

# WHAT IS DIOXIN?

Dioxin is the common name for a class of 75 chemicals. Dioxin has no commercial use. It is a toxic waste product formed when waste containing chlorine is burned or when products containing chlorine are manufactured. PVC (polyvinyl chloride) plastic is a major source of the chlorine in medical waste. Commonly-used PVC items in health care include medical equipment such as IV bags, gloves, tubing, oxygen tents, mattress covers, packaging and office supplies such as medical binders.



## Exposure

When medical facilities burn their waste containing chlorinated plastics like PVC, dioxin will be emitted from the smokestacks of the incinerator. Dioxin particles are then carried by the wind until they drop onto land or water. We now know that dioxin can travel thousands of miles. Grazing animals and fish ingest the dioxin, but they cannot break it down, so it then travels up the food chain. Ninety percent of human exposure to dioxin occurs through our diets of meat, dairy products, eggs and fish.

Dioxin builds up in fatty tissue. Because of the high fat content of breast milk, nursing infants are exposed to about 50 times the adult dose and may receive more than 10 percent of their total lifetime exposure during the nursing period, a time when they are most vulnerable to the toxic effects of dioxin.

Every person has some amount of dioxin in their body. This is because dioxin, like DDT, does not readily break down in the environment. It also accumulates in the body. Continual low-level exposure leads to a "build up" in tissues.

## Health Effects

Cancer: Dioxin is a proven human carcinogen according to the prestigious International Agency for Research on Cancer (IARC). Liver, lung, stomach, soft and connective tissue cancers as well as Non-Hodgkins's lymphoma have all been associated with dioxin.

Immune System Effects: Low exposures to dioxin result in increased susceptibility to bacterial, viral and parasitic diseases.

Reproductive and Development Effects: In animals, dioxin exposure causes decreased fertility, decreased litter size and inability to carry pregnancies to term. Maternal exposure results in offspring with lowered testosterone levels, decreased sperm counts, birth defects and learning disabilities. Human studies report lowered testosterone levels in exposed workers and birth defects in children of Vietnam veterans exposed to dioxin in Agent Orange. Nursing human infants exposed to high dioxin concentrations in breast milk had significantly lower levels of the thyroid hormone necessary for development of the brain.

Hormone Disruption: Dioxin behaves like a hormone by attaching to a receptor and altering the genetic activity in cells. Since human hormones can exert effects at levels of parts per trillion, small amounts of dioxin could cause a chain reaction in the body.

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