



Department of Health

**Bureau of Environmental Health and
Radiation Protection**

"To protect and improve the health of all Ohioans."

**Health Assessment
Section**

Arsenic

Answers to Frequently Asked Questions

What is arsenic?

Arsenic (ar-suh-nick) is a common element found in the Earth's rocks and soils. Arsenic has no smell or taste. Pure arsenic looks similar to dark grey metal, but pure arsenic in nature is rare. Usually, arsenic in nature is combined with other elements. Arsenic combined with carbon and hydrogen is called organic arsenic. Arsenic combined with other elements, like oxygen, is called inorganic arsenic.

Where is arsenic found in the environment?

Arsenic is found all over the Earth in different kinds of rocks and soils.

In Ohio, different parts of the state have different kinds of rocks. This means some parts of Ohio may have more arsenic in the rocks and soil than other parts. In Ohio, there is usually about 6 parts arsenic to every 1 million parts soil, but this can be higher or lower.

How can arsenic enter my body from the environment?

Arsenic can enter your body if you touch or work with soil contaminated with arsenic. People who work in gardens or flower beds may breathe in arsenic dust or accidentally eat some of the soil.

Arsenic can enter your body if you drink water that has arsenic in it. Arsenic can dissolve in groundwater (underground sources of drinking water) which is used as drinking water. Inorganic arsenic is the type of arsenic that is more likely to be in drinking water.

Arsenic can enter your body if you eat food that has arsenic in it. Many kinds of foods, especially seafood, contains organic arsenic. Fruits and vegetables can contain arsenic if they were grown in soil that has arsenic in it.



*Most arsenic in Ohio's soil is natural, not man-made.
(Image source: Dreamstime)*

Can arsenic make me sick?

Yes, you can get sick from arsenic, especially inorganic arsenic.

Whether or not you will get sick from arsenic depends on:

- How much you were exposed to (dose).
- How long you were exposed (duration).
- How often you were exposed (frequency).
- Your general health, age, and lifestyle. Young children, the elderly, and people with chronic (on-going) health problems are more likely to get sick.

What health problems can arsenic cause?

Swallowing small amounts of inorganic arsenic can cause stomach pain, nausea, vomiting, and diarrhea. Swallowing large amounts can cause sudden, serious health problems like irregular heartbeat, or even death.

Breathing high levels of inorganic arsenic can cause throat and lung irritation.

Touching, eating, drinking, or breathing low levels of inorganic arsenic over a long period of time can cause changes in your skin and nerve damage.

Organic arsenic is not likely to cause health problems.

Can arsenic cause cancer?

Yes, inorganic arsenic is a known human carcinogen, meaning there is scientific proof that inorganic arsenic can cause skin, liver, bladder, and lung cancer in people.

How does arsenic affect children?

Children can have all the same health problems from arsenic that adults can have.

Young children can swallow arsenic if they put soil and rocks that contain arsenic in their mouth. They can also swallow arsenic if they drink formula that is mixed with water that contains arsenic.

There is some scientific proof that shows that children who touch, swallow, or breathe arsenic for a long time can have lower IQ scores than other children.

Unborn babies may be harmed by inorganic arsenic if their mother swallows or breathes it while she is pregnant. These unborn babies may have deformities and low birth weight, or they can die and the mother will have a stillbirth or miscarriage.



Arsenic in soil can be more dangerous for children because they are more likely to eat soil. (Image source: iStock)

Can a medical test show if I have been exposed to arsenic?

Yes. A urine test is the most common, but it will only work for a few days after you are exposed to arsenic because arsenic leaves your body quickly. A hair or fingernail test will work for up to 12 months after you are exposed, but will not show low levels.

Keep in mind that these tests can only show you whether you have arsenic in your body. They cannot tell you whether you will get sick or where the arsenic came from.

How can I protect myself and my family from arsenic?

If it is found that your private well water contains arsenic, do not use it to drink or cook with. Do not give water with arsenic to children or use it to mix baby formula. Use a different source of water like bottled water, or hook your home up to a different water system.

If you live in an area with high levels of arsenic in the soil, stay out of the soil as much as possible. Do not let children put soil in their mouth, and make sure they wash their hands after playing in the dirt. Wear gloves when gardening. Regularly sweep the dirt and dust from your home. If your yard has areas of open dirt or soil, consider covering it with grass, mulch, or some other kind of ground cover.

What is the federal government doing to protect my health from arsenic?

Different federal agencies have created recommendations to protect public health from the toxic effects of naphthalene. Their recommendations can be enforced by law.

The U.S. Environmental Protection Agency (EPA) has set limits on the amount of arsenic that industries can release. The U.S. EPA has also banned most pesticides that contain arsenic.

For drinking water, the U.S. EPA only allows 10 parts arsenic for every 1 billion parts water.

Resources

Agency for Toxic Substances and Disease Registry (ATSDR). 2007. Toxicological profile for arsenic. Atlanta, GA: U.S. Department of Health and Human Services, Public Health Service.

Report on Carcinogens, 14th Edition; U.S. Department of Health and Human Services, Public Health Service, National Toxicology Program. 2016.

Where can I get more information?

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