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Prescribing Active Travel for Healthy People and a Healthy Planet: A Toolkit for Health Professionals

Dr. Eric Notebaert, CAPE Board Member
Kim Perrotta MHS, CAPE Executive Director
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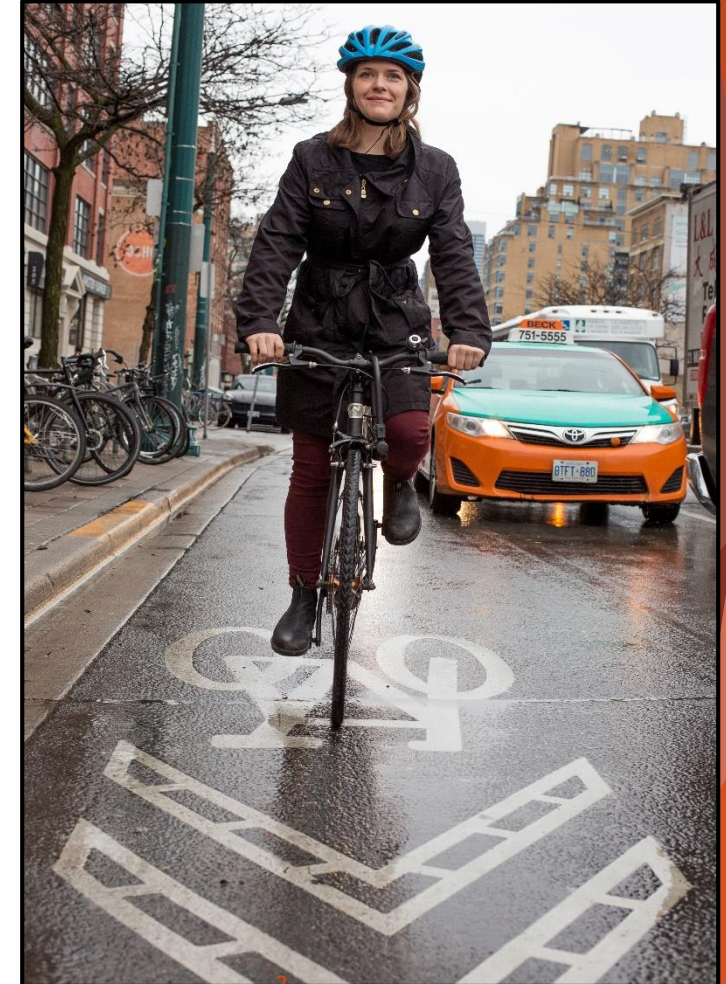
**Prescribing Active Travel for Healthy
People and a Healthy Planet:**

A Toolkit for Health Professionals

— March 2017 —

Chronic Disease Costs Overwhelming Budgets

- ▶ Chronic diseases consume 67% of the health care budget in Canada
- ▶ Cost Canadians \$190 billion/year; about \$65 billion in treatment and \$135 billion in lost productivity
- ▶ Rates increasing faster than the GDP in some provinces; health care costs threaten to overwhelm provincial budgets across the country



References:

Public Health Agency of Canada (PHAC). Against the Growing Burden of Disease. Presentation by Kimberly Elmslie Director General, Centre for Chronic Disease Prevention, PHAC. <http://www.ccgh-csih.ca/assets/Elmslie.pdf>
Photo: Gaye Jackson, 2017, CAPE

Physical Activity Reduces Chronic Diseases

- ▶ Physical activity - reduce the risk of over **25 chronic conditions**, including coronary heart disease, stroke, hypertension, **breast cancer**, **colon cancer**, Type 2 diabetes and osteoporosis (PHAC, 2011).
- ▶ Each hour of moderate to vigorous activity per week can reduce the risk of premature death from all causes by 4 to 9% (Samitz et al, 2011).
- ▶ < 1 in 5 Canadian adults - 150 minutes/week - needed to achieve health benefits (Colley et al. 2011a).
- ▶ < 1 in 10 Canadian children - aged 5 to 17 - 60 minutes/day needed for healthy growth and development (Colley et al, 2011b).



