HEALTH SURVEILLANCE INDICATORS:
PHYSICAL ACTIVITY

Public Health Relevance

Physical activity can lower an individual's risk for cardiovascular disease, diabetes, colon cancer, osteoporosis, and obesity. As lifestyles become more sedentary due to prolonged sitting at desks and in cars, and while watching television and using various technology devices, it becomes more important to participate in physical activity during leisure time. Healthy public policy, advocacy, education and other services are public health activities that can promote increased physical activity in the population.

This report explores two measures. One measure is based on physical activity during leisure time only and the other measure is based on physical activity during leisure time and transportation. Both measures are further divided into two categories. 'Active' is defined as burning more than 3 kcal/kg of energy per day, on average, and is around the desired amount of activity to gain cardiovascular health benefits. 'Moderately active or higher' is defined as burning more than 1.5 kcal /kg of energy per day, on average. People who are moderately active may also achieve some health benefits, but it is less activity than is recommended.

Highlights

1. The percent of adults that were moderately active or higher in Toronto remained fairly stable from 2007 to 2014.

2. Physical activity levels amongst adults in Toronto was not significantly different than the rest of Ontario and the rest of the GTA.

3. Adults in East Scarborough were significantly less likely to be physically active than Toronto as a whole.

4. Socio-demographic factors such as sex, age, education, immigrant status, income level, and ethno-racial identity were associated with significant differences in physical activity amongst adults in Toronto.

Trends Over Time

The percent of adults that were moderately active or higher in Toronto remained fairly stable from 2007 to 2014.

Figure 1 shows the percent of adults that were active, moderately active, and moderately active or higher during leisure time in Toronto from 2007 to 2014.

Adults in Toronto were significantly more likely to be active during their leisure time in 2014 (25.8%) as compared to 2007 (18.8%). Despite this increase in physical activity, the percent of adults that were at least moderately active or higher remained fairly stable from 2007 (41.0%) to 2014 (46.4%).

