



**Ontario Health**  
Cancer Care Ontario



# Prevention System Quality Index 2020

Technical Appendix

October 2020

# Prevention System Quality Index 2020: Technical Appendix

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# Overview

This document provides technical information for the indicators in *Prevention System Quality Index 2020*. Sections for each indicator describe its:

- definition for the report;
- data source and the dates for the data retrieved;
- technical specifications or the portion of the dataset that was selected; and
- calculation method.

Where applicable, also noted are:

- additional levels of analysis (e.g., socio-demographic factors, public health unit level);
- considerations or assumptions for readers to be aware of; and
- data limitations.

Differences in the structure of each section are based on the different types of data reported in the Prevention System Quality Index (PSQI). The types of data include administrative data, Canadian Community Health Survey data, data in existing indicators reproduced from reports by other organizations and data from primary sources collected by the Population Health and Prevention Unit, Prevention and Cancer Control at Ontario Health (Cancer Care Ontario).

General notes on administrative data and Canadian Community Health Survey data are provided below.

## Administrative data

PSQI indicators that use administrative data are indicators in the chapters on alcohol drinking, healthy eating, physical activity and occupational carcinogens. These include lists of addresses from the Alcohol and Gaming Commission for the indicators on alcohol retail stores, Ministry of Education data for the food literacy and health and physical education indicators and nickel and formaldehyde use in manufacturing and mining from the Ministry of the Environment, Conservation and Parks' toxics reduction dataset.

As described in the relevant sections, some of these data are available online and others were obtained by submitting a request to the data holders by email.

Indicators using administrative data were limited in what they could measure. Because the data were collected for administrative purposes, their objectives are not fully consistent with the objectives of the PSQI indicators.

## Canadian Community Health Survey data

Indicators that use Canadian Community Health Survey data are:

- Current tobacco smoking;
- Second-hand smoke exposure;
- Long-term smoking cessation;
- Drinking more alcohol than guideline limits for cancer prevention;
- Eating vegetables and fruit fewer than five times a day;
- Household food insecurity;
- Inadequate moderate-to-vigorous physical activity;
- Active transportation use; and
- Sun protection and exposure.

### Description

Statistics Canada conducts the Canadian Community Health Survey (CCHS) – Annual Component to collect information related to health status, health care utilization and health determinants for the Canadian population.<sup>1</sup> The CCHS is a population-based cross-sectional survey.<sup>1</sup> Data collection for the CCHS is done by either computer assisted personal or telephone interviewing.<sup>1</sup>

The CCHS covers about 97 percent of the population age 12 and older in the 10 provinces and the three territories.<sup>1</sup> Excluded from the survey's coverage include people living on reserves and other Indigenous settlements, full-time members of the Canadian Forces, the institutionalized population and children ages 12 to 17 who live in foster care.<sup>1</sup>

### Data availability

The CCHS produces an annual microdata file and a file combining two years of data.<sup>1</sup> Two years of data are generally required for reliable estimates at the regional (sub-provincial) level, such as for public health units.<sup>1</sup> Additional collection years can also be combined to examine populations or rare characteristics.<sup>1</sup>

The Ontario Ministry of Health, Health Analytics and Insights Branch distributes the Ontario portion of the CCHS file (CCHS Ontario Share File) that consists of a subset of respondents who agreed to share their health card number and data with the provincial ministries and health regions that agree to privacy conditions for access.<sup>2</sup> There may be slight differences between results from the share file from the ministry and data published on the Statistics Canada website for its Health Indicators because rates calculated for Health Indicators use the master CCHS data file.<sup>2</sup>

### Data limitations

CCHS data on modifiable risk factors are self-reported. Respondents of self-reported surveys tend to under-report behaviours that are socially undesirable or unhealthy, such as alcohol and tobacco use, and over-report behaviours that are socially desirable, such as physical activity and vegetable and fruit intake.

Major changes to the design and collection strategy of the CCHS were implemented, beginning with the 2015 survey.<sup>1</sup> As a result, comparisons to previous years of the CCHS are not recommended.

## Weighting

Estimates for the indicators using CCHS data were weighted according to individual or household sampling weights provided by Statistics Canada to ensure that the sample is representative of the overall population.

## Variance estimates

Bootstrapping techniques were used to obtain variance estimates and 95% confidence intervals of all estimates.<sup>3</sup> Statistics Canada requires estimates with coefficients of variation of 15% to 35% to be noted with a warning to users to interpret with caution, and estimates with coefficients of variation >35% to be suppressed.<sup>3</sup>

## Age-group estimates

- Estimates were calculated annually for the years of data that are included in the indicator (e.g., 2015, 2016, 2017).
- Estimates for adults were age-standardized to the 2011 Canadian population using the age groups from the Canadian Community Health Survey (CCHS) person-level sampling strategy:
  - Tobacco indicators use the age groups of 20 to 34, 35 to 49, 50 to 64, 65 and over;
  - Alcohol indicators use the groups of 19 to 34, 35 to 49, 50 to 64, 65 and over; and
  - Healthy eating, physical activity and sun protection and exposure indicators use the groups of 18 to 34, 35 to 49, 50 to 64, 65 and over.
- Estimates for adolescents were unadjusted.

## Sub-analyses

Sub-analyses that were included for each indicator are noted in each section. Details on the analyses are described below.

## Socio-demographic factors

- Factors included in *Prevention System Quality Index 2020* are sex and income and were compared against the following reference variables: males for sex and income quintile 5 (Q5) for analyses by income quintiles.
- These socio-demographic factors were defined as follows:
  - Sex: Based on response to CCHS Sex and Gender (GDR) question, “What was your sex at birth?”
  - Income quintile: Sorts respondents’ derived household income into quintiles based on the ratio of household income to the low-income cut-off (LICO) for the household size and community; starting in 2011, Statistics Canada imputed all missing household incomes to account for the one-third of missing responses to the income question
- Pooled data (2015–2017 combined, where indicated) was used to increase the survey sample to a size that is acceptable for the release of indicators stratified by socio-demographic characteristics without introducing a high degree of sampling variability.
- Estimates were age-standardized using the 2011 Canadian population as the standard.
- Statistically significant differences in prevalence estimates between categories of a given socio-demographic factor were tested by comparing the absolute difference between two estimates with the square root of the sum of the margin of error (i.e., the upper 95% confidence limit

minus the estimate) squared for each estimate being compared. If the difference between the estimates was greater than the square root of the sum of the squares of the two margins of error, the estimates were considered significantly different (approximately  $p < 0.05$ ).

#### Public health unit

- Pooled data (2015–2017 combined) were used to increase the survey sample to a size that is acceptable for the release of indicators stratified by geographic regions without introducing a high degree of sampling variability.
- Statistically significant differences in prevalence estimates between public health unit estimates and the Ontario estimate were tested by comparing the absolute difference between the two estimates with the square root of the sum of the margin of error (i.e., the upper 95% confidence limit minus the estimate) squared for each estimate being compared. If the difference between the estimates was greater than the square root of the sum of the squares of the two margins of error, the estimates were considered significantly different (approximately  $p < 0.05$ ).

#### Exclusions

Respondents in the non-response categories (refusal, don't know, and not stated) for any of the listed questions were excluded from analyses.

#### References

1. Statistics Canada. Canadian Community Health Survey - Annual Component (CCHS) [Internet]. [Available from: <https://www23.statcan.gc.ca/imdb/p2SV.pl?Function=getSurvey&SDDS=3226>.
2. Association of Public Health Epidemiologists of Ontario. Canadian Community Health Survey (CCHS) [Internet]. [cited 2020 May 04]. Available from: <https://www.apheo.ca/data-cchs>.
3. Statistics Canada. Canadian Community Health Survey (CCHS) Annual Component. User guide. 2016 Microdata file. [Internet]. 2016 [cited 2020 Feb 20]. Available from: [http://sda.chass.utoronto.ca/sdaweb/dli2/cchs/cchs2015/more\\_doc/userguide.pdf](http://sda.chass.utoronto.ca/sdaweb/dli2/cchs/cchs2015/more_doc/userguide.pdf).

