

# Too Far to Walk or Bike?

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## ABSTRACT

Only 25-35% of Canadian children and youth regularly engage in active transportation (AT; e.g., non-motorized travel modes such as walking and cycling) to/from school. Previous research shows that distance between home and school is the strongest barrier to AT. Based on social ecological theory, we describe several strategies to overcome this barrier. At the individual level, children and youth could engage in AT to/from destinations such as parks, shops, friends' and family members' residence, and sport fields which may be located closer than their school. Parents who drive their kids to/from school could drop them within a "walkable" distance so that they can walk for the remainder of the trip. Partnerships could be developed between schools and other nearby institutions that would allow cars and buses to use their parking lot temporarily so that children could do a portion of the school trip on foot. Developing a well-connected network of sidewalks along low traffic streets can also facilitate AT. At the policy level, decisions regarding school location have a direct influence on distance. Finally, social marketing campaigns could raise awareness about strategies to incorporate AT into one's lifestyle, and encourage parents to reconsider what constitutes a "walkable" distance.

**KEY WORDS:** Transportation; child; adolescent; schools; walking; exercise

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The latest Active Healthy Kids Canada Report Card on Physical Activity for Children and Youth indicates that only 25 to 35% of Canadian children and youth regularly engage in active transportation (AT; e.g., using non-motorized travel modes such as walking and cycling) to/from school, and these levels are approximately half of what they were a generation ago.<sup>1</sup> Moreover, only 5% meet the Canadian physical activity (PA) guidelines which recommend a minimum of 60 minutes of daily moderate- to vigorous-intensity PA.<sup>1</sup> Nevertheless, there is a growing body of evidence showing that AT to/from school is associated with greater daily PA levels among children and youth, and that cycling to/from school is associated with increased cardiovascular fitness.<sup>2</sup> In contrast, motorized travel is a form of sedentary behaviour that produces exhaust gases emissions that reduce air quality, exacerbate health conditions and contribute to climate change.<sup>3</sup>

In addition to attenuated AT levels, large decreases in children's independent mobility – that is their freedom to travel without adult supervision – have been noted internationally.<sup>4,5</sup> For instance, Hillman and colleagues<sup>5</sup> reported that in 1971, 80% of British 7-8 years olds were allowed to go to school without adult supervision, but this proportion decreased to only 9% by 1990. Children's autonomy for traveling to other neighbourhood destinations has also declined over time.<sup>4</sup> However, most of the literature on AT in children and youth has focused on the trip to/from school.<sup>6,7</sup>

In this regard, recent literature reviews have shown that distance between home and school (whether perceived by parents and chil-

dren or objectively measured) is the greatest barrier to AT to/from school.<sup>6,7</sup> For example, in the United States, the proportion of children who walked or biked to/from school decreased from 41% to 13% between 1969 and 2001, and distance explained about 47% of this decline.<sup>8</sup> Nevertheless, among American children and youth living within 1.6 km from school, a reasonable walking or cycling distance, AT to/from school declined from 86% to 50% during the same time period, suggesting that other factors lead to motorized trips (i.e., heavy traffic, dangerous crossings, parental concerns about "stranger danger", etc.).<sup>8</sup>

Notwithstanding the importance of distance as a correlate of travel mode decisions, we believe that it should not be viewed as an insurmountable barrier or an obstacle that makes it truly impossible to engage in some AT. Below we describe several strategies to overcome this barrier based on social ecological theory.<sup>9</sup>

Although it is generally assumed that school travel mode choices are made by parents, at least for young children,<sup>7</sup> recent findings show that youth who have some input into the decision-making

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process are more likely to engage in AT to/from school.<sup>10</sup> This suggests that interventions targeting youth may be effective in increasing AT. Of particular interest, even if the school is impractically far to walk or bike, other destinations may be located closer to home such as parks, shops, friends' and family members' residence, and sport fields. AT to non-school destinations may represent a substantial source of PA.<sup>11</sup> In addition, by demonstrating competence in walking or biking safely for shorter trips, children could incrementally develop their independent mobility and distances previously determined to be excessive for AT may eventually become acceptable.

At the interpersonal level, parents who drive their children to school could drop them within a "walkable" distance so that they can walk for the remainder of the trip (accompanied or not). If parents' schedules make it inconvenient to do this on a regular basis, they could partner with other parents. Modeling from family and peers may also facilitate AT,<sup>6</sup> suggesting that if children and youth see significant others walking or cycling despite what they perceive as a long distance, they may be more likely to do so as well. Furthermore, parents' choices regarding the neighbourhood they live in and the school their children attend can directly influence the distance between home and school. Hence, if parents register their child in a neighbourhood school (if possible), the distance will likely be shorter, rendering AT more feasible.