Figure 1: Percent Active and Moderately Active, and Moderately Active or Higher During Leisure Time, Adults Aged 20 Years and Older, Toronto, 2007 to 2014
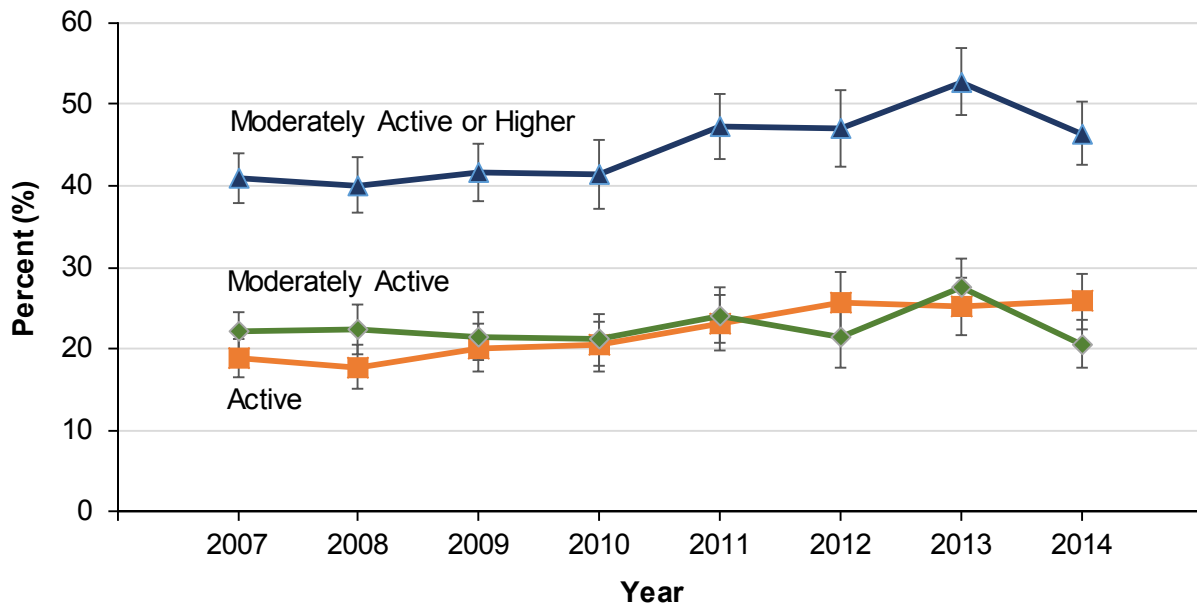
Error bars (I) represent the 95% confidence intervals.
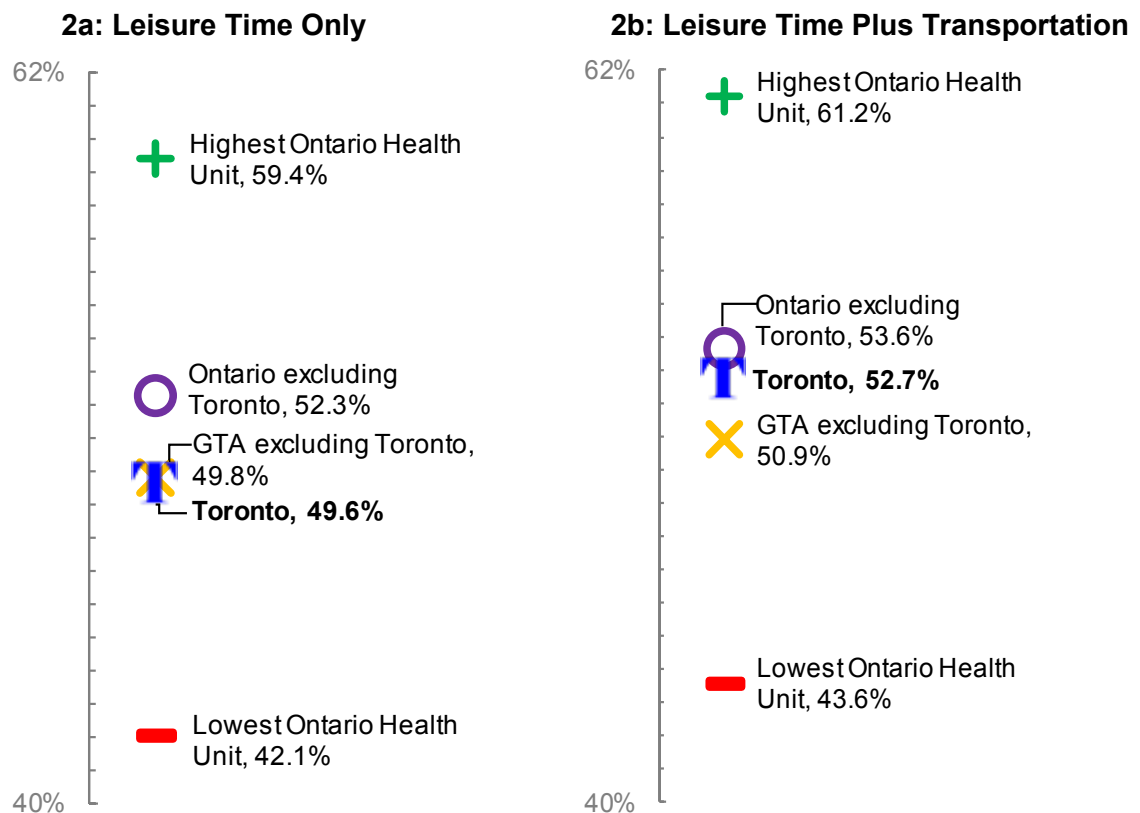
Data Source: see Data Notes.

Regional Comparisons

Physical activity amongst adults in Toronto was not significantly different than the rest of Ontario and the rest of the GTA.

Figures 2a and 2b show the percent of adults that were moderately active or higher during leisure time only and also during leisure time plus transportation in Toronto in 2013/2014 compared to the rest of Ontario (Ontario without Toronto), the rest of the Greater Toronto Area (GTA without Toronto), and the health units (HUs) in Ontario with the highest and lowest percent.

