



Cancer Care Ontario

2016

Prevention System Quality Index

Monitoring Ontario's Efforts in Cancer Prevention: Highlights

The 2016 Prevention System Quality Index (PSQI): Monitoring Ontario's Efforts in Cancer Prevention is Cancer Care Ontario's second report on system-level policies and programs that can reduce the prevalence of cancer risk factors and exposures in the Ontario population.

The PSQI aims to provide evidence and data that can help policy-makers, policy-influencers and program planners across sectors in governments, non-governmental organizations and public health units implement policies and programs that prevent cancer in Ontario.

The PSQI reports on indicators of effective of policies and programs, identifies achievements and gaps in the prevention system, and highlights opportunities for improvement within the following cancer risk factor and exposure domains: tobacco, alcohol, healthy eating, physical activity, ultraviolet radiation, environmental carcinogens, occupational carcinogens and infectious agents.

The main findings of the 2016 PSQI indicators (see summary on the following pages) show that while there are many policies and programs in place in Ontario that can reduce cancer risk factors and exposures, there are also many opportunities for improvement. Working in all sectors to address the risk factors and exposures highlighted in the 2016 PSQI would reduce the burden of cancer and other chronic diseases, and result in cost savings to the healthcare system.

The full 2016 PSQI report can be found at cancercare.on.ca/PSQI.



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Tobacco

In 2014, 18.7 per cent of Ontarians age 20 and older reported smoking daily or occasionally.

Tax as a percentage of tobacco retail price

- Increasing tobacco taxes reduces the prevalence of tobacco use more than any other policy intervention.
- As of April 2016, taxes were 65 per cent of the average total tobacco retail price in Ontario, well below the World Health Organization's recommendation of at least 75 per cent.

Exposure to second-hand smoke

- Smoke-free laws and policies protect people from second-hand smoke.
- The Smoke-Free Ontario Act prohibits smoking in enclosed public places, enclosed workplaces, motor vehicles when children under age 16 are present, outdoor bar and restaurant patios, playgrounds, public sports fields and surfaces, and the outdoor grounds of hospitals and psychiatric facilities.
- The percentage of non-smokers age 20 and older exposed to second-hand smoke in public places declined from 2003 to 2007, but increased significantly from 10.1 per cent in 2007 to 14.2 per cent in 2014. Exposure at home and in private vehicles declined significantly from 2003 to 2014.
- Similar trends were seen in adolescents ages 12 to 19, but their exposure to second-hand smoke was substantially higher.

Long-term smoking cessation

- A sustained focus on smoking cessation can substantially reduce smoking prevalence.
- In 2014, 3.9 per cent of recent daily smokers age 20 and older had quit smoking for at least one year.



Alcohol

In 2014, 8.2 per cent of Ontarians age 19 and older reported drinking, on average, alcohol in excess of the recommended daily limits for cancer prevention.

Minimum retail price of alcohol sold in off-premises alcohol outlets

- Setting minimum prices for alcohol has been shown to reduce alcohol consumption.
- As of March 2016, none of the minimum retail prices for beer, table wine and spirits in Ontario met the minimum price per standard drink estimated to achieve appreciable reductions in alcohol consumption at the population level (\$1.63 in 2015 dollars).

Private off-premises alcohol outlets

- Privatization of off-premises alcohol outlets may result in increased alcohol consumption in a population.
- In 2015, 75.9 per cent of the off-premises alcohol outlets in Ontario were privately owned, similar to 2014.

Alcohol outlet density (on- and off-premises)

- Increasing the density of alcohol outlets in a geographic area may result in higher alcohol consumption in that area.
- In 2015, the density of on- and off-premises alcohol outlets in Ontario was 17.2 for every 10,000 people age 15 and older, similar to 2014.

*There are two types of alcohol outlets. An **off-premises alcohol outlet** is a retail store where people buy alcohol, but drink it elsewhere. An **on-premises alcohol outlet** is a bar, restaurant or other establishment where people buy alcohol and drink it on-site.*



Healthy eating

In 2014, 67.8 per cent of Ontarians ate vegetables and fruit fewer than five times per day. Vegetable and fruit consumption is considered to be a good marker of overall diet quality.

Household food insecurity

- Food insecurity is a strong determinant of health because it directly influences the quality and quantity of food eaten. Adults and some children experiencing food insecurity tend to eat significantly fewer servings of vegetables and fruit than those who are food secure.
- In 2014, 11.9 per cent of Ontario households experienced food insecurity. The prevalence of severe household food insecurity remained stable from 2005 to 2014; however, the prevalence of moderate food insecurity increased slightly, but significantly, and the prevalence of marginal food insecurity decreased slightly, but significantly.

Food literacy development in secondary schools

- Enhancing food literacy can increase the consumption of healthy foods. Food literacy includes knowledge about nutritional needs, the ability to meal plan and budget, the ability to prepare food and knowledge about food safety.
- Approximately one-third of students who entered Grade 9 from the 2005/06 to 2009/10 school years earned one or more credits in a course that included a food literacy component during their secondary school education. This estimate has changed very little over time.



Physical activity

In 2014, 48.5 per cent of Ontario adults and 30.6 per cent of adolescents were inactive during leisure time.