References:

- Public Health Agency of Canada (PHAC). 2011. Benefits of Physical Activity.
- Samitz G, Egger M, Zwahlen M. Domains of physical activity and all-cause mortality: Systematic review and dose-response meta-analysis of cohort studies. *Int J Epidemiol* (2011); 40(5):1382-1400
- Colley R et al. 2011a. Physical activity of Canadian adults; accelerometer results from the 2007 to 2009 Canadian Health Measures Survey. *Health Reports*. 22.1:7
- Colley R et al. 2011b. Physical activity of Canadian children and youth: Accelerometer results from the 2007 to 2009 Canadian Health Measures Survey
- Photo: Gaye Jackson, 2017, CAPE

Active Travel - Reduces Chronic Diseases

- ❖ Time crunched society - walking & cycling effective ways to increase physical activity - population level
- ❖ Risk of premature death from all causes:
 - ❖ can be decreased by 28% among people who cycle 3 hour/week (Andersen et al., 2000)
 - ❖ by 22% among people who walk 29 minutes/day, seven days a week (Kahlmeier et al, 2001)
- ❖ NEED supportive environments - separated bike lanes that feel safe - to encourage cycling, particularly among women & children.



References:

- Andersen LB et al. 2000. All-cause mortality associated with physical activity during leisure time, work, sports, and cycling to work. Archives of Internal Medicine. 160.
- Kahlmeier S et al. 2011. Health economic assessment tools (HEAT) for walking and cycling. Methodology and User Guide. WHO Regional Officer for Europe.
- Photo: Kim Perrotta, 2016

Air Pollution - Significant Burden of Illness

- ❖ WHO - Air pollution - broad spectrum of acute & chronic health conditions including asthma, lung cancer, strokes, & cardiovascular disease
- ❖ CMA - air pollution - **21,000 premature deaths per year** from heart & lung illnesses
- ❖ CMA - Health Care & lost time costs - **\$10 billion per year**
- ❖ CCO & PHO - PM2.5 is responsible for **290 to 900 cancer cases per year** in Ontario (CCO & PHO, 2016).



References:

- World Health Organization (WHO). 2013. Review of evidence on health aspects of air pollution - VIHAAP Project.
- Cancer Care Ontario (CCO) & Public Health Ontario (PHO). Environmental Burden of Cancer in Ontario. 2016.
- CMA, 2008. No Breathing Room: National Illness Costs of Air Pollution.
- Photo: Kim Perrotta, Toronto.

Active Travel - Reduces Air Pollution

- ❖ The transportation sector - major source of air pollution
- ❖ Busy traffic corridors - high levels of air pollution & high risk of acute & chronic heart & lung conditions (Giles-Corti, 2010).
- ❖ Example: Transportation-related air pollution in the GTHA alone: approximately **700 premature deaths per year** & **\$4.6 billion per year** in health-related costs (MOHs, 2014).
- ❖ Air pollution health impacts & health-related costs can be significantly reduced by shifting short-trips from cars to bicycles (Grabow et al., 2011; MOHs, 2014).



References:

- Medical Officers of Health (MOHs). 2014. Improving Health by Design in the Greater Toronto-Hamilton Area: A Report of the Medical Officers of Health in the GTHA. (2014), 2nd Edition. <https://www.peelregion.ca/health/resources/healthbydesign/pdf/moh-report.pdf>
- Grabow, M. et al. 2011. Air Quality and Exercise-Related Health Benefits from Reduced Car Travel in the Midwestern United States, [Environmental Health Perspectives](https://doi.org/10.1289/ehp.1103440). November <http://dx.doi.org/10.1289/ehp.1103440>
- Photo: Gaye Jackson, 2017, CAPE

Active Travel - Reduces Greenhouse Gases

- ❖ Climate Change is the greatest public health threat of the 21st Century (WHO 2016).
- ❖ **250,000 additional premature deaths per year by 2030** from heat stress, diarrhea, malaria and malnutrition (WHO, 2014a).
- ❖ Increasing heat waves, flooding, wildfires, extreme storms, & insect-borne diseases in Canada already.
- ❖ Transportation Sector - Canada - **26% of GHGs** in 2004 (Canada, 2016)
- ❖ Paris Agreement - Canada must reduce **GHGs by 30%** of 2005 levels by 2030 & by 80% by 2050 (Canada, 2016).



