The Centre for Sustainable Transportation

Le Centre pour un transport durable

CHILDREN, YOUTH, AND TRANSPORT

Contents:

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This booklet can help municipal officials reflect on the many impacts of transport on the health and well-being of children and youth. Superscript numbers point to sources detailed in a more comprehensive document *Child- and Youth-Friendly Land-Use and Transport Planning Guidelines*, available at the Centre's Web site.

If we can build a successful city for children we will have a successful city for all people.
Enrique Peñalosa (former mayor of Bogotá, Colombia)[1]

CHILDREN'S INCREASING USE OF MOTORIZED TRANSPORT

Transport and land-use planners mostly focus on adults' needs. Children and youth are important users of transport and are strongly affected by land-use arrangements. This booklet makes the case for giving more attention to the needs of young people.

Most of the concerns about the effects of transport and land use on young people are related to their health, broadly interpreted. This booklet outlines many key health concerns. As well, it sets out some of the things municipal officials—staff and politicians—can do to improve health and well-being by reducing transport's adverse impacts and also, in some cases, by reducing the amount of transport activity undertaken by children and youth.

An indication of how much more children may be travelling by car is in the chart overleaf. On average, 11- to 15-year-olds in the Greater Toronto Area made 83 per cent more school-day trips per person by car in 2001 than in 1986; 16- to 19-year-olds made 61 per cent more trips as a passenger, although hardly any more as a driver. Meanwhile, weekday car trips by adults increased by 10 per cent. Average trip length hardly changed.[69]

About 55 per cent of the additional car trips by 11- to 15-year-olds were between home and school. They replaced trips made by other modes: transit, cycling, and walking. Almost all the other trips—e.g., between school and a hockey game—were *new* trips not made in 1986.

The chart shows data for 6- to 10-year-olds for 1986 only. Data on this age group are no longer collected, partly to reduce the survey cost but chiefly because of growing unwillingness among parents to provide information about their children's travel activity.

As spelled out in the next section, young people's health can be at risk as a result of travelling by car, not the least because of the lost opportunity to engage in active transport, i.e., walking or cycling. As well, the health of young people can be worsened by exposure to transport activity generally.

HOW TRANSPORT AFFECTS CHILDREN'S HEALTH

"Less than half of Canadian children and youth are active enough to ensure proper growth and development."

We are now living in 'obesogenic' environments: communities, workplaces, schools and homes that actually promote or encourage obesity.

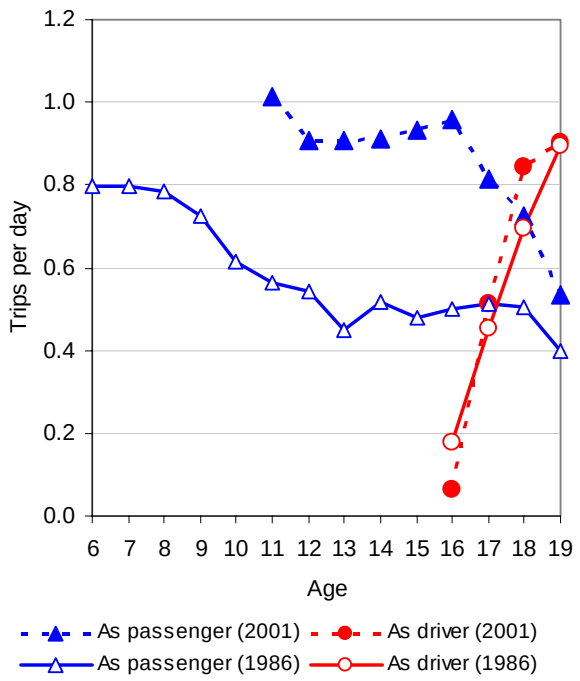
Dr. Sheela Basrur, Ontario's Chief Medical Officer of Health[2]

References to children and youth as society's 'canaries' are not exaggerated when we consider the harm that motorized transport can have on their developmentally vulnerable bodies. As with many environmental health factors, children are especially susceptible to exposure to poor air quality, high noise levels, insufficient active transport (walking and cycling), and high risk of injury or death in traffic. They are developing emotionally, learning about their neighbourhoods, establishing habits, and discovering whether the world is a safe place in which they can be confident and independent.

Transport, physical activity, and obesity

Poor nutrition and sedentary lifestyles that revolve around television and video games have been blamed for children's reduced physical activity and rising average body weights.[42] Recent evidence from Canada,[43] the United States,[44] and the United Kingdom[45] suggests that dependence on automobiles to transport children to school and leisure activities may also be a factor.

