



POLYCHLORINATED DIBENZO-P-DIOXINS (PCDDs AND CDDs)

What are polychlorinated dibenzo-p-dioxins?

Polychlorinated dibenzo-p-dioxins (also called PCDDs and CDDs) are a poisonous group of compounds. These compounds are part of a larger group of 75 different dioxins. Volcanoes and forest fires cause some dioxins to form naturally but human activities create most dioxins as impurities or by-products.

Where can PCDDs be found and how are they used?

Dioxins are formed during the burning of organic materials such as garbage, or fossil fuels such as coal, oil, and natural gas. Processes that can create dioxins include the manufacture of pesticides and wood preservatives, and chlorine bleaching in the wood pulp and paper industry. In addition, dioxins are found at low levels in tobacco smoke.

How can people be exposed to PCDDs?

You could be exposed to dioxins through:

- **Breathing** air containing dioxins, such as breathing the smoke near where garbage is burned or near a burn barrel. You may also be exposed if you breathe smoke from burning coal, oil, natural gas, wood, or tobacco smoke.
- **Eating** food containing dioxins. Children can be exposed if they eat dirt containing dioxins, such as at a manufacturing site where dioxins were created.
- **Drinking** water from a well containing dioxins. This can occur if you live near a manufacturing site that produced dioxins.
- **Touching** soil or other materials containing dioxins, such as soil where herbicides were used, especially herbicides containing the active ingredient 2,4-D. The wood preservative pentachlorophenol not used by the general public, has been used on telephone poles, boat docks, and fence posts. People can be exposed by touching treated wood.

How do PCDDs work and how can they affect my health?

Dioxins are a poisonous group of compounds. It is unlikely that most people would be exposed to a level high enough to cause severe health effects. When people were exposed to high levels of the dioxin called 2,3,7,8-tetrachloro dibenzo-p-dioxin (TCDD), they suffered from a severe skin disease called chloracne, characterized by sores on the face and upper body.

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Frequently Asked Questions

Only a few of the 75 dioxin compounds have been studied. TCDD has been studied the most. TCDD was named as a possible or probable cancer-causing substance, depending on which chemicals are linked to it.

How is PCDD poisoning treated?

Medical personnel treat dioxin exposure by reducing toxic effects soon after exposure. Persons exposed to high levels of dioxins should immediately contact their doctor.

What should I do if exposed to PCDDs?

Daily exposure to dioxins is usually at low concentrations. Persons exposed to higher concentrations should immediately contact their doctor.

What factors limit use or exposure to PCDDs?

People are typically exposed to dioxins every day through the air, food, and water. Exposure to higher dioxin levels is rare and typically limited to workers in industries that produce products containing dioxins.

Is there a medical test to show whether I've been exposed to dioxins?

Tests can measure dioxin levels in body fat, blood, and breast milk.

Resources

Agency for Toxic Substances and Disease Registry. Toxicological Profile for Chlorinated Dibenzo-p-dioxins (CDDs), <http://www.atsdr.cdc.gov/toxprofiles/tp104.pdf> -

U.S. E.P.A., *Health Effects Notebook for Hazardous Air Pollutants*,
<http://www.epa.gov/ttn/atw/hlthef/hapindex.html>

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