



## ACTIVE LIVING, CHILDREN & YOUTH:

### What is the Canadian evidence saying?

#### **Healthy Community Design: the big picture**

Being healthy is not just about how we live, but also largely about where we live. A growing body of research shows that communities can be built in ways that encourage (or discourage) healthier living choices, such as walking, cycling, eating healthy foods, and connecting with neighbours. The physical layout and design of a community – elements like the width of streets; the presence of well-lit sidewalks, parks, community gardens and trails; and the location of schools, shopping and employment centres relative to homes – affect one’s ability to make healthier choices. By working across-sectors, planners, community leaders, health champions, researchers and others can help create communities that are built to make “healthy choices, easy choices” for all.



#### **Our Built Environment**

The built environment refers to the human-made surroundings that provide the setting for all human activity, including those places where people live, work, learn, rest and play. These spaces range from rural streets to bustling downtowns and all the places in between.

## **Planning Healthy Communities: How can this fact sheet be useful to me?**

Community design is particularly important for children and youth who tend to be more exposed to the risks and potential impacts of poorly designed communities than adults.<sup>1</sup> Accordingly, Canadian researchers have been busy examining how different types of community designs or built environment features are associated with various youth health outcomes, including physical activity levels. While much work remains to unravel these complex relationships, the research is at a point where the planning implications are clear – healthy community design matters, particularly for children and youth.

The purpose of this fact sheet is to provide Canadian planning practitioners and community stakeholders (e.g., school boards, youth organizations, parent groups, public health organizations, etc.) with a summary of some of the most current “made in Canada” research on child and youth friendly, healthy communities. It highlights leading edge Canadian research carried out between 2007 and 2011 and is meant to better equip planning practitioners, local government officials and community leaders to work more closely with researchers and public health officials in charting next steps in research and evidence-informed policy-making to better address the specific needs of children and youth.

## **Active, Healthy Children and Youth: Issue Overview**

In recent years, Canadian children and youth have become less and less physically active.<sup>2</sup> This is a public health concern. Together with being overweight or obese, lack of physical activity is considered a “conveyor belt” to heart disease, stroke and other chronic conditions, including cardiovascular disease, diabetes and various cancers.<sup>3</sup> Type 2 diabetes is of particular concern to children and youth in Canada, with incidences appearing to rise in parallel to obesity rates.<sup>4</sup> On the other hand, physical activity is associated with more positive health outcomes, including improved physical and mental health and well-being.

Community design that supports more physical activity outside of school and active transportation has the potential to help slow Canada’s chronic disease epidemics affecting our children and youth. While structured physical activity and sports are essential ingredients of children’s healthy development, neighbourhood design that encourages active transportation as part of one’s daily life might help children and youth maximize their weekly minutes of physical activity – 10 minutes here, 10 minutes there – and develop a culture of more active, healthy living.

What’s more, built environment improvements that support more active and safe pedestrian travel – e.g., traffic calming, streetscape improvements, improved site lines and lighting, traffic speed reductions, and road space reallocation – have also been shown to improve traffic safety and reduce injury risks for children and youth. They have also been demonstrated to improve perceptions of neighbourhood safety, a critical concern for parents and guardians who are key decision-makers for children and youth.

## Key Research and Findings

This section provides some general background facts on physical activity and health, followed by more specific, Canadian research findings around active school transportation and the built environment. The highlighted findings come from a review of 97 peer-reviewed journal articles and 16 reports from respected Canadian agencies published between 2007 and 2011.

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### Physical inactivity, sedentary behaviour and obesity are growing issues of concern for Canadian children and youth.

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- 91% of Canadian children and youth are not getting the recommended levels of daily physical activity.<sup>5</sup>
- On average, only 7% of Canadian youth get the recommended daily minimum of 60-minutes of moderate to vigorous physical activity.<sup>6,7</sup>
- About one in 10 Canadian children and youth between the ages of six and 17 are considered obese.<sup>8</sup>
- The number of obese children and youth increased 2.5 times between 1978 and 2004.<sup>9</sup>
- Numerous studies and recent research from across Canada have linked the lack of physical activity as a key contributor to Canada's high (and growing) obesity rates among youth and children.<sup>10,11</sup>

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### Changes in play and travel behaviour are associated with less physical activity among Canadian youth.