Travel as car passenger and driver by young people in the Greater Toronto Area, school days, 1986 and 2001



The following data are relevant:

- Less than half of Canadian children walk to school.[46] (Most children who live within three kilometres of school walk to school. But, enough children live farther from their schools to bring the average who walk down to less than half.)
- Less than half of Canadian children and youth are active enough to ensure proper growth and development. Among teenagers, perhaps less than 20 per cent do sufficient exercise, although the amount of physical activity by teenagers may have been increasing recently.[47]
- In 1998/99, 37 per cent of children aged 2-11 were overweight, up from 34 per cent in 1994/95. These included the 18 per cent of children in this age group who were obese in 1998/99, up from 16 per cent in 1994/95.[48]
- A UK study demonstrated that children who walk to school burn more calories than those who are driven. The number of calories burned weekly by walking to school is the equivalent of two hour-long classes of physical education.[49]

Effects of traffic-related poor air quality, including poor in-vehicle air quality

Road traffic is the main cause of poor air quality in most urban areas of the world and many rural areas, including in Canada. There is considerable evidence that this poor air quality harms children, including the following:

- The World Health Organization found that children may be more vulnerable to airborne pollution because their airways are narrower than those of adults.[13]
- The same work for WHO indicated that there appears to be no threshold for ozone levels that are safe, and children are particularly susceptible.[14]
- Work in Denver, Colorado, found that children who live near high-traffic areas (20,000 cars per day) may be six times more likely to develop childhood leukemia and other cancers.[17]
- Children living in areas of Europe and California with poor air quality have been found to have reduced lung function growth that places them at risk for future respiratory illness.[18]

There's other work on this topic:

- A study of children's exposure to diesel exhaust on school buses in the United States showed that concentrations of fine particulates were often 5-10 times higher than at monitoring stations.[21]
- One author reviewed relevant data and concluded,

  Drivers and passengers in cars may inhale up to 18 times as much pollution as people outside their vehicle, the worst occurring in slow-moving driving conditions in urban areas. Levels of benzene were found to be two to 18 times higher than ambient air and levels of carbon monoxide two to 14 times higher. Nitrogen dioxide is also higher (1-2.5 times), especially during high-speed driving on motorways and during afternoon rush hours.[23]

Traffic-related fatalities and injuries

The rates of traffic-related injury and fatality are generally lower for children than for adults. Nevertheless, the following should be considered:

- Road traffic crashes are the leading cause of injury death in Canada for children over the age of one year.[26]
- The risk of harm to a child from traffic is very much higher than the risk of harm from a stranger.[27]
- A study in the UK found that one third of children who survive traffic crashes may suffer from post-traumatic stress disorder. Symptoms include depression, recurring nightmares, difficulty attending to school work, and fear of cars.[28]

Keeping Children Safe in Traffic,[31] a recent report by the Organization for Economic Cooperation and Development, outlines current risks for children in traffic, progress made towards creating safer environments, and the best practices of countries that have made concerted efforts to reduce the risk to children from traffic. Some of the best practices include measures to reduce traffic speed, and public education for children, parents, and drivers.

Effects on emotional and behavioural development

A road traffic crash can have an extreme impact on a child's development, even if the child is not directly injured. There are more subtle effects from being in an automobile and from the effects of road traffic generally, including the effects of traffic noise. Some relevant findings include the following:

- An Australian study found that heavy traffic reduces the independent mobility of children and youth.[32]
- An investigation in the UK found that opportunities and locations for spontaneous, non-structured play can be severely restricted by traffic.[33]
- An Austrian study found that low-level but chronic noise of moderate traffic can stress children and raise their blood pressure, heart rate, and levels of stress hormones.[34]
- There is some evidence from work in Austria that young people who walk to school are emotionally healthier than children who travel by motorized means.[37]
- A Swiss study found that half of five-year-old children who lived on an "inadequate" street "where traffic is a nuisance and menace to children at play" never played outside, and only 10 per cent played outside for more than two hours a day, mostly in playgrounds.[38] All five-year-olds who lived on an "adequate" street played outside, most for more than two hours a day.

"… children who live near high-traffic areas … may be six times more likely to develop childhood leukemia and other cancers."

HOW MUNICIPAL OFFICIALS CAN CONTRIBUTE

Taken together, the above findings suggest that more attention should be given to transport's impacts on the health of children and youth. Municipal officials can contribute to efforts that reduce the dependence of both adults and children on motorized transport. See *Child- and Youth-Friendly Land-Use and Transport Planning Guidelines* for a detailed discussion and analysis of this issue (at www.cstctd.org).

