

## Appendix 1 – Canadian evidence

### Report on Public Health and Urban Sprawl in Ontario: A Review of the Pertinent Literature

descriptors

Abelsohn, Alan; Riina Bray, Catherine Vakil, David Elliott

2005 Environmental Health Committee, Ontario College of Family Physicians

**Research subject** general; urban sprawl, health

**Research Type** review

**Population** general

**Place** ON

**Reference Type** Report

**Page length** 53, including tables and figures

#### Abstract or Excerpt

[from the Executive Summary]

This report summarizes pertinent information on the relationship between urban sprawl and health. It serves to identify the key issues that are relevant to the growing number of sprawl-related health problems in Ontario which is comparable to US situations and is far worse compared to Europe.

The best available evidence indicates that greenspace is an essential part of human health. People cannot continue to lead healthy lives without sufficient farmland to produce local food, forests to help purify the air, and protected watersheds to provide safe drinking water. Neither of these complementary goals - protecting environmental systems and protecting human health - can be accomplished, however, without curbing urban sprawl. By setting aside one million new acres for a Greenbelt in southern Ontario, the provincial government has taken strong steps towards protecting the environment, and building stronger, healthier, more compact communities. Other connected strategies, such as the proposed Growth Plan and the Planning Reform initiative, will also play key roles in controlling sprawling growth.

In this document, the pathway from urban sprawl to public health via vehicle emissions and air pollution will be examined, along with reviews of the relationship of sprawl to increased driving. Sprawling urban developments leads to increased driving, which results in increased vehicle emissions that contribute to air pollution and its attendant negative impacts on human health. Health effects of traffic-related air pollution, at both the local and regional levels, are described using Toronto and Ontario mortality and morbidity data. . .

The impact of the built environment on health is an emerging field of study and more rigorous research is needed, especially in Canada. Despite this, the results of current studies clearly indicate that serious public health problems will continue to escalate unless decisive and immediate action is taken to control urban sprawl and preserve sufficient greenspace, improve air quality, and protect water sources.

#### Comment

A report from the Ontario College of Family Physicians' Environmental Health Committee, concerned about the public health impacts of urban sprawl in Ontario. Noting the limited number of Canadian studies, the literature review draws on studies from elsewhere.

In addition to background, conclusions and description of methodology, the review has six sections. 'Physical Health Impacts of Sprawl' primarily covers air pollution, noting the differential burden of illness, impacts from short- and long-term exposure and briefly covers impacts from climate change. 'Lack of Physical Activity - Diabetes, Obesity, Hypertension' considers walkability, and impacts arising from increased use of cars and related factors. 'Injuries and Death from Traffic Accidents' and 'Effects on Water Quality' are self-explanatory. 'Mental Health Impacts of Sprawl' covered increased stresses from commuting/driving, loss of sense of community, loss of greenspaces and other factors. The last section, 'High Risk Groups' draws particular attention to children, women, the elderly and people with disabilities. Each section highlights pertinent information from the literature, noting relevance to Ontario.

The paper closes with brief recommendations, citing the need for more integrated and walkable communities, the need to protect greenspaces, and the need for physicians to attend to the living locations of their patients in considering their well-being. In simultaneously defending use of studies from elsewhere and providing a warning, the authors note that "Canadian and Ontario studies in the area of sprawl and health are very sparse. Studies done in the US, however, give us serious warning of what the future holds for the health of this province if we continue to let urban sprawl expand" (p 38).

#### Other Information

<http://www.ocfp.on.ca/English/OCFP/UrbanSprawl/>

## The case of Montréal's missing food deserts: Evaluation of accessibility to food supermarkets

Apparicio,Philippe; Cloutier,Marie-Soleil; Shearmur,Richard

2007 International Journal of Health Geographics 6, 1 page(s) 4 - 16

descriptors

Research subject	food access/nutrition; location and accessibility of supermarkets
Research Type	GIS, multivariate statistical analysis
Population	general, other (low income)
Place	Montreal
Reference Type	Journal, online
Page length	13, some tables, maps, figures

### Abstract or Excerpt

**BACKGROUND:**Access to varied, healthy and inexpensive foods is an important public health concern that has been widely documented. Consequently, there is an increasing interest in identifying food deserts, that is, socially deprived areas within cities that have poor access to food retailers. In this paper we propose a methodology based on three measures of accessibility to supermarkets calculated using geographic information systems (GIS), and on exploratory multivariate statistical analysis (hierarchical cluster analysis), which we use to identify food deserts in Montréal.

**RESULTS:**First, the use of three measures of accessibility to supermarkets is very helpful in identifying food deserts according to several dimensions: proximity (distance to the nearest supermarket), diversity (number of supermarkets within a distance of less than 1000 metres) and variety in terms of food and prices (average distance to the three closest different chain-name supermarkets).Next, the cluster analysis applied to the three measures of accessibility to supermarkets and to a social deprivation index demonstrates that there are very few problematic food deserts in Montréal. In fact, census tracts classified as socially deprived and with low accessibility to supermarkets are, on average, 816 metres away from the nearest supermarket and within 1.34 kilometres of three different chain-name supermarkets.

**CONCLUSION:**We conclude that food deserts do not represent a major problem in Montréal. Since geographic accessibility to healthy food is not a major issue in Montréal, prevention efforts should be directed toward the understanding of other mechanisms leading to an unhealthy diet, rather than attempting to promote an even spatial distribution of supermarkets.

### Comment

Authors comment on the recent, mainly British, interest in "food deserts" which are ""areas of relative exclusion where people experience physical and economic barriers to accessing healthy food" (British research team)" (online). They note that, to date, most have used a simplistic/limited methodology and suggest that this leads to the conclusions that food deserts do not exist or are irrelevant. The paper presents results from developing and applying a more refined methodology, which considers distance to supermarket, number of supermarkets within 1km, and mean distance to 3 different chains/brands as key variables. Their conclusion is that food deserts are not an issue in Montreal.

Authors discuss the methodology and limitations of the research, consider constraints on conclusions and suggest the need for more research.

### Other Information

<http://www.ij-healthgeographics.com/content/pdf/1476-072X-6-4.pdf>

**Walkable Communities Literature Review: What Do We Know?**

descriptors

**Armstrong, Karen**

2006 Central West Walkable Communities Project, Ontario

<b>Research subject</b>	physical activity; walkable communities
<b>Research Type</b>	review
<b>Population</b>	general
<b>Place</b>	n/a
<b>Reference Type</b>	Report
<b>Page length</b>	10
<b>readability</b>	point form

**Abstract or Excerpt**

no abstract



**Comment**

This review provides a short summary of research related to the walkability of communities. Research is categorized into several areas: Association Between Neighbourhood Walkability and Active Transportation, Demographics on Transportation Use, Health Benefits of Walkable Communities, Injuries and Changes in Urban Design. Each of these sections includes bullet-point summaries of research. A final section provides a set of benchmarks and indicators that might be used for evaluation.

**Toronto bicycle commuter safety rates****Aultman-Hall,L.; Kaltenecker,M. G.**

1999 Accident Analysis and Prevention 31, 6 page(s) 675 - 686

**Keywords** Bicycle; Safety; Collisions; Commuter; Bikepaths Accidents, Traffic/statistics & numerical data;Bicycling/statistics & numerical data;Female;Health Surveys;Humans;Male;Occupational Health;Ontario;Safety

**Abstract or Excerpt**

This analysis uses data from a survey of Toronto commuter cyclists that collected information regarding accident history as well as regular commute route to work or school. By relating the route information of the 1196 respondents to facility attributes in a Geographic Information System (GIS), defensible estimates of travel exposure on roads, off-road paths and sidewalks were developed. The rate of collision on off-road paths and sidewalks was lower than for roads. The relative rates for falls and injuries suggest these events are least common on-road followed by off-road paths, and finally most common on sidewalks. The rate of major injuries, an injury that required medical attention, was greatest on sidewalks and the difference between paths and sidewalks was negligible. These rates suggest a need for detailed analysis of sidewalk and off-road path bicycle safety. The absolute event rates per bicycle kilometer were found to be between 26 and 68 times higher than similar rates for automobile travel, re-confirming the urgent bicycle safety crisis. Examination of rates for sub-groups of cyclists suggest that experience is an important factor in bicycle safety. The same survey conducted in Ottawa, Canada found event rates much lower than Toronto. This result may confirm urban form, traffic levels and attitude do affect bicycle safety. The analysis also demonstrates a successful method to quantify bicycle travel exposure information and should be considered for further use as complement to other existing techniques.

