



Benzene

Benzene belongs to a class of chemicals called volatile organic compounds, so called because they evaporate in the air. Benzene is made from coal and petroleum sources and is present in gasoline. As one of the most commonly-made chemicals in the United States, benzene is often used to make many other chemicals. Benzene is also present in cigarette smoke.

How People Are Exposed to Benzene

People are exposed to benzene by breathing it in the air. Benzene gets into the air from forest fires, car emissions, gasoline vapors, and tobacco smoke. People who work with petroleum products, including gasoline, are exposed to benzene by touching or breathing in the chemical.

Benzene also can be absorbed into the body by eating food or drinking water or other beverages contaminated with benzene. These exposures are less common than breathing in the chemical.

How Benzene Affects People's Health

Breathing in unusually high doses of benzene can cause difficulty in thinking, changes in heart function, unconsciousness, or death. In smaller amounts over longer periods of time, benzene can also decrease the formation of blood cells. Benzene is considered to be a cancer-causing chemical.

Levels of Benzene in the U.S. Population

In the *Fourth National Report on Human Exposure to Environmental Chemicals (Fourth Report)*, CDC scientists measured benzene in the blood of 1,345 participants aged twenty years and older who took part in the National Health and Nutrition Examination Survey (NHANES) during 2003–2004. The prior survey period of 2001–2002 is also included in the *Fourth Report*. By measuring benzene in blood, scientists can estimate the amount of benzene that has entered people's bodies.

- CDC researchers found benzene present in the blood of the majority of participants.
- Prior research has shown that people who smoke have more benzene in their blood.

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

For More Information

- Agency for Toxic Substances and Disease Registry
Toxicological profile for benzene update
<http://www.atsdr.cdc.gov/toxprofiles/tp3.html>
- Environmental Protection Agency
Consumer fact sheet on Benzene
http://www.epa.gov/safewater/contaminants/dw_contamfs/benzene.html

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