Physical Activity Patterns of Children in Toronto: The Relative Role of Neighbourhood Type and Socio-economic Status

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ABSTRACT

Objective: A child's opportunity for physical activity and the safety of engaging in activity are influenced by built environment (BE) elements. This study examined the relationship of neighbourhood type and socio-economic status (SES) with activity using a sampling frame that purposely located schools in varying neighbourhoods to ensure that there was variability in BE characteristics and SES.

Methods: Participants (1,027 Grade 5 & 6 students, Toronto, ON) were drawn from 16 schools that varied by neighbourhood type (pre-1946 "old/urban BE" with grid-based street layout versus post-1946 "new/inner-suburban BE" with looping street layout) and socio-economic status (low and high SES). Physical activity was recorded by accelerometry for seven days. Only children living within 1.6 km of school were included in the analyses (n=713; boys=339, girls=374). Generalized linear mixed models examined sex-specific differences in physical activity across four geographic stratifications: old BE, low-SES (OL); old BE, high-SES (OH); new BE, low-SES (NL); and new BE, high-SES (NH).

Results: Children who attended schools in more affluent neighbourhoods (urban and inner-suburban) had more positive physical activity profiles. Across school days, boys were more active in inner-suburban neighbourhoods whereas urban and inner-suburban girls' activity levels were similar. On the weekend, the influence of the neighbourhood environment was stronger, especially for girls and also for boys with respect to total activity and the accumulation of moderate-to-vigorous physical activity.

Conclusion: These findings focus attention on the need to consider the broader social and temporal contexts of specific geographic locations when planning and implementing built environment interventions to increase physical activity among children.

Key words: Accelerometer; child; built environment; physical activity

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

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The built environment consists of the buildings, roads and planned open spaces in which people live, work and perform other daily activities (e.g., study, eat, socialize and play). The physical layout of communities can promote or limit opportunities for physical activity. Using accelerometers to capture objective levels of physical activity, Frank and colleagues observed that features of community design (increased land-use mix, street connectivity and residential density) were positively associated with the accumulation of moderate-to-vigorous physical activity (MVPA) and the achievement of physical activity guidelines.¹ However, the associations in that study were explored in adults living in the US. While there is some evidence to support a link between the built environment and children's physical activity,^{2,3} most studies have used self-reported measures of activity that show mixed results⁴ and are known to have limited validity in children.⁵ Two studies^{6,7} used objective measures of physical activity (accelerometry), yet these focused on differences between urban and rural environments. Where studied, suburban children tend to be most active,⁴ although the findings are based on self-reported physical activity, and the involvement of households with higher socio-economic status (SES) could be confounding the results. Children from low SES households tend to have lower physical activity levels and to engage in more sedentary activities.⁸⁻¹⁰

Given this SES-activity relationship, there is a need for studies that separate SES from geographic features in investigations of children's physical activity. Also, physical activity differs between the

sexes, girls being generally less active and less likely to achieve physical activity recommendations than boys.¹¹ Consequently, any investigation into the relation of neighbourhood type and SES with characteristics of physical activity should consider the possibility that findings may be sex specific. To the authors' knowledge, no Canadian published study aiming to investigate the effect of neighbourhood on *multiple* aspects of young boys' and girls' physical activity (total physical activity, activity intensity, time spent sedentary and minutes of light and MVPA; age 10 to 12 years) has employed a sampling strategy that established sufficiently varied built environment characteristics and SES; this gap provided the incentive for Project BEAT (Built Environment and Active Transport).

The City of Toronto was the study site for Project BEAT. Marked differences in the built environment can be found across Toronto. The inner-city is dominated by "older" traditional neighbourhoods (pre World War II),¹² but improved mobility options and demands for

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Figure 1. Map identifying the 16 schools in the City of Toronto participating in Project BEAT, classified into four different neighbourhood types

"Old" Neighbourhood: Mostly developed before 1946; primarily grid-based street layout.
 "New" Neighbourhood: Mostly developed after 1946; primarily looped street layout.