**descriptors**

**Research subject** injury, physical activity; linking bicycle commuting to collisions/injuries

**Research Type** survey (n=1196), GIS

**Population** general

**Place** Toronto

**Reference Type** Journal

**Page length** 12

**readability** fine, but much detail on procedure/rationale for weightings/subgroups etc.

**Comment**

The authors note contradictory results from the limited number of studies that compare on-road/off-road bicycle safety. Some studies suggest that roads are safer; others suggest the reverse.

The paper reports on a bicycle safety survey of bicycle commuters in downtown Toronto, comparing use of roads, paths, and sidewalks. (Paths include paved, unpaved, school-yard shortcuts, etc. but not mountain bike trails and should not be considered equivalent to dedicated bicycle lanes as in Europe.) Study focused on bicycle commuters in order to ensure more accurate mapping of routes on GIS and relied on self-reported collisions, falls and injuries (and subsequently, not fatalities). The results show a much higher total number of on-road events. However, when weighted by per-km-traveled, there is a much higher rate of events on sidewalks, than on paths, with the lowest rate on roads. The same ranking of events was found in an earlier study in Ottawa – although the number of Toronto events was higher overall. The authors provide some break-downs, showing rates for some subgroups such as male/female, experience, sidewalk cyclers, etc. (Some of this was used for developing more appropriate weightings.) They also note that “[a]lthough exact comparisons are not possible, the event rates per bicycle kilometer were found to be approximately 26-68 times higher than similar rates for automobile travel throughout Ontario” (685).

The authors devote considerable space to discussion of assumptions, procedures, reasoning and calculations involved in performing the analysis and weighting of results. They also warn against the risk of making too direct an interpretation of the results, noting, for example that sidewalk-cyclers may be more reckless riders, hence leading to a greater number of events or that good path maintenance could decrease the number of events. The authors also make some conjectures with respect the differences – for example that the “rules of the road” mediate interactions on roads in a manner that is not necessarily followed on paths or sidewalks.

**Grounds for Action: Promoting Physical Activity through School Ground Greening in Canada**

descriptors

**Bell, Anne C.; Janet E. Dymont**

2006 Evergreen

<b>Research subject</b>	physical activity; schools and children`s growth and development
<b>Research Type</b>	survey, review, analysis
<b>Population</b>	youth, children
<b>Place</b>	Canada
<b>Reference Type</b>	Report

**Abstract or Excerpt**

Grounds for Action presents the findings of a national survey that explored the relationship between green school grounds and physical activity at elementary schools across Canada. This is a timely investigation given the growing epidemic of overweight and obesity among Canadian children. Children spend on average about 25% of their school day outdoors on the school ground. This setting thus offers important opportunities for promoting physical activity and health.

Grounds for Action examines the ways that greening initiatives can influence the quality and quantity of active play on school grounds. It analyzes information provided by 105 parents, teachers and administrators at 59 elementary schools in British Columbia, Alberta, Manitoba, Ontario, Quebec and Nova Scotia. The evidence indicates that green school grounds can play a significant role in promoting physical activity – especially moderate and light levels of activity – by increasing the range of enjoyable, non-competitive, open-ended forms of play at school. When asked to compare their school ground before and after greening, almost half of the respondents (49%) reported that their green school ground now promotes more vigorous activity (40% reported no change; 2% reported less activity; 9% were unsure). The majority of respondents (71%) indicated that greening has also resulted in more moderate and/or light physical activity (17% reported no change; 1% reported less activity; 11% were unsure).

Through greening, school grounds diversify the play repertoire, creating opportunities for children of all ages, interests and abilities to jump, climb, dig, lift and generally get moving in ways that nurture all aspects of their health and development. These positive findings emerged consistently across the schools participating in the survey, despite the differences in size, student population and geographic location.



**Comment**

This report discusses the rationale, process and results of a study on school grounds across the country, comparing student activities in conventional and green school grounds.

The report describes their main findings: Green schools grounds appeal to a wider variety of student interests and support a wider variety of play opportunities. Patterns of activity differ between conventional and green schoolgrounds, with the latter showing a greater variety in degrees of activity (light to vigorous) and more non-competitive activity. Green school grounds promote more active, imaginative and constructive play, enhancing physical, social and cognitive well-being. Green schoolgrounds can act as a model for healthy active lifestyles by involving students in gardening and maintenance. Finally, that "the design and culture of school grounds can limit or enable physical activity... Children are more active when school ground rules, policies and supervision allow for non-competitive, open-ended play, as well as opportunities to care for the garden or green space."

The report makes a series of recommendations. On policy, recommendations include suggestions for agencies ranging from Health Canada, education ministries and school boards to local health authorities. They also recommend interorganizational collaboration, especially between health and education professionals, as well as teacher education and further research.

**Other Information**

<http://www.evergreen.ca/en/lg/pdf/PHACreport.pdf>

**Gender differences in perceived environmental correlates of physical activity**

descriptors

**Bengoechea, Enrique; Spence, John; McGannon, Kerry**2005 International Journal of Behavioral Nutrition and Physical Activity 2, 1 page(s)  
12 - 21

Research subject	physical activity, perceptions; gender and perceived environment, impact on activity
Research Type	telephone survey (n=1209), regression analysis
Population	adults
Place	Alberta
Reference Type	Journal, online, open access
Page length	9, a few tables

**Abstract or Excerpt**

**BACKGROUND:**Limited research has been conducted on gender differences in perceived environmental correlates of physical activity (PA). The purpose of this study was to explore the potential role of gender in the link between perceived environment and PA.

**METHODS:**Using a telephone-administered survey, data was collected on leisure time physical activity (LTPA), perceptions of the neighbourhood environment, and self-efficacy in a representative sample of 1209 adults from the province of Alberta, Canada. LTPA was regressed on ten measures of perceived neighbourhood environment and self-efficacy in a series of logistic regressions.

**RESULTS:**Women were more likely than men to perceive their neighbourhood as unsafe to go for walks at night (?2 = 67.46, p < 0.001) and to report seeing people being active in their neighbourhood (?2 = 6.73, p < 0.01). Conversely, women were less likely to perceive easy access to places for PA (?2 = 11.50, p < 0.01) and availability of places to buy things within easy walking distance from home (?2 = 4.30, p < 0.05). Adjusting for age, education, income, and place of residence, access to places for PA (OR = 2.49) and interesting things to look at in the neighbourhood (OR = 1.94), were associated with higher levels of LTPA in men. Access to places for PA (OR = 2.63) and reporting seeing people being active (OR = 1.50) were associated with increased LTPA among women. After controlling for sociodemographic variables and self-efficacy, the presence of shops and places to buy things within easy walking distance from home (OR = 1.73), interesting things to look at in the neighbourhood (OR = 1.65), and access to places for PA (OR = 1.82) were associated with higher levels of LTPA in men. Among women, no significant relationships were observed between perceived environment and LTPA after adjusting for self-efficacy.

**CONCLUSION:**The results provide additional support for the use of models in which gender is treated as a potential moderator of the link between the perceived environment and PA. Further, the results suggest the possibility of differential interventions to increase PA based on factors associated with gender.

**Comment**

The authors point to an increasing interest in ecological models (over social-cognitive models) of behaviour, which consider multiple influences on physical activity, such as intra- and inter-personal, environmental, organizational and policy factors. Noting that women have been shown to have lower levels of physical activity, the research reported here considered whether there were gender differences in perceptions of environment and whether these had an influence on levels of leisure time physical activity.