At the community level, schools could develop partnerships with other nearby institutions that would allow parents to park their car on site temporarily while they walk their child the remaining distance to school. Such a partnership was successfully developed between a school and a church as part of a Safe Routes to School intervention in Atlanta, Georgia.<sup>12</sup> Similar partnerships could be established to allow school buses to park close to, but not at, school. From that point, walking school buses could be organized as a strategy to alleviate parental road safety concerns (i.e., heavy traffic, dangerous street crossings, etc.), which are a common barrier to AT.<sup>7</sup> An added benefit of this type of approach could be a reduction in motorized traffic in the vicinity of the school and related exhaust gases emissions. Such an approach may actually improve the safety for children engaging in AT.

A supportive built environment may also facilitate AT, but research indicates that urban form correlates of AT differ between children and adults.<sup>6</sup> For example, while greater population density and street connectivity may be associated with shorter routes to/from school and other destinations, these attributes may coincide with greater motorized traffic and associated road safety concerns. Hence, literature reviews have indicated inconsistent associations of density and connectivity with AT to/from school.<sup>6,7</sup> However, a recent study has found that well-connected networks of sidewalks along low traffic streets can favour AT to/from school.<sup>13</sup> Similarly, quiet neighbourhoods with street trees and interesting landscape might also render walking and cycling more appealing despite long distances.

From a broader policy perspective, decisions regarding school locations can have a major impact on the proportion of children and youth living close to their school. However, school location guidelines have recommended the construction of large schools which tend to have large catchment areas and are often built on the outskirts of cities where land is cheaper.<sup>14</sup> As a result, fewer children live within a "walkable" distance. Counter to this approach,

the recent Canadian child- and youth-friendly land-use and transport planning guidelines recommend that urban planners and school administrators consider children's travel to a greater extent.<sup>15</sup> These guidelines specifically state that school policies and practices should favour children's AT and minimize car use that deprives children of an opportunity to exercise, gain independence, and experience their neighbourhood. Furthermore, urban planning policies may have a direct influence on distance between home and school. Such policies could require that new neighbourhoods offer a wide variety of amenities where children and youth could actively travel, including schools, parks and sport fields. In existing neighbourhoods, walking and cycling infrastructure can be improved and traffic calming measures can be implemented as a strategy to make AT safer and more enjoyable, even for long trips. Moreover, a recent report from Cancer Care Ontario recommended that municipality-wide changes be implemented to make it easier and safer to walk, cycle and use public transport. This may translate into the adoption of a Complete Streets policy whereby transportation planners and engineers design the entire street network for all road users, and not only for car drivers. While such policies do not directly address distance between destinations, they can make active transportation more "palatable" despite the distance.

In conclusion, while there is consistent evidence showing that distance between home and school is a strong determinant of AT, there are nonetheless many ways by which children and youth can engage in at least some active trips. We have identified several strategies within five different levels of influence based on the social ecological theory. Furthermore, a key feature of ecological models is the interactions between different levels of influence.<sup>9</sup> For example, a favourable environment could influence parental attitudes about children's capacity to walk or bike safely, which would in turn lead to travel behaviour change. Further research is warranted to examine such interactions and to investigate the correlates of AT for non-school purposes. Additionally, social marketing campaigns could be developed to raise awareness about strategies to incorporate AT into one's lifestyle, and perhaps to encourage parents to reconsider what constitutes a "walkable" distance.

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## RÉSUMÉ

Seulement 25-35 % des enfants et adolescents canadiens font régulièrement du transport actif (TA; soit l'utilisation de modes de transport non-motorisés comme la marche et le vélo) pour se rendre à l'école et en revenir. Des études précédentes montrent que la distance entre l'école et la maison est la principale barrière au TA. D'après le modèle socio-écologique, nous décrivons plusieurs stratégies pour surmonter cette barrière. Au niveau individuel, les jeunes pourraient faire du TA pour aller à des destinations situées plus près de leur domicile comme au parc, au magasin, à la résidence de leurs amis ou de membres de leur famille ou au terrain de sport. Les parents qui conduisent leur enfant en voiture pourraient se stationner près de l'école pour effectuer le reste du trajet à pied. Des partenariats pourraient être développés entre les écoles et des institutions avoisinantes qui permettraient que les voitures et autobus utilisent leur stationnement temporairement pour que les jeunes puissent faire une partie du trajet à pied. Le développement d'un réseau de trottoirs bien connectés le long de rues avec une faible circulation automobile pourrait également favoriser le TA. Au niveau politique, les décisions quant à l'emplacement des écoles ont un impact direct sur la distance. Finalement, des campagnes de marketing social pourraient sensibiliser les gens aux stratégies pour incorporer le TA à ses habitudes de vie, et encourager les parents à reconsidérer ce que représente une distance « marchable ».

**MOTS CLÉS :** transport; enfant; adolescent; école; marche; exercice