# Tobacco

## Current tobacco smoking

### Definition

The percentage of adults, age 20 and older in Ontario, who reported smoking cigarettes every day or occasionally

### Data source

- Statistics Canada, Canadian Community Health Survey (CCHS) – Annual Component, 2015 to 2017 combined Share Files distributed by the Ontario Ministry of Health

### Technical specifications

- CCHS Smoking (SMK) question:
  - At the present time, do you smoke cigarettes every day, occasionally or not at all?

### Calculation

Numerator: Weighted number of adults age 20 and older who reported smoking every day or occasionally × 100

Denominator: Weighted total population of adults age 20 and older in Ontario

### Sub-analyses

- Socio-demographic factors: sex and income

### Additional notes

- See details on Canadian Community Health Survey data (p. 5)

## Tax as a percentage of tobacco retail price

### Definition

The percentage of the average total retail price of a carton of 200 cigarettes that is made up by taxes (federal and provincial or territorial excise and sales taxes), by province or territory

### Data sources

- Statistics Canada, Average Annual Retail Price (after tax) of Cigarette Cartons, by province or territory, 2018, custom report provided by the Consumer Prices Division, Statistics Canada
- Tax rates from federal, provincial and territorial government websites

### Technical specifications

- Total retail price data represent a simple standardized unit price of cigarette cartons across geographies recorded by the Consumer Price Index from Statistics Canada.

- The Consumer Price Index uses the final price paid by the consumer and includes all applicable taxes.
- Rates for excise tobacco taxes and sales taxes that were in effect in 2018 were retrieved from federal, provincial and territorial government websites.

## Calculation

The percentage of the average total retail price for a carton of 200 cigarettes that is made up by taxes is calculated as:

Numerator: Total dollar amount of applicable federal and provincial or territorial excise and sales taxes × 100

Denominator: Provincial or territorial average annual retail price (after tax) of a carton of 200 cigarettes

## Considerations

- The total dollar amount of taxes includes:
  - federal and provincial or territorial tobacco excise tax dollar amounts for a carton of 200 cigarettes;
  - sales tax dollar amounts, including the federal goods and services tax and provincial or territorial sales tax or provincial portion of the harmonized sales tax (HST), on the price of 200 cigarettes without excise or sales taxes; and
  - sales tax dollar amounts on applicable tobacco excise taxes, where excise taxes are applied by the manufacturer, included in the cost to the retailer and therefore subject to sales taxes.

## Data limitations

- Users are advised to exercise caution when comparing the custom average prices data to the official average prices table released by Statistics Canada because the calculation methods are different.
- Average prices should not be used as a measure of pure price change through time because the product and outlet sample can vary from month to month.

## References

1. Government of Alberta. Tobacco tax rates. Edmonton, AB: Government of Alberta; 2015. Retrieved from: <https://www.alberta.ca/about-tax-levy-rates-prescribed-interest-rates.aspx#tobacco>.
2. Government of British Columbia. Tobacco tax. Victoria, BC: Government of British Columbia; 2018. Retrieved from: <https://www2.gov.bc.ca/gov/content/taxes/sales-taxes/tobacco-tax>.
3. Manitoba Government. Taxation division: tobacco tax. Winnipeg, MB: Manitoba Government; 2019. Retrieved from: <https://www.gov.mb.ca/finance/taxation/taxes/tobacco.html>.
4. New Brunswick Government. Tobacco retailer's guide. Fredericton, NB: New Brunswick Government; 2017. Retrieved from: <https://www2.gnb.ca/content/gnb/en/departments/finance/taxes/retailers.html>.
5. Government of Newfoundland and Labrador. Tobacco tax. St. John's, NL: Government of Newfoundland and Labrador; 2016. Retrieved from: <https://www2.gnb.ca/content/gnb/en/departments/finance/taxes/retailers.html>.

6. Government of the Northwest Territories. Tobacco tax. Yellowknife, NT: Government of the Northwest Territories; 2017. Retrieved from: <https://www.fin.gov.nt.ca/en/services/licences-taxes-and-fees/tobacco-tax>.
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8. Government of Nunavut. Tobacco tax. Iqaluit, NU: Government of Nunavut; 2018. Retrieved from: <https://www.gov.nu.ca/finance/information/tobacco-tax>.
9. Government of Ontario. Tobacco tax. Toronto, ON: Queen's Printer for Ontario; 2018. Retrieved from: <https://www.fin.gov.on.ca/en/tax/tt/>.
10. Government of Prince Edward Island. Tobacco tax. Charlottetown, PE: Government of Prince Edward Island; 2015. Retrieved from: <https://www.princeedwardisland.ca/en/information/finance/tobacco-tax-rates>.
11. Revenu Québec. Tobacco tax rate table. Québec City, QC: Government du Québec; 2014. Retrieved from: <https://www.revenuquebec.ca/documents/en/formulaires/ta/TA-1-V%282014-06%29.pdf>.
12. Government of Saskatchewan. Tobacco tax. Regina, SK: Government of Saskatchewan; 2017. Retrieved from: <https://www.saskatchewan.ca/business/taxes-licensing-and-reporting/provincial-taxes-policies-and-bulletins/tobacco-tax>.
13. Government of Yukon. Find current tobacco tax rates in Yukon. Whitehorse, YT: Government of Yukon; 2018. Retrieved from: <https://yukon.ca/tobacco-tax-rates>.

## Second-hand smoke exposure

### Definitions

For each of adults age 20 and older and adolescents ages 12 to 19:

- The percentage of non-smokers in Ontario, who reported exposure to second-hand smoke at home, every day or almost every day, or past month second-hand smoke exposure in a private vehicle or in public places, every day or almost every day

### Data source

- Statistics Canada, Canadian Community Health Survey (CCHS) – Annual Component, 2015–2016 Share File distributed by the Ontario Ministry of Health

### Technical specifications

CCHS Smoking (SMK) questions:

- Including both household members and regular visitors, does anyone smoke inside your home every day or almost every day?
- In the past month, were you exposed to second-hand smoke every day or almost every day in a car or other private vehicle?
- In the past month, were you exposed to second-hand smoke every day or almost every day in public places (such as bars, restaurants, shopping malls, arenas, bingo halls, bowling alleys)?

### Calculations

Calculated for each of adults age 20 and older and adolescents ages 12 to 19:

At home:

Numerator: Weighted number of non-smokers reporting exposure to second-hand smoke every day or almost every day at home × 100

Denominator: Weighted total population of non-smokers

In a private vehicle

Numerator: Weighted number of non-smokers reporting exposure to second-hand smoke every day or almost every day in a private vehicle in the past month × 100

Denominator: Weighted total population of non-smokers

In public places

Numerator: Weighted number of non-smokers reporting exposure to second-hand smoke every day or almost every day in public places in the past month × 100

Denominator: Weighted total population of non-smokers

Sub-analyses

- Socio-demographic factors: sex and income

Additional notes

- See details on Canadian Community Health Survey data (p. 5)

## Smoke-free policies in social housing

Definition

The number of local housing corporations, which are social housing providers in Ontario, with 1,500 or more residential units that have implemented a smoke-free policy across all of their properties

Data sources

- Ontario's local housing corporation websites and email communications, July to September 2019<sup>1-13</sup>
- Schedule 1 of Ontario Regulation 644/00: Local Housing Corporations And Successor Housing Providers lists all local housing corporations in Ontario

Technical specifications

- The websites of Ontario's 47 local housing corporations or the websites of their municipality were scanned to identify corporations with more than 1,500 residential units. Thirteen corporations met the criteria.
- Websites for 13 local housing corporations with 1,500 or more residential units were reviewed to identify a smoke-free policy.
- Each of the 13 local housing corporations were contacted via e-mail to confirm the information that was retrieved from the web, and to obtain additional relevant policies, such as smoke-free building policies. We confirmed or requested a copy of all policies.

