



ARCTIC CONTAMINANTS  
ACTION PROGRAM

# EFFECTS OF DIOXINS

## ON HUMAN HEALTH AND THE ENVIRONMENT



ARCTIC COUNCIL



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Dioxins belong to the most toxic compounds that man has produced. Dioxins stay in the body for a long time because of their chemical stability and their ability to be absorbed by fat tissue. The half-life of dioxins in the body is estimated to be around ten years. In the environment, dioxins accumulate in food chains. This means that predators show higher concentrations of dioxins than their prey.

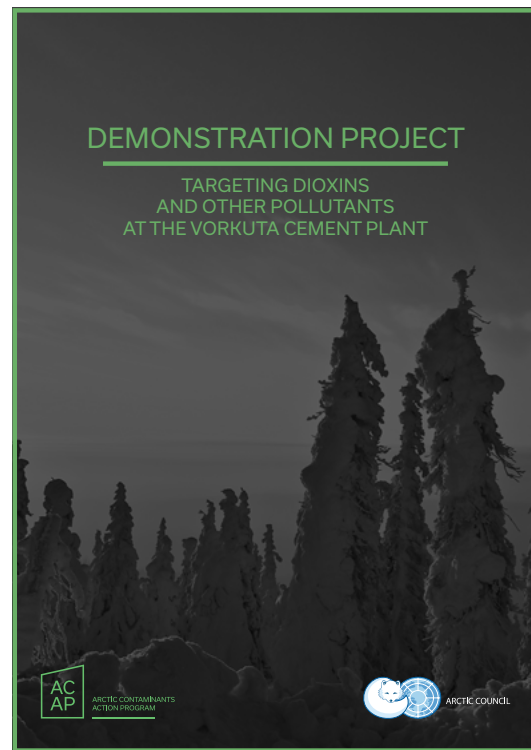
In mammals, long-term exposure is linked to impairment of the immune system, the nervous system, the endocrine system, and reproductive functions. Chronic exposure of animals to dioxins has been shown to result in several types of cancer. TCDD, the most toxic of all dioxins, was evaluated by the WHO's International Agency for Research on Cancer (IARC) and classified as a "known human carcinogen."

The developing fetus is most sensitive to dioxin exposure. Newborns, with rapidly developing organ systems, may also be more vulnerable. Some people or groups of people may be exposed to higher levels of dioxins because of their diet (for example, individuals who consume a great deal of fish in certain parts of the world) or their occupation (for example, workers in incineration plants and at hazardous waste sites). In the Arctic, many people depend on traditional foods with a high content of fish. High dioxins levels are therefore often seen in such populations.

All humans are exposed to dioxins, and it has been estimated that more than 90% of exposure to dioxins occurs via food, mainly meat and dairy products, fish, and shellfish. Therefore, protecting the food supply is critical. This is underlined by the fact that in many parts of the industrialized world the tolerable daily intake (TDI) for dioxins, as set by the Scientific Committee for Food (EU), is exceeded by significant segments of the population.

ACAP's mission is to contribute to the efforts to reduce environmental risks and prevent pollution of the Arctic environment. ACAP acts as a strengthening and supporting mechanism of the Arctic Council to encourage national actions to reduce emissions and other releases of pollutants and to reduce environmental, human health and socio-economic risks. ACAP in co-operation with national authorities develops pilot projects that build capacity and demonstrate emission reduction activities for contaminants. Exchange of information and knowledge on best practices, technologies as well as regulations and other measures among Arctic States, is a key instrument. ACAP contributes to implementation by Arctic Council member states of international conventions and related protocols relevant to the Arctic. ACAP strives to support those pilot projects, which contribute to reductions in emissions of:

- Hazardous substances such as persistent organic pollutants (POPs), mercury, hazardous waste, and others regulated by international conventions
- Short-Lived Climate Pollutants (SLCP) such as black carbon, methane and HFCs at present covered partly under international conventions



These reports and others can be found as soon as they are publicly available in the Arctic Council's online open-access repository: <https://oarchive.arctic-council.org/handle/11374/1>

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## Contacts

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