give parents of overweight children about physical activity? How can we encourage these children to become more physically active?

**Answer** The Canadian Paediatrics Society 2002 position statement on healthy living for children and youth, which is currently being revised, recommends that physicians advise children and adolescents to increase the time they spend on physical activities by at least 30 minutes a day, with at least 10 minutes involving vigorous activities, and that goals should be reset to reach at least 90 minutes a day of total physical activity. The extent to which children and youth are physically active is influenced by a multitude of complex, interrelated factors. Addressing physical inactivity and its contribution to childhood obesity requires a comprehensive and holistic approach.

## Résumé

**Question** Quels conseils devrais-je donner aux parents d'enfants ayant un excès de poids au sujet de l'activité physique? Comment pouvons-nous encourager ces enfants à devenir plus actifs physiquement?

**Réponse** L'énoncé de position de la Société canadienne de pédiatrie de 2002 sur une vie saine pour les enfants et les jeunes, qui fait présentement l'objet de révisions, recommande que les médecins conseillent aux enfants et aux adolescents d'augmenter le temps consacré à des activités physiques d'au moins 30 minutes par jour, dont au moins 10 minutes consacrées à des activités vigoureuses. Ces objectifs devraient être réajustés de manière à atteindre au moins 90 minutes par jour de pleine activité physique. La mesure dans laquelle les enfants et les jeunes sont physiquement actifs est influencée par une multitude de facteurs complexes et reliés entre eux. Pour régler le problème de l'inactivité physique et de sa contribution à l'obésité infantile, il faut adopter une approche complète et holistique.

Obesity has become a leading public health concern, particularly for Canadian youth, for whom rates of obesity have tripled during the past 25 years.<sup>1</sup> Statistics Canada now estimates that 26% of our children and youth aged 2 to 17 years are overweight or obese,<sup>1</sup> as defined by a body mass index between the 85th and 95th percentile, or greater than 95th percentile, respectively.<sup>2</sup> Interventions aimed at improving diet, increasing physical activity, and decreasing sedentary behaviour form the foundation of childhood obesity prevention and management.

Current research suggests that physical inactivity is inversely correlated with the risk of obesity.<sup>3,4</sup> Intuitively one would then expect that increasing physical activity should result in a decrease in the prevalence of obesity. Multiple studies have tried to address this key issue but have not succeeded in demonstrating a significant effect of physical activity interventions on body mass index.<sup>5,6</sup> These negative results highlight some of the challenges of obesity research. First, lifestyle changes rarely occur in isolation. For instance, increased physical activity could be associated with increased caloric intake. Second, very little is known about compensatory behaviour—an

intervention increasing physical activity at school could be followed by a compensatory decrease in activity later in the day. Finally, adherence to physical activity interventions is often difficult to measure. Further innovative research is needed to better define the role of physical activity in maintaining a healthy body weight.<sup>5</sup>

Despite these challenges, the beneficial role of physical activity in delaying or preventing metabolic complications such as type 2 diabetes, cardiovascular disease, and hypertension is well recognized. Physical activity has also been shown to improve bone mineral density, increase school performance, and have a positive effect on mental health.<sup>3,5,7-9</sup>

The Canadian Paediatrics Society (CPS) released a position statement in 2002 providing recommendations on healthy living for children and youth.<sup>3</sup> Physicians and health care professionals are advised to encourage “children and adolescents to increase the time that they spend on physical activities and sports by at least 30 min/day, with at least 10 min involving vigorous activities.”<sup>3</sup> The CPS suggests that goals should be reset with eventual attainment of at least 90 minutes daily of total physical activity.<sup>3</sup> The CPS is currently revising this 2002

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position statement. It is quite likely that the new recommendation will be 60 minutes daily of total physical activity, which is a more realistic and obtainable goal.

A recent report from Active Healthy Kids Canada suggests that 87% of children and youth are not meeting Canada's physical activity guidelines of 90 minutes per day.<sup>7</sup> Given the known health benefits of physical activity, current levels of inactivity are of concern.

### Promoting physical activity

Traditional approaches to addressing physical inactivity have focused on individual awareness and behavioural change. However, it is becoming increasingly well recognized that one's social, physical, and cultural environments are strong determinants of the extent to which one is active.<sup>3,7,8,10</sup> In a recent survey of primary care physicians (family physicians and community pediatricians, 46% to 48% response rate), more than 70% of respondents identified the obesogenic environment (defined as a physical and social environment leading to lifestyles that encourage consumption of energy and discourage expenditure of energy) in which children live as a substantial barrier to pediatric obesity management.<sup>11</sup>

Family support has been positively linked to increased physical activity levels, and family-based obesity treatment programs are among the most effective for combating pediatric obesity.<sup>2,3,5,12</sup> For lifestyle interventions to be effective, parents must be encouraged to be positive role models for their children and to incorporate safe physical activities that the whole family can enjoy.<sup>4,7</sup>

The school system allows access to the largest proportion of Canadian children, and, as such, could play an important role in improving students' healthy behaviour. The American Academy of Pediatrics advocates that 30 minutes of recommended daily activity occur during the school day.<sup>4</sup> Several Canadian provinces have mandated daily physical activity in schools, defending the belief that school communities can provide a supportive environment for students to develop positive habits needed for a healthy, active lifestyle.<sup>7</sup>

**Box 1** offers suggestions on tackling barriers to physical activity. For more information and resources, visit [www.paguide.com](http://www.paguide.com) for Canada's Physical Activity Guides.

#### Box 1. Tackling barriers to physical activity

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Recommendations to overcome barriers to physical activity

- Recognize the problem. Measure height and weight, and plot body mass index on growth charts at each visit
- Ask children and their families about physical activity patterns. Encourage the whole family to become involved in daily activity
- Support progressive and well-defined steps. Limit sedentary behaviour
- Encourage adherence to daily physical activity programs in schools
- Support local community initiatives aimed at increasing activity
- Advocate for safer and more accessible communities that are more conducive to increased activity

### Friendly environment

In recent years, much attention has been paid to the ways in which communities can promote, or inhibit, physical activity. The *built*

environment has been defined as "the range of structural elements in a residential setting: housing, roads, walkways, density, transportation networks, shops, parks, and public spaces."<sup>10</sup> The presence, proximity, and accessibility of recreational parks and facilities have been associated with both self-reported and measured physical activity.<sup>7</sup> Furthermore, Canadian children who live in neighbourhoods with good access to parks, playgrounds, and recreational facilities are more likely to engage in sports with coaches.<sup>13</sup>

Children and their parents often report safety issues as barriers to physical activity.<sup>4,7,10</sup> Factors such as heavy traffic, lack of bicycle lanes, unmarked intersections, and poor street connectivity have reduced the number of children who transport themselves to and from school.<sup>10</sup> In order to encourage active transportation as a means of increasing physical activity, community leaders and urban planners need to address safety and access issues when designing community infrastructure.

The extent to which our children and youth are physically active is influenced by a multitude of complex, interrelated factors. Addressing physical inactivity and its contribution to childhood obesity requires a comprehensive and holistic approach. Primary health care practitioners are well positioned to be leaders in tackling this important issue.<sup>14</sup>

### Competing interests

None declared

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Do you have questions about the effects of drugs, chemicals, radiation, or infections in children? We invite you to submit them to the PRETx program by fax at 604 875-2414; they will be addressed in future Child Health Updates. Published Child Health Updates are available on the *Canadian Family Physician* website ([www.cfp.ca](http://www.cfp.ca)).

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