## Considerations

- The indicator was limited to local housing corporations with more than 1,500 residential units to maintain feasibility of the indicator.

## References

1. CityHousing Hamilton, personal communication, September 24, 2019.
2. The District of Thunder Bay Social Services Administration Board, personal communication, July 15, 2019.
3. Greater Sudbury Housing Corporation, personal communication, September 9, 2019.
4. Halton Community Housing Corporation, personal communication, July 16, 2019.
5. Housing York Inc., personal communication, July 15, 2019.
6. London & Middlesex Community Housing, personal communication, July 16, 2019.
7. Niagara Regional Housing, personal communication, September 5, 2019.
8. Ottawa Community Housing Corporation, personal communication, July 15, 2019.
9. Peel Housing Corporation (operating as Peel Living), personal communication, July 17, 2019.
10. Toronto Community Housing Corporation, personal communication, September 24, 2019.
11. Simcoe County Housing Corporation, personal communication, August 1, 2019.
12. Waterloo Region Housing, personal communication, September 4, 2019.
13. Windsor Essex Community Housing Corporation, personal communication, August 13, 2019.

## Quit attempts

### Definition

The percentage of adults age 25 and older in Ontario reporting current daily or occasional smoking, who reported making one or more serious attempts to quit smoking (for at least 24 hours) in the past 12 months

### Data source

Centre for Addiction and Mental Health, CAMH Monitor, 2017, custom report provided by the Ontario Tobacco Research Unit

### Technical specifications

CAMH Monitor survey questions:

- In the past 12 months, how many times have you made a serious attempt to quit smoking cigarettes?
  - IF NECESSARY: A serious attempt would mean you quit smoking for at least 24 hours.

### Calculation

Numerator: Weighted number of adults age 25 and older, reporting current daily or occasional smoking, who reported making one or more serious attempts to quit smoking in the past 12 months × 100

Denominator: Weighted total population of adults age 25 and older in Ontario reporting current daily or occasional smoking

## Sub-analyses

- Socio-demographic factors: age, income, education level, region in Ontario, residence, immigration status and sexual orientation

## Long-term smoking cessation

### Definition

The percentage of adults age 20 and older in Ontario reporting past daily or occasional smoking, who stopped smoking completely at least one year ago

### Data source

- Statistics Canada, Canadian Community Health Survey (CCHS) – Annual Component, 2015 to 2017 combined Share Files distributed by the Ontario Ministry of Health

### Technical specifications

CCHS Smoking (SMK) questions:

- At the present time, do you smoke cigarettes every day, occasionally or not at all?
- Have you smoked more than 100 cigarettes (about 4 packs) in your life?
- Have you ever smoked a whole cigarette?
- Have you ever smoked cigarettes daily?

In addition to the above questions, the CCHS Derived Variable, Number of Years Since Stopping Smoking Completely – Grouped (SMKDVSTP) combines the SMK questions on stopping smoking<sup>1</sup> and was used to determine when respondents completely stopped smoking.

### Calculation

Numerator: Weighted number of adults age 20 and older reporting past daily smoking or smoking more than 100 cigarettes in their lifetime, who stopped smoking completely at least one year ago × 100

Denominator: Weighted total population of adults age 20 and older reporting past daily smoking or smoking more than 100 cigarettes in their lifetime

Exclusions:

- Respondents who did not report having smoked more than 100 cigarettes in their lifetime
- Respondents who have never smoked a whole cigarette

## Sub-analyses

- Socio-demographic factors: sex and income

### Additional notes

- See details on Canadian Community Health Survey data (p. 5)

## References

1. Statistics Canada. Canadian Community Health Survey (CCHS) Annual Component, PUMF, 2015–2016, derived variable (DV) specifications [Internet]. Ottawa: University of Ottawa; 2019 [cited 2020 May 12]. Available from: [https://gsg.uottawa.ca/data/teaching/soc/cchs201516/CCHS\\_2015\\_2016\\_PUMF\\_Derived\\_Variables.pdf](https://gsg.uottawa.ca/data/teaching/soc/cchs201516/CCHS_2015_2016_PUMF_Derived_Variables.pdf).

# Alcohol

## Drinking more alcohol than limits for cancer prevention

### Definition

The percentage of adults age 19 and older in Ontario who reported drinking more alcohol than guideline limits for cancer prevention

### Data source

- Statistics Canada, Canadian Community Health Survey (CCHS) – Annual Component, 2015 to 2017 combined Share Files distributed by the Ontario Ministry of Health

### Technical specifications

CCHS Alcohol use during the past week (ALW) questions:

- Thinking back over the past week, did you have a drink of beer, wine, liquor or any other alcoholic beverage?
- Starting with yesterday, how many drinks did you have? (Asked for each day of the past week.)

Exceeding guideline limits is measured as more than two drinks a day for men and more than one drink a day for women, with the number of drinks averaged over the reported week

### Calculation

Numerator: Weighted number of adults age 19 and older who reported drinking more than guideline limits for cancer prevention on average each day for the past week  $\times 100$

Denominator: Weighted total population age 19 and older

Exclusions:

- Respondents who reported being pregnant (Yes response to CCHS Main Activity [MAC] question: To better understand the information you will provide on your health it is important to know if you are pregnant. Are you pregnant?)

### Sub-analyses

- Socio-demographic factors: sex and income

### Additional notes

- See details on Canadian Community Health Survey data (p. 5)

# Minimum price of alcohol

## Definition

The minimum retail price at which alcohol may be sold in alcohol retail stores, as set by the Liquor Control Board of Ontario for selected product types per standard drink (17.05 millilitres of alcohol)

## Data source

Liquor Control Board of Ontario (LCBO), MRP Index Factor, 2013 to 2019, available from Trade Resources Online: [doingbusinesswithlcbo.com](http://doingbusinesswithlcbo.com)

## Technical specifications

The LCBO's MRP Index Factor lists minimum retail prices according to product type. The product types selected for the sample of minimum retail prices to calculate the price per standard drink are:

- 750 millilitre bottle of Class A spirits (e.g., whisky, vodka) with 40.0% alcohol by volume
- 750 millilitre bottle of Ontario wine with 7% or more alcohol by volume.
- 750 millilitre bottle of imported wine with 7% or more alcohol by volume. Beginning in 2017, the same minimum prices were set for Ontario and imported wines.
- Case of 12, 341 millilitre bottles of non-draft beer with 5.0% alcohol by volume
- 473 millilitre can of beer with 6.0% alcohol by volume

## Calculation

### Spirits, wine, lower alcohol content beer

Using 750 millilitre bottle of Class A spirits (e.g., whisky, vodka) with 40.0% alcohol by volume as an example, the minimum price per standard drink is calculated as follows for spirits, wine and lower alcohol content beer (less than 5.6%):

1. Calculate the alcohol content of the selected product:
  - 750 millilitre bottle of spirits  $\times$  40.0% alcohol by volume = 300 millilitres of alcohol per bottle
2. Calculate number of standard drinks per product based on the alcohol content:
  - 300 millilitres of alcohol  $\div$  17.05 millilitres of alcohol = 17.595 standard drinks per bottle
3. Calculate the minimum retail product price (e.g., \$27.20 in 2019, including container deposit and taxes) per standard drink:
  - $\$27.20 \div 17.595$  standard drinks = \$1.55 minimum retail price per standard drink in 2019

### Higher alcohol content beer

For non-draft beer with a higher alcohol content (5.6% or higher), the minimum retail price is set by the LCBO based on the litres of absolute alcohol in the product, plus additional charges per product and is calculated as follows:

1. Calculate the alcohol content of the selected product:
  - 473 millilitres of beer  $\times$  6.0% alcohol by volume = 28.38 millilitres of alcohol per can