References:

- World Health Organization (WHO). 2016. WHO Director-General Keynote address at the Human Rights Council panel discussion on climate change and the right to health.
- World Health Organization (WHO). 2014a. Quantitative risk assessment of the effects of climate change on selected causes of death, 2030s and 2050s.
- Canada, 2016. Canada's Mid-Century Long-Term Low-Greenhouse Development Strategy. Federal Department of Environment and Climate Change.
- Photo: Kim Perrotta, 2016

Modelling Study - San Francisco, California

IF region could increase walking & cycling for shorter trips from 4.5 to 22 minutes per day:

- ▶ Reduce Vehicle Miles Travelled by 15 per cent
- ▶ Reduce GHGs by 14.5 per cent
- ▶ Reduce premature deaths by 13% (about 2,400/year) by increasing physical activity
- ▶ Reduce disability-adjusted life years from chronic diseases by 13 per cent by increasing physical activity
- ▶ Reduce air levels of PM2.5
- ▶ Increase traffic-related injuries by 39 per cent (113 additional premature deaths/year) with existing infrastructure



Reference:

- Maizlish Neil, James Woodcock, Sean Co, Bart Ostro, Amir Fanai, and David Fairley, Health Cobenefits and Transportation-Related Reductions in Greenhouse Gas Emissions in the San Francisco Bay Area. American Journal of Public Health. April 2013.

Modelling Study - Midwestern US

Across a region in the Midwestern United States that includes 31.3 million people - the elimination of all short automobile trips (<8 km) with 50 per cent of those trips replaced by cycling, would produce:

- ▶ Reduce VMT by 20%
- ▶ Reduce GHG emissions by 1.8 tonnes
- ▶ Produce \$3.6 billion in air quality health benefits/year
- ▶ Produce \$3.75 billion in physical activity-related health benefits/year
- ▶ Equivalent to 2.5 per cent of the 2004 health care costs for five of the Midwestern states included in the study.



References:

- Grabow, M. et al. 2011. Air Quality and Exercise-Related Health Benefits from Reduced Car Travel in the Midwestern United States, *Environmental Health Perspectives*. November <http://dx.doi.org/10.1289/ehp.1103440>
- Photo: Kim Perrotta, Dundas, Ontario

Collaboration is Important

- ▶ Eric: Started working on Active Transportation ≈ 30 years ago
- ▶ Collaboration with many groups in Montreal:
 - ▶ Vélo Québec - Coalition Vélo Montréal
 - ▶ Conseil Régional de l'Environnement de Montréal et de Laval
 - ▶ Centre d'Écologie Urbaine de Montréal
 - ▶ David Suzuki Foundation - The Climate Reality Project
 - ▶ Action Climate Montréal
 - ▶ Universities



Always use a Public Health Perspective

- ▶ Health perspective brings credibility
- ▶ Use best possible evidence
- ▶ Screen all the relevant papers
- ▶ Inform other groups of pertinent new data
- ▶ Present to as many conferences as possible
 - ▶ Medical
 - ▶ Environmental
 - ▶ Urban Planning
 - ▶ Public hearings
 - ▶ NGO gatherings

Examples:

