

Arsenic in Groundwater

Arsenic is a metal-like substance found in small amounts in nature. Elevated levels of arsenic can be found naturally in groundwater in some areas of Illinois. Arsenic in groundwater may also be the result of contamination caused by hazardous waste or industries that use arsenic. Drinking water containing high levels of arsenic may cause health problems.

HOW MIGHT I BE EXPOSED TO ARSENIC?

A person can come into contact with arsenic in many different ways. Because it is a natural part of the environment, everyone is exposed to small amounts of arsenic. For most people, the largest source of arsenic is in the food they eat. Most foods, including vegetables, fish, and seafood, contain some arsenic.

Arsenic in groundwater can enter the body by drinking the water or by eating food cooked in the water. Arsenic does not evaporate into the air and because it is not easily absorbed through the skin, bathing, showering, and handwashing will not increase arsenic exposure.

HOW CAN ARSENIC GET INTO MY DRINKING WATER?

There are two main ways arsenic can get into your drinking water. Mineral deposits in some areas of Illinois naturally contain high levels of arsenic. Groundwater flowing through these deposits can dissolve arsenic from the minerals. This can increase the amount of arsenic in your well water.

Another way arsenic can get into your water is by contact with hazardous waste. Waste material containing arsenic is produced by industries that make or use arsenic. Arsenic has been used as a wood preservative, in pesticides, and in special kinds of glass. Improper disposal of this waste can contaminate groundwater.

Arsenic has no smell or taste, so you cannot tell if it is in your drinking water. The only way to find out if your well water has high levels of arsenic is to have it tested.

HOW CAN ARSENIC AFFECT MY HEALTH?

Health effects caused by arsenic depend on a variety of things. These include the type and amount of arsenic that has entered the body, how long you have been exposed to arsenic, and how the body responds to arsenic. Unborn babies, young children, people with existing health conditions, and elderly people are at greatest risk due to arsenic exposure.

How arsenic affects health is not fully known. Studies have shown that drinking water containing elevated levels of arsenic can cause the following health effects:

- Thickening and discoloration of the skin
- Sometimes these changes can lead to skin cancer, which may be curable if discovered early
- Digestive problems such as stomach pain, nausea, vomiting, and diarrhea
- Numbness in the hands and feet

Some of these health effects are seen with other common illnesses, so detecting arsenic poisoning can be difficult. If you or your family members are concerned about health problems you believe to be related to arsenic in your water, you should consult your doctor and have your well water tested.

HOW CAN I GET MY WELL WATER TESTED?

Many commercial laboratories will test for arsenic in your water for a minimal fee. IDPH recommends using a laboratory certified by Illinois EPA for arsenic in drinking water. A list of these can be found here: <http://www.epa.illinois.gov/Assets/iepa/certification-training/labs/accredited-labs-condensed.pdf>. The Illinois State Water Survey Public Service Laboratory also can test your water for arsenic: <https://www.isws.illinois.edu/chemistry-and-technology/public-service-laboratory/water-testing>. Contact your local health department or a regional IDPH office for information and assistance.

IS THERE AN ACCEPTABLE LEVEL OF ARSENIC IN MY WATER?

The U.S. Environmental Protection Agency has established a drinking water standard of 10 parts per billion for arsenic in public water supplies. This level also serves as a guideline for an acceptable level in private wells. IDPH staff can explain your well water test results. There are many locations in Illinois where arsenic occurs naturally in groundwater at levels much greater than the drinking water standard.

HOW CAN I REDUCE MY EXPOSURE TO ARSENIC IN MY WATER?

If elevated levels of arsenic are found in your well, we recommend that you stop using your well water for drinking, cooking, and preparing baby formula. Bottled water can serve as an alternative for these purposes. You can continue to use your well water for bathing and washing clothes without concern. A water treatment system that meets ANSI/NSF Standard 53 can be installed to reduce arsenic levels.

IS THERE A TEST TO DETERMINE IF I HAVE BEEN EXPOSED TO ARSENIC?

If you think you have been exposed to arsenic, you should consult your doctor. Arsenic can be measured in blood, urine, hair, or nails. Of these, a urine test is the simplest way to tell if you are being exposed to arsenic at levels of concern. The test should distinguish organic arsenic (in seafood) from inorganic arsenic (in drinking water).

WHERE CAN I GET MORE INFORMATION?

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Division of Environmental Health
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217-782-5830
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