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- Fewer children are walking to school than in previous decades. A study of commuting habits in the Greater Toronto Area found that the proportion of children aged 11-15 years being driven to school in private automobiles more than doubled between 1986 and 2006, from 14% to 31%, while the proportion of walkers during the same period decreased by almost 10%.<sup>12</sup>
- An Edmonton study of 1,633 preschoolers found that parents reported children's total weekly screen time (i.e., time spent viewing TV, movies, playing video games, and using computers) amounted to an average of almost 14 hours a week; whereas average amount of weekly physical activity for the group was only 11 hours and 23 minutes.<sup>13</sup>
- Sport participation rates are declining among Canadian youth. The proportion of 15-18 year olds who participate at least once a week in organized sports declined from 77% in 1992 to 59% in 2005.<sup>14</sup>

### **Active and Safe Routes to School**

Schools are a principal travel destination for children and youth. Not so long ago, the majority of Canadian children and youth walked or bicycled for trips in their neighbourhood and to get to school. This is no longer the case, with school trips in Canada increasingly being made by car.<sup>15</sup> Research demonstrates that developing safe routes to school that support and encourage active transportation can be a core strategy for increasing youth physical activity and reducing the number of automobile trips to and from schools. Active transportation refers to more sustainable, human-powered transportation options like walking, cycling and wheeling (i.e., in-line skating, skateboarding, by wheelchair, etc.).



Photo: Dan Burden

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### **Students' proximity to school and the quality of the built environment in school neighbourhoods are important factors in school travel choice.**

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- Multiple studies from across Ontario have found that shorter distances between home and school increases the likelihood children will use active modes of travel to school.<sup>16 17 18</sup> A distance of one kilometre or less is especially favorable for active transportation.<sup>19 20 21 22</sup>
- A study of 810 grade 7 and 8 students in London, Ontario found that 94% of children use active transportation to home from school if they live within 400m; therefore, environmental interventions would be most effective if aimed at intermediate areas around schools (roughly 400m to 1.6km).<sup>23</sup>
- High traffic volumes and major streets to cross have been found to significantly reduce the likelihood of children walking home from school, and therefore supportive built environment features (e.g., traffic calming, safe crossings) around schools may encourage more students to use active travel.<sup>24</sup>
- A nationwide examination of Canadian school neighbourhoods found that many were not always well designed for safe walking, with 42% located on high-volume, high-speed roads and another 14% having no sidewalks in the immediate area.<sup>25</sup>

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**The choice to walk or cycle is strongly influenced by perceptions of neighbourhood safety, comfort, and aesthetics.**

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- Interviews and focus groups with elementary school children in London, Ontario have revealed that children's perceptions of neighbourhood safety play an important part in influencing their decision to walk, bike, or play in certain areas of their neighbourhoods. <sup>26 27</sup>
- An Alberta study showed that children who have a positive perception of their neighbourhood features such as sidewalks and parks, are more likely to be physically active and spend less than two hours a day in 'screen time' (watching TV, playing games, on the Internet). <sup>28</sup>
- Research from across Canada indicates that parent or child perceptions of higher speeds and traffic volumes along school routes and within school neighbourhoods are associated with both lower rates of active school transportation and physical activity rates among youth. <sup>29 30 31</sup>
- Neighbourhood attractiveness (e.g., cleanliness, presence of street trees, etc.) has been associated with increased active travel by youth and, in some cases, appears to outweigh potential negative impacts of high traffic and neighbourhood safety. <sup>32 33 34 35</sup>
- A Toronto study demonstrated that children are more likely to walk to school in areas where other people walk. <sup>36</sup> Furthermore, parents were found to be more comfortable with their children walking if they are with friends, in a street with many people, or if they know people in the neighbourhood. <sup>37</sup>
- A survey of Canadian municipalities determined that fewer than 20% of them had policies requiring safe walking and biking routes under any of the following conditions: (1) development of new areas, (2) reconstruction of roads, and (3) retrofitting of existing communities. <sup>38</sup>



FIGURE: The single strongest correlation with use of active transportation for school trips is the distance between the school and residence.

