Coming to Consensus on Policy to Create Supportive Built Environments and Community Design

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ABSTRACT

In April 2011, a conference with invited experts from research, policy and practice was held to build consensus around policy levers to address environmental determinants of obesity. The gap between existing policy tools and what can promote health through community design is a major policy opportunity. This commentary represents a consensus of next actions towards creating built environments that support healthy active living. The policy environment and Canadian evidence are reviewed. Issues and challenges to policy change are discussed. Recommendations to create supportive built environments that encourage healthy active living in communities include the following: 1) empower planning authorities to change bylaws that impede healthy active living, protect and increase access to green space, introduce zoning to increase high density, mixed land use, and influence the location and distribution of food stores; 2) establish stable funding for infrastructure promoting active transportation and opportunities for recreation; 3) evaluate the effectiveness of programs to improve the built environment so that successful interventions can be identified and disseminated; 4) mandate health impact assessment of planning, development and transportation policies to ensure that legislative changes promote health and safety; 5) frame issues to dispel myths and to promote protection from obesity risk factors.

Key words: Child; adolescent; health status; obesity; health policy; environment design

La traduction du résumé se trouve à la fin de l'article.

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In April 2011, a consensus conference was held with invited experts from research, policy and practice fields. The conference aimed to build consensus around policy levers to address environmental determinants of obesity, including next logical steps toward further policy action. We identified a range of opportunities for action, based upon a synthesis of international recommendations, best evidence from the literature and previous priority-setting within the Canadian policy milieu;¹⁻³ creating supportive built environments for healthy active living was one opportunity discussed. We invited conference participants to share with the group high-level insights from their experience (available political opportunities/appetite for change) and research (evidence of what works/does not work). Consensus was reached through facilitated discussion following presentation of evidence and the environmental context. A consensus paper was drafted and circulated for revision. This commentary represents a consensus of next actions towards creating supportive built environments for healthy active living.

Policy environment

"The built environment is part of our physical surroundings and includes the buildings, parks, schools, road systems, and other infrastructure that we encounter in our daily lives".⁴ The built environment may influence the behaviour or weight status of populations by decreasing opportunities for physical activity, increasing opportunities to be sedentary, increasing exposure to high-energy, low-

nutrient density foods, limiting access to healthy foods, and exposing people to stressors that may moderate how energy intake and expenditure relate to weight status. For example, design elements that include road network patterns leading to increased connectivity and safety, pedestrian accessibility, mixed land use, parks and playgrounds contribute to the walkability of a neighbourhood and have a tremendous impact on levels of physical activity, especially with respect to active transportation and play.⁵ Residential density and zoning bylaws contribute to community design and access to opportunities for both physical activity and healthy eating.

Many Canadian jurisdictions are acknowledging a need for changes to built environments, including zoning and bylaws, to promote healthy weights.⁶ According to the 2011 Active Healthy

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Kids Canada (AHKC) Report Card,⁵ "In the past year, there has been a rise in the number of communities and governments taking this multi-sectoral/level approach in their strategies to promote child and youth physical activity and reduce sedentary pursuits by targeting the built environment" (p. 46). Yet, the same 2011 AHKC report card disclosed that only 16% of municipalities had a formal transportation master plan and less than 20% of communities required mandatory safe walking and biking routes in the development of new areas, reconstruction of roads or retrofitting of existing communities. In 2008, the AHKC reported that 96% of Canadian municipalities had at least one bylaw discouraging physical activity or free play, such as restrictions on skateboarding, street hockey or bicycling.⁷ The inherent contradiction is that municipal bylaws emphasizing safety from injury (safe play) function to counter promotion of an active lifestyle as part of well-being. The yawning gap between existing policy tools at the municipal level and what we acknowledge as increasingly necessary to promote active lifestyle through community design is a major policy opportunity that needs to be addressed.

Recent surveys of decision-makers from all levels of government, schools and workplaces in Alberta show support for policy initiatives that address land-use design and zoning to promote active living, but to a lesser degree to promote healthy eating. Respondents supported implementing transportation policies designed to promote physical activity through safe routes, cycle facilities, adequate lighting, etc. (89%); enhancing the quantity and quality of green spaces in all neighbourhoods (93%); changing the design of our neighbourhoods and communities to encourage informal physical activity in daily life (85%); and changing building and community design standards to discourage sedentary activities (63%). The same survey found little support for using land-use decisions and zoning to promote healthy eating. In fact, a large albeit minority proportion of respondents (46%) supported zoning to increase the number of small grocery stores at walking distance from residences in every neighbourhood, and only 28% supported zoning to limit fast food restaurants per square kilometre.⁸

