HEART & STROKE™ FOUNDATION

Heart and Stroke Foundation's

Healthy Community *Design Research*

The Heart and Stroke Foundation is well known for its commitment to funding valuable research leading to important advancements in heart disease and stroke. Since 2009, we have partnered with key research funders such as the Canadian Institutes of Health Research to support several, multi-year healthy community projects linking first-class researchers with local policy-makers. These innovative projects will address information and public policy gaps and identify evidence-based ways to improve community design to support healthy living. So far the results are diverse, unique, and vital to the policy-making process in villages, towns, and cities all across the country.

"Understanding the connection between health and community design will lead to improved planning policies, improved community environments, and improved health. The Heart and Stroke Foundation has been a national leader in supporting research examining these important relationships."

Dr. Andrew Pipe, Chief, Division of Prevention and Rehabilitation, University of Ottawa Heart Institute.

Following is a list of some of the research projects funded by the Heart and Stroke Foundation and the Canadian Institutes of Health Research, and looking at health and community design questions.

Research Project 1: Features of the built environment in residential neighbourhoods that influence excess weight and weight-related behaviours in a cohort of children at risk for obesity.

Principal Investigator: Barnett, Tracie A., Sainte-Justine Hospital, Montreal, QC.

Project website: etudequalitystudy.ca

Summary:
Obesity in Canadian children has tripled in the last 30 years. Although a complex issue, this steep and sudden increase in obesity suggests that the cause may be linked to changes in the way our communities are designed. By understanding the characteristics of children's residential environments that are most strongly associated with obesity-generating behaviours, this research will provide important insights into prevention. To achieve its objective, the study will consider important factors that help determine a person's health such as gender, attitudes, beliefs, influence of parents, neighborhood safety, and income and education levels.

Photo: www.pedbikeimages.org / Dan Burden

Research Project 2: A longitudinal examination of the relationship between the built environment, physical activity, and social factors within the Capital Health Region of Alberta.

Principal Investigator: Berry, Tanya, University of Alberta, Edmonton, AL.

Project website: ualberta.ca/~tanyab/BEEP%20report.pdf

Summary:
This research project followed people over six years and looked at several factors that can influence weight gain including activity levels and access to walkable neighbourhoods. Ultimately, the goal is to provide municipal planners with the information they need to better understand how community and neighborhood design may or may not contribute to obesity. Although this research study occurred in Alberta, the knowledge gained was shared nationally and suggestions may be helpful to municipal planners all across Canada.

Research Project 3: Understanding the impact of the built environment on decisions to cycle as a mode of urban transport.

Principal Investigator: Brauer, Michael, University of British Columbia, Vancouver, BC.

Project Website: cyclingincities.spph.ubc.caa

Summary:
Cycling as a form of active transportation offers a great opportunity to increase physical activity and decrease the risk for cancer, diabetes, heart disease, and obesity. Cycling also offers environmental benefits such as reduced air and noise pollution. Unfortunately, cycling rates in Canada, as compared to those in European centres, are low, and Canadian municipalities are struggling to increase ridership. Some cities have sponsored research to understand how to encourage people to cycle more, but none of this research investigates how neighbourhood characteristics and transportation networks are related to cycling – until now.

Research Project 4: Built Environment and Active Transport (BEAT).

Principal Investigators: Faulkner, Guy E. J.; Buliung, Ron, University of Toronto, Toronto, ON.

Project Website: physical.utoronto.ca/Beat.aspx

Summary:
Physical inactivity is an important factor in the increasing number of overweight or obese children. However, in Canada, over half of children aged 5 -17 rely solely on inactive modes of transportation (e.g., car or bus) to get to and from school. Given that physical activity declines through adolescence and that lifelong physical activity patterns are established in childhood, encouraging any amount of active commuting at a young age could be beneficial in the long term.

There is an absence of Canadian research examining how to increase active school transport and, specifically, the role of the built environment in shaping this behaviour. This research project addresses this gap in knowledge and provides key evidence to support the development of better policies and programs to positively affect school travel behaviour and children's health.

Research Project 5: Built environment influences on diet, physical activity, and obesity: a transdisciplinary approach.

Principal Investigator: Frank, Lawrence; University of British Columbia, Vancouver, BC.

Project Website: health-design.spph.ubc.ca/research/newpath/

Summary:
Which comes first, the activity or the neighborhood? A criticism of past research involving the impact of the built environment on a specific health issue or overall health is that people choose to live in areas that reflect their lifestyles. For example, those who want to be physically active may be more likely to live in a walkable community whereas those who want to drive may be more likely to live in places where use of a vehicle is needed to reach routine destinations. This ground-breaking research project will address the question of which comes first, and it will also be the first such project to combine and exploration of diet and physical activity in understanding how the built environment impacts obesity.

