



POLYCHLORINATED BIPHENYLS (PCBs)

Fact Sheet

PCBs are contaminants that are found in low levels in the environment due to human activities. As a result, it is also in the food that we consume which means that everyone can be exposed to those low levels. Low levels do not seem to affect human health, however, many Aboriginal people are exposed to higher levels of PCBs which can cause health problems. Read on to get more information!

WHAT ARE PCBs?

Polychlorinated biphenyls (PCBs) are classified as:

- ❖ Persistent, toxic and likely to bioaccumulate (PTBs), and;
- ❖ Persistent organic pollutants (POPs).

Overall, this means that they can stay in the environment for a very long time, be prone to long-range transport and bioaccumulate in animals, and therefore also in humans (see fact sheet on bioaccumulation and contaminants).

WHERE ARE PCBs FOUND?

YEARS AGO

PCB production began in the 1920s it was used mostly for industrial materials like:

- ❖ Coolants and lubricants for things like transformers and capacitors
- ❖ Stabilizing additives in flexible PVC coatings of electrical wiring and electronic components
- ❖ Pesticide extenders
- ❖ Cutting oils
- ❖ Flame retardants
- ❖ Hydraulic fluids
- ❖ Sealants (used in caulking, etc)
- ❖ Adhesives
- ❖ Wood floor finishes
- ❖ De-dusting agents
- ❖ Carbonless copy paper
- ❖ Ink and paint additives

In the 1970s, manufacturing PCBs became banned because they were found to be too toxic. The ban did not include PCBs that were already in electrical use but they are now being phased out and the government has strict regulations for the handling, storage and disposal of PCBs.

TODAY

Today, trace levels (very low levels) of PCBs are found in the environment (air and water) all over the world. This happened because of accidental releases and improper disposal practices in the past; and because of the long-range transport of PCBs by global air currents (see fact sheet on bioaccumulation and contaminants). Once PCBs get into the environment, they accumulate in animals and then biomagnify which means that the animals at the top of the food chain, including humans, have the highest concentrations of PCBs.

EXPOSURE

All Canadians have some PCBs in their bodies but these low levels are unlikely to cause health problems.

THE MAIN SOURCES INCLUDE

FOOD MOSTLY

AIR

SOIL

WATER



First Nations Environmental Health Innovation Network

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Some people may be exposed to higher levels of PCBs from:

- ❖ Eating large amounts of wild fish, wildlife or marine mammals
 - Studies have shown that farmed salmon has higher levels of PCBs than wild salmon
- ❖ Workplace exposure
 - Replacing or servicing old electrical equipment
 - Transporting PCBs to storage and destruction facilities
 - Handling PCBs at these sites
- ❖ Accidental releases, including uncontrolled fires involving PCBs

HEALTH EFFECTS

Health effects of PCBs are usually due to accidental releases or job-related activities, where the exposure is much higher than what is normally found in the environment.

SIGNS AND SYMPTOMS IN HUMANS

- ❖ Skin conditions such as acne-like conditions and rashes
- ❖ Swelling of the upper eyelids
- ❖ Discolouring of the nails and skin
- ❖ Numbness in the arms and/or legs
- ❖ Weakness
- ❖ Muscle spasms
- ❖ Chronic bronchitis
- ❖ Problems related to the nervous system
- ❖ Increased incidence of certain cancers (mostly liver and kidney)

Research on this is ongoing and evidences are showing long-term low-level exposure can lead to subtle effects on:

- ❖ Reproduction
- ❖ Development of newborns
- ❖ Development of children

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IN ANIMALS

- ❖ Liver damage
- ❖ Anemia; acne-like skin conditions; and liver, stomach, and thyroid gland injuries
- ❖ Immune system changes, behavioural alterations, and impaired reproduction
- ❖ Death

PREVENTION

Here are some things that you can do to minimize your risk of exposure and health effects related to PCBs:

- ❖ Follow regional/provincial/territorial advice about limiting your consumption of wild game and wild fish.
 - You do not need to restrict consumption of commercial fish (example: fish bought in a supermarket).
- ❖ Never burn wood that has been treated or painted.
- ❖ If you are at risk for exposure to PCBs in the workplace, be sure to take appropriate safety precautions like wearing protective clothing and follow all prescribed decontamination procedures.

The information given has been adapted from the following sites and documents:

Health Canada: [It's Your Health-PCBs](#)

Environment Canada:

[Polychlorinated Biphenyls \(PCB\)](#)

FOR MORE INFORMATION

Call us Toll-Free at 1-866-960-5223 for more environmental health resources.

You can contact your local public health unit or contact Health Canada at:

Health Canada's Management of Toxic Substances Division
Room 128, Building #8
Tunney's Pasture
Ottawa, ON K1A 0L2
Telephone: (613) 957-3127