

Benzene and human health

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What is benzene, where does it come from and what is it used for?

Benzene is a widely used chemical formed from both natural processes and human activities. In its pure form, it is a colourless liquid with a sweet odour that evaporates into the air very quickly.

Benzene is widely used by industry to manufacture many products. Crude oil is the largest natural source of benzene. Petrol in Australia contains about 1 per cent of benzene. Benzene is also found in cigarette smoke, car exhaust and some incense smoke. Emissions from bushfires are another source of benzene.

How can exposure to benzene occur?

Exposure to benzene typically occurs by breathing in air containing benzene vapour. Benzene is readily absorbed into the body from the lungs.

Exposure of the general community to low levels of benzene is very common as it is released into the air from many sources including car exhaust, petrol, bushfire smoke and from industry. These types of exposures are referred to as 'background exposures'.

It is important to understand that exposure to benzene occurs from multiple sources, to varying degrees, and that exposure should be limited where possible.

How can benzene affect health?

The effects of a chemical on human health depend on a number of factors such as how long exposure occurs, how much exposure (concentration of benzene in air, soil or water), and the health and age of the individual.

People who inhale benzene for long periods of time (months or years) at high enough levels may experience harmful effects in the

tissues that form blood cells, especially the bone marrow.

The International Agency for Research on Cancer (IARC) has established that benzene is a human carcinogen (can cause cancer in humans).

Low level exposures for short periods of time are common in the general population and do not result in a measurable health risk.

Does benzene affect children?

Children can be affected by benzene exposure in the same ways as adults. It is not known if children are more susceptible to benzene poisoning than adults.

What happens to benzene after it enters the environment or the human body?

Benzene can pass into the air from water and soil. It reacts with other chemicals in the air and breaks down within a few days. Benzene in the air can attach to rain and be carried back down to the ground. It breaks down more slowly in water and soil, and can pass through the soil into underground water. Benzene does not build up in plants or animals.

Is there a medical test to show whether a person has been exposed to benzene?

Although there are several tests that can show if you have been exposed to benzene, these are only useful for very recent exposures, as benzene disappears within hours to days from the body. For these reasons, blood testing for benzene is generally not recommended where longer term exposure has occurred, as the results will not be useful for determining exposure or risk.

Hunter New England Population Health

For general health information on benzene, please contact Hunter New England Population Health Unit on (02) 4924 6277 (Opt. 2) and ask to speak to a Public Health Physician.