The percent of adults in Toronto that were moderately active or higher during leisure time and leisure time plus transportation was not significantly different than Ontario or the rest of the GTA. Adults in Toronto were significantly less likely to be moderately active or higher compared to the Ontario HU with the highest percent.

Figure 2: Percent Moderately Active or Higher, Adults Aged 20 Years and Older, Selected Regions in Ontario, 2013/2014

2a: Leisure Time Only

- Highest Ontario Health Unit, 59.4%
- Ontario excluding Toronto, 52.3%
- GTA excluding Toronto, 49.8%
- **Toronto, 49.6%**
- Lowest Ontario Health Unit, 42.1%

(Axis: 40% to 62%)

2b: Leisure Time Plus Transportation

- Highest Ontario Health Unit, 61.2%
- Ontario excluding Toronto, 53.6%
- **Toronto, 52.7%**
- GTA excluding Toronto, 50.9%
- Lowest Ontario Health Unit, 43.6%

(Axis: 40% to 62%)

Data Source: see Data Notes.

Toronto Neighbourhood Comparisons

Adults in East Scarborough were significantly less likely to be physically active than Toronto as a whole.

Table 1 shows the percent of adults that were moderately active or higher during leisure time only and leisure time plus transportation by Toronto Public Health's Service Delivery Areas (SDAs) for Chronic Disease and Injury Prevention in 2013/2014.

When compared to Toronto as a whole, adults in East Scarborough were significantly less likely to be moderately active or higher during both leisure time and leisure time plus transportation, whereas adults in the Toronto Centre were significantly more likely.

Table 1: Percent Moderately Active or Higher by Service Delivery Area*, Adults Aged 20 Years and Older, Toronto, 2013/2014

CDIP Service Delivery Area	Leisure Time Only (%)	Leisure Time Plus Transportation (%)
Danforth East York	50.0	53.3
East Scarborough	34.3 L	35.4 L
Humber Downsview	40.2	42.7
Rexdale Etobicoke	50.1	55.9
Toronto Centre	62.7 H	68.0 H
West Scarborough	40.9	43.1
Willowdale Don Mills	52.6	54.6
York South Humber	44.0	46.2
Toronto	**49.6**	**52.7**

* Toronto Public Health's Service Delivery Areas for Chronic Disease and Injury Prevention (CDIP).

H Significantly higher than the Toronto total indicating a favourable result for that area.

L Significantly lower than the Toronto total indicating an unfavourable result for that area.

Data Source: see Data Notes.

Map 1 shows the same trends described in Table 1 for physical activity during leisure time plus transportation by Service Delivery Area*. The visual trend seen on this map is the same as is seen for physical activity during leisure time only.