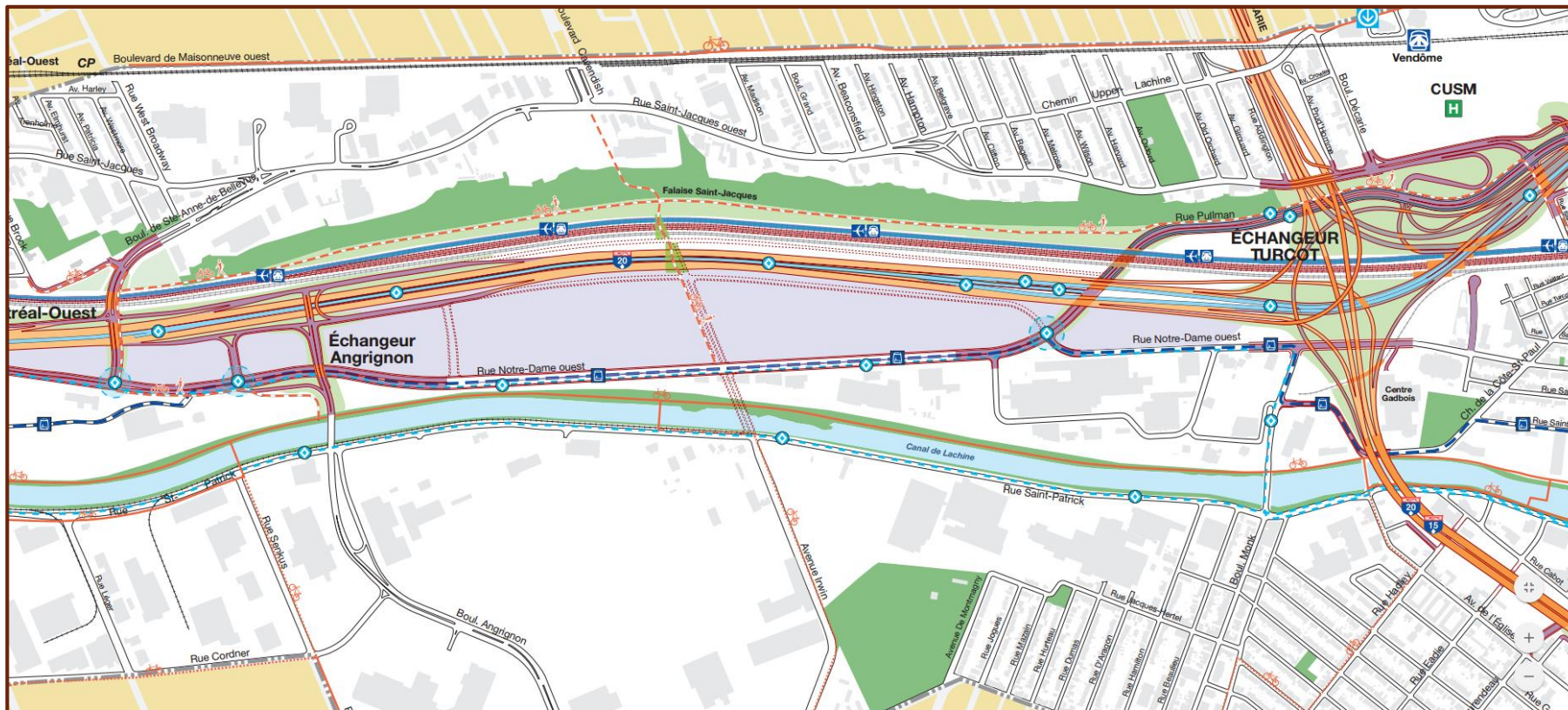
- ▶ Quebec Government hearings on Road Safety
- ▶ City of Montreal hearings on GHG/carbon neutral city
- ▶ Collaboration with the City of Montreal on project to double the # of kms of bicycle lanes
- ▶ Collaboration with Montreal Public Health Department on bicycle safety

Look for Opportunities to Influence

- ▶ Letters /meetings with Transport Ministers and medical organizations
- ▶ Letters to newspapers
- ▶ Work on specific projects:
 - ▶ The Turcot exchange
 - ▶ The bridge A19 between Montreal and Laval
 - ▶ The project of opening the Jacques Cartier bridge all year round for bicycles
 - ▶ The recent document on doubling bicycle routes in Mtl (feasibility - time frame).



THE TURCOT PROJECT 2010: A way to increase AT & decrease pollution & GHGs



THE TURCOT PROJECT : An overpass for AT - A link with public transit - A park.



The Highway Bridge A19 Project

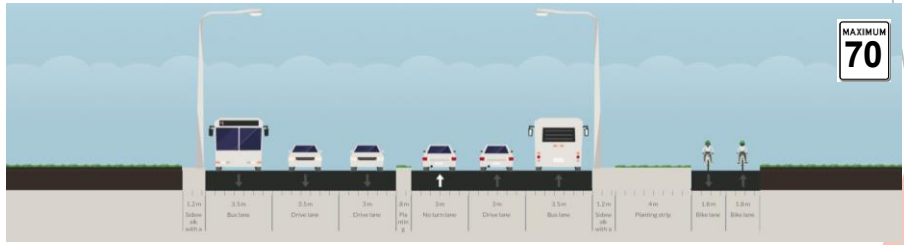
Avenue Papineau actuelle à Laval et Bois-des-Fillion (route 335)



Parachèvement de l'autoroute 19 (MTMDETQ)



Boulevard urbain avec aménagements autoroutiers (MTMDETQ)



