

APR 04 1997

Facts About Arsenic

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- Arsenic is a naturally occurring metal commonly found in air, food, water and soil.
- All people have some level of arsenic in their bodies, with food such as fish, shellfish and red wine the most common sources of arsenic intake.
- Arsenic occurs in both organic and inorganic forms, which have major differences in toxicity.
- High levels of exposure to organic arsenic, commonly present in seafood, are not known to cause harmful health effects.
- High levels of exposure to inorganic arsenic can cause harmful health effects, including lung and skin cancer, irritation of the digestive tract, skin abnormalities, and damage to the peripheral nervous system.
- You can minimize your exposure to arsenic in the environment.

How are people exposed to arsenic?

Arsenic is found in many places in the environment. Some arsenic exists naturally in air, food, water and soil. Arsenic may naturally be present in soil or ground water, particularly in the western U.S. In the past, some household products such as paints, dyes, and ant and rat poisons were made with inorganic arsenic. The main use of arsenic in this country today is for pesticides and herbicides. Wood preservatives, tobacco, some folk remedies such as the "Asiatic pill", kushtay, yellow root, and health foods with kelp also may contain arsenic. In medicine, arsenic was used in drugs to treat many diseases, and is still used in antiparasitic drugs for humans. Industrial processes such as purifying gases, manufacturing electronics, hardening metal alloys, preserving animal hides, clarifying glass and ceramics and bronze plating are also potential sources of exposure to inorganic arsenic. People working in mining, smelting and pesticide or wood treating industries may be exposed to inorganic arsenic. Red wine can also contain high levels of inorganic arsenic.

Arsenic enters the body primarily through eating food or drinking water. Arsenic can also be inhaled, and small amounts of arsenic may enter the body through the skin. Arsenic does not tend to accumulate in the body. Most arsenic that is absorbed into the body is efficiently passed in the urine.

Is there a medical test to determine if someone has been exposed to arsenic?

Most arsenic is cleared from the blood within a few hours, so measurements of blood arsenic can measure only very recent exposures. Since most absorbed arsenic is quickly eliminated in the urine, tests of urinary arsenic levels are useful as indicators of recent exposure, within the last one or two days. *You may request urinary arsenic tests through the Medical Monitoring Program at no cost to you.*

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What levels of exposure to arsenic have harmful health effects?

It is difficult to determine at what level arsenic causes specific health effects. The type and severity of health problems associated with arsenic may be affected by several conditions:

- ▶ Amount of arsenic exposure;
- ▶ Length of the exposure;
- ▶ Route of exposure, that is whether the exposure happens by eating, drinking, skin contact or breathing;
- ▶ Age, sex, weight and genetic factors;
- ▶ General health, nutrition, and personal habits of the exposed individual, such as medication use or smoking; and
- ▶ Individual reaction to chemical exposure.

Arsenic exposure levels in humans vary widely, with many factors influencing levels of arsenic absorbed by the body. There is not a strong correlation between specific arsenic levels and measured toxic effects, thus a wide range of arsenic levels in the body from 5-50 micrograms per liter of urine ($\mu\text{g/L}$) may be considered "normal". The level of arsenic in urine is also affected by recent diet; seafood in particular can cause higher urinary arsenic levels. Smoking or exposure to second-hand smoke can also raise the level.

Exposure to arsenic at low to moderate levels for long periods of time can cause injury to the liver, kidneys, or blood vessels, skin abnormalities, and may increase the risk of cancer of the bladder, kidneys, lungs and skin.

Exposure to higher levels of arsenic, more typical of occupational exposures, can cause irritation of the digestive tract, decreased production of blood cells, anemia and impaired nerve function ("pins and needles" feeling in hands and feet).

Seek medical advice if you are experiencing any symptoms that you think may be related to arsenic exposure. *A doctor who specializes in environmental medicine will be available for consultation through the Medical Monitoring Program at no cost to you.*

How can I minimize my exposure to arsenic?

You can minimize exposure to arsenic in contaminated soil and airborne dust by:

- ▶ washing your hands and your children's hands and toys frequently,
- ▶ wet mopping and dusting your home regularly, and
- ▶ discouraging your children from playing in bare dirt and bringing dirt in from outside.

You can also help decrease your body's absorption of arsenic by eating regular meals and a balanced diet high in protein, and by avoiding tobacco smoke.

This fact sheet summarizes information about arsenic and is not a comprehensive listing of potential effects. For more information about arsenic you may contact the Colorado Department of Health/Asarco Globe Site Staff:

Nancy Strauss
692-3407

Jane Mitchell
692-2644

If you live or work near the Asarco Globe Plant and are concerned about environmental exposure to arsenic, you may schedule an appointment for testing and more information by calling the

**Medical Monitoring Program Office at 296-6532
between the hours of 10:00 am and 6:00 pm, Monday through Friday.**

Medical Monitoring services are being provided as part of the settlement of the State of Colorado vs. Asarco, Inc., and will be offered free of charge.



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March 1994