Map 1: Percent of Moderately Active or Higher During Leisure Time Plus Transportation by Service Delivery Area*, Adults Aged 20 Years and Older, Toronto, 2013/2014
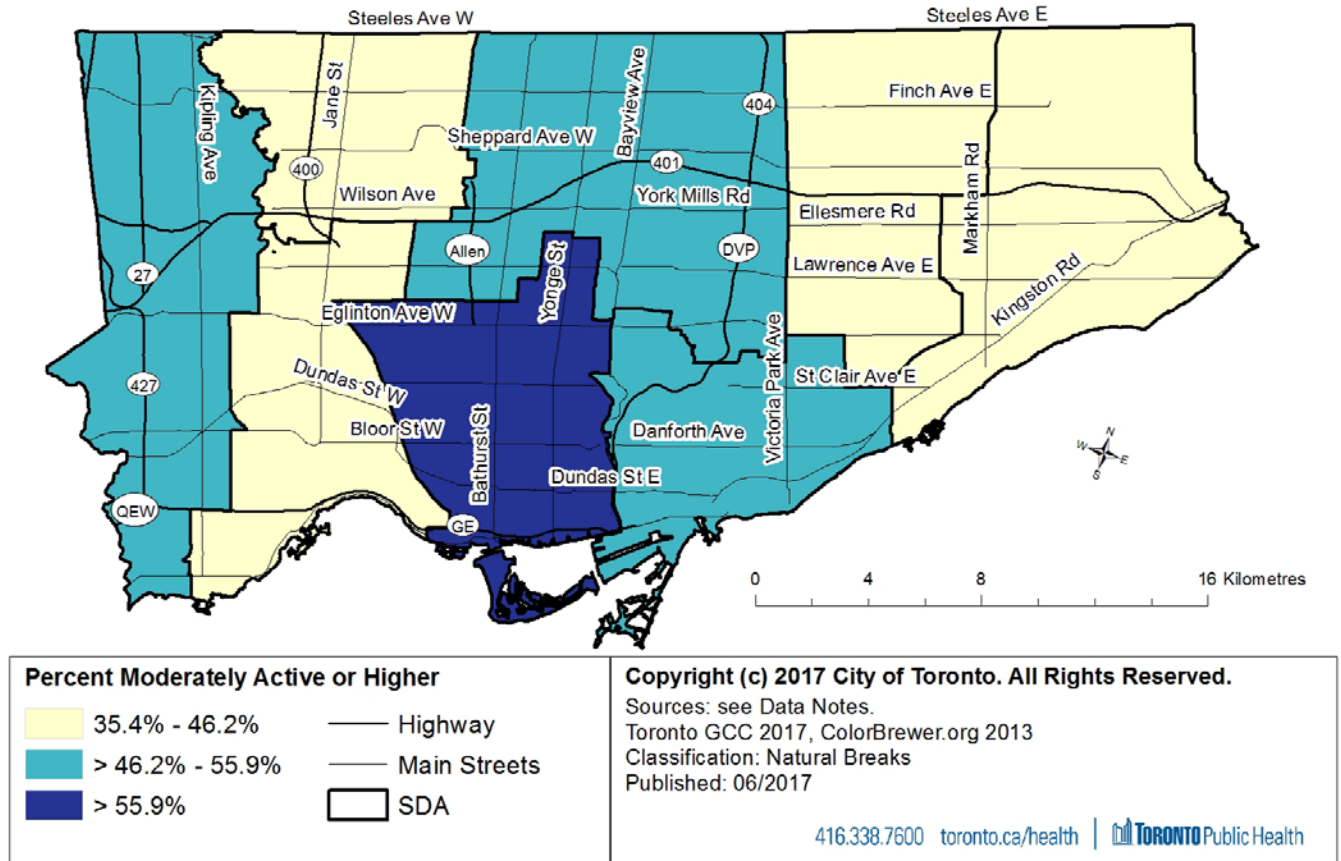
* Toronto Public Health's Service Delivery Areas for Chronic Disease and Injury Prevention (CDIP).

Socio-demographics

Socio-demographic factors such as sex, age, education, immigrant status, income level, and ethno-racial identity were associated with significant differences in physical activity amongst adults in Toronto.

Table 2 shows the percent of adults that were moderately active or higher during leisure time only and leisure time plus transportation by sex in Toronto in 2013/2014.

Females were significantly less likely to be moderately active or higher than males.

Table 2: Percent Moderately Active or Higher by Sex, Adults Aged 20 Years and Older, Toronto, 2013/2014

Sex	Leisure Time Only (%)	Leisure Time Plus Transportation (%)
Male	54.7	57.6
Female	44.8 **L**	48.7 **L**

L Significantly lower than the other sex indicating an unfavourable result for this group.

Data Source: see Data Notes.

Table 3 shows the percent of adults that were moderately active or higher during leisure time only and leisure time plus transportation by age group in Toronto in 2013/2014.

Adults in the 40 to 64 years age group were significantly less likely to be moderately active or higher during their leisure time plus transportation as compared to those in the 20 to 39 years age group. There were no significant differences in physical activity during leisure time only amongst the three age groups.