affordable housing spurred a post-war suburban housing revolution. As a result, conventional suburban neighbourhoods dominate the inner-suburban Toronto. This part of the city also captures some of Canada's earliest experiments with planned urban form, such as the Don Mills community and tower neighbourhoods.^{12,13} Over the last two decades, however, pockets within some inner-city neighbourhoods have been re-developed, a trend that has been supported by favourable policy and market conditions. With the exception of these re-urbanized residential blocks in the inner-city and the tower neighbourhoods in the inner-suburbs, the era of development can reasonably be used as a proxy for neighbourhood types in Toronto. Within the older central city, street networks are more commonly connected (gridded), have a higher density of intersections and shorter straight blocks, and include higher building densities and mixed use. In the newer inner-suburbs, the neighbourhood streets are largely curvilinear with clear hierarchy, land uses are segregated, housing density is lower, and there is more open space than in the older neighbourhoods.^{12,14} SES varies widely across these urban (older) and inner-suburban (newer) settings. This is an important factor, as a household's choices regarding opportunities for physical activity and the safety of engaging in physical activity are also affected by level of SES.

This unique landscape supports our objective to classify neighbourhoods according to neighbourhood type and SES in an investigation of how neighbourhoods influence the physical activity patterns of children in Toronto. This is a novel design that addresses the inherent gaps in the built environment and physical activity literature.

METHODS

Experimental design

Children's physical activity levels in the City of Toronto were examined. From January 2010 to June 2011, all elementary/intermediate schools in the Toronto District School Board with Grade 5 and 6 students ($n=469$) received an invitation to participate. A pool of interested schools was generated, and 16 schools were selected that varied with respect to neighbourhood type and level of SES. Two neighbourhood classifications were created on the basis of the period of neighbourhood development: urban (old BE) – older built environment with primarily grid-based street layout – versus inner-suburban (new BE) incorporating newer built environment with primarily looped street layout (Figure 1). Neighbourhood era of development was computed at the scale of the census dissemination area (DA). DAs are the smallest geographic units (0.18 ± 0.39 km²) for which detailed public census data (by Statistics Canada) are available. All DAs in which >50% of the residential building stock was developed before 1946 were identified as urban/old neighbourhoods. The year 1946 was selected to represent a proxy for pre and post World War II neighbourhoods. Development patterns in Toronto changed noticeably in the post-war era as a result of a widespread implementation of the "planned neighbourhood" design concept.^{12,13} For the purpose of this study, we assumed that the general physical qualities of a neighbourhood (i.e., neighbourhood type) would be similar within a 1.6 km radius of a school location. Children living >1.6 km from school were deemed eligible for

Table 1. Descriptive Characteristics of Sample, by Sex (n=713)

Characteristic	Neighbourhood Classification							
	OL (n=158)		OH (n=194)		NL (n=214)		NH (n=147)	
	Boys	Girls	Boys	Girls	Boys	Girls	Boys	Girls
Sample size	79	79	86	108	103	111	71	76
Mean age, years (SD)	10.9 (0.7)§	11.0 (0.7)§	11.1 (0.6)	11.2 (0.6)	11.0 (0.6)	11.0 (0.6)§	11.2 (0.6)*	11.3 (0.6)*‡
Mean height, cm (SD)	147.1 (8.6)	146.3 (8.3)	147.2 (6.8)	149.0 (8.0)‡	147.2 (7.1)	145.0 (12.2)†§	147.4 (7.5)	150.0 (8.0)‡
Mean weight, kg (SD)	43.3 (12.5)	40.3 (9.8)	40.0 (9.0)	39.7 (7.6)	42.9 (11.3)	40.9 (10.1)	43.6 (10.8)	42.1 (9.2)
Mean body mass index, kg/m ² (SD)	19.7 (4.3)	18.7 (3.4)	18.3 (3.1)§	17.8 (2.5)‡	19.6 (4.1)	19.1 (3.7)†	19.9 (3.9)†	18.6 (3.2)
BMI category								
Normal weight, %	65.8	75.9	75.6	86.1‡	61.2	62.2†	62.0	73.7
Overweight or obese, %	34.2	24.1	24.4	13.9‡	38.8	37.8†	38.0	26.3

* Significantly different from OL, $p < 0.05$ † Significantly different from OH, $p < 0.05$ ‡ Significantly different from NL, $p < 0.05$ § Significantly different from NH, $p < 0.05$ || International Obesity Task Force classification¹⁵

OL=Old built environment (urban), low socio-economic status (SES); OH=Old built environment (urban), high SES; NL=New built environment (inner-suburban), low SES; NH=New built environment (inner-suburban), high SES

school bus transportation as they were considered to reside outside the school catchment area (www.tdsb.on.ca).