Research Project 6: Optimizing investments in the built environment to reduce youth obesity.

Principal Investigators: Lyons, Renée F.; Grant, Jill L., Dalhousie University, Halifax, Nova Scotia

Project Website: ahprc.dal.ca/projects/enact/

Summary:
On average, youth in Nova Scotia have extremely low rates of physical activity. Additionally, the diets within this group often do not meet the guidelines in Canada's Food Guide. Unfortunately, the result is that Nova Scotia has one of the highest rates of youth obesity in Canada. While there are many reasons for this, one potential contributor is the built environment.

Governments and developers spend billions of dollars each year modifying the built environment based on policies related to zoning and building, land use, neighbourhood form, transportation, and capital funding. Yet these policies rarely take into consideration the growing problem of youth obesity. This research project seeks to inform decision-makers as to how investments in the built environment can better support health-promoting behaviours such as physical activity and healthy eating among youth.

Research Project 7: Working upstream: Effecting healthy children through neighbourhood design

Principal Investigators: Muhajarine, Nazeem; Neudorf, Cordell, University of Saskatchewan, Saskatoon, SK.

Project Website: smartcitieshealthykids.com

Summary:

Also known as "Smart Cities, Healthy Kids" this is a three-year study that examines the active living potential of all 60 residential neighbourhoods in the City of Saskatoon, Saskatchewan. The "Smart Cities, Healthy Kids" study examines how urban planning and design can help encourage more children to be physically active, while helping to reduce the risk of childhood obesity.

The study took a multi-pronged approach. In the first part, the research team looked at how specific planning strategies the city had undertaken over time have now affected the "active living potential" of each residential neighbourhood in the city. In the second phase, researchers set out to determine the relationship between a neighbourhood's active living potential with the reported and actual level of physical activity of the children, aged 10 to 13, who live there. In the final, qualitative portion of the study, the team asked children and their parents about what influence they felt their neighbourhoods had on their activity levels.

Research Project 8: Obesity prevention and the built environment: examining opportunities and barriers in four Alberta communities.

Principal Investigator: Nykiforuk, Candace I. J.; University of Alberta, Edmonton, AL.

Project Website: chbeprojects.com

Summary:

Obesity is a major risk factor for chronic diseases such as type 2 diabetes, cancer, and heart disease – all of which are important public health concerns in Canada. Many of the risk factors for these chronic diseases can be addressed through physical activity and healthy eating. However, the built environment shapes the choices we are able to make in support of being more active and eating a healthier diet.

This research will look at how people view opportunities to support better health as a result of their built environment, how they access these opportunities, and what aspects of the environment prevent access. As a result, a current information gap within the scientific work on chronic disease and obesity prevention will be filled. Using an approach that considers programs, services, and opportunities (or barriers) in the built environment will provide valuable insights for further research; health program and service delivery; and local, community-level decision-making.

Research Project 9: A longitudinal study of environmental determinants of overweight among children: the SHAPEs of things to come.

Principal Investigator: Spence, John C., University of Alberta, Edmonton, AL.

Project Website: centre4activeliving.ca

Summary:
Rates of overweight and obese children have increased over the past decade. These rates, which are associated with poor health and a lower quality of life, will continue to rise if the causes are not addressed. We know that an imbalance in the amount of calories consumed and those burned through physical activity are the most immediate causes.

However, there are other factors that influence this imbalance. The way neighbourhoods are designed and access to fast-food restaurants have recently been associated with obesity among adults. However, very little research has been conducted with children, and even less is known about how the environment is related to changes in body weight over time. Evidence from long-term studies is needed to identify a clear link between the built environment and the cause of obesity. If a link between the built environment and childhood overweight and obesity is found, then opportunities for interventions and appropriate policies can be identified.

Research Project 10: Bicyclists' Injuries and the Cycling Environment (BICE).