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**Applying child-friendly, healthy design practices at the community-wide level might also be an important strategy to encourage active living among children and youth.**

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- In a study of school travel behaviour of 11-13 year olds in Toronto, it was found that the built environment around students' homes had a closer association with the choice to use active forms of travel than the built environment around the school; however, a study of 11-13 year olds in London, Ontario found that the built environment around the home and the school neighbourhood both had an influence on children using active travel.<sup>39 40</sup>
- Studies indicate that more youth and child-friendly, healthy community design features include visually clear signs, safer and narrower street crossings with median refuges, and other traffic calming features.<sup>41 42 43 44</sup>
- A study examining physical activity patterns in 11-15 year-olds across Canada suggests that youth who attended schools in communities with high street connectivity were less likely to be active out of school than students who go to school in communities with less street connectivity. It should be pointed out, however, that the study did use a relatively large, 5km radius area around schools to define children's environments, which might have some methodological limitations. Further analysis using smaller areas, such as 2km radius, could be conducted to confirm the potential implications of this study. Nonetheless, this research highlights the importance of taking into considerations the needs of specific age groups in order to effectively create healthier communities for all.<sup>45</sup>

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**As schools are a central travel destination for children and youth, school-based active transportation programming requires special attention.**

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- A cross-Canada study demonstrated that schools with "Individualized School Travel Plans" with multiple interventions to support more active transportation to school modestly increased active school transport by 2.1% over the period of a year. Successful interventions included safety education, special events (e.g., Walk to School Day, bicycle safety rodeos) and infrastructure improvements (four-way crossings, street lights).<sup>46</sup>
- A Toronto study demonstrated that parental decision-making is a key factor in active school transport rates, and suggested that parents need to be included in school-based active transportation programs. Core deciding factors include neighbourhood safety issues (perceived and actual) and distance to school.<sup>47</sup>
- A cross-Canada study of 397 schools demonstrated that there is room for schools to be more active in encouraging and facilitating safe and active school transport, as less than 40% of schools had active programs such as 'walk to school' days, and only 70% had even passive initiatives to encourage active transportation, such as bike racks.<sup>48</sup>

## Conclusions

This fact sheet presents research highlights from a wide body of work. This section summarizes key “take home” points that emerged as common, overarching themes from the review.

- ★ **Physical activity is among the most significant modifiable behaviours that can influence a younger person’s likelihood of developing chronic diseases. For children and youth, Type 2 diabetes is of particular concern with the incidence appearing to rise in parallel to obesity rates.**
- ★ **Recent Canadian research, supported by a considerable body of US and international data, has associated certain built environment features, including active transportation infrastructure, with more physically active lifestyles for children and youth.**
- ★ **Key factors associated with increased active travel among children and youth include: short distances to destinations such as schools; presence of safe, well-lit sidewalks and bicycle paths in good repair; proximity to parks; clear signage; traffic calming; as well as neighbourhood safety, comfort and aesthetics.**
- ★ **Additional Canadian research is required to continue building the evidence base, particularly studies over a longer period of time (i.e., longitudinal studies), built environment intervention studies, and research that considers multiple built environment variables simultaneously (e.g., street connectivity, density and land uses) and their collective influences on child and youth physical activity and health.**



## What can planners do?

Whatever the context – from smaller towns to major urban centres – evidence points to several options for planners to better address the needs of children and youth in transportation and land use planning. Some actions planners might consider to encourage healthier community design and safer, more active transportation connections to schools are briefly outlined below. Many of them are aligned with work planners may already be pursuing through their regular transportation, land use, and environmental planning. See the next section for links to helpful resources and more information.



**Reviewing current and long-range planning:** There are many opportunities for planners to get involved and to encourage more child- and youth-friendly community design.

- 1. Look for opportunities** to include youth and children in transport and land use planning. As appropriate, establish or adapt public outreach to include children and youth to ensure their perspectives are considered in your community's plans.
- 2. Review and update** street standards to include better and safer pedestrian and bicycle infrastructure for children and youth with your jurisdiction's transportation engineers (or equivalent) and, where necessary and required, provincial transportation departments. Where practical and possible, identify and evaluate walking and bicycling routes used by children and youth to ensure that they are as safe and suitable for them as possible.
- 3. Develop and adopt** a "Complete Streets" policy that ensures all users and age groups are accommodated in new street designs, construction, and improvements to existing streets and roads. There are numerous sample policies available for communities of all sizes.
- 4. Encourage** high quality neighbourhood design with safe, accessible, pleasant multi-modal connections in school neighbourhoods wherever practical and possible.