Two classifications of SES for neighbourhoods around the school locations were also created (Low SES and High SES) according to the median household income reported in the 2006 Population Census of Canada. For each school ($n=469$), the median household income within an 800 m (i.e., 0.8 km/0.5 mile) straight line buffer distance was estimated by taking a median of the DA-level household incomes. Schools with the lower 50th percentile values were identified as the Low SES schools. The SES was measured at a larger geographic scale (than neighbourhood type) in order to capture the general socio-economic characteristics of a school's student population, who may live in various neighbourhoods (i.e., in different DAs) near the school. Half of the surveyed schools (i.e., eight schools) were Low SES schools, and the other half were High SES schools. Consent was obtained from participating school boards, individual schools, parents and students. Student participation was voluntary.

A total of 1,027 parents/guardians gave consent for their children to participate (boys, $n=478$; girls, $n=549$). Height and weight measurements were taken and accelerometer-measured physical activity data collected on a total of 1,001 children. Of those, 85.5% had at least three weekdays and one weekend day of valid data ($n=856$; boys=389, girls=467). Analyses were conducted only on children living within 1.6 km of school ($n=713$; boys=339, girls=374; mean age 11.1 ± 0.6 years). With the use of age- and sex-specific body mass index (BMI) cut-points provided by the International Obesity Task Force,¹⁵ participants were classified as of normal weight, overweight or obese.

Measurement of physical activity

Children's physical activity was objectively measured for seven days using accelerometry (ActiGraph GT1M; ActiGraph LLC, Pensacola, FL, US). A 5 s epoch (interval) was used to capture the rapid transitions in activity typical in children.¹⁶ For inclusion in data analysis, each child required a minimum of 10 hours of wearing time for at least 3 weekdays and 1 weekend day.¹⁷ Time spent at various levels of movement intensity was classified according to published thresholds in children¹⁸ and used to determine levels of physical activity during school days (weekdays; WD) and weekends (WE). Physical activity variables of interest included total physical activity (TPA; counts·day⁻¹), mean counts (MC; counts·min⁻¹), time spent

sedentary (% of day) and minutes of light-intensity activity (LPA) and moderate-to-vigorous activity (MVPA). Data collection took place during the spring/summer (April to June) and fall (September to December) school periods to limit any seasonal effect.

Statistical analyses

Generalized linear mixed models were used to examine sex-specific differences in accelerometry summary measures (TPA, MC, sedentary behaviour, LPA and MVPA) for WD and WE across four neighbourhood classifications based on neighbourhood type and SES: old BE, low-SES (OL); old BE, high-SES (OH); new BE, low-SES (NL); new BE, high-SES (NH). Random effects at classroom levels were included to account for possible variability (i.e., clustering of accelerometry data among different classrooms) and adjust for any clustering effects. Sex-specific differences in descriptive characteristics (age, height, weight, BMI and proportion of normal weight and overweight/obese participants) were also explored across neighbourhood classifications. Estimated means were compared and significant differences tested using the Sequential Bonferroni method. The alpha level was set at 0.05. SPSS version 19.0 was used for all analyses.

RESULTS

General characteristics

Data for 713 participants are presented (mean age 11.1 ± 0.6 years; boys, $n=339$, girls, $n=374$, Table 1). For boys, only age and BMI differed among neighbourhoods (boys in urban neighbourhoods were slightly younger [OL] and had lower BMIs [OH] than boys in NH neighbourhoods, $p < 0.05$). For girls, there were significant differences in age, height, BMI and weight classification. Girls in low SES neighbourhoods were younger and shorter (particularly those in NL neighbourhoods) than girls in high SES neighbourhoods. Furthermore, compared with girls in OH neighbourhoods, those in NL neighbourhoods had greater BMIs, and a significantly greater proportion were classified as being overweight or obese ($p < 0.05$, Table 1).

Weekday physical activity

The type of neighbourhood most conducive to high levels of PA across school days differed between boys and girls. Boys in inner-suburban, high SES neighbourhoods had the highest activity levels;

Table 2. Influence of Neighbourhood Type and SES on Characteristics^{||} of Accelerometer-measured Physical Activity in Boys

