

# The Research File

Summary from the Canadian Fitness and Lifestyle Research Institute and ParticipACTION

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## Active Transportation

Active commuting can play a role in accumulating sufficient daily physical activity for health benefits. Who is most likely to do so and what are the factors associated with a higher likelihood of this behaviour? Two recent reviews of the health and transportation literature have synthesized research in this area, while recent analysis of Canadian data shed light on who is more likely to commute via active means. Saelens and Handy examined environmental correlates of walking while Davison and colleagues examined health benefits, and predictors of active commuting for children and programs associated with their active commuting to school. Butler and colleagues conducted analysis of the 2005 Canadian Community Health Survey to investigate active commuting patterns.

### *Who Chooses Active Transportation?*

Butler and colleagues report that almost one quarter (23%) of Canadian men and women walk 6 or more hours per week

to work, school or for errands, whereas 10% of men and 6% of women cycle for these purposes. Individuals with lower incomes are more likely to walk and cycle for transportation. Younger adults are more likely to cycle, as are those who are single. Students are more likely than others both to walk and to cycle for transportation, as are people who are physically active otherwise during their usual daily activities.



Davison and colleagues note that boys and children from lower SES backgrounds were more likely to commute to school actively. In addition, children who actively commute are more likely to have parents who commuted actively to school or who currently commute actively to work. Their parents are also more likely to value physical activity and the social interactions that may occur between children who actively commute. Children are less likely to actively commute if their parents work, or if there are conflicts with their parents' work schedules or their own after school activities. Children's likelihood of actively commuting to school is strongly related to parental perception of safety from crime, and their perception that other children in the neighbourhood actively commute. The support of other family members also has a role to play. Interestingly, attitudes about physical activity, including eagerness to walk or enjoyment of physical activity do not differ between children who actively commute and those who do not.

### *Environmental factors*

Among adults, walking for transportation has been found to be most consistently associated with residential density and proximity of non-residential destinations. Pedestrian infrastructure, such as the



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presence and condition of sidewalks is more consistently related to recreational walking than walking for transportation. For children, commuting to school via active means is more likely to occur when they live near school, live in areas of higher population density, attend smaller schools and live in urban areas, factors that indicate that they may be attending local schools rather than satellite schools. Indeed, the most frequently reported barrier to active commuting to school is distance. The quality of the pedestrian infrastructure, traffic safety, direct route, minimal hills, and walkable neighbourhoods also play a role in children's active transportation choices.

### Future research directions

More research is needed about whether changes in the environment would lead to changes in walking or cycling behaviour. Research also needs to better understand confounding factors such as demographic and self-selection factors. With few exceptions, there has been little investigation on whether there is substitution between transportation-related and recreational walking or whether active commuting increases overall physical activity levels.

### Implications for Health Promoters

Davison et al. report that children and adolescents who walk or bicycle to school are more active and are more likely to meet physical activity recommendations - accumulating approximately 20 additional minutes of moderate to vigorous physical activity per day on week days - and exhibit higher rates of cardio-vascular



fitness than those who travel by motorized means.

Health promoters could advocate for:

- Mixed zoning, providing residents nearby places to work, shop and recreate, as such areas provide high potential for walking;
- A transportation system with traffic calming and high levels of street connectivity, along with amenities that increase walking, such as bus stops, sidewalks, recreational trails, parks and sites for schools;
- Improvement in sidewalk infrastructure and traffic calming;
- Programs that couple infrastructure changes with classroom activity and parent involvement; and,

- Safe Routes to School and Walking School Bus programs.

The researchers suggest that dialogue among health professionals, local planners and community members is needed to coordinate these goals.

### More Info...

Butler, GP. Orpana, HM. Wiens, AJ. By Your Own Two Feet: Factors Associated with Active Transportation in Canada. *Canadian Journal of Public Health*, 2007: July-August; 98(4): 259-264.  
 Davison, KK. Werder, JL. Lawson CT. Children's active commuting to school: current knowledge and future directions. *Prev Chronic Dis* 2008; 5(3): 1-11.  
 Saelens, BE. Handy, SL. Built Environment Correlates of Walking: A Review. *Medicine & Science in Sports and Exercise*. 2008 Jul; 40 (7 Suppl): S550-66.

### What have we learned?

- *There may be different factors involved in transportation related walking and recreational walking. It is not yet clear whether one substitutes for or augments the other.*
- *Mixed land use, residential density and proximity of non-residential destinations are associated with transportation related walking, while aesthetics and the presence and condition of sidewalks appear to be more important factors for recreational walking.*
- *Cities designed for active transportation will ease barriers to participation in work-force and education opportunities for low-income populations along with greater overall community access for all vulnerable populations.*
- *For children, proximity, density, pedestrian infrastructure and traffic safety appear to be important factors in the choice to commute actively to school.*
- *The Safe Routes to School and Walking School Bus programs are promising approaches designed to promote active commuting to school.*