Table 3: Percent of Moderately Active or Higher by Age Group, Adults Aged 20 Years and Older, Toronto, 2013/2014

Age Group	Leisure Time Only (%)	Leisure Time Plus Transportation (%)
20 to 39 Years	52.4	58.3
40 to 64 Years	46.8	48.7 **L**
65 Years and Older	49.9	49.9

L Significantly lower than the age group with the highest percent of physical activity, thus, indicating an unfavourable result for this group.

Data Source: see Data Notes.

Table 4 shows the percent of adults that were moderately active or higher during leisure time only and leisure time plus transportation by education level in Toronto in 2013/2014.

Adults with a high school education or less were significantly less likely to be moderately active or higher as compared to those with post-secondary education.

Table 4: Percent of Moderately Active or Higher by Education level, Adults Aged 20 Years and Older, Toronto, 2013/2014

Education Level	Leisure Time Only (%)	Leisure Time Plus Transportation (%)
Less than High School	33.4 **L**	34.5 **L**
High School Graduate	42.1 **L**	45.6 **L**
Post-Secondary Education	55.5	45.6

L Significantly lower than the education level with the highest percent of physical activity, thus, indicating an unfavourable result for this group.

Data Source: see Data Notes.

Table 5 shows the percent of adults that were moderately active or higher during leisure time only and leisure time plus transportation by immigrant status in Toronto in 2013/2014.

Both recent and longer-term immigrant adults were significantly less likely to be moderately active or higher as compared to Canadian-born adults.

Table 5: Percent of Moderately Active or Higher by Immigrant Status, Adults Aged 20 Years and Older, Toronto, 2013/2014

Immigrant Status	Leisure Time Only (%)	Leisure Time Plus Transportation (%)
Recent Immigrants	41.8 **L**	46.9 **L**
Longer-term Immigrant	40.4 **L**	42.1 **L**
Canadian-born	61.4	65.4

L Significantly lower than the immigrant status group with the highest percent of physical activity, thus, indicating an unfavourable result for this group.

Data Source: see Data Notes.

Table 6 shows the percent of adults that were moderately active or higher during leisure time only and leisure time plus transportation by income level in Toronto in 2013/2014.

Adults in the low and middle income groups were significantly less likely to be moderately active or higher as compared to adults in the high income group.

Table 6: Percent Moderately Active or Higher by Income Level, Adults Aged 20 Years and Older, Toronto, 2013/2014

Income Level	Leisure Time Only (%)	Leisure Time Plus Transportation (%)
Low Income	40.5 **L**	42.5 **L**
Middle Income	47.5 **L**	51.7 **L**
High Income	59.9	63.2

L Significantly lower than the income group with the highest percent of physical activity, thus, indicating an unfavourable result for this group.

Data Source: see Data Notes.

Table 7 shows the percent of adults that were moderately active or higher during leisure time only and leisure time plus transportation by ethno-racial identity in Toronto in 2013/2014.

Adults of Black, South Asian, West Asian, or Arab ethno-racial identities were significantly less likely to be moderately active or higher as compared to adults of White ethno-racial identity.

Table 7: Percent Moderately Active or Higher by Ethno-racial Identity, Adults Aged 20 Years and Older, Toronto, 2013/2014

Ethno-racial Identity	Leisure Time Only (%)	Leisure Time Plus Transportation (%)
White	56.4	59.5
Black	35.6 **L**	38.9 **L**
South Asian/West Asian/Arab	37.7 **L**	41.6 **L**
East Asian/Southeast Asian	45.1	49.6
Other Racialized Group	45.9	46.5

L Significantly lower than the ethno-racial identity with the highest percent of physical activity, thus, indicating an unfavourable result for this group.

Data Source: see Data Notes.

Data Notes

Notes

- Significant differences were estimated using overlapping confidence intervals. Although this method is conservative (α ~< 0.01) and most appropriate when comparing mutually exclusive groups, it was chosen as an objective means of drawing conclusions on population-based data. Multiple comparisons performed in the analyses were not taken into consideration when choosing the level of significance to test.

- Toronto is compared to the rest of Ontario (Ontario with Toronto removed) as opposed to the Ontario total because Toronto comprises a large proportion of the Ontario population. Toronto is also compared to the rest of the GTA (Greater Toronto Area) for the same reason.

