Heart and Stroke Foundation of Canada

Position Statement

COMMUNITY DESIGN, PHYSICAL ACTIVITY, HEART DISEASE AND STROKE

FACTS

- The design, infrastructure and layout of a community can encourage or discourage participation in physical activity, including active modes of transportation such as walking and cycling. Important design elements include street crossings, lighting, parks, sidewalks, cycling lanes, community trails, recreational facilities, and ease of access to public transit, schools, shopping and employment areas.
- The most recent Canadian Health Measures Survey found that only 15% of Canadian adults[1] and 7% of Canadian children and youth[2] get the recommended amount of physical activity.
- Overweight and obesity are serious health problems in Canada. Rates of overweight and obesity have been climbing steadily for the past 30 years. Physical inactivity or sedentary living is one of the factors related to these rising rates of obesity.[3]
- The risk of obesity has been shown to decline by 4.8% for each additional kilometre walked per day and can increase by 6% for each hour spent in a car per day.[4]
- A recent study compared rates of active transportation with obesity in Europe, North America and Australia and found that generally, the countries with higher rates of active transportation had lower levels of obesity.[5]
- Across Canada, only about 12% of trips to the grocery store, work, the library or school are made on foot or by bicycle. While this is higher than the 7% rate in the United States, it is much lower than in the Netherlands (46%) and Denmark (41%).[6] In major urban centres, 34% of residents report walking, biking, or taking public transit to get to work, while in smaller Canadian communities, this figure is 18%.[7]
- In urban areas, neighbourhoods that have good street lighting, availability of continuous sidewalks, and a greater density and variety of shops, services, parks, schools and workplaces within walking distance of homes are often called "walkable" neighbourhoods. Canadian studies have shown that adolescents are more likely to walk or bike to school if the journey is short and takes place in a walkable environment with a variety of land uses and a high density of street trees.[8]
- A number of studies in the United States and Canada have shown that people who live in moderate to high density areas and in more walkable neighbourhoods make more trips on foot or by bicycle, spend less time driving, and are more likely to meet recommended levels of physical activity. [9,10] People living in more walkable neighbourhoods are less likely to be overweight or obese than those living in rural areas or low density areas with a lack of shops, services and other amenities close by.[11-14]
- Users of public transit tend to have higher levels of physical activity.[15]
- In addition to active transportation and public transit infrastructure, greater access to recreational facilities and parks serves to promote physical activity, particularly among children.[16] Reduced availability of recreational facilities has been associated with lower levels of physical activity and increased prevalence of overweight among U.S. adolescents.[17]
- Safety concerns keep 1 in 5 Canadians from walking or bicycling.[18] Community planning that encourages walking and cycling is likely to improve perceived neighbourhood safety, particularly among women, parents of younger children and the elderly[19-21] and may increase rates of physical activity among Canadians.
- Community planning that encourages walking, cycling, and public transit use will also help to lower air pollution levels. The Canadian Medical Association estimates that as many as 21,000 Canadians die each year as a result of air pollution. Of these, roughly 18,000 are the result of chronic exposure over a number of years, and almost 3,000 are the result of acute, short-term exposure.[22]
- While everyone faces increased health risks due to air pollution, the risk is greater for people with cardiovascular and respiratory conditions, people with diabetes, the elderly, pregnant women and young children.[23]

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RECOMMENDATIONS

The Heart and Stroke Foundation of Canada recommends that:

Canadians:

1. Consider the features of their communities that encourage active transportation and physical activity. Features to note include the presence of nearby shops and services, continuous sidewalks, trails and cycling lanes, safe street crossings, good lighting, tree coverage, well maintained parks and recreational facilities, and street patterns that allow short and easy trips to amenities. Through neighbourhood/community associations, Canadians should encourage mayors and municipal councils to adopt policies that encourage active transportation, including those noted in the section below.
2. Download and use the Heart and Stroke Foundation's Shaping healthy, active communities toolkit (PDF, 2.20 MB), which was developed to help individuals and organizations who are interested in making their communities more supportive of physical activity through active, healthy communities.

Municipal Governments, Community Planners and Developers

1. Work together to create communities that support active, healthy living in Canada by making land use planning decisions that:
   a. Retrofit existing communities to include sidewalks, cycling infrastructure, street trees, parks, and pedestrian connections to nearby schools, workplaces, shops and services.
   b. Establish urban containment policies to manage the outward growth of cities to promote increased development density and opportunities for active travel.
   c. Lead to the development of new communities located within urban containment boundaries that support active transportation and physical activity by including higher density and land use mix, a range of housing options and affordability, easy access to recreational facilities and parks, and good links to frequent public transit.

Provincial Governments

1. Develop and implement sustainable regional and metropolitan development plans.
2. Increase funding for municipal infrastructure and public transportation.
3. Prioritize funding for public transit and municipal infrastructure that encourages active living.
4. Align provincial transportation policy and municipal affairs policy with physical activity and health goals.

Federal Government

1. Develop a Canadian active transportation plan in cooperation with provincial and municipal governments and other key stakeholders.
2. Establish an Active Transportation Fund to provide dependable, long-term funding for municipal infrastructure that promotes active transportation such as sidewalks, walking trails, bike paths and bike lanes.
3. Renew the Recreational Infrastructure Canada Fund to ensure continued investment in facilities such as swimming pools, skating rinks, tennis courts, soccer fields, parks, trails, etc.