The results indicate differences in perceptions as well as possible correlations between these and levels of physical activity. The authors note some "interesting differences". For example the perception that "there are many interesting things to look at while walking" was associated with higher levels of physical activity in men, but not in women and that women's perception of neighbourhoods as less safe at night than men were not significantly associated with lower levels of physical activity.

The authors briefly discuss similarities and differences between their results and those of other studies, considering possible explanations. Limitations of the study are also considered briefly.

In conclusion, the authors emphasize the importance of including gender differences in future research - as well as in the design of interventions that aim to increase levels of physical activity.

**Other Information**

<http://www.ijbnpa.org/content/2/1/12>

## Improving the Health of Canadians: An Introduction to Health in Urban Places 05-06

Canadian Institute for Health Information

2006 Canadian Institute for Health Information Ottawa

descriptors

<b>Research subject</b>	general; social, physical environment, housing and health
<b>Research Type</b>	summary of primary research
<b>Population</b>	general, urban
<b>Place</b>	Canada; Vancouver, Calgary, Toronto, Montréal, Halifax
<b>Reference Type</b>	Report
<b>Page length</b>	143, including appendices; many tables and figures
<b>readability</b>	simple language; well illustrated with maps and figures

### Abstract or Excerpt

[from the Introduction]

Research shows that urban areas can influence numerous aspects of health and well-being, including what people eat, their employment status and working environment, their housing, the quality of the air they breathe and water they drink, their access to health services, the risks to which they are exposed in their neighbourhoods and various social support and economic resources. Given this, urban areas represent an important area for health, as well as related research and policy development.

How healthy people are depends on a range of individual characteristics (for example, age, gender, health-related behaviours, socio-economic status).

However, cities are more than just urban areas with large numbers of individuals. Individuals live in different types of housing structures that are nested within different neighbourhoods that are themselves nested within different cities and regions across Canada. Factors at each of these levels may influence Canadians' health and well-being.

This report looks at some of those factors to explore why, collectively, people who live in some urban areas are healthier than others. Urban areas are built by people for people. They grow and change, just as the people who live in them grow and change. Further, the meanings that people give to cities also develop and change over time. "Improving the Health of Canadians: An Introduction to Health in Urban Places" explores how the spaces and places in urban areas - specifically neighbourhood and housing characteristics - may influence the lives and health of Canadians who live in them.

### Comment

The bulk of this report is contained in four chapters, two of which are particularly relevant to this review. Chapter 2 summarizes research linking health and neighbourhood characteristics - such as social and physical characteristics - for five Canadian cities - Vancouver, Calgary, Toronto, Montréal, and Halifax. Chapter 4 looks at "what we do and do not know about links between health and policies or interventions related to neighbourhoods and housing" (p 6). The other two chapters take a general survey of health in urban populations across the country and look at associations between health and housing.

The report notes some limitations, for example, that data is based on Central Metropolitan Areas (as defined by Statistics Canada), therefore does not include PEI or Territories and that there is a lack of availability of neighbourhood-level data. It also notes that discussing the full scope of health-built environment correlation is not possible, so the most it can do is provide an overview.

Chapter 2 includes several sections. The largest section summarizes research on socio-economic neighbourhood characteristics and indicates that "place matters to health in these five select urban areas - patterns of health outcomes and behaviours can vary depending on the neighbourhood in which people live" (p 27). For example, self-reported health is likely to be higher in neighbourhoods with higher-than-average education and income and overweight and obesity tend to be higher in neighbourhoods further from urban cores. Sub-sections cover each of the five cities, using maps and tables to illustrate similarities and differences among neighbourhood characteristics and health outcomes and behaviours. The section concludes with a summary of what we do and don't know. For example, we do know that residents of different neighbourhoods are not equally healthy and adopt different health-promoting and health-compromising behaviours (p 48) but we do not know the causal mechanisms from which these differences arise (p 48).

Another section of Chapter 2 considers physical neighbourhood characteristics. The

lesser availability of research of this type is indicated by the shorter discussion, which briefly summarizes Canadian and other studies, without the detailed breakdown provided in the preceding section. For example, people living in neighbourhoods with more greenery had lower levels of overweight and obesity, and perceptions of low safety are associated with lower levels of activity (p 49). Traffic-related injuries, which tend to be higher in urban areas, are another health outcome related to physical characteristics of neighbourhoods that is discussed.

This chapter also briefly summarizes research on access to health services, available and affordable food, modes of transportation and traffic-related pollution.

Chapter 3 looks at housing adequacy, suitability and affordability.

Chapter 4, which discusses policy aspects, notes the difficulty of relating health outcomes to policy interventions and the lack of policy evaluation in the area of health and the built environment. The report highlights some work that has looked at policy related to characteristics noted above, for example, neighbourhood safety, injury prevention, recreational facility availability as well as tools such as environmental impact assessment. The chapter closes by drawing attention to what we do and do not know, for example, that we have evidence of associations between neighbourhood characteristics and health behaviours, but we know little about how behaviour-related strategies may translate into health outcomes.

In conclusion, the report provides a summary of what we know and what we still need to know, drawing attention to planned and ongoing Canadian Population Health Institute research projects and other reports.

#### Other Information

[http://secure.cihi.ca/cihiweb/dispPage.jsp?cw\\_page=AR\\_1217\\_E](http://secure.cihi.ca/cihiweb/dispPage.jsp?cw_page=AR_1217_E)



## Exploring the effect of the environment on physical activity: a study examining walking to work.

descriptors

Craig,C. L.; Brownson,R. C.; Cragg,S. E.;Dunn,A. L.

2002 American Journal of Preventive Medicine 23, 2 Suppl page(s) 36 - 43

### Abstract or Excerpt

**BACKGROUND:** Research on physical activity and the physical environment is at the correlates stage, so it is premature to attribute causal effects. This paper provides a conceptual approach to understanding how the physical design of neighborhoods may influence behavior by disentangling the potential effects of income, university education, poverty, and degree of urbanization on the relationship between walking to work and neighborhood design characteristics. **METHODS:** The study merges Canadian data from 27 neighborhood observations with information on walking to work from the 1996 census. Hierarchical linear modeling was used to create a latent environment score based on 18 neighborhood characteristics (e.g., variety of destinations, visual aesthetics, and traffic). The relationship between the environment score and walking to work was modeled at the second level, controlling for income, university education, poverty, and degree of urbanization. **RESULTS:** With the exceptions of visual interest and aesthetics, each neighborhood characteristic contributed significantly to the environment score. The environment score was positively associated with walking to work, both with and without adjustment for degree of urbanization. Controlling for university education, income, and poverty did not influence these relationships. **CONCLUSIONS:** The positive association between the environment score and walking to work, controlling for degree of urbanization supports the current movement toward the development of integrated communities for housing, shops, workplaces, schools, and public spaces. Given the need for research to guide environmental interventions, collaboration among public health practitioners, urban planners, and transportation researchers is essential to integrate knowledge across sectors.

<b>Research subject</b>	physical activity; walking to work
<b>Research Type</b>	neighbourhood observations, census data
<b>Population</b>	general
<b>Place</b>	Quebec, Ontario, Alberta
<b>Reference Type</b>	Journal
<b>Page length</b>	8, few tables and figures
<b>readability</b>	Requires some familiarity with statistical terminology and methods; gist of the paper can be gathered without

### Comment

The authors note that there is more research linking psychosocial variables with physical activity than research linking physical environmental variables. However, they also note that some research suggests the latter may provide important influences.

This paper reports on a study investigating the relationship between people walking to work and neighbourhood characteristics. The study used a convenience sample of 27 neighbourhoods across Canada, chosen to represent a diversity of characteristics, including large and small urban centres and suburban areas, as well as differing densities and socio-economic characteristics. Neighbourhood environmental characteristics - such as number and variety of destinations, pedestrian in/exclusivity, aesthetics and obstacles - were rated by observers. This data was compared with census data on transportation modes used for getting to work, most specifically, those reporting "walking to work" as their main means of transportation.