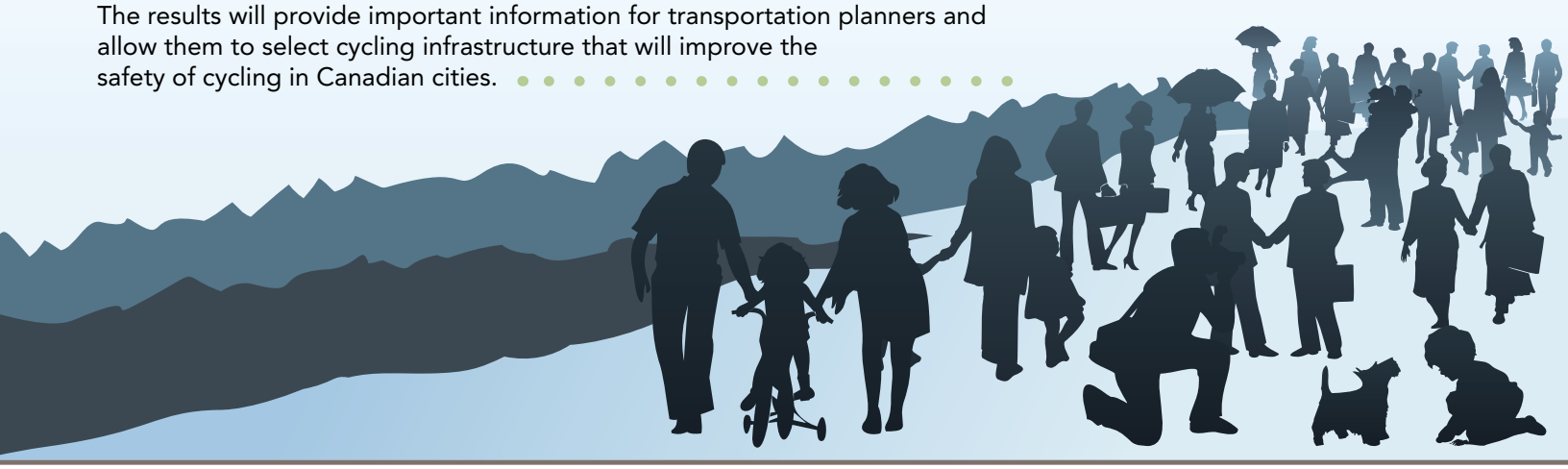
Principal Investigator: Teschke, Kay, University of British Columbia, Vancouver, BC.

Project Website: cyclingincities.spph.ubc.ca

Summary:
In Canada, people drive for most trips rather than walk or bike. In the Netherlands, Denmark, Sweden, Switzerland, Austria, and Germany, walking represents twice as many trips as in Canada and biking 5-15 times as many trips. Additionally, people of all ages bike in these European locations. However, in Canada, cyclists are mainly young men.

Safety concerns prevent many people from biking. Cycling in Canada is less safe than driving and less safe than cycling in European cities. On the other hand, cycling has many benefits; it can improve physical fitness, reduce obesity, and decrease air pollution. Making cycling safer will encourage cycling and lead to improved population health.

This research is studying the link between bicyclists' injuries and the cycling environment. The results will provide important information for transportation planners and allow them to select cycling infrastructure that will improve the safety of cycling in Canadian cities.



Research Project 11: TIME (Tools, Information, Motivation, Environment) for health: A multi-level intervention to promote healthy eating in children and their families.

Principal Investigators: Kirk, Sara and Rainham, Daniel, Dalhousie University, Halifax, NS.

Project Website: ahprc.dal.ca/projects/time

Summary:
When it comes to scheduled physical activity, time pressures can lead to challenges in providing healthy food choices at home. There are a number of settings outside the home, including recreational facilities, where food is available. However, that food is often not consistent with current recommendations for healthy eating. Are we giving up a healthy diet in order to promote physical activity? Is it necessary? To examine these questions, this research will focus on improving family nutrition habits and incorporating a change in the built environment to increase healthy food availability in recreational facilities.

Research Project 12: Identifying causal effects of the built environment on physical activity, diet, and obesity among children.

Principal Investigator:Gilliland, Jason; University of Western Ontario, London, ON.

Project Website: N/A

Summary:
Research suggests that the built environment in which we live, play, shop, work, and go to school influences obesity levels by making it hard or easy to be physically active and eat healthy foods. This study will assess how the built environment impacts physical activity and eating behaviours among elementary school children in Southwestern Ontario. The ultimate goal is to provide information to guide policy-makers and planners in making health-promoting changes in the built environment.

Research Project 13: A mover's study: Physical activity and diet before and after residential relocation.

Principal Investigators: Frank, Lawrence and Brauer, Michael; University of British Columbia, Vancouver, BC.

Project Website: N/A

Summary:
This Metro Vancouver study will investigate how different neighbourhood design attributes influence health over time. Researchers will compare built environment features and the health of people before and after they move to a new neighbourhood. They will focus on diet, physical activity levels, body weight, and exposure to air and noise pollution. They will examine relationships across different age groups, ethnicities, and income levels. The findings from this project will advance our understanding of how neighbourhood layout and design influence health outcomes across different populations.

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HEALTHY CANADA by design

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