Boys (n=339)	TPA (counts·day ⁻¹)		MC (counts·min ⁻¹)		LPA (min)		MVPA (min)		SB (% of day)	
	WD	WE	WD	WE	WD	WE	WD	WE	WD	WE
OL: Old built environment, low SES (n=79)	478,770 (135,869)	335,549 (169,399)†§	474.7 (21.9)§	357.6 (25.6)†§	194.0 (3.9)	155.8 (5.5)	36.8 (2.0)	22.0 (2.0)†	77.3 (0.7)§	81.3 (0.9)†§
OH: Old built environment, high SES (n=86)	483,650 (127,870)	429,351 (196,481)*†	515.5 (20.4)§	483.1 (23.9)*†	181.2 (3.7)	172.7 (5.2)	38.0 (1.8)	31.1 (1.9)*†	76.9 (0.7)§	77.0 (0.8)*†
NL: New built environment, low SES (n=103)	487,736 (129,896)	358,785 (134,686)†	452.8 (20.1)§	342.0 (23.5)†§	192.9 (3.5)	166.5 (4.8)	38.0 (1.8)	23.9 (1.8)†	78.6 (0.7)§	81.8 (0.8)†,§
NH: New built environment, high SES (n=71)	533,073 (147,799)	407,089 (146,110)*	592.6 (22.8)*†§	470.3 (26.7)*†	195.1 (3.1)	169.5 (5.8)	42.5 (2.1)	28.7 (2.1)	73.9 (0.7)*†	77.2 (0.9)*†

^{||} Presented as mean (SE).

* Significantly different from OL, p<0.05

† Significantly different from OH, p<0.05

‡ Significantly different from NL, p<0.05

§ Significantly different from NH, p<0.05

TPA=total physical activity; MC=mean counts; LPA=light physical activity; MVPA=moderate-to-vigorous physical activity; SB=% of day spent sedentary; WD=weekdays; WE=weekend

Table 3. Influence of Neighbourhood Type and SES on Characteristics^{||} of Accelerometer-measured Physical Activity in Girls

Girls (n=374)	TPA (counts·day ⁻¹)		MC (counts·min ⁻¹)		LPA (min)		MVPA (min)		SB (% of day)	
	WD	WE	WD	WE	WD	WE	WD	WE	WD	WE
OL: Old built environment, low SES (n=79)	392,254 (114,890)	288,726 (133,021)†	379.9 (18.2)†§	306.8 (23.6)†	177.6 (3.8)	149.7 (5.0)	24.6 (1.5)	15.9 (1.8)†	80.4 (0.7)	82.7 (0.8)†
OH: Old built environment, high SES (n=108)	406,311 (110,694)‡	375,598 (181,743)*†§	444.2 (15.8)*†	428.0 (20.5)*†	166.7 (3.3)	154.8 (4.4)§	29.3 (1.3)‡	25.2 (1.6)*†§	78.8 (0.6)‡	79.4 (0.7)*†§
NL: New built environment, low SES (n=111)	359,446 (90,999)†§	286,712 (92,038)†	341.7 (16.3)†§	295.3 (21.0)†	168.6 (3.3)	147.5 (4.4)	22.6 (1.3)†	16.3 (1.6)†	81.9 (0.6)†§	83.3 (0.7)†
NH: New built environment, high SES (n=76)	400,625 (109,118)‡	303,979 (180,593)†	447.2 (18.6)*†	353.8 (24.1)	166.5 (3.9)	133.6 (5.2)†	26.6 (1.5)	17.8 (1.9)†	78.7 (0.7)‡	82.2 (0.8)†

^{||} Presented as mean (SE).

* Significantly different from OL, p<0.05

† Significantly different from OH, p<0.05

‡ Significantly different from NL, p<0.05

§ Significantly different from NH, p<0.05

TPA=total physical activity; MC=mean counts; LPA=light physical activity; MVPA=moderate-to-vigorous physical activity; SB=% of day spent sedentary; WD=weekdays; WE=weekend

the overall intensity of activity they accumulated (mean counts) was significantly greater and they spent a significantly lower proportion of their day sedentary compared with boys in all other neighbourhoods (p<0.05, Table 2). However, the accumulation of LPA and MVPA across school days was no different from that in other neighbourhoods. There was also a trend for WD total activity to be higher in NH neighbourhoods than OL neighbourhoods (p=0.07). For girls, an inner-suburban, low SES neighbourhood was least enhancing with regard to physical activity. Compared with those going to schools in high SES neighbourhoods, these girls spent a significantly greater proportion of their day sedentary, and the activity that they accumulated across the day was less intense; they also accumulated less total activity and, in particular, less MVPA (p<0.05, Table 3). The overall WD activity profile of girls in urban, low SES neighbourhoods was also less intense. Similar to boys, the accumulation of LPA on weekdays was similar across neighbourhoods.