2. Calculate the pricing per litre of absolute alcohol (e.g., \$67.90 in 2019):
  - $28.38 \text{ millilitres} \div 1000 \times \$67.90 = \$1.93$
3. Add container deposit:
  - $\$1.93 + \$0.10 \text{ per container for one can} = \$2.03$
4. Add environmental levy:
  - $\$2.03 + \$0.104481 \text{ (based on } \$0.0893 \text{ per container plus 13\% HST and 4\% non-refillable container charge for one can)} = \$2.13$
5. Round up to the nearest \$0.05:
  - = \$2.15 minimum retail price per product
6. Calculate number of standard drinks per product based on the alcohol content:
  - $28.38 \text{ millilitres of alcohol} \div 17.05 \text{ millilitres of alcohol} = 1.665 \text{ standard drinks per can}$
7. Calculate the minimum retail price per standard drink:
  - $\text{Minimum retail price of product } (\$2.15) \div 1.665 \text{ standard drinks} = \$1.29 \text{ minimum retail price per standard drink in 2019}$

## Private alcohol retail stores

### Definition

The percentage of alcohol retail stores in Ontario that are privately owned

### Data sources

Alcohol and Gaming Commission of Ontario address lists as of January 2019, obtained via email for:

- retail stores on the site of wineries, breweries and distilleries;
- wine retail stores not on the site of a winery;
- grocery stores licensed to sell wine or beer;
- ferment-on-premise outlets (facilities allowing customers to make wine on site); and
- farmers' market locations selling wine.

Brewers' Retail Incorporated website as of January 2019 provided addresses for:

- Beer Store locations.

Liquor Control Board of Ontario (LCBO), [doingbusinesswithlcbo.com](http://doingbusinesswithlcbo.com) as of January 2019 provided:

- LCBO retail store list; and
- LCBO Convenience Outlets directory (privately owned rural stores selling on behalf of the LCBO).

### Technical specifications

Alcohol retail stores are also called off-premises alcohol outlets and refer to stores where customers buy alcohol to consume elsewhere.

Alcohol retail stores that generate revenue from the sale of alcohol for private businesses are identified as privately owned, which in Ontario are:

- retail stores on the site of wineries, breweries and distilleries;
- wine retail stores not on the site of a winery;
- grocery stores licensed to sell wine or beer;
- ferment-on-premise outlets;
- farmers' market locations selling wine;
- Beer Store locations; and
- LCBO Convenience Outlets.

The Liquor Control Board of Ontario stores are identified as publicly owned alcohol retail stores.

### Calculation

Numerator: The number of privately owned alcohol retail stores × 100

Denominator: The total number of alcohol retail stores

Exclusions: Only alcohol retail stores regulated by the Ontario government are included in this indicator. Liquor sales at duty-free stores are regulated by the federal government and were not included.

### Analysis

- The percentage of alcohol retail stores that were private were calculated for Ontario and for each public health unit.
- To identify the public health unit of alcohol retail stores (by type) in Ontario, the store locations were geographically located (geocoded) using the World Geocode Service (ArcGIS Online) in ArcGIS 10.3.1.
- The number of privately owned alcohol retail stores, and the total number of alcohol retail stores were aggregated at the public health unit level. The percentage of publicly owned alcohol retail stores was then calculated for each public health unit.
- Giesbrecht et al. provides the framework for this analysis.<sup>1</sup>
- Statistics Canada Health Region boundary files, 2013 updates.

### References

1. Giesbrecht N, Wettlaufer A, April N, Asbridge M, Cukier S, Mann R et al. Strategies to reduce alcohol-related harms and costs in Canada: a comparison of provincial policies. Toronto: Centre for Addiction and Mental Health; 2013.

## Alcohol retail store density

### Definition

The number of alcohol retail stores (both publicly and privately owned) per 10,000 people age 15 and older in Ontario

## Data sources

Alcohol and Gaming Commission of Ontario address lists as of January 2019, obtained via email for:

- retail stores on the site of wineries, breweries and distilleries;
- wine retail stores not on the site of a winery;
- grocery stores licensed to sell wine or beer;
- ferment-on-premise outlets (facilities allowing customers to make wine on site); and
- farmers' market locations selling wine.

Brewers' Retail Incorporated website as of January 2019 provided addresses for:

- Beer Store locations.

Liquor Control Board of Ontario (LCBO), [doingbusinesswithlcbo.com](http://doingbusinesswithlcbo.com) as of January 2019 provided:

- LCBO retail store list; and
- LCBO Convenience Outlets directory (privately owned rural stores selling on behalf of the LCBO).

## Calculation

Numerator: Number of alcohol retail stores × 10,000

Denominator: Ontario population age 15 and older

Exclusions: Only alcohol retail stores regulated by the Ontario government are included in this indicator. Liquor sales at duty-free stores are regulated by the federal government and were not included.

## Analysis

- The number of alcohol retail stores per 10,000 people age 15 and older as of January 2019 were calculated for Ontario and for each public health unit.
- To identify the public health unit of alcohol retail stores (by type) in Ontario, store locations were geographically located (geocoded) using the World Geocode Service (ArcGIS Online) in ArcGIS 10.3.1. Alcohol store addresses were geocoded by street address, street name or, when address was invalid or unmatchable, by postal code or town or manually using web searches.
- Ontario's 2019 population, age 15 and older, by public health unit, was estimated based on the Ministry of Finance's population projection, 2018–2041, based on the 2011 census.
- Giesbrecht et al. provides the framework for this analysis.<sup>1</sup>

## References

1. Giesbrecht N, Wettlaufer A, April N, Asbridge M, Cukier S, Mann R et al. Strategies to reduce alcohol-related harms and costs in Canada: a comparison of provincial policies. Toronto: Centre for Addiction and Mental Health; 2013.

# Healthy Eating

## Eating vegetables and fruit fewer than five times a day

### Definition

For each of adults age 18 and older and adolescents ages 12 to 17:

- The percentage of the population in Ontario who reported eating vegetables (excluding potatoes) and fruit fewer than five times per day

### Data source

- Statistics Canada, Canadian Community Health Survey (CCHS) – Annual Component, 2015 to 2017 combined Share Files distributed by the Ontario Ministry of Health

### Technical specifications

CCHS Fruit and vegetable consumption (FVC) questions:

- In the last month, how many times per day, per week or per month did you drink 100% PURE fruit juices, such as pure orange juice, apple juice or pure juice blends? Do not include fruit-flavored drinks with added sugar or fruit punch.
- In the last month, not counting juice, how many times did you eat fruit? Please remember to include frozen, dried or canned fruit.
- In the last month, how many times did you eat dark green vegetables such as broccoli, green beans, peas and green peppers or dark leafy greens including romaine or spinach? Please remember to include (frozen or canned vegetables and) vegetables that were cooked in soups or mixed in salad.
- In the last month, how many times did you eat orange-coloured vegetables such as carrots, orange bell pepper, sweet potatoes, pumpkin or squash? (Please remember to include frozen or canned vegetables and vegetables that were cooked in soups or mixed in salad).
- Excluding the green and orange vegetables as well as the potatoes you have already reported, in the last month, how many times did you eat OTHER vegetables? Examples include cucumber, celery, corn, cabbage and vegetable juice.

### Calculation

Numerator: Weighted number of population who reported eating vegetables (excluding potatoes) and fruit fewer than 5 times a day × 100

Denominator: Weighted total population

Exclusions:

- Responses reporting drinking fruit juice more than once a day, i.e., fruit juice was counted for no more than one of the five instances of vegetable and fruit consumption in a day

### Sub-analyses

- Socio-demographic factors: sex and income

## Considerations

- The CCHS collects data on the frequency of eating vegetables and fruit. No inference can be made regarding the number of servings or quantity of vegetables and fruit respondents ate each day.

