

**Neighborhood Walkability in Montreal:
Comparing observational and GIS-based measures of the built environment for physical activity**
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Public health researchers have long looked beyond genetic factors to the social and built environments affecting obesity and its related diseases. However, no consensus exists on the most appropriate approach for measuring the built environment for physical activity or walkability. This project draws from a clinic-based study of 201 type-2 diabetes patients in and around Montreal to compare GIS-based walkability scores with results from a street-level audit. Both sets of scores exhibit the same general trend in walkability across Montreal, with more walkable areas in and around downtown. Kappa tests for inter-rater reliability show that the majority of the audit's 21 questions are reliable between the male and female raters. A strong positive relationship between the audit and GIS scores suggests that walkability indexes calculated for circular or polygon-based network buffers serve as a good substitute for labour-intensive field work. A positive relationship between walkability and neighbourhood income also exists, however the null relationship with individuals' steps taken per day points to the importance of individual and social environment factors in explaining the behaviour of this small sample.