Weekend physical activity

For boys, WE activity profiles were strongest among children in high SES neighbourhoods (urban and inner-suburban, p<0.05); however, the accumulation of LPA was similar across neighbourhoods (Table 2). Boys in high SES, urban neighbourhoods also had greater total activity and accumulated more MVPA than those living in more economically disadvantaged communities. For girls, WE activity levels were highest among those situated in urban, economically advantaged neighbourhoods: these girls accumulated significantly more total activity and MVPA, and spent a lower proportion of their day sedentary than did girls in all other neighbourhoods (p<0.05, Table 3). Compared with girls in low SES neighbourhoods, the overall intensity of their activity profile was also higher, and they accumulated significantly more LPA over the weekend than girls in inner-suburban, high SES neighbourhoods.

DISCUSSION

This study aimed to investigate the relationship between school neighbourhood type (based primarily on the period of neighbourhood development) and SES and physical activity in children using a sampling frame that purposely located schools in varying neighbourhoods to ensure that there was variability in built environment characteristics and SES. Our work generated three key lessons.

Lesson 1: Area level SES factors matter

Children who attend schools in more affluent neighbourhoods, *irrespective of neighbourhood type* (urban and inner-suburban), have more positive physical activity profiles across the week. The observation of high physical activity levels among children in inner-suburban high SES neighbourhoods corresponds with previous accounts from self-reported PA data.⁴ Families in newer neighbourhoods with economic means may encourage structured, localized, higher-intensity activities that compensate for potential reductions in habitual physical activity associated with design features that inhibit walking or unstructured play. Less affluent school neighbourhoods have been shown to have social and physical environments less conducive to maintaining healthy weights and levels of physical activity.^{19,20} They may lack recreational facilities or have facilities that require a fee.²¹ Less affluent neighbourhoods are also more likely to be perceived as unsafe.¹⁹ Perceived threats to safety are one of the biggest barriers to children's independent play and mobility.²²

Overall, this finding highlights the need for interventions addressing inequalities at the individual and neighbourhood levels. These may include built environment modifications, but it is likely that a broader intervention approach is required in alleviating safety concerns, increasing social capital and cohesion, and subsidizing opportunities for physical activity.

Lesson 2: The influence of the neighbourhood environment may vary over time

On the weekend, the combination of affluence and an urban environment becomes particularly important in raising children's physical activity profiles, especially for girls and also for boys with respect to total activity and the accumulation of MVPA. When compared with children from lower SES neighbourhoods, the results take on a more practical significance. For example, the approximately 3%-4% difference in time spent being sedentary on the weekend among groups amounts to an extra hour of sedentary time for children in lower SES neighbourhoods; these children also accumulate seven to nine fewer minutes of MVPA than their urban, high SES neighbourhood counterparts on the weekend. Toronto's urban neighbourhoods are older and have greater street connectivity, and in more affluent areas where safety concerns are low might provide a favourable environment for accessing opportunities and engaging in outdoor activities and play. Since children potentially have more discretionary input into decisions over time use during the weekend, the effect of this type of environment on physical activity might be stronger during that time period.

Notably, this finding highlights that the relationship between neighbourhood type (and likely more broadly the "built environment") and physical activity is temporally heterogeneous. That is, the strength of association between features of the built environment and physical activity varies at different times of the day or week – for example, as the spatial, temporal and institutional constraints (e.g., family structure, access to daycare, location of work, employment status, access to cars) facing households also changes over time.²³ This has important implications for what and *when* built environment interventions might work in increasing the physical activity of children.

Lesson 3: Gender and the type of physical activity measured matters

The impact of neighbourhood classification on aspects of physical activity is different for boys and girls. For example, girls in urban

and inner-suburban high SES neighbourhoods had similar week-day activity levels that were significantly higher than the levels of girls in low SES neighbourhoods. This was not the case for boys: those in high SES, inner-suburban neighbourhoods had significantly greater activity profiles than their urban counterparts. Girls may be granted less independent mobility than boys,²⁴ and this might be further amplified in less affluent neighbourhoods because of heightened parental concerns regarding personal safety.