Analytical models included testing for significance of different socio-economic variables. The results indicated a significant relation between the environmental score and the percentage of people walking to work. This result holds when adjusted for socio-economic variables such as poverty, education and the greater percentage of people who walk to work in urban areas over suburban areas.

The authors note some limitations and confounding factors, for example, that it cannot be determined whether people were more likely to walk to work because of the environmental factors or whether people chose the neighbourhoods according to personal preferences. They also make a few suggestions for further research, calling for collaboration among health practitioners, urban planners, and transportation researchers.

## The association between low level exposures to ambient air pollution and term low birth weight: a retrospective cohort study

Dugandzic,Rose; Dodds,Linda;Stieb,David;Smith-Doiron,Marc

2006 Environmental Health: A Global Access Science Source 5, 1 page(s) 3 - 10

descriptors

Research subject	air quality; exposure, weight of babies
Research Type	perinatal and air pollution data, regression analysis
Population	other (pregnant women)
Place	Nova Scotia
Reference Type	Journal, online
Page length	8, a few tables and figures
readability	Relatively clear writing, although considerable use of statistical language and analysis to explain results

### Abstract or Excerpt

**BACKGROUND:** Studies in areas with relatively high levels of air pollution have found some positive associations between exposures to ambient levels of air pollution and several birth outcomes including low birth weight (LBW). The purpose of this study was to examine the association between LBW among term infants and ambient air pollution, by trimester of exposure, in a region of lower level exposures.

**METHODS:** The relationship between LBW and ambient levels of particulate matter up to 10 um in diameter (PM10), sulfur dioxide (SO2) and ground-level ozone (O3) was evaluated using the Nova Scotia Atlee Perinatal Database and ambient air monitoring data from the Environment Canada National Air Pollution Surveillance Network and the Nova Scotia Department of Environment. The cohort consisted of live singleton births (=37 weeks of gestation) between January 1, 1988 and December 31, 2000. Maternal exposures to air pollution were assigned to women living within 25 km of a monitoring station at the time of birth. Air pollution was evaluated as a continuous and categorical variable (using quartile exposures) for each trimester and relative risks were estimated from logistic regression, adjusted for confounding variables.

**RESULTS:** There were 74,284 women with a term, singleton birth during the study period and with exposure data. In the analyses unadjusted for year of birth, first trimester exposures in the highest quartile for SO2 and PM10 suggested an increased risk of delivering a LBW infant (relative risk = 1.36, 95% confidence interval = 1.04 to 1.78 for SO2 exposure and relative risk = 1.33, 95% confidence interval = 1.02 to 1.74 for PM10). After adjustment for birth year, the relative risks were attenuated somewhat and not statistically significant. A dose-response relationship for SO2 was noted with increasing levels of exposure. No statistically significant effects were noted for ozone.

**CONCLUSION:** Our results suggest that exposure during the first trimester to relatively low levels of some air pollutants may be associated with a reduction in birth weight in term-born infants. These findings have implications for the development of effective risk management strategies to minimize the public health impacts for pregnant women.

### Comment

The authors note considerable research showing a relation between ambient levels of air pollution and susceptible populations, such as pregnant women. They note, however, that most studies have occurred in areas with high levels of pollution and without accounting for smoking in mothers. The research reported in this paper, attempted to include consideration of these factors.

Using data from the National Air Pollution Surveillance network and maternal residence at birth, maternal trimester exposure to ozone, sulfur dioxide and particulate matter were estimated. Regression analysis was used to assess the relationship between low birth weight (LBW) and trimester exposures for the different pollutants, accounting for a variety of socio-economic and demographic variables (such as age, prior LBW infants, smoking during pregnancy).

The results showed a higher risk of LBW infants for mothers with higher exposures to particulate matter and sulphur dioxide during the first trimester, although this was attenuated when adjusted for birth year. The authors note that their results, which indicate no significant relation to ozone exposure, is consistent with other studies. The authors note limitations of the research, for example, exposure was based on residences located up to 25 km from monitoring sites, which may have led to misclassification and that important confounding factors may be missing from the analysis. The authors also note similarities and differences between their research and others.

### Other Information

<http://www.ehjournal.net/content/5/1/3>

## Thinking about environment: incorporating geographies of disability into rehabilitation science

Dyck, Isabel; O'Brien, Patti

2003 The Canadian Geographer 47, 4 page(s) 400 - 413

**Keywords** Disability/Social aspects; Human geography; AIDS patients; Rehabilitation services; Social Science

### Abstract or Excerpt

This paper concerns the introduction of geographical perspectives and concepts to health professionals in their analysis of disability or chronic illness. It focuses specifically on a course project, which drew on geographical literature and concepts from social theory in 'mapping' the daily routines of people with disability or chronic illness. It presents an analysis of the daily routines of a man with HIV/AIDS, showing the close and recursive interweaving of meanings of space and bodily inscription as a man under palliative care negotiates his body, neighbourhood and medical care. It describes his changing relationship to the spaces constituting his everyday life, and their renewed meaning as medical care becomes a more prominent theme in how such spaces are used. The relevance of this mapping of the chronically ill self into place and space to health professions is discussed through the particular lens of occupational therapy, which seeks to understand theoretically the interlinking of client behaviour and 'environment' and its implications for clinical reasoning.

descriptors

<b>Research subject</b>	other; person with HIV/aids negotiating neighbourhood/space
<b>Research Type</b>	case study, personal
<b>Population</b>	other (person with HIV/AIDS)
<b>Place</b>	Vancouver
<b>Reference Type</b>	Journal
<b>Page length</b>	13
<b>readability</b>	discursive rather than scientific style

### Comment

This paper reports on an in-depth case study of a person with HIV/AIDS living in Vancouver, using narrative description to explain the spatial and social/cultural interactions of a person with a 'disability'. Written in a very discursive, theoretical style, the paper integrates recent social theory and geographical perspectives with an occupational therapy approach. The authors see this as important: "[t]he biomedical framework is found to be inadequate in dealing with many aspects of chronic illness and disability, which commonly are lived out and managed in the community without the benefits of resolution through the cures and processes of acute care management" (401).

The authors discuss the conceptualization of "disability" and its integration into rehabilitation science, noting in both cases the increasing trend toward recognizing the socio-environmental factors/influences involved. Insights from a geographical perspective draw stronger connections to social-cultural space and the built environment.

The study involved interviews and ongoing interaction with a single individual, documenting his changing routines, interactions and experiences. The context and meaning of these factors are discussed. Attention is given to their breadth – for example, the importance of moving to "a landscape encoded with meanings that suggest people with HIV/AIDS will be less out-of-place" (405) – as well as their detail – for example the prevalence or lack of commercial locations without stairs.

"In this paper we have aimed to show how Scott's account of his day-to-day life indicates the fluidity of both identity and spaces. Consistent with a socio-spatial model of disability, there is evidence of the power of architectural features, social attitudes and the encoding of spaces in exclusionary or inclusionary ways in circumscribing the spatiality of Scott's day-to-day life" (408).

The authors close with discussion on the implications of their research for health professionals and their practice.

### Other Information

LINKING HEALTH AND THE BUILT ENVIRONMENT: AN ANNOTATED BIBLIOGRAPHY - APPENDIX 1: CANADIAN EVIDENCE  
healthy communities and the built environment, ontario healthy communities coalition :: civics research co-operative

<http://vnweb.hwwilsonweb.com/hww/jumpstart.jhtml?recid=0bc05f7a67b1790e3c6d763555ca95fc032dcebcc7faadba81768ed5daad633864f66267c929a010&fmt=H> PDF: <http://vnweb.hwwilsonweb.com>

**Environmental inequality and circulatory disease mortality gradients****Finkelstein,M.; Jerrett,M.;Sears,M. R.**

2005 Journal of epidemiology and community health 59, 6 page(s) 481 - 487

**Keywords** Adult; Aged;Air Pollutants/adverse effects;Cardiovascular Diseases/etiology/mortality;Cerebrovascular Accident/etiology/mortality;Environmental Exposure/adverse effects;Epidemiologic Methods;Female;Humans;Male;Middle Aged;Ontario/epidemiology;Poverty Areas;Residence Characteristics;Respiration Disorders/etiology/mortality;Social Class;Urban Health/statistics & numerical data;Vehicle Emissions/adverse effects

**Abstract or Excerpt**

**STUDY OBJECTIVE:** Studies in Europe and North America have reported that living in a disadvantaged neighbourhood is associated with an increased incidence of coronary heart disease. The aim of this study was to test the hypotheses that exposure to traffic and air pollution might account for some of the socioeconomic differences in mortality rates in a city where residents are covered by universal health insurance.