Boulevard Papineau axé sur les transports collectifs et actifs



Source: Schémas élaborés à l'aide de Streetmix

Analysis of Cycling Routes for Montreal



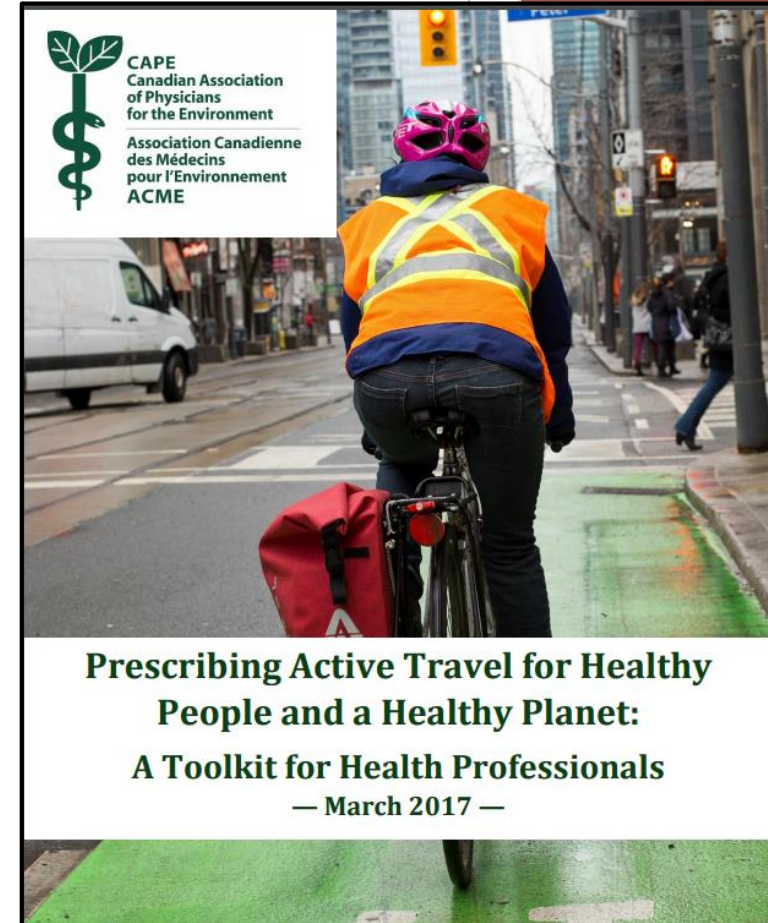
The Key Lessons

- ▶ Follow developments on your topic
- ▶ Always be there when there is an opportunity to educate or advocate
- ▶ You will become indispensable
- ▶ Use your MD title or health professional credentials to support health evidence
- ▶ Respect the expertise of others in the field of land use & transportation planning, & environmental policy



Toolkit - Report with Five Modules

- ▶ Active Travel, Public Health, and the Environment
- ▶ Promoting Active Travel to Improve Patient Health
- ▶ Community Design That Supports Active Travel
- ▶ Places to Grow-Managing Growth in Ontario's Greater Golden Horseshoe to Support Active Travel
- ▶ Promoting Policies That Support Active Travel



Toolkit-Two Patient Brochures

Active Transportation Improves Health

By allowing you to be more physically active, active transportation can reduce your risk of developing chronic diseases such as diabetes, heart disease, and some cancers. Studies have found that each hour of moderate or vigorous activity per week can reduce the risk of premature death by 4% to 9%.

Active transportation can also improve mental health because physical activity improves self-esteem, reduces stress, and enhances feelings of happiness and satisfaction.

Active Transportation Controls Weight

Active transportation can help you maintain your weight. One study found that the risk of becoming obese was reduced by 4.8% for every additional kilometre people walked each day, while the risk of becoming obese increased by 6% for every hour people spent in a car each day.



Getting Started

Getting started is easy. Think of the places you regularly visit. You can easily walk to destinations that are within one kilometre of your home. It only takes about 12 minutes to walk one kilometre. Distances that are between one and five kilometres are easy to cycle.

As you get more comfortable you can try walking or cycling longer distances. Consider contacting your local city or town office to find out about city programs that address bicycle lanes, sidewalks, and safe street crossings in your community.

For More Information

Tel: (416) 306-2273
 Email: info@cape.ca
 Web: www.cape.ca



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GET HEALTHY & FIT with Active Transportation



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ALAIRS DESIGN - PHOTOS BY GAYE JACKSON

Transit Use Improves Health

By increasing your levels of physical activity, transit use can reduce your risk of chronic diseases such as heart disease, stroke, diabetes, and some cancers. Studies have found that each hour of moderate or vigorous physical activity per week reduces the risk of premature death by 4% to 9%. Transit use can improve mental health as well because physical activity improves self-esteem, reduces stress, and enhances feelings of happiness and satisfaction.

Transit Use Controls Weight

Transit use can help you maintain your weight by making you more physically active. One study found that the risk of becoming obese was reduced by 4.8% for every additional kilometre people walked each day, while the risk of becoming obese increased by 6% for every hour people spent in a car each day.

Transit Use Saves Money

Driving a motor vehicle can be expensive when one considers the cost to drive, insure, fuel, and maintain a vehicle. Estimates suggest that it can cost about \$10,000 a year to own a car. Public transit is a low-cost way to travel.