Additionally, the impact of neighbourhood appeared weaker for some characteristics of activity: for boys, the accumulation of MVPA across the school week and the accumulation of LPA over the weekend were similar across neighbourhoods. Older neighbourhoods, with traditionally greater street connectivity, may encourage walking for various activities, therefore one might expect to see a greater accumulation of LPA among children living in these neighbourhoods. Yet our data demonstrate that for the most part, the accumulation of LPA is similar among neighbourhoods; only over the weekend did differences arise, in girls only, when those in urban, high SES neighbourhoods accumulated more LPA than those in inner-suburban, high SES neighbourhoods. Overall, these findings emphasize that built environment interventions may have variable impact on different types of physical activity and groups of children (e.g., boys and girls).

Strengths and limitations

The strengths of this study include the large sample, the sampling frame and the use of an objective measure of physical activity to examine multiple aspects of physical activity across both school days and over the weekend. Our collection of high-frequency physical activity data was particularly appropriate for quantifying children's activity.^{16,25,26}

The limitations of the study include the narrow age range of children sampled and the investigation of Toronto neighbourhoods, which do limit the generalizability of the findings to other age groups and geographic locations. The present study did not examine the influence of micro-level community design and land-use characteristics (e.g., connectivity, access/proximity to recreational facilities, residential density). Moreover, since Toronto's public schools maintain small catchment areas, this research assumed that the socio-economic and built environment near school and home locations would generally be similar (1.6 km between school and home). However, we recognize that different definitions of neighbourhood may have yielded different results (although such differences might be small¹⁴) and that the built environment near the home location may be different than around the school within our sample. For example, Mitra and colleagues compared the relative influences of the home and school neighbourhoods on active school transportation and found that the built environment near home was more important in enabling walking among children.²⁷ An exploration of the relationship between the objective qualities of the neighbourhood of both the home and the school, and measures of physical activity, remains a focus of future investigation.

CONCLUSION

In conclusion, our findings highlight the value of geographic stratification based on neighbourhood type and SES in cross-sectional analyses of accelerometry data. Our work offers three key lessons: one, that physical activity varies more by level of school neigh-

bourhood affluence than neighbourhood type; two, that broader relationships between the built environment and physical activity may vary temporally; and three, that the influence of the built environment is different for boys and girls, and varies according to the type of physical activity. In planning and implementing built environment interventions to increase physical activity among children, these lessons focus attention on the need to consider the broader social and temporal contexts of specific geographic locations.

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RÉSUMÉ

Objectif : Les occasions pour un enfant de faire de l'activité physique et la possibilité de le faire en toute sécurité sont influencées par les éléments du milieu bâti (MB). Notre étude porte sur la relation entre le type de quartier, le statut socioéconomique (SSE) et l'activité; la base d'échantillonnage utilisée contenait volontairement des écoles de divers quartiers pour assurer la variabilité des caractéristiques du MB et du SSE.

Méthode : Les participants (1 027 élèves de 5^e et de 6^e année à Toronto, en Ontario) ont été choisis dans 16 écoles qui variaient selon le type de quartier (« MB ancien/urbain » d'avant 1946 avec rues quadrillées ou « MB nouveau/de la proche banlieue » d'après 1946 avec rues en boucles) et le statut socioéconomique (SSE faible ou élevé). L'activité physique a été enregistrée par accélérométrie pendant sept jours. Seuls les enfants vivant à moins de 1,6 km de l'école ont été inclus dans l'analyse (n=713; garçons=339, filles=374). Au moyen de modèles linéaires mixtes généralisés, nous avons examiné les différences par sexe dans l'activité physique entre quatre stratifications géographiques : MB ancien, faible SSE; MB ancien, SSE élevé; MB nouveau, faible SSE; et MB nouveau, SSE élevé.

Résultats : Les enfants qui fréquentaient les écoles des quartiers aisés (urbains et de la proche banlieue) avaient des profils d'activité physique plus positifs. Les jours d'école, les garçons des quartiers de la proche banlieue étaient plus actifs, tandis que les niveaux d'activité des filles étaient semblables en milieu urbain et dans la proche banlieue. Les fins de semaine, l'influence de l'environnement du quartier était plus forte, surtout chez les filles, mais aussi chez les garçons en ce qui a trait à l'activité totale et à l'accumulation d'activité physique modérée à vigoureuse.

Conclusion : Ces résultats montrent qu'il faut examiner le contexte social et temporel des lieux géographiques lorsqu'on planifie et que l'on met en œuvre des interventions sur le milieu bâti pour accroître l'activité physique chez les enfants.

Mots clés : accéléromètre; enfant; milieu bâti; activité physique