**DESIGN:** Cohort mortality study. Individual postal codes used to derive: (1) socioeconomic status from census data; (2) mean air pollution levels from interpolation between governmental monitoring stations; (3) proximity to traffic from the geographical information system. Analysis conducted with Cox proportional hazards models.

**SETTING:** Hamilton Census Metropolitan Area, Ontario, Canada, on the western tip of Lake Ontario (population about 480,000).

**PARTICIPANTS:** 5228 people, aged 40 years or more, identified from register of lung function laboratory at an academic respirology clinic between 1985 and 1999.

**MAIN RESULTS:** Circulatory disease (cardiovascular and stroke) mortality rates were related to measures of neighbourhood deprivation. Circulatory disease mortality rates were also associated with indices of long term ambient pollution at the subjects' residences (relative risk 1.06, 1.00 to 1.13) and with proximity to traffic (relative risk 1.40, 1.08 to 1.81). Subjects in more deprived neighbourhoods had greater exposure to ambient particulate and gaseous pollutants and to traffic.

**CONCLUSIONS:** At least some of the observed social gradients in circulatory mortality arise from inequalities in environmental exposure to background and traffic air pollutants.

**descriptors**

**Research subject** air quality, social justice; circulatory disease, traffic pollution and air pollution, inequality

**Research Type** cohort mortality study (n=5528)

**Population** general, other (low income)

**Place** Hamilton

**Reference Type** Journal

**Page length** 7; some tables, figs

**readability** Some 'statistical talk' but not too heavy; methods, limitations, results, conclusions all clear

**Comment**

After a brief discussion of some of the many reasons for a higher risk/incidence of heart disease in poor areas, the authors describe the purpose of their study is to "test hypotheses that exposure to traffic and air pollution might account for some of the socioeconomic differences in mortality rates in a city where residents are covered by universal health insurance" (481). (The latter consideration is important for American studies, where it is difficult to tell whether higher incidence of mortality among people living in low-income neighbourhoods results from a lack of access to health care.)

The study covered 5228 people (from attendance at a clinic), using their postal codes to link with socio-economic census data (to generate a 'deprivation index') and pollution data (total suspended particulates and SO<sub>2</sub>, to approximate long-term exposure) and traffic related pollution (living within 50m of a major road or 100m of a highway). The mortality outcomes considered included cardiovascular, cerebrovascular and respiratory disease

The results indicate no relation between deprivation and asthma but they do indicate a relation between deprivation and chronic obstructive pulmonary disease, ischaemic heart disease, and diabetes. In addition, pollution levels, including living distance from traffic affected a higher number of people in deprived areas.

"We have replicated the finding that circulatory disease (cardiovascular and stroke) mortality rates are related to measures of neighbourhood deprivation. Circulatory disease mortality rates were also associated with indices of ambient pollution at the subjects' residences and with residential proximity to traffic. As subjects in more deprived neighbourhoods had greater exposure to ambient particulate and gaseous pollutants and to traffic, we have confirmed the hypothesis that some part of the

deprivation related circulatory disease mortality differential is related to differences in exposure to environmental pollutants. We found no evidence of effect modification by neighbourhood deprivation. That is, the effect of environmental exposures was the same in richer and poorer neighbourhoods" (485-6). The authors note similarities and differences with Norwegian, Dutch and Californian studies and discuss limitations of the study as well as some of the implications for regulatory and environmental policy.

**Urban Form, Physical Activity and Health**

**Fisher, Patrick**

2005 Region of Waterloo Public Health

**descriptors**

<b>Research subject</b>	physical activity; growth management
<b>Research Type</b>	summary
<b>Population</b>	general
<b>Place</b>	Region of Waterloo, Ontario
<b>Reference Type</b>	Report
<b>Page length</b>	26, includes tables, figures, photos

**Abstract or Excerpt**

no abstract



**Comment**

This report is one of several discussion papers written to support development of a regional growth management strategy. The report summarizes findings from a survey that looked at differences between urban design, physical activity, walking rates, and health indicators, making comparisons among inner-city and suburban neighbourhoods. The report discusses environmental and individual factors that affect walking and cycling in local neighbourhoods. Environmental factors include a range of considerations: functional (e.g. path design, traffic control devices), safety (e.g. crossing aids, surveillance), aesthetic (e.g. cleanliness, trees), and destinations (e.g. shops, bike parking). Individual factors include motivation, interest, social/family support and health status. The report closes with a listing of the significant differences found between the inner-city and suburban neighbourhoods.

## Promoting Public Health Through Smart Growth: Building Healthier Communities Through Transportation and Land Use Policies

Frank, L. D.; Sarah Kavage Todd Litmann

descriptors

Research subject	physical activity, air pollution, mental health; transportation, land use, research, policy and practice
Research Type	review and synthesis of research and application to policy and practice
Population	general
Place	n/a
Reference Type	Report
Page length	52, including tables, figures, photos

### Abstract or Excerpt

[from the Preface]

This report explains how our built environment shapes our transportation choices, and in turn, human health. It reviews the existing research for a range of transportation-related health impacts on seven public health outcomes: Physical Activity and Obesity, Air Quality, Traffic Safety, Noise, Water Quality, Mental Health, and Social Capital.

As part of Smart Growth B.C. efforts to help foster transportation investments and land Development decisions that promote a synergy between public health and Environmental sustainability, this report will provide guidance for developing transportation and land use policies and practices that support public health objectives. It also offers general recommendations for how land use policies, investments and actions can help to achieve healthy communities.

Land use patterns, because they relate with transportation behaviour, subsequently affect public health in a number of ways: through physical activity levels, availability of healthy food choices, exposure to crashes, air pollution and noise, and community interaction and mobility. Last year Canada's Heart and Stroke Foundation released its annual report card highlighting that "the suburban dream has gone sour," further documenting that public health is associated with auto dependency and lack of opportunities for active transportation.

The same basic smart growth principles that provide environmental, energy, and economic benefits can also help to support healthier communities. Compact land use patterns with high-quality pedestrian environments and a mix of land uses can improve public health by promoting active forms of transportation, reducing per capita air pollution and associated respiratory ailments, and lowering the risk of car related accidents.

Taken collectively, research to date shows that over the long term, land use and transportation policies can provide significant health benefits. Although current approaches to building are well-entrenched, local, provincial and federal actions can all significantly change the prevailing land use pattern to one that is more supportive of healthier communities.



### Comment

The review focuses specifically on transportation policy, investment and design, using the concept of "Smart Growth" to frame the discussion. Connections are drawn between urban form/built environment, behaviours and health impacts. In looking at health from the perspective of urban design and planning, the authors note that "[a]lthough the majority of the evidence is based on research from the U.S., the implications are equally relevant for Canadian communities" (p 3).

In presenting a review of the literature, the authors emphasize that there are many challenges involved in quantifying and predicting health impacts. These include the interconnections – therefore entanglements among the possibly contributing factors – difficulties in quantifying environmental factors, mixed impacts, and the difficulty in drawing causal connections.

In reviewing the literature, the report discusses land use impacts on travel behaviour such as density, connectivity, mixed use, pedestrian environments and connection to transit, as well as land use and transportation impacts on health objectives such as physical activity and obesity, traffic safety, air quality and pollution, noise, water quality and pollution, mental health, and social capital.

The report concludes by making suggestions for planning for healthy communities.