Public opinion, however, is generally much more positive about such measures, 56% of Albertans surveyed indicating their support for zoning to limit fast food restaurants per square kilometre, and 74% reporting support for zoning to restrict the supply of junk food near schools.⁹ Similarly, 72% of respondents in Quebec claimed they were supportive, in principle, of restrictions on fast food outlets near schools. The support increases to 83%-87% when the possibility of actually adopting regulatory measures is proposed.¹⁰

Evidence

A systematic review has reported evidence for associations between built environment and diet, physical activity and sedentary behaviour.⁶ However, while systematic reviews of epidemiologic studies of the built environment and obesity have found statistically significant associations in approximately half of the studies reviewed, heterogeneity across studies limits the strength of evidence.¹¹

Looking specifically at Canadian studies, including those in this supplement, different aspects of the built environment appear to be related to obesity and its proximal determinants in varied urban contexts. Specifically, in Toronto, residential density has been associated with decreased population obesity, and in Vancouver, residential density, land-use mix, street connectivity and a composite

walkability index are all associated with decreased population obesity among adults.¹² In Ottawa, neighbourhoods with fewer recreation opportunities were associated with higher body mass index (BMI) among adults.¹³

The results emerging from built environment studies specifically focusing on children point to a more complex picture. In Saskatoon, children 10-14 years of age living in fractured-grid neighbourhoods accumulated less physical activity and more sedentary time per day than those in grid-pattern or curvilinear-pattern neighbourhoods.¹⁴ Studies from Halifax and Toronto in this issue further elucidate the potential mitigating effects of neighbourhood level socio-economic status. A study of children 12-14 years of age in Halifax reported that rates of physical activity in children from schools in lower socio-economic areas were higher in urban than in suburban or rural settings.¹⁵ In Toronto, children who attended schools in more affluent neighbourhoods had more positive physical activity profiles across the week.¹⁶

The findings on the effect of the built environment on children's physical activity and obesity reported in this issue extend the results from several earlier studies conducted in Canadian cities. Studies from Edmonton have reported that a walkable neighbourhood design, specifically intersection density, was associated with decreased childhood obesity among girls.¹⁷ Among pre-adolescent children in Alberta, neighbourhood safety, sidewalks and parks are negatively correlated with body weight.¹⁸ Further, an Ontario study revealed that children with a park playground within 1 km from home were five times more likely to be at healthy weight than children without such access.¹⁹ Studies have shown that children who live in neighbourhoods with fewer amenities or lacking neighbourhood access to sidewalks, walking paths, parks or playgrounds, or recreation or community centres had 20%-45% higher odds of being obese/overweight.²⁰ These findings are supported by a study in this issue from London, ON, which reports that public recreation opportunities within a 500-metre network distance from home were associated with lower BMI in children.²¹

Perceptions of built environment are also important. In Edmonton, children aged 6 to 12 described more active transportation in their neighbourhoods when they lived in highly walkable areas.²² Among adults in Edmonton, neighbourhood choice (for ease of walking) was associated with a lower BMI, whereas objectively measured walkability was not a significant influence on BMI.²³ Perceptions of traffic as a barrier to walking also predicted higher BMI.²⁴

Community design, zoning and neighbourhood social factors are also associated with physical access to foods. For example, Canadian research has found that fast food outlets are more prevalent in neighbourhoods of lower socio-economic status,²⁵ while supermarkets – sources of wider food choices, including healthy foods – are less prevalent in these neighbourhoods.²⁶ A Montréal study reported in this issue found that children attending a school in neighbourhoods with a higher number of unhealthy relative to healthy food establishments scored most poorly on dietary outcomes.²⁷ Additionally, a study in Halifax found that dietary quality was higher among youth in higher than in lower socio-economic urban settings.¹⁵ Further, there was evidence from an Edmonton study that the shorter the distance to healthier food sources from one's residence, the less the likelihood of obesity.²⁸ With regard to the influence of neighbourhood food environment on healthy eat-

ing among grade 7 and 8 students in London, ON, the proximity of convenience stores to students' homes and proximity of schools to convenience stores and fast food outlets were all significantly associated with decreased healthy eating index scores.²⁹

Evidence of the impact of the built environment on behaviours and weight status is growing. There are small but meaningful associations observed between aspects of the built environment and behavioural determinants/risk of obesity, although the findings are inconsistent. Perceptions of the environment may be as important as objectively measured aspects of environments. Over the past four years, the Heart and Stroke Foundation and Canadian Institutes of Health Research have made research on obesity and built environment a strategic focus, and several Canadian research projects have been funded that contribute to the evidence base; several of those studies are reported in this supplement. Yet, evidence on the effectiveness of built environment *interventions* is sparse. Very little intervention research has linked the effectiveness of changing environments to behavioural or weight and health outcomes, especially in a policy context,⁶ suggesting a serious evidence gap.

