



Polychlorinated Biphenyls (PCBs)

2017

Exposure to Polychlorinated biphenyls (PCBs) has the potential to harm your health. The health effects of contact with any hazardous substance depend on how much, for how long and the way in which you are exposed. The effects also depend on personal factors such as family history, overall health, and lifestyle.

What are PCBs?

Polychlorinated biphenyls (PCBs) are mixtures of up to 209 individual chlorinated compounds which are known as congeners. There are no known natural sources of PCBs. PCBs are either oily liquids or solids that are colorless to light yellow and have no known smell or taste.

PCBs were previously used as coolants and lubricants in transformers, capacitors, and other electrical equipment because they do not burn easily and are good insulators. PCBs stopped being produced in the U.S. in 1977 due to evidence that they build up in the environment and can cause harmful health effects.

How do PCBs enter the environment?

PCBs can be released into the air, water, and soil from hazardous waste sites; illegal or improper disposal of industrial wastes and consumer products; leaks from old electrical transformers containing PCBs; and from the burning of some wastes.

PCBs do not easily break down in the environment and may remain there for a long time. In water, small amounts of PCBs may remain dissolved, but most stick to organic particles and sediment at the bottom of water bodies. PCBs are taken up by small organisms and fish in the water and can build up in fish and marine mammals over time, reaching levels that may be many thousands of times higher than in the water.

How might I be exposed to PCBs?

- Breathing, drinking or through skin contact.
- Contact with contaminated soil.
- Drinking from a contaminated well or water source.
- Eating food containing PCBs. Fish (especially those caught in contaminated lakes and rivers), meat and dairy products are the main sources of PCBs in food.
- Using old fluorescent lighting fixtures and electronic equipment made 30 or more years ago. These items may leak small amounts of PCBs into the air when they get hot during operation.
- During repair and maintenance of transformers and other old electrical devices containing PCB oil.

What guidelines have been set to protect human health?

The U.S Environmental Protection Agency (EPA) has set a maximum contaminant level for PCBs in public drinking water systems of 0.5 micrograms per liter (0.5 µg/L). The North Carolina Department of Health and Human Services (N.C. DHHS) has issued fish advisories for certain bodies of water to limit eating fish containing high levels of PCBs.

How can PCBs affect my health?

Exposure to large amounts of PCBs can cause skin conditions, such as acne and rashes, or liver damage. In animal studies, long-term PCB exposure has led to eye and skin damage, behavioral changes, immune system effects and liver damage. Additionally, mothers exposed to relatively high levels of PCBs had children with slightly lower birth weights, behavioral alterations and effects on the immune system. PCBs are not known to cause birth defects.

PCBs are classified as a probable human carcinogen by the EPA. Epidemiological studies and animal studies have shown an association of PCBs with liver cancer. Some studies also suggest that PCB exposure may be associated with biliary tract cancer and non-Hodgkin's lymphoma.

How can I limit my exposure to PCBs?

- Follow N.C. DHHS fish consumption advisories.
- Discourage children from playing with old electrical equipment or dirt near hazardous waste sites.
- If you or your children have been exposed to PCBs at home or in the workplace, clothes should be laundered and wash any skin that may have come in contact with PCBs with soap and water .

When should I see a doctor?

Contact your physician if you or your children have symptoms that you think are caused by PCB exposure. You should inform your physician about the symptoms and when, how and for how long you think you and/or your children were exposed to PCBs.

Additional Information

Contact N.C. Department of Health and Human Services, Division of Public Health, Health Assessment, Consultation and Education program at (919) 707-5900 for additional information. To find a fish consumption advisory in your area, visit: <http://epi.publichealth.nc.gov/oeefish/advisories.html>.

References

Agency for Toxic Substances and Disease Registry (ATSDR). ToxFAQs for Polychlorinated Biphenyls (PCBs). Accessed on December 16th, 2016 from www.atsdr.cdc.gov/toxfaqs/tf.asp?id=140&tid=26



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