Researchers

1. Conduct research that improves our understanding of:
   a. The relationships between the elements of community design, land use, and transportation systems, and the outcomes of physical activity, overweight, and obesity in a variety of Canadian contexts (urban, suburban, rural).
   b. The relative impact of community design on physical activity levels compared to other factors such as age, gender, household income, cultural factors and personal preferences.
   c. Effective policy options that apply to different types of Canadian communities (urban, suburban, small town and rural).
   d. Potential economic benefits from community design that promotes active transportation and physical activity in areas including health, the environment, and economic productivity.

COMMUNITY DESIGN, PHYSICAL ACTIVITY, HEART DISEASE AND STROKE

BACKGROUND INFORMATION

The degree to which communities promote active living for all is largely determined by *community design, land use, and transportation systems*:*

> **Community Design:** the design of communities and their physical elements (such as buildings, streets, parks and open spaces, and sidewalks), including both their arrangement and appearance.
>
> **Land use:** the distribution of activities across space, including the location and density of housing, workplaces, schools, green space, commercial, and industrial uses.
>
> **Transportation System:** the physical infrastructure for roads, bridges, sidewalks, bike paths, railroad tracks and public transportation (buses, subways, light rail).

The Links between Community Design, Physical Activity, Heart Disease and Stroke

The benefits of regular physical activity are well known and include, among other things, better overall physical and mental health, improved fitness, and weight control. There are a number of health risks associated with physical inactivity which include heart disease, stroke, high blood pressure, type 2 diabetes and overweight/obesity. The ways in which communities are designed affect levels of physical activity and active transportation by encouraging or discouraging walking, cycling, playing in parks, driving cars, taking public transit and using recreational facilities. Forms of active transportation include walking, cycling, in-line skating, skateboarding, wheelchair use, etc.

Community planning and development largely determine the shape and physical layout of the communities in which we live, work, learn and play. Design and development that separates housing from shops, services, schools, and workplaces and/or makes it difficult to use active transportation to easily access amenities encourages the use of automobiles and discourages physical activity. Some key strategies to promote active transportation include:

- Creating inter-connected street grid patterns with pedestrian activated crossing lights;
- Placing shops and services, parks and recreation spaces, schools, and workplaces within walking distance of housing;
- Building and improving sidewalks, pathways, and cycling lanes.

Users of public transit tend to have higher levels of physical activity because they often use active modes of transportation to access transit stops. Therefore, in addition to simply expanding public transit services, investments in infrastructure which promote active transportation to and from public transit access points are also critical. Examples of these types of investments include safe cycling routes to and from major transit stops as well as bike racks at transit stops and buses designed to transport bikes.

Many suburban developments created in Canada in the 1940s and 1950s increased reliance on the automobile. This has continued over the past 60 years and has fuelled urban sprawl. Urban sprawl uses large quantities of land, tends to separate housing from stores, schools, and workplaces, and encourages dependency on automobiles. Key features of urban sprawl include new housing developments at the edges or well outside established community areas; housing that is relatively isolated from shops, services, workplaces, and schools; lower numbers of residents per square kilometre ("low density"); looping, poorly-connected residential street patterns; wide, busy commercial streets that pose safety risks to pedestrians and cyclists, and a lack of sidewalks and/or narrow sidewalks that are located too close to busy streets.

Urban sprawl and development that encourages automobile use contributes to higher levels of air pollution. Air pollution includes particulate matter (from industrial and motor vehicle emissions), carbon monoxide (from motor vehicle exhaust), and ground level ozone (from burning fossil fuels for transportation). Air pollution discourages physical activity, is a significant risk factor for heart disease and stroke and can worsen existing heart and lung problems.[24-37] Community planning that encourages walking, biking and public transit use will help lower pollution levels overall, increase physical activity levels and decrease the risks for heart disease and stroke. Careful planning is also required to reduce pedestrian exposure to air pollution along suburban streets and in central and often more walkable parts of cities, where cars and people are concentrated.

Evidence suggests that there are important relationships between community design, physical activity, rising rates of overweight and obesity and heart disease and stroke. To improve the heart health of Canadians and reduce the risks of heart disease and stroke, future Canadian community planning and development should consider the extent to which a community promotes active transportation and physical activity. Particular effort should be made to provide and establish mixed land use, appropriate density, a variety of housing options and affordability, efficient public transit, infrastructure that supports active transportation, and access to parks and recreational facilities.

* For simplicity, community design is used in the title of this position statement. It is recognized that land use and transportation systems are also key factors with respect to the promotion of active transportation and physical activity.

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The Heart and Stroke Foundation of Canada recognizes that the life-long heart health of Canadians is affected by both individual and social factors. Individual factors include genetic make-up, personal health choices and actions, and social support. Social factors include the social, economic and environmental conditions in which Canadians live, work, learn and play. The Foundation encourages Canadians to make heart-healthy choices and encourages governments and the private sector to develop policies and programs that support healthy communities and reduce inequalities that negatively affect health and well-being.

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