The approach reflects the following planning principle: *Ensure that in every part of the urban region it is as advantageous to live without a car as with a car.* Neighbourhoods designed this way will have good transit and nearby stores, jobs, and leisure facilities. They will be child- and youth-friendly, and are more likely to be successful neighbourhoods for all people.

To create a local environment that promotes healthy weights, local and regional governments/communities should:

1. Examine community planning policies and processes to identify how local communities can promote physical activity, reduce barriers to physical activity for everyone, and engage young people in physical activity.

2. Provide education and training for community planners, engineers, architects and decision-makers in 'active living by design'.

3. Allow more opportunities for people to be physically active by providing:

- More park land and recreational areas
- More safe walking and cycling routes
- Culturally appropriate and accessible recreation programs
- Neighbourhoods with shops and schools within walking distance
- Public transit within walking distance of home, school and work.[2]

CHECKLIST FOR MUNICIPAL OFFICIALS

"Are sidewalks and bicycle paths planned with children's destinations in mind?"

- ✓ Do planning departments respond to children's transport needs and trends?
- ✓ Do planning practices consider the potential harmful health impacts on children as well as the benefits?
- ✓ Are sidewalks and bicycle paths planned with children's destinations in mind?
- ✓ Are there sidewalks to all transit stops?
- ✓ Do traffic lights near schools and recreation centres allow enough time for children to cross?
- ✓ Are streets planned to avoid potential sight obstructions for children?
- ✓ What are the opportunities to make recreation facilities more accessible through active transport?
- ✓ Can traffic be reduced by encouraging more live-work opportunities?
- ✓ Are transit fares low for children and youth to encourage use of transit?
- ✓ Are no-idling by-laws enforced, especially near schools?
- ✓ Have you considered reducing permitted traffic speeds in residential areas?
- ✓ Are day care centres situated away from busy roads?
- ✓ What opportunities exist to make transit more child- and youth-friendly?

INITIATIVES AND RESOURCES

Addressing the health issues outlined above requires an integrated and committed effort by many sectors: transport and land-use planners, educators, health professionals, parents, transit authorities, and all levels of government. Solutions range from removing barriers to active transport for all people to creating incentives and opportunities for reducing society's dependence on the automobile. A detailed account of barriers and recommended actions may be found in the Centre's report *Kids on the Move in* Halton *and Peel*.[3]

Programs

Active and Safe Routes to School. This is a comprehensive and adaptable program that engages all community partners in finding solutions that meet their needs. Visit http://www.saferoutestoschool.ca.

Also visit:

Way to Go! School Program in British Columbia at http://www.waytogo.icbc.bc.ca

Go for Green at http://www.goforgreen.org

International site for **Walk to School** initiatives at http://www.iwalktoschool.org

OffRamp for Youth. A program for high school students that helps youth support sustainable transport choices and create more opportunities for active transport. It is managed by the Vancouver-based organization Better Environmentally Sound Transportation. Visit the Web site at: http://www.best.bc.ca.

Other organizations

The Centre for Sustainable Transportation. More information about the organization responsible for the present booklet is at http://www.cstctd.org.

Child Friendly Cities. UNICEF's Child Friendly Cities initiative is at the forefront of efforts to consider children's needs and aspirations in an urban environment. The Secretariat documents and publicizes child-friendly initiatives and supports national and international networks. It addresses the needs of youth up to 18 years of age. (Visit the Web site of UNICEF Innocenti Research Centre at Florence, Italy: http://www.childfriendlycities.org)

Books

David Driskell, *Creating better cities with children and youth—A manual for participation*. Earthscan Publications, 2002.

"What are the opportunities to make recreation facilities more accessible through active transport?

"The present booklet for municipal officials is one of five prepared by The Centre for Sustainable Transportation"

Louise Chawla (ed), *Growing up in an urbanising world.* Earthscan Publications, 2002.

Other documents

Kids on the Move, European Commission. Available at http://europa.eu.int/comm/environment/youth/air/kids_on_the_move_en.pdf.

Catherine O'Brien, Richard Gilbert, *Kids on the Move in Halton and Peel*. The Centre for Sustainable Transportation. Available at http://cstctd.org.

This booklet for municipal officials is one of five prepared for The Centre for Sustainable Transportation by Catherine O'Brien, Research Associate, and Richard Gilbert, Research Director. The others are for health and recreation professionals, educators, parents, and youth.

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A walking school bus in Toronto

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