Issues and challenges

Changing the built environment significantly is a massive undertaking with potentially huge financial investment needs

Building transportation infrastructure is a significant investment that spans jurisdictions' decision-making structures and involves sectors not traditionally involved with health. For example, building a road may be primarily a provincial responsibility, yet incorporating bike lanes or increasing public transit may be a municipal one. Urban planners with municipal mandates may face challenges as to what they can accomplish, as provincial laws and policies may be outdated or too restrictive. Physical activity, food access and health may not yet be a high priority for transportation and planning sectors or even for departments of finance. Indeed, given the multiple demands on limited municipal tax bases, finding sufficient resources to maintain, change or build infrastructure supportive of health-promoting community design may be a challenge.

Smaller, localized changes in built environments may provide the opportunity for incremental changes

Focusing on school environments or municipal bylaws is not only more manageable politically and practically, but can also provide preliminary evidence of local effectiveness as exemplars for others.

Public support for change in built environments may need to take into account parental concerns about child safety

Enhancing safety (i.e., fewer traffic incidents involving pedestrians and cyclists) through improved built environmental design may have more immediate resonance with parents than changes in health status or obesity. Social perceptions, such as parental fears about child safety (i.e., child abduction by strangers, which is extremely rare), are significant factors that need to be taken into account when promoting built environment changes. Connecting issues of violence prevention with safety challenges, dispelling myths and fears, and engaging public support for change should not further exacerbate public fears but, rather, help to dispel them.

Recommendations

To create supportive built environments that encourage physical activity, active living and access to healthy foods in local communities, we recommend the following:

- Empower local planning authorities to
 - change bylaws that have an effect of restricting physical activity
 - initiate programs to help protect and increase access to green space, including parks and playgrounds
 - introduce zoning bylaws that increase high density and mixed land use
 - through a combination of incentives (tax shelters) and constraints (zoning bylaws) influence the location and distribution of food stores, including fast food stores and suppliers of fruit and vegetables.
- Establish stable, long-term funding for municipal infrastructure that promotes active transportation and provides opportunities and facilities for recreation.
- Evaluate the effectiveness of local programs in improving aspects of the built environment so that successful intervention strategies can be identified and scaled up.
 - Evidence of what interventions work under which conditions is likely to come from natural experiments assumed by committed communities based on the growing evidence associating built environment with obesity and health.
 - It is essential for researchers to work with planners and policy-makers to capture the impact of local changes.
- Make health impact assessment of planning, development and transportation policies mandatory to ensure that legislative changes increase walking, cycling and safety for children and citizens.
 - As the impact of the built environment, including land use and community design, on the health of the population becomes increasingly evident, promoting the development and implementation of public policies conducive to health suggests consideration of the health impacts of new and standing policies in major project planning.
 - Development of tools to assist municipalities and provincial jurisdictions in doing such assessments is required.
- Advocate the framing of issues so as to dispel myths and fears about child safety (from abduction or injury) and to promote child safety from obesity risk factors (e.g., physical inactivity, sedentary behaviours).

CONCLUSION

Consensus around policy levers to address environmental determinants of obesity, including next logical steps toward further policy action, led to concrete recommendations for researchers, practitioners and policy-makers to create supportive built environments that encourage physical activity, active living and access to healthy foods in local communities.

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RÉSUMÉ

En avril 2011, une conférence d'experts invités du monde de la recherche, des politiques et de la pratique a cherché à construire des consensus autour de leviers politiques pour aborder les déterminants environnementaux de l'obésité. Le fossé entre les outils stratégiques existants et ceux qui pourraient favoriser la santé par le design communautaire présente une importante occasion stratégique à saisir. Ce commentaire expose le consensus des experts sur les prochaines étapes en vue de la création de milieux bâtis favorisant une vie active saine. Nous passons en revue l'environnement politique et les données probantes canadiennes. Les enjeux et les difficultés des changements d'orientation sont abordés. Les recommandations en vue de créer des milieux bâtis qui encouragent une vie active saine dans les communautés sont les suivantes : 1) habiliter les responsables de la planification à changer les règlements qui nuisent à une vie active saine, à protéger et élargir l'accès aux espaces verts, et à introduire un zonage qui accroît la densité et l'utilisation mixte des sols et qui influence l'emplacement et la répartition des magasins d'alimentation; 2) établir des budgets de financement stables pour les infrastructures qui favorisent le transport actif et les possibilités de loisir; 3) évaluer l'efficacité des programmes d'amélioration du milieu bâti pour que les interventions fructueuses puissent être identifiées et disséminées; 4) ordonner l'évaluation des incidences sur la santé pour toutes les initiatives de planification et les politiques de développement et de transport, afin que les modifications législatives favorisent la santé et la sécurité; 5) présenter les enjeux de manière à déboulonner les mythes et à promouvoir la protection contre les facteurs de risque de l'obésité.

Mots clés : enfant; adolescent; état sanitaire; obésité; politique sanitaire; conception de l'environnement