Ontario
Cancer Care Ontario
Action Cancer Ontario

Cancer Risk Factors in Ontario

Glossary

GLOSSARY

Apoptosis
Programmed cell death, in which a series of molecular steps in a cell lead to its death. This is one method the body uses to get rid of abnormal cells and may be blocked in cancer cells.

Autosomal dominant
A variant of a gene on any chromosome (except the sex chromosomes) that will express itself in the offspring, despite the presence of other variants of that gene.

Autosomal recessive
A variant of a gene on any chromosome (except the sex chromosomes) that in the presence of its dominant variant will not express itself in the offspring. It will only express itself when both copies of the gene are the same recessive variants.

Carcinogen, carcinogenic, carcinogenicity, carcinogenesis
Any substance that can cause cancer. Such substances are termed carcinogenic, or able to cause cancer; this is the property of carcinogenicity. Carcinogenesis is the process of beginning or promoting the changes that result in cancer.

Case-control study
A study that starts with the identification of people with the disease or other outcome of interest, and compares them with a suitable control group (comparison or reference group) of people without the disease.

Cohort study
A study in which subsets of a defined population are identified who are, have been, or may be exposed to the agent under investigation. The identified individuals are followed over time for the occurrence of disease or other outcomes of interest.

Dose-response
The relationship of observed outcomes (responses) in a population to varying levels of a protective or harmful agent, such as a medication or environmental contaminant. If the outcome changes when the dose of the agent changes, there is said to be a dose-response relationship between the two.

Ecologic study
A study in which the units of analysis are populations or groups of people, rather than individuals.

Epigenetic
Factors that affect gene expression without changing the DNA sequence itself.

Estrogen receptor (ER) positive/negative
Cancer cells that either require or do not require the presence of estrogen to grow. This will determine whether those cells will cease or continue growing when treated with hormones that block estrogen binding and action.

Excess relative risk

The relative risk of a disease minus 1.0. This is often expressed as the excess relative risk per unit of radiation.

Free radical

A type of unstable molecule that is made during normal cell metabolism. Free radicals can build up in cells and cause damage to other molecules, such as DNA, lipids and proteins. This damage may increase the risk of cancer and other diseases.

Genotoxic/genotoxicity

An effect that damages or otherwise interferes with the action of a gene.

Germline mutation

A gene change in a body's reproductive cell (egg or sperm) that becomes incorporated into the DNA of every cell in the body of the offspring. Germline mutations are passed on from parents to offspring.

Ionizing radiation

Radiation of sufficiently high energy to cause ionization (change the electrical charge of atoms) in the medium through which it passes. It may consist of a stream of high-energy particles (e.g., electrons, protons, alpha-particles) or short–wavelength electromagnetic radiation (X-rays, gamma rays). This type of radiation can cause extensive damage to the molecular structure of a substance, either as a result of the direct transfer of energy to its atoms or molecules, or as a result of the secondary electrons released by ionization.

Interaction/effect modification

Differences in the effects of one or more factors according to the level of the remaining factor(s). For example, there is an interaction between age and sex if the effect of age on the outcome of interest is different for males and females.

Meta-analysis

A statistical synthesis of the data from comparable studies resulting in a quantitative summary of the pooled results.

Oncogene

A mutated form of a gene involved in normal cell growth. If altered, an oncogene can promote or allow the uncontrolled growth of cancer.

Oxidative stress

A physiologic state caused by cumulative damage done by free radicals due to an imbalance between these molecules in the body and molecules that are able to detoxify them or repair the resulting damage.

Prospective study

See cohort study.

Progesterone receptor (PR) positive/negative

Cancer cells that either require or do not require the presence of progesterone to grow, which will determine whether those cells will cease or continue growing when treated with hormones that block progesterone binding.

Randomized control trial

A study in which participants are randomly allocated into different intervention or treatment groups to compare the outcomes of different exposures.

Relative risk

The ratio of the risk of disease or death among a group of people exposed to a given risk factor/carcinogen, to the risk among an unexposed group.

Synergistic relationship

Describes an interaction between two or more factors in which the effect of one factor is enhanced by the presence of the other(s). In other words, the effect of one factor on an outcome (e.g., cancer risk) is greater in the presence of another factor than when that other is absent.

Tumour suppressor gene

A gene that encodes a protein that helps control cell growth. Mutations in these genes may lead to uncontrolled cell growth and cancer. The tumour suppressor gene is sometimes called an anti-oncogene.

For more information:

Cancer in Ontario: Overview, published 2010, is the first in a series of Cancer Care Ontario publications designed to provide information on patterns and trends for cancer and risk factors in the Province. This first report provides an overview of the burden of cancer.

Please see www.cancercare.on.ca/reports

Ontario Cancer Facts are short, monthly fact sheets intended to increase knowledge about cancer and its risk modifiers in Ontario. Data typically originate from several sources including the Ontario Cancer Registry, Cancer Care Ontario publications, and Canadian, provincial or regional health surveys. Readers may subscribe to receive Ontario Cancer Facts by e-mail.

Please see www.cancercare.on.ca/cancerfacts

The Occupational Cancer Research Centre (OCRC), established in 2009, is the first of its kind in Canada. The Centre was established to fill the gaps in our knowledge of occupation-related cancers and to translate these findings into preventive programs to control workplace carcinogenic exposures and improve the health of workers. The Centre is establishing and leading a program of integrated research that will involve collaborations between researchers, worker organizations and employers. The OCRC is jointly funded by Ontario's Workplace Safety and Insurance Board, Cancer Care Ontario, and the Canadian Cancer Society.

Please see http://occupationalcancer.ca

The Cancer Quality Council of Ontario is an advisory council to Cancer Care Ontario and the Ministry of Health and Long-Term Care established in 2002 to guide quality improvement efforts and monitor and publicly report on the performance of Ontario's Cancer System. One mechanism by which this is achieved is the **Cancer System Quality Index**, an interactive web-based tool released annually since 2005, that reports on a variety of evidence-based indicators covering every aspect of cancer control, from cancer prevention to recovery and end-of-life care, and tracks Ontario's progress against seven dimensions of quality.

Please see www.csqi.on.ca

Cancer Care Ontario
620 University Avenue
Toronto, Ontario
M5G 2L7

416 971 9800
publicaffairs@cancercare.on.ca
www.cancercare.on.ca