Use of active transportation to or from work and school

- Adults and children who use active transportation (walking and bicycling) have higher overall physical activity levels.
- In 2011, active transportation was used in 21.6 per cent of trips taken to or from work by adults age 19 and older in Greater Golden Horseshoe regions, which encompass over 60 per cent of Ontario's population. Most of these trips were to or from public transit. In youth ages 11 to 18, 51.4 per cent of trips taken to or from school used active transportation.

Health and physical education specialist teachers in schools

- Professional development for teachers in physical education can increase the time students spend being physically active during physical education classes and may result in increased overall physical activity.
- In the 2013/14 school year, 19.7 per cent of elementary and 21.7 per cent of secondary schools reported having specialist teachers assigned to teach health and physical education. These percentages have increased since the 2006/07 school year.

Enrolment in health and physical education

- Health and physical education classes can increase overall physical activity in children and adolescents.
- In the 2013/14 school year, 88.6 per cent of Grade 9 students earned one or more health and physical education credits, compared to 26.0 per cent of Grade 12 students.



Ultraviolet radiation (UVR)

In 2006, Ontario residents spent more time in the sun without improving sun protection behaviours than in 1996. In addition, the proportion of Ontarians who used UVR-emitting tanning devices increased during this period.

Shade policies in local municipalities

- Shade provided by built structures and tree canopies can protect people from UVR exposure more effectively than sunscreen.
- As of March 2016, three local municipalities with a population of 100,000 or more have strong shade policies. The guidelines that these municipalities follow when evaluating plans for developing or redeveloping sites state that shade should be provided for a broad range of municipally and privately owned sites.

Adults and children who use active transportation have higher overall levels of measured and self-reported physical activity.



Environmental carcinogens

A large number of Ontarians are exposed to two environmental carcinogens: radon and fine particulate matter (PM_{2.5}).

Radon levels in residences

- Radon is a naturally occurring radioactive gas released into the air during the decay of uranium in soil and rock. Radon can accumulate in high concentrations in homes and buildings.
- High radon concentrations in Ontario homes can be reduced by including radon prevention measures as part of a mandatory building code for new houses or major renovations, and by testing and undertaking remediation in existing homes.
- From 2009 to 2013, 25.2 per cent of homes surveyed in Ontario had radon concentrations greater than or equal to 100 Bq/m³, the average annual radon concentration at which the World Health Organization recommends remedial action.

Fine particulate matter (PM_{2.5}) concentrations in outdoor air

- PM_{2.5} is one of the major components of outdoor air pollution.
- Motor vehicle traffic, industrial sources, and residential fireplaces and woodstoves are key contributors to PM_{2.5} in Ontario.
- In 2014, the average annual PM_{2.5} concentrations at 40 monitoring stations across Ontario ranged from 4.7 to 10.8 µg/m³.
- PM_{2.5} concentrations were higher than the reference level of 10 µg/m³ (set by the Canadian Ambient Air Quality Standards and World Health Organization's Air Quality Guidelines) at three monitoring stations: Hamilton Downtown (10.8 µg/m³), Windsor West (10.7 µg/m³) and Windsor Downtown (10.1 µg/m³).



Occupational carcinogens

Many workers in Ontario are exposed to formaldehyde and nickel, which are known carcinogens. The Toxics Reduction Act requires facilities in the manufacturing and mineral processing industries in Ontario to report the amount of toxic substances they use and the number of employees working at their facilities, as well as to develop plans for reducing the use of these substances.

Industrial formaldehyde use and employment in industries using formaldehyde

- Reducing formaldehyde use and workers' exposure would be most comprehensively achieved by eliminating or substituting it with a substance that is not known to cause cancer. It is also possible to lower exposure through engineering controls, such as increasing ventilation.
- In 2013, 20 industrial facilities with 7,467 employees used an estimated total of 8,220 tonnes of formaldehyde. The paper, chemical and wood product manufacturing industries accounted for nearly 99 per cent of the total formaldehyde used by reporting facilities in Ontario.

Industrial nickel use and employment in industries using nickel

- Large-scale reductions in nickel use may not be as feasible as for other substances. Workers' exposure to nickel can be reduced through engineering and administrative controls and use of personal protective equipment.
- In 2013, 122 industrial facilities with 40,199 employees used an estimated total of 874,580 tonnes of nickel. Primary metal manufacturing, and mining and quarrying accounted for nearly 98 per cent of the total nickel used by reporting facilities in Ontario.



Infectious agents

Chronic infections with viral, bacterial and parasitic infectious agents are estimated to cause 7.4 per cent of cancers in developed countries. Human papillomavirus (HPV) is sexually transmitted and causes virtually all cervical cancers. Hepatitis B virus is transmitted through blood and other body fluids and is a cause of liver cancer. Infection with HPV and hepatitis B virus can be prevented through vaccination.

School-based HPV vaccination coverage

- In 2007, Ontario introduced a publicly funded school-based HPV vaccination program for girls in Grade 8. As of September 2016, boys also receive the HPV vaccine as part of the school-based vaccination program.
- At the end of the 2012/13 school year, the vaccination coverage rate for the school-based HPV vaccination program in Grade 8 girls in Ontario was 80.2 per cent.

School-based hepatitis B vaccination coverage

- Ontario publicly funds the hepatitis B vaccine for the school-based program and for certain high risk groups.
- The province's school-based hepatitis B vaccination program for all students in Grade 7 started in 1994.
- At the end of the 2012/13 school year, the vaccination coverage rate for the school-based hepatitis B vaccination program in Grade 7 students in Ontario was 86.9 per cent.



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