### Other Information

[www.smartgrowth.bc.ca/downloads/SGBC\\_Health\\_Report\\_Final.pdf](http://www.smartgrowth.bc.ca/downloads/SGBC_Health_Report_Final.pdf)



**Land Use Planning and Public Health: Improving the Health of Populations through Environmental Design**

descriptors

Johnson, Sherrill; Marko, Josh

Population Health, Capital Health Edmonton

Research subject	planning; land use planning, public health
Research Type	literature review
Population	n/a
Place	n/a
Reference Type	Report
Page length	28

Abstract or Excerpt

Draft Copy



**Comment**

Noting the increasing interest in this area of research, the authors indicate that a comprehensive review was beyond the scope of the paper and point to their emphasis on identifying key intersections between land use planning and public health as a means for considering the roles of public health professionals in planning and decision-making. The authors note that relevant literature is found in diverse fields of interest ranging from public health and urban planning to law, gerontology, architecture and others.

The paper begins with a historical review and current status of the relationship between land use planning and public health, noting their common origin in health issues that arose with early industrialization and urbanization, their separation over time, and the renewed interest in bringing them together.

Subsequent sections of the review cover evidence relating to the impacts of urban design on health – such as chronic disease and injury, obesity, food availability, physical activity, heart and respiratory illness and safety – and to the social effects of built environments – such as mental health and social inclusion. In discussing this literature, especially systematic reviews, that support connections between land use and health, the authors also emphasize the lack of strong empirical foundations and lack of causal linkages that can be drawn. Gaps in the research are also noted. The authors also discuss literature that provides a rationale for increased collaboration between public health and land use planning and consider the subsequent implications.

**The environment: a focus for occupational therapy. 1991 Muriel Driver lecture.**

descriptors

Law,M.

1991 Canadian journal of occupational therapy 58, 4 page(s) 171 - 180

**Keywords** Architectural Accessibility; Canada;Civil Rights;Disabled Persons;Employment, Supported;Environment Design;Occupational Therapy/trends;Occupations;Power (Psychology)

<b>Research subject</b>	other; disability, occupation, built environment
<b>Research Type</b>	commentary, theory, policy and practice creation
<b>Population</b>	other (disabled, differently abled)
<b>Place</b>	Canada
<b>Reference Type</b>	Journal

**Abstract or Excerpt**

Individuals in Canada with a disability encounter environmental constraints that limit their active participation in the daily life of our communities. Fundamental inequities in participation and integration continue to exist and there is a need for a concerted effort to eliminate these disabling environments. Several factors, including the built environment, societal production of space, classification of individuals based on norms, the perception of disability as deviance, the power of health disciplines and bureaucracy are examined to determine their contribution to the creation of these disabling environments. Recent modifications to occupational therapy theory and practice, while meaningful, have not fully explored ways in which disabling environments limit occupation. Prevailing ideas about occupation and the environment are examined for their contribution to solving these environmental problems. Principles which can assist occupational therapy intervention directed at changing disabling environments are described. The intent is to define methods of changing disabling environments, based on the desires and active participation of people with disabilities



## Through seniors' eyes: an exploratory qualitative study to identify environmental barriers to and facilitators of walking

Lockett,D.; Willis,A.;Edwards,N.

2005 Canadian Journal of Nursing Research 37, 3 page(s) 48 - 65

**Keywords** photovoice, active living,walking, seniors, environmental facilitators, barriers

### Abstract or Excerpt

This qualitative exploratory study examined environmental factors influencing the walking choices of elderly people using the photovoice approach. A total of 13 seniors in Ottawa, Canada, took photographs of barriers to and facilitators of walking in their neighbourhoods. These photos were displayed during 3 focus-group sessions and served as touchstones for discussion. A total of 22 seniors, including 8 of the 13 photographers, participated in the focus-group sessions. The findings show that environmental hazards related to traffic and falls risks can be significant barriers to walking for seniors, and that connectivity can truly exist for the elderly only if convenience, hazard-free routes are available. They also indicate that simple amenities such as benches and washrooms might facilitate walking for seniors. A neighbourhood that is activity-friendly for seniors will also be a good place for everyone else to live, work, and play. The use of photovoice as a method was well received by the participants and provided rich information that may not have been captured through other means.

### descriptors

<b>Research subject</b>	physical activity; environmental barriers to walkability
<b>Research Type</b>	qualitative (n=13/22); photovoice and focus groups
<b>Population</b>	older adults
<b>Place</b>	Ottawa
<b>Reference Type</b>	Journal
<b>Page length</b>	17
<b>readability</b>	No technical language

### Comment

To begin, the authors stress environmental facilitators and barriers to walking as important considerations for the health and well-being of seniors. They draw attention to another study, which suggests that altering the physical environment may have a greater positive impact on physical activity than interventions aimed at changing individual behaviour.

The methods section describes the rationale for using photovoice and focus groups based on sharing and discussion of the photos, which were of both barriers and facilitators to walking. In their conclusions the authors draw attention to the added benefit of photovoice as a research technique that also supports awareness-building, empowerment and possibly advocacy. The limitations of photovoice are also discussed.

The discussion on findings, covers 39 photos of barriers and 47 photos of facilitators of walking. Barriers included traffic hazards (e.g. insufficient time to traverse intersections), fall hazards (e.g. cracked, uneven and nonexisting sidewalks, parking lot entrances, narrow stairs). Facilitators included amenities in close proximity, good public transit (return route), winter safety, washrooms, places to sit. The discussion also noted two themes that emerged: 1) that "seniors are often forced to consciously trade one form of risk for another" (p 60) and 2) that there is a "need for efficient, barrier-free routes between destinations" (p 60). In conclusion the authors note that the "findings indicate the need for intersectoral collaboration in order to make neighbourhoods more walker-friendly for seniors" (p 62).

### Other Information

<http://www.cinahl.com/cgi-bin/refsvc?jid=273&accno=2009045604>

**Urban neighborhoods, chronic stress, gender and depression**

descriptors

**Matheson,F. I.; Moineddin,R.;Dunn,J. R.;Creatore,M. I.;Gozdyra,P.;Glazier,R. H.**

2006 Social science and medicine 63, 10 page(s) 2604 - 2616

**Keywords** Adolescent; Adult;Aged;Canada/epidemiology;Chronic Disease;Cultural Diversity;Depression/epidemiology/etiology;Female;Humans;Male;Middle Aged;Poverty/psychology/statistics & numerical data;Sex Factors;Socioeconomic Factors;Stress/complications/epidemiology;Urban Population

**Research subject** mental health; depression and neighbourhood deprivation

**Research Type** multilevel modeling, census and community health survey data

**Place**

**Reference Type** Journal

**Abstract or Excerpt**

Using multilevel analysis we find that residents of "stressed" neighborhoods have higher levels of depression than residents of less "stressed" neighborhoods. Data for individuals are from two cycles of the Canadian Community Health Survey, a national probability sample of 56,428 adults living in 25 Census Metropolitan Areas in Canada, with linked information about the respondents' census tracts. Depression is measured with the Center for Epidemiologic Studies-Depression Scale Short Form and is based on a cutoff of 4+ symptoms. Factor analysis of census tract characteristics identified two measures of neighborhood chronic stress--residential mobility and material deprivation--and two measures of population structure--ethnic diversity and dependency. After adjustment for individual-level gender, age, education, marital and visible minority status and neighborhood-level ethnic diversity and dependency, a significant contextual effect of neighborhood chronic stress survives. As such, the daily stress of living in a neighborhood where residential mobility and material deprivation prevail is associated with depression. Since gender frames access to personal and social resources, we explored the possibility that women might be more reactive to chronic stressors manifested in higher risk of depression. However, we did not find random variation in depression by gender across neighborhoods.



**Page length** 13, 3 tables and map

**readability** requires some stastical knowledge to fully understand

**Comment**

The central focus of this paper is exploration of a correlation between neighbourhood stress and depression. The primary factors discussed are socioeconomic; however, some built environment factors - neighbourhood material deprivation - are included in the analysis and show a positive correlation with depression.