- Data used for the regional comparisons normally shows the percentage for the Ontario health units with the highest and the lowest percentage. The purpose of these comparisons is to show the percent for Toronto relative to other areas in Ontario.

- The estimates in this indicator page are from self-reported data from the Canadian Community Health Survey (CCHS). Self-reported data have a number of limitations. People do not always remember their behaviours, and may under-report or over-report certain behaviours or characteristics based on their perceived social desirability. For example, people may say they exercised more than they actually did because they perceive this to be a "better" response. In addition, surveys do not always provide a representative picture of the whole population. The CCHS under-represents people of low income, people with low education, and new immigrants. If a respondent did not respond to a survey question relevant to the analysis presented, they were excluded from both the numerator and the denominator.

- Time trend analysis is based on the most recent 8 years of data. This is because the CCHS changed from a two-year release cycle to an annual release cycle starting in 2007.

Definitions

95% Confidence Interval is the range within which the true value lies, 19 times out of 20.

Ethno-racial Identity is based on respondents identifying their cultural and/or racial background. South Asian includes ethnicities such as Indian and Pakistani; West Asian includes those such as Afghan and Persian; Arab includes those such as Egyptian and Saudi Arabian; East Asian includes those such as Chinese and Japanese; and Southeast Asian includes those such as Vietnamese and Filipino. The 'other' group includes people who defined themselves as Latin American, and of multiple ethnic groups. The sample size for these groups were too small to analyze them separately. Aboriginal respondents are not included in this category because of their unique identity, history, and experiences. They are excluded from the analysis by ethno-racial identity.

Immigrants are those respondents whose country of birth is outside of Canada.

Income Level is derived as three equally divided parts of the weighted population based on the respondents' adjusted household income ratios. A respondent's adjusted household income

ratio is calculated using the total household income, Statistics Canada's 2013-2014 Low Income Cut Offs (LICOs), and the CCHS income adjustment factor. Approximately 30% of survey respondents included in this analysis had their income level imputed based on other socio-demographic characteristics.

Longer-term Immigrants refers to individuals that arrived within the ten year period prior to data collection.

Physical Activity is based on estimates of the total amount of energy used in leisure time only and leisure time plus transportation per day. This is determined by asking survey respondents how often and how long on average per session they participated in a list of 21 popular physical activities over the past three months. Each activity is assigned an intensity level. The frequency of participation in each activity is multiplied by the average duration and the intensity level, and each activity is then summed to achieve a measure of total daily leisure time energy expenditure in kcal/kg/day. Energy expenditure is categorized into inactive (<1.5 k cal/kg/day), moderately active (>=1.5 & <3 kcal/kg/day), and active (>=3 kcal/kg/day categories. These estimates assume that all activities are performed at a standard intensity level, which in many cases is not true. This reduces the validity of this measure. This estimate also does not capture physical activity done at work or as housework. Because physical activity for all purposes reduces risk of health problems, measures of leisure time and transportation activity alone may not be sufficient to determine the health risk associated with physical inactivity in the population.

Recent immigrants or "Newcomers" are respondents that had arrived in Canada in the ten years prior to the data collection.

Sex defines people based on their biological characteristics, whereas gender is a socially constructed concept. From a social determinants of health perspective, certain health conditions can be associated with gender, and from a biological perspective, health conditions can be associated with sex. Although reporting based on both concepts would be preferable, the data source used here only collects information on sex, and not gender.

Sources

Canadian Community Health Survey: Canadian Community Health Survey (CCHS), 2007 to 2014. Statistics Canada, Share File, Knowledge Management and Reporting Branch, Ontario Ministry of Health and Long-Term Care.
Used in:

- Figures 1 and 2
- Map 1
- Tables 1 to 7

Health Surveillance Indicator: Physical Activity
Category: Chronic Disease
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This indicator report is part of a series that informs the ongoing assessment of Toronto's health status. For a full list of the indicators, please go to: www.toronto.ca/health.