## Additional notes

- See details on Canadian Community Health Survey data (p. 5)

# Household food insecurity

## Definition

The percentage of households in Ontario that were food insecure in the past 12 months, overall and by level of food insecurity (marginal, moderate or severe)

## Data sources

- Statistics Canada, Canadian Community Health Survey (CCHS) – Annual Component, 2017 Share File distributed by the Ontario Ministry of Health

## Technical specifications

CCHS Food security (FSC) questions, respondents' agreement with the following statements:

- Statements applicable to adults in the household
  - You and other household members worried that food would run out before you got money to buy more.
  - The food that you and other household members bought just didn't last, and there wasn't any money to get more.
  - You and other household members couldn't afford to eat balanced meals.
  - You or other adults in your household ever cut the size of your meals or skip meals because there wasn't enough money for food.
  - You (personally) ever eat less than you felt you should because there wasn't enough money to buy food.
  - You (personally) ever hungry but didn't eat because you couldn't afford enough food.
  - You (personally) ever lose weight because you didn't have enough money for food.
  - You or other adults in your household ever not eat for a whole day because there wasn't enough money for food.
- Statements applicable to children in the household
  - You or other adults in your household relied on only a few kinds of low-cost food to feed the children because you were running out of money to buy food.
  - You or other adults in your household couldn't feed the children a balanced meal, because you couldn't afford it.
  - The children were not eating enough because you or other adults in your household just couldn't afford enough food.
  - You or other adults in your household ever cut the size of any of the children's meals because there wasn't enough money for food.

- Any of the children ever skip meals because there wasn't enough money for food.
- Any of the children ever hungry but you just couldn't afford more food.
- Any of the children ever not eat for a whole day because there wasn't enough money for food.

## Calculation

### Marginal food insecurity

**Numerator:** Weighted number of households agreeing to one food security question related to adults or children in the household × 100

**Denominator:** Weighted total number of households

**Interpretation:** Some indication of worry or an income-related barrier to adequate, secure food access<sup>1</sup>

### Moderate food insecurity

**Numerator:** Weighted number of households agreeing to any two questions and up to 5 questions related to adults in the household or up to 4 questions related to children in the household × 100

**Denominator:** Weighted total number of households

**Interpretation:** Compromise in quality or quantity of food consumed by adults or children due to a lack of money for food<sup>1</sup>

### Severe food insecurity

**Numerator:** Weighted number of households agreeing to 6 or more questions related to adults in the household or 5 or more questions related to children in the household × 100

**Denominator:** Weighted total number of households

**Interpretation:** Disrupted eating patterns and reduced food intake among adults or children<sup>1</sup>

## Sub-analyses

- Socio-demographic factors: sex

## Additional notes

- See details on Canadian Community Health Survey data (p. 5)

## References

1. Tarasuk V, Mitchell A. Household food insecurity in Canada, 2017–18. Toronto: Research to identify policy options to reduce food insecurity (PROOF); 2020.

# Food literacy development in secondary schools

## Definition

The percentage of students in publicly funded Ontario secondary schools who earned at least one credit in courses with a food literacy component within five years following their enrolment in Grade 9

## Data source

- Ministry of Education, Ontario School Information System (OnSIS), Number and percentage of unique students who completed at least one course with a food literacy component within five years following their enrolment in Grade 9, 2005/06 to 2012/13 Grade 9 cohorts, 2005/06 to 2017/18 school year data, custom report provided by the Dissemination and Reporting Unit, Ministry of Education

## Technical specifications

Courses considered to have a food literacy component in the Ontario secondary school curriculum are:

- Food and Nutrition, Grade 9 or 10, Open (HFN10/HFN20)
- Food and Nutrition Sciences, Grade 12, University/College Preparation (HFA4M)
- Exploring Family Studies, Grade 9 or 10, Open (HIF10/HIF20)
- Food and Culture, Grade 11, University/College Preparation (HFC3M)
- Food and Culture, Grade 11, Workplace Preparation (HFC3E)
- Nutrition and Health, Grade 12, University Preparation (HFA4U)
- Nutrition and Health, Grade 12, College Preparation (HFA4C)
- Food and Healthy Living, Grade 12, Workplace Preparation (HFL4E)
- Working with Infants and Young Children, Grade 11, College Preparation (HPW3C)
- Raising Healthy Children, Grade 11, Open (HPC3O)
- Working with School-Age Children and Adolescents, Grade 12, College Preparation (HPD4C)

Course descriptions are available in the Ontario Ministry of Education's secondary school curriculum for Social Sciences and Humanities courses.<sup>1</sup>

## Calculation

**Numerator:** The number of students in Grade 9 for a given school year who earned at least one credit in courses with a food literacy component within five years following their enrolment in Grade 9 × 100

**Denominator:** The total number of Grade 9 students in the given school year

## Considerations

- Grade is defined as the latest grade in which the student was enrolled in the academic year.
- To receive a course credit, a student must receive a final course grade of 50 percent or higher.
- Secondary school courses that teach food literacy require students to demonstrate practical knowledge and literacy, including the ability to develop healthy meal plans for themselves and others and to prepare healthy meals.

## Data limitations

- Includes students who may or may not have completed secondary school (i.e., earned a secondary school diploma); assessing the five years from the year of enrolment in Grade 9 serves to approximately capture the full period of enrolment in secondary school
- Includes only active full-time or part-time students in the academic year enrolled in public and publicly funded Roman Catholic elementary and secondary schools (English and French) and sourced from data submitted year-round
- The following courses were not offered prior to the 2013/14 school year, and were therefore only available to the 2009/10 to 2012/13 Grade 9 cohorts for this analysis: HFC3M, HFC3E, HFA4U, HFA4C, HFL4E and HPD4C
- Excludes private schools, publicly funded hospital and provincial schools, care, treatment and correctional facilities, summer, night and adult continuing education day schools
- Excludes courses offered through the Specialist High Skills Majors program, which are offered by some secondary schools within Ontario to students in Grades 11 and 12, including hospitality and tourism, food processing, or health and wellness, which may include courses or training related to cooking or food handling

## References

1. Ontario Ministry of Education. The Ontario curriculum, Grades 9 to 12, social sciences and humanities, 2013. Toronto: Queen's Printer for Ontario; 2013.

# Physical Activity

## Inadequate moderate-to-vigorous physical activity levels

### Definition

For each of adults age 18 and older and adolescents ages 12 to 17 in Ontario:

- The percentage of the population who reported less than the recommended level of moderate-to-vigorous physical activity for their age group

### Data source

- Statistics Canada, Canadian Community Health Survey (CCHS) – Annual Component, 2015 to 2017 combined Share Files distributed by the Ontario Ministry of Health

### Technical specifications

The Canadian Physical Activity Guidelines (CPAG) define moderate-to-vigorous physical activity as physical activity causing a person to sweat at least a little and to breathe harder.<sup>1</sup> Recommended levels of moderate-to-vigorous physical activity are:

- 150 minutes or more a week, in bouts of 10 minutes or more, for adults age 18 and older<sup>1</sup>
- 60 minutes or more daily for adolescents ages 12 to 17<sup>1</sup>

CCHS physical activity data were analyzed using combinations of questions described below, which are found in the CCHS Derived Variable Specifications.<sup>2</sup>

### Physical inactivity in adults

This analysis used the CCHS Physical Activity Indicator Derived Variable (PAADVACV), which indicates whether a respondent is physically active according to the CPAG.<sup>2</sup> PAADVACV covers the following CCHS Physical activities – adults 18 years and older (PAA) questions:

- In the last 7 days, did you use active ways like walking or cycling to get to places such as work, school, the bus stop, the shopping centre or to visit friends?
  - How much time in total, in the last 7 days, did you spend doing these activities? Please only include activities that lasted a minimum of 10 continuous minutes. Enter the number of minutes.
- Did you do sports, fitness or recreational physical activities, organized or non-organized, that lasted a minimum of 10 continuous minutes? Examples are walking, home or gym exercise, swimming, cycling, running, skiing, dancing and all team sports.
  - Did any of these recreational physical activities make you sweat at least a little and breathe harder?
  - In the last 7 days, how much time in total did you spend doing these activities that made you sweat at least a little and breathe harder?

