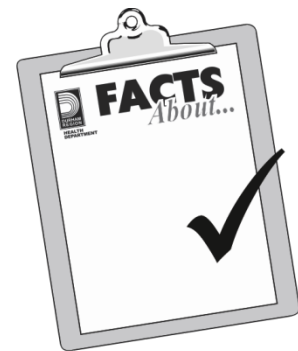




# FACTS

## About...



HEALTH DEPARTMENT



# Dioxins

## What are dioxins?

“Dioxin” is a term used to refer to a group of structurally and chemically related compounds that include dioxins, furans and dioxin-like polychlorinated biphenyls (PCBs). They all have chlorine atoms as part of their structure and are very persistent in the environment. They have the potential to be toxic at certain levels and can be a concern for human health. The most toxic dioxin is 2,3,7,8-tetrachlorodibenzo-p-dioxin, or simply TCDD.

Dioxins are by-products of many industrial processes, including smelting, chlorine bleaching of paper pulp and the manufacturing of some herbicides and pesticides. Dioxins can also be produced from burning household wastes such as plastics and wood that has been chemically treated. There are natural sources of dioxins as well, such as forest fires and volcanic eruptions. In Canada, the most significant source of dioxins is the large-scale burning of municipal and medical waste.

## How am I exposed to dioxins?

Because they are produced in many different processes and are persistent in the environment, dioxins are always present in trace amounts in air, water and soil. They are able to work their way up the food chain and accumulate in the fatty tissues of animals. For most people, 90% of exposure to dioxins will come from food, rather than air, water or soil.

The Durham York Energy Centre (DYEC) is a waste management facility that produces energy from the combustion of garbage. It uses a minimum temperature of 1000°C to ensure complete combustion, which controls the production of dioxins. If any dioxins are produced, air pollution control technology removes it from emissions going out of the stack. Risk assessments conducted as part of the environmental assessment process found that even with the addition of any dioxins from the DYEC to the local airshed, dioxins were still below all applicable air standards. Regular stack tests at the DYEC are required by the Ontario Ministry of the Environment, Conservation and Parks to ensure that emissions to the local ambient air do not pose any health risks to the community.

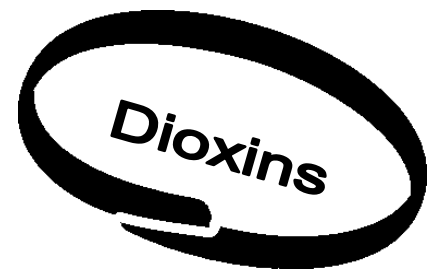
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For more information

Durham Region Health Department

905-668-2020 1-800-841-2729 durham.ca

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## How can dioxins affect my health?

Exposure to dioxins has been linked to effects on all organs and organ systems. Short-term exposure to very high levels of dioxin can cause skin disorders, such as chloracne, and altered liver function. Long term exposure has been linked with impairment of the immune, endocrine, reproductive, and nervous systems. Exposure to dioxins has also been linked to certain types of cancers. TCDD has been classified by the International Agency for Research on Cancer as carcinogenic to humans (group 1).

One's risk of getting sick from exposure to dioxins depends on how much s/he is exposed to, how long and how often s/he is exposed, as well as personal health and lifestyle factors. Because everyone is exposed to trace amounts of dioxins in the environment, everyone carries a certain level of dioxins in the body. However, according to the World Health Organization, "current normal background exposure is not expected to affect human health on average".

## What can I do to reduce my exposure to dioxins and furans?

Since most exposure comes from diet, taking the following steps can reduce the intake of dioxins:

- When preparing meat and fish, trim off any visible fat
- Drain off extra fat from food after cooking and consider baking, broiling, roasting or barbecuing
- Eat a variety of foods, including vegetables, fruit and grains, which contain fewer dioxins than meat, milk products and fish
- Follow Ontario's *Guide to Eating Ontario Fish* for consumption guidelines for fish caught from Ontario lakes. The Guide can be found at: <https://www.ontario.ca/page/eating-ontario-fish-2017-18>

You can also avoid burning garbage, especially materials that may contain wood preservatives or plastics. If burning wood is required to heat your home, the Government of Canada provides tips for reducing the environmental and health impacts of wood smoke: <https://www.canada.ca/en/health-canada/services/air-quality/indoor-air-contaminants/avoid-wood-smoke.html>

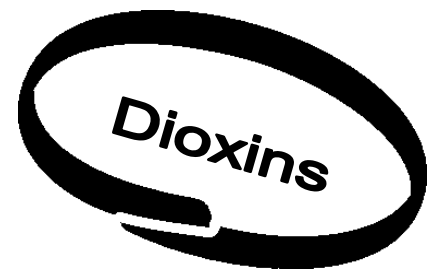
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## More information can be obtained from:

Government of Canada

It's Your Health: Dioxins and Furans

<https://www.canada.ca/en/health-canada/services/healthy-living/your-health/environment/dioxins-furans.html#info>

World Health Organization

Dioxins and their effects on human health

<http://www.who.int/news-room/fact-sheets/detail/dioxins-and-their-effects-on-human-health>

Durham York Energy Centre

<https://www.durhamyorkwaste.ca/>

Durham Region Health Department, Environmental Help Line  
905-723-3818 ext. 2188 or 1-888-777-9613

October 31, 2018

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