**Staying informed and exploring new opportunities:** Healthy community design is a rapidly growing field with new research, evidence, and standards coming out continually.

- 1. Network** with other municipalities, provincial planning agencies, health authorities, youth advocacy groups, and universities who have undertaken youth-focused, healthy community design plans, projects and policies and who could support the work you are undertaking.
- 2. Designate** a staff member or council member, or both, as responsible for bringing the perspectives of young people into consideration



and to liaise between the multiple public and private sector players involved in healthy community design in school neighbourhoods (e.g., school boards, public health officers, transit providers, developers, transportation engineers, etc.).

3. **Support** youth-focused, healthy built environment research that occurs in your community. From research design to analysis and interpretation of findings, planners can support researchers at academic institutions and use resulting data to support evidence-based, healthy community design policy-making.
4. **Learn** about the tools and techniques available to support children and youth and more active transportation, including the “four Es” typically used in safe routes to schools programs – education, encouragement, enforcement, and engineering (see the resource section to get started).



**Building the case for youth-friendly, healthy community design:** Whether planning for a single school neighbourhood, small towns or major cities, it is important to cultivate support from key stakeholders including elected officials, school boards, local planning commissions, public health officials, etc. Build awareness of child- and youth-friendly healthy community design and its health, safety, fiscal and environmental benefits with these stakeholders.

1. **Coordinate** with the local school boards and agencies, community organizations, youth groups, and parent groups where appropriate and feasible to harmonize municipal and school policies to support and encourage safer more active transportation to and from school (e.g., identifying and developing active and safe routes to school, improving key crossings, traffic calming). Ensure that school boards are involved in plan review, particularly in neighbourhoods where schools are located.
2. **Establish** a healthy community design or active transportation task force or committee with youth members to help develop evidence-informed child and youth-friendly, healthy community design policies, programs and plans.
3. **Educate** other planners, local government officials, school boards and community leaders about the public health implications of land use and transportation planning choices, including the safety and health benefits of safe and active routes to school.
4. **Partner** with the local public health office to get local health data and/or invite the Chief Medical Health Officer, or equivalent, to speak to Council and local school boards on the benefits of healthy community design and active and safe routes to schools.

## More Information and Resources

There is a wealth of information and resources available to planners interested in learning more about healthy community design and planning. For more information, or to access additional Planning Healthy Communities Fact Sheets, please visit:

- **National Collaborating Centre for Environmental Health - Healthy Built Environment Inventory:** A searchable catalogue of healthy communities case studies, guidelines, tools and key scientific papers [http://nceh.ca/en/major\\_projects/built\\_environment](http://nceh.ca/en/major_projects/built_environment)
- **Heart and Stroke Foundation:** A resource site with links to research, healthy physical activity guidelines and healthy community design information. [www.heartandstroke.ca/healthycommunities](http://www.heartandstroke.ca/healthycommunities)
- **Urban Public Health Network - Healthy Canada by Design:** A clearinghouse of healthy community design resources and links. [www.uphn.ca/CLASP/](http://www.uphn.ca/CLASP/)
- **Canadian Institute of Planners:** Information and links to a variety of healthy community planning resources, including a new Healthy Communities Practice Guide. [www.cip-icu.ca](http://www.cip-icu.ca)
- **Public Health Agency of Canada:** Maintains a built environment webpage with helpful information and evidence. [www.phac-aspc.gc.ca/hp-ps/hl-mvs/be-eb-eng.php](http://www.phac-aspc.gc.ca/hp-ps/hl-mvs/be-eb-eng.php)
- **Canadian Institute of Health Information:** A wide variety of resources and research studies on population health and environmental factors, including the built environment. [www.cihi.ca](http://www.cihi.ca)
- **Active & Safe Routes to School:** Provides educational resources, tools and information to help schools design their own active transportation programs. [www.saferoutestoschool.ca](http://www.saferoutestoschool.ca)
- **Active Healthy Kids Canada:** Provides tools, resources and links to help get children and youth more physically active, including information on active and safe routes to schools. [www.activehealthykids.ca/Home.aspx](http://www.activehealthykids.ca/Home.aspx)



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