



Chemicals in Private Drinking Water Wells Fact Sheet

Florida Department of Health, Division of Environmental Health

This fact sheet discusses possible health risk from exposure to low levels of arsenic typically found in private drinking water wells.

Arsenic

What is arsenic?

Arsenic is a naturally occurring metal. It is in rocks and soil, water, and air. Arsenic is also in plants and animals. There are trace amounts of arsenic in all living matter.

Nearly 90% of man-made arsenic in the U.S. is used to preserve wood. It is used as a pesticide. Arsenic is also used to make paints, dyes, metals, drugs, soaps, and semi-conductors.

Arsenic deposited on the ground from industrial or agricultural uses tends to stay in the top few feet of soil for a long time. When dissolved in water, arsenic has no smell, taste, or color. This is true even at high levels.

How might I be exposed to arsenic in my drinking water?

- Water that seeps through the rock dissolves some arsenic and carries it into aquifers, under the ground, where water is stored. These aquifers may be used for drinking water.
- Drinking water may contain arsenic as a result of proper or improper use or disposal of wastes

What is the standard for arsenic in drinking water?

The Florida Department of Environmental Protection (DEP) drinking water standard for arsenic is 10 micrograms per liter (10 ug/L). There is no required sampling of private drinking water wells.

How can arsenic affect my health?

Drinking water standards are set at very low levels. Drinking water every day at or below the standard for your entire lifetime is unlikely to cause illness.

To set drinking water standards, scientists study reports of people exposed to chemicals at work. They also study reports of experiments with animals. From these reports, they determine a “no-effect level” or level that doesn’t cause illness. Then, to be on the safe side, scientists set drinking water standards hundreds or thousands of times less than the “no-effect level.” Therefore, drinking water with levels slightly above the standard for a short time period does not significantly increase the risk of illness. The risk of illness, however, increases as the level of chemical increases and the length of time you drink the water increases.

The type and severity of health effects associated with exposure to a particular chemical depends on a number of factors:

- How much of the chemical was someone exposed to each time?
- How long did the exposure last?
- How often did the exposure occur?

- What was the route of exposure? (Did someone eat, drink or breathe the chemical into their body?)

Health effects are also determined by a number of personal factors. From person to person, how someone is affected by a chemical exposure ranges widely. The drinking water standard is set to protect the most sensitive individuals. Health effects are also determined by a number of personal factors. These include:

- How old are they?
- What gender are they?
- Is the person generally healthy or do they already have other health problems?
- What are their health habits? (For instance, do they drink alcohol or smoke tobacco?)
- How likely are they to be affected by exposure to a chemical, in general?

Health effects from exposure to arsenic in drinking water typically take years to develop. The time required for a condition to develop depends on the amount of arsenic consumed. At low levels, darkening of the skin (hyperpigmentation) may take years to develop.

Too much direct sunlight and cigarette smoking may worsen the effects of arsenic exposure. Apart from arsenic, stopping smoking and reducing excess sun exposure reduces the risk of many diseases.

How likely is arsenic to cause cancer?

The World Health Organization, the US Department of Health and Human Services (DHHS), and the US Environmental Protection Agency have all determined exposure to inorganic arsenic increases the risk of cancer in humans. These cancers include lung cancer, skin cancer, bladder cancer, liver cancer, kidney cancer, and prostate cancer. The drinking water standard is set to protect against the risk of cancer.

Is there a medical test to see if you have been exposed to arsenic?

There are tests to measure the level of arsenic in blood, urine, hair, or fingernails. The urine test is the most reliable test for arsenic exposure within the last few days. Tests on hair and fingernails can measure exposure to high levels of arsenic over the past 6-12 months. These tests can determine if you have been exposed to above-average levels of arsenic. They cannot predict how the arsenic levels in your body will affect your health.

Should I continue to use my drinking water if arsenic is found?

Levels of arsenic less than the drinking water standard are not likely to cause illness. Drinking water with levels slightly above the drinking water standard for a short time period does not significantly increase the risk of illness. Because the risk of illness does, however, increase as the level of chemical increases and the length of time you drink the water increases, you should seek drinking water that meets the drinking water standard.

For additional health information: Please call the Florida Department of Health toll-free help line 877-798-2772 weekdays from 10:00 a.m. to 7:00 pm. Outside of Florida, please call 850-245-4299 between 8:00 a.m. and 5:00 p.m. Or visit us online at: www.myfloridaeh.com

For more information about the health effects from exposure to this chemical in different situations and at higher levels than those usually found in drinking water wells, please see the ATSDR ToxFAQs for arsenic at: <http://www.atsdr.cdc.gov/tfacts2.pdf>