## Diet, physical activity, and adiposity in children in poor and rich neighbourhoods: a cross-sectional comparison

Merchant, Anwar; Dehghan, Mahshid; Behnke-Cook, Deanna; Anand, Sonia

2007 Nutrition Journal 6, 1 page(s) 1 - 5

descriptors

Research subject	physical activity, social justice; obesity prevention
Research Type	cross sectional survey (n=160 and 156);
Population	children, other (low income and high income)
Place	Canada
Reference Type	Journal, online
Page length	6, some tables

### Abstract or Excerpt

**BACKGROUND:** Obesity in Canadian children increased three-fold in twenty years. Children living in low-income neighborhoods exercise less and are more overweight than those living in more affluent neighborhoods after accounting for family socio-economic status. Strategies to prevent obesity in children have focused on personal habits, ignoring neighborhood characteristics. It is essential to evaluate diet and physical activity patterns in relation to socio-economic conditions to understand the determinants of obesity. The objective of this pilot study was to compare diet, physical activity, and the built environment in two Hamilton area elementary schools serving socioeconomically different communities.

**METHODS:** We conducted a cross-sectional study (November 2005-March 2006) in two public elementary schools in Hamilton, Ontario, School A and School B, located in low and high socioeconomic areas respectively. We assessed dietary intake, physical activity, dietary restraint, and anthropometric measures in consenting children in grades 1 and higher. From their parents we assessed family characteristics and walkability of the built environment.

**RESULTS:** 160 children (n = 48, School A and n = 112, School B), and 156 parents (n = 43, School A and n = 113, School B) participated in this study. The parents with children at School A were less educated and had lower incomes than those at School B. The School A neighborhood was perceived to be less walkable than the School B neighborhood. Children at School A consumed more baked foods, chips, sodas, gelatin desserts, and candies and less low fat dairy, and dark bread than those at School B. Children at School A watched more television and spent more time in front of the computer than children studying at School B, but reported spending less time sitting on weekdays and weekends. Children at both schools were overweight but there was no difference in their mean BMI z-scores (School A = 0.65 versus School B = 0.81, p-value = 0.38).

**CONCLUSION:** The determinants of overweight in children may be more complex than imagined. In future intervention programs researchers may consider addressing environmental factors, and customizing lifestyle interventions so that they are closer to community needs.

### Comment

The main focus of this study was to compare diet, physical activity, built environment and body weight of children at two schools in different neighbourhoods in order to consider possible interventions aimed at reducing obesity. Although various aspects related to childhood obesity were considered, one component of the survey was to record information about the built environment.

Despite a variety of differences between the two schools, including differences in the 'walkability' of their respective neighbourhoods, there was no difference in the mean body mass index of children at the two schools, although children at both schools were overweight.

The authors note that their findings are inconsistent with other studies, which suggest an association between environment and obesity.

The authors discuss limitations of the study, noting, for example, the small sample size and the potential for bias introduced by self-selection.

In pointing to the main implications of the research, the authors suggest that the factors causing obesity in children may be quite different even within one city. In their conclusion, they briefly consider implications of this result for designing interventions, specifically with respect to messages advocating behavioural change.

### Other Information

<http://www.nutritionj.com/content/6/1/1>

**Healthy Growth: Health and the Built Environment in Waterloo Region**

Schumilas, Theresa

descriptors

<b>Research subject</b>	general; healthy communities, growth management
<b>Research Type</b>	summary
<b>Population</b>	general
<b>Place</b>	Region of Waterloo, Ontario
<b>Reference Type</b>	Report
<b>Page length</b>	25, including tables, figures, photos

**Abstract or Excerpt**

no abstract

**Comment**

Written as a companion document to the Human Services Plan for the Region of Waterloo, the purpose of this report is "to create a wider understanding of the ways in which the built environment can affect health in Waterloo Region and to inform and support programs and policies that attend to these needs" (p5). The report is split into three sections which summarize the potential impacts of population growth, describe possible mitigation measures and outline specific action strategies that have been planned by the Region. Impacts include chronic disease and aging, air quality, increasing service needs, and health disparities. Planning measures include increasing physical activity through urban design measures, improving food access and intake, improving air quality by focusing on emissions from local energy and fuel consumption, increasing social capital in neighbourhoods, and strengthening rural health by improving local farm viability and addressing rural isolation. Actions stress collaboration and citizen engagement.

## Traffic intensity, dwelling value, and hospital admissions for respiratory disease among the elderly in Montreal (Canada): a case-control analysis

Smargiassi,A.; Berrada,K.;Fortier,I.;Kosatsky,T.

2006 Journal of epidemiology and community health 60, 6 page(s) 507 - 512

**Keywords** Aged; Air Pollutants/adverse effects;Canada/epidemiology;Case-Control Studies;Female;Hospitalization/statistics & numerical data;Humans;Inhalation Exposure/adverse effects;Male;Middle Aged;Odds Ratio;Respiration Disorders/epidemiology/etiology;Risk Factors;Socioeconomic Factors;Vehicle Emissions

### Abstract or Excerpt

**BACKGROUND:** Persons exposed to residential traffic have increased rates of respiratory morbidity and mortality. As poverty is an important determinant of ill health, some have argued that these associations may relate to the lower socioeconomic status of those living along major roads.

**AIMS:** The objective was to evaluate the association between traffic intensity at home and hospital admissions for respiratory disease among Montreal residents of 60 years and older.

**METHODS:** Case hospitalisations were those with respiratory diagnoses and control hospitalisations were those where the primary discharge diagnosis was non-respiratory. Morning peak traffic estimates from the EMME/2 Montreal traffic model (MOTREM98) were used as an indicator of exposure to road traffic outside the homes of those hospitalised. The crude association between traffic intensity and hospitalisation for respiratory disease was adjusted by an area based estimate of the appraised value of patients' residences, expressed as a dollar average over a small segment of road (lodging value). This indicator of socioeconomic status, as calculated from the Montreal property assessment database, is available at a finer geographical scale than the neighbourhood socioeconomic indicators accessible from the Canadian census.

**RESULTS:** Increased odds of being hospitalised for a respiratory compared with a control diagnosis were associated with higher levels of estimated road traffic nearby patients' homes, even after adjustment for lodging value (crude OR 1.35, CI95% 1.22 to 1.49; adjusted OR 1.18, CI95% 1.06 to 1.31 for >3160 vehicles passing during the three hour morning traffic peak compared with secondary roads off network). **CONCLUSION:** The results suggest that road traffic intensity itself, may affect the respiratory health of elderly residents of a large Canadian city, an association that is not solely a reflection of socioeconomic status.

### descriptors

**Research subject** air quality; traffic and respiratory health

**Research Type** statistical analysis on MED-ECHO data and postal codes

**Population** older adults

**Place** Montreal

**Reference Type** Journal

**Page length** 7, some tables, figures

**readability** generally good, some statistical terminology

### Comment

The authors point to other studies that support an association between exposure to traffic emissions and higher rates of respiratory disease, as well as the critique, that such associations may be biased upwards due to socioeconomic factors. The point of the research reported in this paper was to accommodate for such biases. The results confirm the results from other studies: that there is an increased risk of hospitalization for respiratory disease for elderly persons living along roads with higher traffic flows. Although the potential to account for differences in socioeconomic status is limited, the results suggest that the higher risk of disease is not solely attributable to recognition that those living in high traffic areas likely have lower socioeconomic status.

The authors discuss limitations of the study and briefly note inconsistencies among research of a similar nature.