Getting Started

Getting started is easy. Visit your community's transit website to find out about the transit routes available in your community. Consider the destinations you visit regularly such as school or work. Use a transit website or a mobile phone app to help select the best routes for your destinations.

For More Information

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ALAIRS DESIGN - PHOTOS BY GAYE JACKSON

GET HEALTHY & FIT: Use Public Transit



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Toolkit-Two Educational Backgrounders



Backgrounder

Transit, Active Transportation, and Public Health

Chronic Diseases Are a Costly Health Issue

Chronic diseases have reached epidemic proportions in Canada. The cost of cardiovascular disease, just one of the chronic diseases, was \$12.1 billion in 2008 (PHAC, 2008). Obesity, an important risk factor for chronic diseases is also on the rise. According to the Public Health Agency of Canada, over one in four Canadian adults are obese and 8.6% of children and youth aged 6 to 17 are obese. The estimated cost of 18 chronic diseases associated with obesity is \$7.1 billion in Canada (PHAC, 2011).

Physical Activity Reduces Chronic Disease

The factors—or determinants—that are linked to obesity and chronic diseases include physical activity, diet, socioeconomic status, ethnicity, immigration status, and environmental factors. Each hour of moderate or vigorous activity per week is associated with a 4% to 9% reduction in the risk of premature death from all causes (Samitz, 2011).

Active Transportation Increases Physical Activity

Walking and cycling for transportation has proven to be an effective strategy for encouraging adults to be regularly active and reducing their risk of chronic diseases. Walking or cycling to work was associated with an overall 11% reduction in cardiovascular risk (Hamer, 2008).

Transit Use Increases Physical Activity

Most transit trips begin and/or end with walking. For example, a Montreal study found that a public transit round trip averaged 2,500 steps, which accounts for 25% of the physical activity recommended each day (Morency, 2011). A US study found that adults who use public transit walk an average of 19 minutes a day in the process of taking public transit, with 29% of them achieving the 30 minutes of daily physical activity recommended (Besser, 2005).



Backgrounder

Transit and Active Transportation Require Supportive Community Design

Given the many health, environmental, and social benefits associated with active transportation, it is important to encourage people to walk, cycle, and take transit as often as they are able. In order for transit and active transportation to be a reasonable choice, the communities where people live and work need to support that choice.

Community Design Affects Transit and Active Transportation

There is resounding evidence of statistically significant associations between the built environment and travel behavior. The more walkable a neighbourhood is in design, the more often people walk, cycle, and use public transit. For example, a Toronto study found that residents from the most walkable neighbourhoods walk for utilitarian reasons (rather than for pleasure) 2.7 times as often and use transit 2.5 times as often as residents in the least walkable neighbourhoods, and have, on average, a Body Mass Index (BMI) that is one point less than residents from the least walkable neighbourhoods (TPH, 2012). One study found that the built environment, which is the man-made surroundings that provide the setting for human activity, accounts for between 48% and 90% of the differences in walking levels (Ewing, 2010).

Community Design Elements

The community design elements that have been found to have the greatest impact on walking, cycling and transit use by residents include the 5 D's: Density, Diversity, Design, Destination, and Distance.



Toolkit - Links to Resources

- ▶ [Active Travel Toolkit](#) (March 2017)
 - ▶ [Report](#) Prescribing Active Travel for Healthy People and a Healthy Planet: A Toolkit for Health Professionals
 - ▶ [La Rapport](#) Prescrire le Transport Actif pour la Santé des Gens et celle de la Planète: une Boite à Outils pour les Professionals de la Santé
 - ▶ [Backgrounder](#) Transit, Active Transportation, and Public Health
 - ▶ [Document d'information](#) Transport en commun, transport actif et santé publique
 - ▶ [Backgrounder](#) Transit and Active Transportation Require Supportive Community Design
 - ▶ [Document d'information](#) Le transport en commun et le transport actif nécessitent le soutien de la communauté
 - ▶ [Patient Factsheet](#) Get Healthy & Fit with Active Transportation
 - ▶ [Patient Factsheet](#) Get Healthy & Fit: Use Public Transit
 - ▶ [Feuille d'information pour les Patients](#) Retrouvez la forme et la santé: Utilisez les transports en commun
 - ▶ [Patient Brochure](#) Get Healthy & Fit with Active Transportation
 - ▶ [Patient Brochure](#) Get Healthy & Fit: Use Public Transit
 - ▶ [Feuille d'information pour les Patients](#) Retrouvez la forme et la santé: avec le transport actif
 - ▶ [Social Media Kit](#)