



Disinfection By-products (DBPs)

Disinfection by-products (DBPs), also called trihalomethanes, are formed when chlorine and bromine interact with natural organic materials in water, such as in chlorinated drinking water and chlorine-treated swimming pools. DBPs can be found in the air during activities such as showering, bathing, dishwashing, and swimming. DBPs do not build up in the environment.

How People Are Exposed to DBPs

People are exposed to DBPs by drinking chlorinated or brominated water and by breathing in air containing DBPs. The skin also absorbs DBPs during bathing and swimming. After exposure, DBPs remain in the body for only a short period of time.

How DBPs Affect People's Health

The human health effects from DBPs at low environmental exposures are unknown. Humans exposed to unusually large amounts of some DBPs could experience liver damage and decreased nervous system activity.

Levels of DBPs in the U.S. Population

In the *Fourth National Report on Human Exposure to Environmental Chemicals (Fourth Report)*, CDC scientists measured four different DBPs in the blood of at least 1,222 participants aged 20–59 years who took part in the National Health and Nutrition Examination Survey (NHANES) during 2003–2004. By measuring DBPs in blood, scientists can estimate the amounts of the DBPs that have entered peoples' bodies.

CDC scientists did not find detectable blood levels of DBPs in all participants. Levels were similar to those seen in small past studies.

Finding a measurable amount of one or more DBPs in blood does not mean that the levels of DBP cause an adverse health effect. Biomonitoring studies of blood DBPs can provide physicians and public health officials with reference values so that they can determine whether people have been exposed to higher levels of DBPs than are found in the general population. Biomonitoring data can also help scientists plan and conduct research on exposure and health effects.

For More Information

- Agency for Toxic Substances and Disease Registry
Toxicological profile for bromoform and chlorodibromomethane
<http://www.atsdr.cdc.gov/toxprofiles/tp130.html>

Toxicological profile for chloroform update

<http://www.atsdr.cdc.gov/toxprofiles/tp6.html>

- Environmental Protection Agency
Disinfection Byproducts: A Reference Resource
http://www.epa.gov/enviro/html/icr/gloss_dbp.html

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