- In the last 7 days, did you do any other physical activities while at work, in or around your home or while volunteering? Examples are carrying heavy loads, shoveling, and household chores such as vacuuming or washing windows. Please remember to only include activities that lasted a minimum of 10 continuous minutes.
  - Did any of these other physical activities make you sweat at least a little and breathe harder?
  - In the last 7 days, how much time in total did you spend doing these activities that made you sweat at least a little and breathe harder?

#### Physical inactivity in adolescents

This analysis used the CCHS Youth Physical Activity Indicator Derived Variable (PAYDVPAI), which indicates whether a youth is physically active according to the CPAG.<sup>2</sup> PAYDVPAI covers the following CCHS Physical activities for youth (PAY) questions:

- In the last 7 days, did you use active ways like walking or cycling to get to places such as [school, the bus stop, the shopping centre, work] or to visit friends?
  - How much time did you spend using active ways to get to places? (Asked for each of the previous seven days.)
- In the last 7 days, did you do sports, fitness or recreational physical activities while at [school or day camp, including during physical education classes, during your breaks and any other time you played indoors or outdoors]?
  - Did any of these activities make you sweat at least a little and breathe harder?
  - How much time did you spend doing these activities at [school or day camp] that made you sweat at least a little and breathe harder? (Asked for each of the previous seven days.)
- In the last 7 days, did you do physical activities in your leisure time including exercising, playing an organized or non-organized sport or playing with your friends?
  - Did any of these leisure-time activities make you sweat at least a little and breathe harder?
  - How much time did you spend doing these leisure-time activities that made you sweat at least a little and breathe harder? (Asked for each of the previous seven days.)
- In the last 7 days, did you do any other physical [activities that you have not already reported], for example, while you [were doing paid or unpaid work or] helping your family with chores?
  - Did any of these other physical activities make you sweat at least a little and breathe harder?
  - How much time did you spend doing these other physical activities that made you sweat at least a little and breathe harder? (Asked for each of the previous seven days.)

#### Calculation

##### Adults

Numerator: Weighted number of adults age 18 and older who did not meet the Canadian Physical Activity guidelines for moderate-to-vigorous physical activity × 100

Denominator: Weighted number of adults age 18 and older

## Adolescents

Numerator: Weighted number of adolescents ages 12 to 17 who did not meet the Canadian Physical Activity Guidelines for moderate-to-vigorous physical activity × 100

Denominator: Weighted number of adolescents ages 12 to 17

## Sub-analyses

- Socio-demographic factors: sex and income

## Data limitation

- For the purposes of this indicator active transportation is assumed to be moderate-to-vigorous physical activity and is counted by the CCHS derived variables. However, the CCHS does not ask whether time spent using active transportation caused the person to sweat at least a little or to breathe harder, so may overestimate total time spent in moderate-to-vigorous physical activity.

## Additional notes

- See details on Canadian Community Health Survey data (p. 5)

## References

1. Canadian Society for Exercise Physiology. Canadian Physical Activity Guidelines [Internet]. Ottawa: Canadian Society for Exercise Physiology; [cited 2020 Apr 15]. Available from: [http://csep.ca/CMFiles/Guidelines/CSEP\\_PAGuidelines\\_0-65plus\\_en.pdf](http://csep.ca/CMFiles/Guidelines/CSEP_PAGuidelines_0-65plus_en.pdf).
2. Statistics Canada. Canadian Community Health Survey (CCHS) Annual Component, PUMF, 2015–2016, derived variable (DV) specifications [Internet]. Ottawa: University of Ottawa; 2019 [cited 2020 May 12]. Available from: [gsg.uottawa.ca/data/](http://gsg.uottawa.ca/data/)

# Active transportation use

## Definitions

For each of adults age 18 and older or adolescents ages 12 to 17 in Ontario:

- The percentage of the population who reported using active forms of transportation at least once in the past week

For adults age 18 and older in Ontario:

- The percentage of the population who reported using active transportation on four or more days of the week in the past week

## Data source

- Statistics Canada, Canadian Community Health Survey (CCHS) – Annual Component, 2015 to 2017 combined Share Files distributed by the Ontario Ministry of Health

## Technical specifications

CCHS Physical activities – adults 18 years and older (PAA) questions:

- In the last 7 days, did you use active ways like walking or cycling to get to places such as work, school, the bus stop, the shopping centre or to visit friends?
- In the last 7 days, on which days did you do these activities? (Monday, Tuesday, Wednesday, Thursday, Friday, Saturday, Sunday)

CCHS Physical activities for youth (PAY) questions:

- In the last 7 days, did you use active ways like walking or cycling to get to places such as school, the bus stop, the shopping centre, work or to visit friends?

## Calculation

Active transportation at least once in past week

For each of adults age 18 and older and adolescents ages 12 to 17:

Numerator: Weighted number of people who reported use of active ways to get to places at least once in the previous seven days × 100

Denominator: Weighted total population

Active transportation on four or more days of the past week, adults age 18 and older

Numerator: Weighted number of people who reported use of active ways to get to places on four or more days in the previous seven days × 100

Denominator: Weighted number of adults age 18 and older

## Sub-analyses

- Socio-demographic factors: sex and income

## Additional notes

- See details on Canadian Community Health Survey data (p. 5)

# Health and physical education specialist teachers in schools

## Definitions

For each of elementary and secondary schools:

- The percentage of publicly funded schools in Ontario with a full or part-time health and physical education (HPE) specialist teacher
- The overall provincial ratio of students to one full-time equivalent HPE specialist teacher for schools with a full or part-time specialist teacher assigned to teach HPE, in publicly funded schools in Ontario

## Data source

- Ministry of Education, Ontario School Information System (OnSIS), Number of Full-Time Equivalent (FTE) Specialist Teachers Assigned to Teach Health & Physical Education and Related Student Head Count by Publicly Funded Elementary and Secondary Schools including

information for schools with no specialist teachers, March submission for 2006/07 school year, October submission for 2007/08 to 2013/14 school years and November submission for 2014/15 to 2016/17 school years, custom report provided by the Dissemination and Reporting Unit, Ministry of Education

## Technical specifications

- Data regarding the number of HPE teachers are reported by schools to the Ministry of Education and schools vary in their definition of an HPE specialist teacher. There are currently no standardized criteria for HPE specialists in Ontario. The majority of specialist teachers in Ontario, however, have taken specialized training recognized by the Ontario College of Teachers or have a university background in physical education.
- $\geq 1.0$  FTE per school does not necessarily mean there are one or more full-time HPE specialist teachers, since two or more part-time specialist teachers may account for  $\geq 1.0$  FTE.
- The FTEs of specialist teachers who were assigned to teach at least one HPE subject or class is based on the total number of teaching hours per week, where:
  - 25 teaching hours per week = 1.0 FTE
  - 12.5 teaching hours per week = 0.5 FTE

## Calculation

Calculations were done separately for elementary and secondary schools. Statistically significant ( $p < 0.05$ ) trends were identified using Microsoft Excel's linear regression analysis data tool.

### Percentage of schools with a full or part-time HPE specialist teacher

Numerator: Number of publicly funded schools with a full or part-time HPE specialist teacher  $\times 100$

Denominator: Total number of publicly funded schools

### Overall provincial ratio of students to one full-time equivalent HPE specialist teacher for schools with an HPE specialist teacher

Numerator: Total number of students in Ontario, excluding students in schools with no HPE teacher (full or part-time)

Denominator: Total full-time equivalent HPE specialist teachers

## Considerations

- Includes public and publicly funded Roman Catholic elementary and secondary schools (English and French)
- Elementary schools were defined in this analysis to include junior kindergarten to Grade 8.