### Other Information

<http://jech.bmj.com/cgi/reprint/60/6/507>

## Food Deserts in the Prairies? Supermarket Accessibility and Neighborhood Need in Edmonton, Canada

Smoyer-Tomic, Karen E.; John C. Spence, and Carl Amrhein

2006 The Professional Geographer 58, 3 page(s) 307 - 326

**Keywords** accessibility, Edmonton, food deserts, supermarkets

### Abstract or Excerpt

The U.S. and U.K. literatures have discussed “food deserts,” reflecting populated, typically urban, low-income areas with limited access to full-service supermarkets. Less is known about supermarket accessibility within Canadian cities. This article uses the minimum distance and coverage methods to determine supermarket accessibility within the city of Edmonton, Canada, with a focus on high-need and inner-city neighborhoods. The results show that for 1999 both of these areas generally had higher accessibility than the remainder of the city, but six high-need neighborhoods had poor supermarket accessibility. We conclude by examining potential reasons for differences in supermarket accessibility between Canadian, U.S., and U.K. cities.

descriptors

<b>Research subject</b>	food access/nutrition; location and accessibility of supermarkets
<b>Research Type</b>	primary, empirical
<b>Population</b>	general, other (low income), older adults
<b>Place</b>	Edmonton
<b>Reference Type</b>	Journal
<b>Page length</b>	20, several maps, tables

### Comment

After providing a brief background discussion on food deserts and supermarket accessibility, the authors note that there is little Canadian research in this area. The research reported in this paper was designed to consider whether supermarket accessibility is lower in the inner city of Edmonton than in suburban areas and whether accessibility is poorer in low-income and other high-need areas. The authors discuss data and methods, and present results using maps and tables. Discussion includes mention of limitations of the study, for example that the study did not consider the range of foods available in the supermarkets, suggesting that inclusion of an attractiveness score for the stores may provide a more accurate representation.

The results indicate that people living in both inner-city and high-need neighbourhoods had better accessibility to supermarkets than those living in suburbs. There were only a few neighbourhoods that might be classified as food deserts, some of which had low-income residents and/or seniors or people without cars.

The authors point to similarities between their results and those from other Canadian areas, but dissimilarity with some American studies. Some explanations for such differences are provided, for example historical differences in planning and policy, as well as (more likely) differences in recent re-development of downtown areas and market forces.



**Walkable Communities Literature Review: Section B**

descriptors

Stewart, Virginia

2006 Central West Walkable Communities Project, Ontario

Research subject	physical activity; walkable communities
Research Type	review
Population	general
Place	n/a
Reference Type	Unpublished Material
Page length	19

**Abstract or Excerpt**

[from the Preface]

The literature review accomplishes several purposes. It furthers an understanding of the goal and objectives of the Central West Walkable Communities Project. It presents a broad range of discipline perspectives, such as health, planning, engineering and leisure. It provides information that targets a wide audience from municipal decision-makers including elected officials to individuals and families.

Targeting a wide audience warrants approaching the literature from an ecological model perspective – a model that is becoming more widely used . The ecological model moves beyond just targeting the individual, a familiar approach of the health belief model, social cognitive theory and the transtheoretical model to including environmental and policy aspects of behaviour change . In Canada the ecological model is used by the Canadian Fitness and Lifestyle Research Institute (CFLRI) , as well it is referenced in the Ministry of Health Promotion’s Active 2010 strategy.

Using an ecological model framework, the literature is organized into multiple layers based on an adaptation of the model presented by Sallis, Cervero, Ascher, Henderson, Kraft and Kerr (2006). Five layers of information are applied to the walkable communities project, each layer furthering an understanding of a system that is interconnected: all layers potentially influencing a person’s behaviour...

It should also be noted the reports, research, and editorials, selected for this review were critically chosen from the most recent literature available, in addition to recommended literature by the committee.

There is a plethora of research that is furthering an understanding of causal relationships; however, many researchers caution against generalizing their research findings, just yet. Nevertheless, researchers are encouraging health promoters and others to move ahead, in some cases without the knowledge, to do what they can to influence change.



**Comment**

This review uses an "ecological model" to organize literature from across the multiple disciplines that are relevant to the walkability of communities. Different "layers" are used to categorize information: broad environment [context], policy environment, behaviour settings [e.g. where activities take place], the perceived environment and personal constraints. Each of the sections summarize relevant findings from the literature.

## Linking perceptions of neighbourhood to health in Hamilton, Canada

Wilson,K.; Elliott,S.;Law,M.;Eyles,J.;Jerrett,M.;Keller-Olaman,S.

2004 Journal of epidemiology and community health 58, 3 page(s) 192 - 198

**Keywords** Adolescent; Adult;Cross-Sectional Studies;Environment;Female;Health Policy/economics;Health Services Accessibility/standards;Health Status Indicators;Health Surveys;Humans;Logistic Models;Male;Middle Aged;Ontario/epidemiology;Residence Characteristics;Socioeconomic Factors

### Abstract or Excerpt

**OBJECTIVE:** To investigate the association between perceptions of neighbourhood physical and social characteristics and three health outcomes (self assessed health status, chronic conditions, and emotional distress).  
**DESIGN:** Cross sectional survey data analysed in small neighbourhoods.  
**SETTING:** Hamilton, Ontario, Canada, a medium sized industrial city, located at the western end of Lake Ontario (population at the time of the study about 380 000).  
**PARTICIPANTS:** Random sample of 1504 adults aged 18 years and older residing in four contrasting neighbourhoods.  
**MAIN RESULTS:** Significant differences across the four neighbourhoods are apparent in self assessed health status and emotional distress, but not in chronic conditions. Neighbourhoods with lower SES reported poorer health and more emotional distress. Perceptions of the physical environment dominated social concerns in all neighbourhoods. For all three health outcomes, individual risk factors followed expectations, with measures of poverty, age, and lifestyle all significantly associated with poor health outcomes. Physical environmental problems were positively and significantly associated with poor physical and emotional health. Specifically, people reporting they dislike aspects of their neighbourhood's physical environment are 1.5 times more likely to report chronic health conditions (OR 1.56, 95% CI 1.19 to 2.05), while those reporting physical likes with their neighbourhood are less likely to report fair/poor health (OR 0.50, 95% CI 0.28 to 0.90) or emotional distress (OR 0.45, 95% CI 0.26 to 0.80).  
**CONCLUSIONS:** These results demonstrate the importance of neighbourhood perceptions as a determinant of health, as well as conventional factors such as low income, lifestyle, and age. The dominance of physical environmental concerns may have arisen from the industrial nature of Hamilton, but this result merits further investigation.

### descriptors

<b>Research subject</b>	physical activity, perceptions; neighbourhood physical, social characteristics
<b>Research Type</b>	telephone survey (n=1200), regression analysis
<b>Population</b>	adults
<b>Place</b>	Hamilton
<b>Reference Type</b>	Journal

**Page length** 7, few tables,figs

**readability** little technical language; journal format highlights key points and policy implications

### Comment

Residents from four neighbourhoods with different physical and socioeconomic characteristics were surveyed by telephone to investigate relations between their perceptions of their physical/built and social environment and their health. The investigation looked specifically at self-reported health, emotional health and chronic conditions. The results indicated significant differences in health status among the four neighbourhoods, with twice as many people in two neighbourhoods reporting their health as fair or poor. Generally speaking, people who liked their neighbourhood's physical characteristics were less likely to report fair/poor health. In all cases, perceptions of the physical environment seem more important than perceptions of social concerns. In addition, most suggestions for neighbourhood improvements that might improve health were physical - as opposed to social. In addition to affects of socioeconomic factors, the built environment also had an impact on emotional stress (those who were dissatisfied with their neighbourhood had greater likelihood of reporting emotional stresses) and chronic conditions (which also increased with dissatisfaction/dislike of neighbourhood). The authors discuss limitations of the research and interpretations, for example, that pessimism may mean people report both health and neighbourhood negatively, or that people with poor health may have more negative perceptions of their neighbourhoods. In conclusion the authors note that perceptions of neighbourhood may be as important as the physical and social characteristics of the neighbourhoods themselves. They also point to the complexities of the associations: "Our results suggested a differentiated relation between health inhibiting and health promoting aspects and each of the three health outcomes. Neighbourhood dissatisfaction and physical dislikes were associated with increased odds of reporting chronic conditions while

physical likes were associated with decreased odds of fair/poor health and scoring above the GHQ-20 cut off point" (p 197). The effects may be differentiated, with different factors affecting different health outcomes for different groups.