## Data limitations

- Excludes private schools, publicly funded hospital and provincial schools, care, treatment and correctional facilities, summer, night and adult continuing education day schools
- Excludes teachers on leave and long-term occasional teachers; principals and vice-principals

# Enrolment in health and physical education

## Definition

The percentage of students in publicly funded secondary schools in Ontario who earned one or more credits in health and physical education courses in a given school year, by grade

## Data source

- Ministry of Education, Ontario School Information System (OnSIS), Percentage of Secondary School Students Who Earned a Credit in One or More Physical Education Courses, by Grade, 2005/06 to 2016/17 school years, custom report provided by the Dissemination and Reporting Unit, Ministry of Education

## Technical specifications

Health and physical education courses are any courses listed in the Health and Physical Education curriculum document for Grades 9 to 12.<sup>1</sup> The current 2015 curriculum includes:

- Healthy Active Living Education, Grade 9, Open (PPL10)
- Healthy Active Living Education, Grade 10, Open (PPL20)
- Healthy Active Living Education, Grade 11, Open (PPL30)
- Healthy Active Living Education, Grade 12, Open (PPL40)
- Health for Life, Grade 11, College Preparation (PPZ3C)
- Introductory Kinesiology, Grade 12, University Preparation (PSK4U)
- Recreation and Healthy Active Living Leadership, Grade 12, University or College Preparation (PLF4M)

## Calculation

Calculated for each of Grade 9 to 12, for each of the school years provided by the Ministry of Education

Numerator: Number of students who earned one or more credits in a health and physical education course × 100

Denominator: Total number of students

## References

1. Ontario Ministry of Education. The Ontario curriculum, Grades 9 to 12, health and physical education [Internet]. [Available from: <http://www.edu.gov.on.ca/eng/curriculum/secondary/health9to12.pdf>].

# Ultraviolet Radiation

## Sun protection and exposure

### Definitions

The percentage of adults age 18 and older and adolescents ages 12 to 17 in Ontario who reported use of one or more sun protection measure in the past 12 months

The percentage of adults age 18 and older in Ontario who reported having had a sunburn in the past 12 months

The percentage of adults age 18 and older in Ontario, reporting having had a sunburn in the past 12 months, who reported using one or more sun protection measure in the past 12 months

### Data source

- Statistics Canada, Canadian Community Health Survey (CCHS) – Annual Component, 2015–2016 Share File distributed by the Ontario Ministry of Health

### Technical specifications

CCHS Sun safety behaviours (SSB) questions:

- Think about a typical weekend, or day off from work or school during the summer months, about how much time each day do you spend in the sun between 10 am and 4 pm?
- In the summer months, on a typical weekend or day off, when you are in the sun for periods of 30 minutes or more, how often do you:
  - Seek shade?
  - Wear a hat that shades your face, ears and neck?
  - Wear long (pants or a long skirt?)
  - Use sunscreen on your face? What Sun Protection Factor (SPF) do you usually use on your face?
  - Use sunscreen on your body? What Sun Protection Factor (SPF) do you usually use on your body?
- In the past 12 months, has any part of your body been sunburnt?

### Calculation

Use of one or more sun protection measure

Calculation for each of adults age 18 and older and adolescents ages 12 to 17:

Numerator: Weighted number of population who reported always or often using one or more sun protection measure in the past 12 months × 100

Denominator: Weighted total population

Using one or more sun protection measure means using one or more of the protective measures described in the sun safety recommendations for Canada<sup>1</sup> as follows:

- Spending less than 30 minutes in the sun between 10 am and 4 pm on a typical weekend or day off from work or school during the summer months.
- Spending more than 30 minutes in the sun AND always or often doing at least one of:
  - Seeking shade
  - Wearing a hat AND long pants or long skirt
  - Wearing sunscreen with an SPF of at least 30 on the face AND body
- Note: wearing sunglasses was not counted as a sun protection measure

#### Sunburns

Numerator: Weighted number of adults ages 18 and older who reported having had a sunburn in the past 12 months × 100

Denominator: Weighted total number of adults ages 18 and older

#### Use of one or more sun protection measure among adults reporting a sunburn

Numerator: Weighted number of adults ages 18 and older reporting having had a sunburn in the past 12 months, who reported always or often using one or more sun protection measure in the past 12 months × 100

Denominator: Weighted number of adults ages 18 and older reporting having had a sunburn in the past 12 months

#### Sub-analyses

- Socio-demographic factor: sex

#### Additional notes

- See details on Canadian Community Health Survey data (p. 5)

#### References

1. Marrett LD, Chu MB, Atkinson J, Nuttall R, Bromfield G, Hershfield L, et al. An update to the recommended core content for sun safety messages for public education in Canada: a consensus report. *Can J Public Health*. 2016;107(4-5):e473-e9.

## Shade policies in local municipalities

### Definition

The number of local municipalities in Ontario with populations of 100,000 or more that have shade policies, by the strength of policies (strong, moderate, limited, not included)

## Data sources

- Municipal planning documents (e.g., official plans, urban design guidelines, site plan control by-laws) available on the web and additional documents sent via email from the municipality for each of the 26 Ontario local municipalities with populations of 100,000 or greater.<sup>1-45</sup>

## Technical specifications

- For feasibility purposes, analysis was limited to local municipalities with populations of 100,000 or more, and 26 local municipalities met this threshold based on the 2016 census.
- The homepages on the Internet for the 26 local municipalities were visited to retrieve official plans, urban design guidelines and master plans.
- Search terms used in review of planning documents: “shade,” “shading,” “solar” (i.e., for solar protection).
- Additional search in Google using search terms + “site:[local municipality’s homepage on the Internet]” (e.g., shade OR shading OR solar site:hamilton.ca).
- Each of the local municipalities was contacted by e-mail to confirm the information that was retrieved from the web and to obtain any additional relevant policies in their municipalities that relate to shade.

## Calculation

- Assessed as of May 2019 for each of the following 26 local municipalities: Ajax, Barrie, Brampton, Burlington, Cambridge, Chatham-Kent, Greater Sudbury, Guelph, Hamilton, Kingston, Kitchener, London, Markham, Milton, Mississauga, Oakville, Oshawa, Ottawa, Richmond Hill, St. Catharines, Thunder Bay, Toronto, Vaughan, Waterloo, Whitby and Windsor.
- Planning policy documents for each of the local municipalities, as well as any additional documentation sent by e-mail from the municipalities were reviewed.
- Statements related to shade were identified, and the overall strength of shade policies in each local municipality were categorized as follows:
  - Strong shade policies: Planning policy documents include one or more statements indicating that shade should be provided for a broad range of municipally and privately owned sites.
  - Moderate shade policies: Planning policy documents include one or more statements indicating that shade should be provided for only a few types of sites (municipally owned, privately owned, or both), but do include statements applicable to a broad range of sites.
  - Limited shade policies: Planning policy documents include one or more statements indicating that shade should be considered for one or more types of sites, but it is not essential, and no further statements on shade that could be categorized as a strong or moderate shade policy.
  - Shade policy not included: Statements on providing shade are not included in planning policy documents at the present time for the local municipality.

## Considerations

- In Ontario, municipalities establish guidelines that are used when evaluating plans for developing or redeveloping a site. These guidelines are found in planning policy documents, such as official plans and urban design guidelines. Statements on providing shade (called shade policies in this indicator) may be included in these guidelines. Guidelines can apply to both municipally and privately owned sites.

- Only shade policies that have been adopted by the local council and approved by the Ontario Municipal Board, if required, are included in this indicator.
- This assessment of shade policies may not reflect how well the policies are implemented and the actual availability of shade in each municipality.
- Municipal shade policies do not require projects to be undertaken for the sole purpose of increasing the availability of shade. In the planning policy documents reviewed, where a shade policy was identified, shade was identified only as an element to be incorporated into plans for new developments or redevelopments and in ongoing municipal landscaping (e.g., shade trees).

#### Data limitations

- Not all municipalities responded to confirm or clarify the information obtained from the web. Municipalities that provided confirmation are indicated in the PSQI Supplementary Table on shade policies. Unique types of planning documents from the municipalities that did not provide confirmation may have been missed.
- The wording of municipal planning documents vary between municipalities, and direct comparisons can not be made.

#### References

1. Town of Ajax. Town of Ajax Official Plan. Office consolidation January 15, 2016. Ajax, ON: Town of Ajax; 2016.
2. Town of Ajax. Bylaw number 11–2014 Site Plan Control Bylaw. Ajax, ON: Town of Ajax; 2014.
3. City of Barrie. The City of Barrie Official Plan. Office consolidation January 2018. Barrie, ON: City of Barrie; 2018.
4. City of Brampton. September 2015 consolidation of the City of Brampton 2006 Official Plan. Brampton, ON: City of Brampton; 2015.
5. City of Brampton, City of Vaughan and Town of Richmond Hill. Measuring the sustainability performance of new development. Final comprehensive report. Prepared for the Cities of Brampton, Vaughan and Town of Richmond Hill by Halsall Associates. Brampton, ON: City of Brampton, City of Vaughan and Town of Richmond Hill; 2013.
6. City of Burlington. Urban Forest Management Plan 2011–2030. Burlington, ON: City of Burlington; 2010 Jul.
7. City of Burlington. Design guidelines for mixed-use and residential mid-rise buildings. Burlington, ON: City of Burlington; 2019 Mar.
8. City of Cambridge. Cambridge Official Plan. Cambridge, ON: City of Cambridge; 2018 Sep.
9. Municipality of Chatham-Kent. Chatham-Kent Official Plan: action toward sustainability. Chatham, ON: Municipality of Chatham-Kent; 2018 Nov.
10. City of Greater Sudbury. The City of Greater Sudbury Official Plan: flexible, balances, sustainable. Sudbury, ON: City of Greater Sudbury; 2019 May.
11. City of Guelph. The City of Guelph Official Plan: March 2018 consolidation. Guelph, ON: City of Guelph; 2018 Mar.
12. City of Guelph. Built form standards for mid-rise buildings and townhouses. Guelph, ON: City of Guelph; 2018 Apr.
13. City of Guelph. Built form standards for mid-rise buildings and townhouses. Guelph downtown streetscape manual and built form standards. Section 3.0 built form standards. Guelph, ON: City of Guelph; 2014 Jul.
14. City of Hamilton. Urban Hamilton Official Plan. Chapter B communities. Hamilton, ON: City of Hamilton; 2013 Sep.
15. City of Kingston. City of Kingston Official Plan. Kingston, ON: City of Kingston; 2019 May.

16. City of Kingston. Design guidelines for communities. Kingston, ON: City of Kingston; 2015 Oct.
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## Tanning bed use in Ontario students Grade 7 to 12

### Indicator source

The data on tanning bed use in Ontario students in Grade 7 to 12 is available in a report published by the Ontario Sun Safety Working Group and can be found online: [uvontario.ca/artificial-tanning](http://uvontario.ca/artificial-tanning)

### Reference

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# Environmental Carcinogens

## Fine particulate matter (PM<sub>2.5</sub>) concentrations in outdoor air

### Indicator source

Ministry of the Environment, Conservation and Parks, Air Quality in Ontario Report:

- 2017 report available from the Government of Ontario website: [ontario.ca/document/air-quality-ontario-2017-report](https://ontario.ca/document/air-quality-ontario-2017-report)
- Reports for 2013 to 2016 data are available from the Air Quality Ontario Publications page: [airqualityontario.com/press/publications.php](https://airqualityontario.com/press/publications.php)

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# Occupational Carcinogens

## Industrial nickel and formaldehyde use and employment

### Definition

The number of industrial manufacturing and mineral processing facilities using nickel, the total amount of nickel used (in tonnes) in facilities using nickel, and the number of employees working at industrial manufacturing and mineral processing facilities using nickel, as reported to the National Pollutant Release Inventory (NPRI)

The number of industrial manufacturing and mineral processing facilities using formaldehyde, the total amount of formaldehyde used (in tonnes) in facilities using formaldehyde, and the number of employees working at industrial manufacturing and mineral processing facilities using formaldehyde, National Pollutant Release Inventory (NPRI)

### Data source

- Ministry of the Environment, Conservation and Parks, Toxics Reduction dataset, 2013 to 2016, distributed by the [Ontario Data Catalogue](#)

### Technical specifications

- For each of nickel and formaldehyde, the dataset limited to industrial facilities in the manufacturing and mineral processing sectors, as classified by the North American Industry Classification Systems (NAICS codes 31–33 and 21), using 10 or more tonnes per year in Ontario.

### Calculation

For each of nickel and formaldehyde:

- Obtain count of the total number of specified facilities for the reporting year
- Sum the number of employees working at the specified facilities
- Estimate the total amount used (in tonnes) in reporting facilities in the manufacturing and mineral processing sectors by selecting the mid-point value for each facility's reported range of use (e.g., >10 to 100 = 45, >100 to 1000 = 450), summing these values across all facilities for each sector

### Considerations

- The Toxics Reduction Act (TRA) came into effect in 2009, which requires industrial facilities in the manufacturing and mineral processing sectors to report the use and release of toxic substances, including formaldehyde and nickel, as well as the number of employees working at their facilities.
- Data are reported annually by industrial facilities in the manufacturing and mineral processing sectors to the Ministry of the Environment, Conservation and Parks in accordance with the TRA. Data are made publicly available online on the Ministry of Environment, Conservation and Parks website.

- Industrial facilities in the manufacturing and mineral processing sectors (NAICS codes: 31–32 and 212) are required to report to the Toxics Reduction Program if a toxic substance is manufactured, processed or otherwise used and is reported to the NPRI.
- Use is reported in intervals of increasing magnitude (e.g., >0 to 1 tonnes; >1 to 10 tonnes; >10 to 100 tonnes; >100 to 1,000 tonnes; >1,000 to 10,000 tonnes; >10,000 to 100,000 tonnes; >100,000 to 1,000,000 tonnes; >1,000,000 tonnes). To calculate estimates of amounts used, the mid-point value was selected for every facility’s reported range of use. These mid-point values were summed for all facilities and analyzed by industrial sector.
- The total amounts of nickel and formaldehyde used in Ontario and the number of facilities and employees than what is reported. The TRA only requires industrial facilities in the manufacturing and mineral processing sectors to report on their use of formaldehyde or nickel, and only if the amount manufactured, used or released in the environment is above 10 tonnes per year.
- The TRA does not require the owners and operators of industrial facilities to measure their employees’ exposure to formaldehyde or nickel. As a result, calculations include employees who work at industrial facilities that use nickel and formaldehyde, and who may or may not be directly exposed. Therefore, it is not possible to make any inferences regarding the amount of nickel and formaldehyde an employee may be exposed to.

### Data limitations

- Reporting formaldehyde and nickel use in ranges of values under the TRA, as opposed to reporting numeric values, poses a significant limitation in establishing data trends for these indicators. By requiring facilities to report exact numeric values for the use of substances as opposed to ranges of values, the data could demonstrate more subtle changes in use over time.

# Infectious Agents

## School-based human papillomavirus and hepatitis B vaccination coverage

### Indicator source

The school-based coverage indicators for human papillomavirus and hepatitis B vaccination are from the Public Health Ontario's Immunization Coverage Reports for School Pupils in Ontario for the 2013/14 to 2017/18 school years, which are available from [publichealthontario.ca/en/health-topics/immunization/vaccine-coverage](https://publichealthontario.ca/en/health-topics/immunization/vaccine-coverage)

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