

How are people exposed to arsenic?

Everyone has some daily exposure to arsenic because it is a naturally-occurring chemical element that is normally found in water, soil, indoor house dust, air, and food.

Arsenic in your water supply can get into your body when you drink the water or use it to cook or prepare food and beverages.

Arsenic is not absorbed very well through the skin and does not easily evaporate from water. As a result, bathing or washing dishes in arsenic-contaminated water, is unlikely to cause health problems.

Arsenic gets into well water through natural processes. As ground water flows through rocks and soil that contain arsenic, some of the arsenic dissolves into the water. Drinking water in Washington typically contains less than 3 parts of arsenic per billion parts of water (often abbreviated as 3 ppb). For comparison, 3 ppb is about equal to adding one teaspoon of arsenic to an acre of water that is 4 feet deep. However, levels from 10 ppb to 33,000 ppb have been found in some wells in Washington. These are usually associated with ground water located in rock or soil that has a naturally high content of arsenic.

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For more information, contact the Washington State Department of Health at 1-877-485-7316 or www.doh.wa.gov/etoxcontact.

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Arsenic and Your Private Well



Arsenic is found in well water throughout Washington, sometimes at levels that may cause health problems.

Testing a water sample is the only way to know how much arsenic is present.

The Washington State Department of Health recommends that water used for drinking or food preparation contain no more than 10 parts per billion (ppb) arsenic.



What health problems can be caused by arsenic?

Swallowing relatively large amounts of arsenic (even just one time) can cause mild symptoms, serious illness, or in extreme cases, death. Milder effects may include swelling of the face, nausea, vomiting, stomach pain, or diarrhea. Serious effects may include coma, internal bleeding, or nerve damage causing weakness or loss of sensation in the hands, arms, feet, or legs. Only a few private drinking water wells in Washington have been found to have this much arsenic.

Long-term exposure to smaller amounts of arsenic is more common and can increase the risk of developing cancer of the bladder, lung, skin, liver, kidney, or prostate. Other health effects may include high blood pressure, narrowing of the blood vessels, nerve damage, anemia, diabetes, stomach upset, and skin changes.

Talk with your health care provider if you think you have any health problems that may be caused by exposure to arsenic.

Should I be concerned?

Most health problems from long-term arsenic exposure are common illnesses that affect many people and have several possible causes besides arsenic.

Even with relatively high levels of arsenic in the water, we expect that these health problems usually are not caused by arsenic exposure, but are mostly due to other factors such as diet, genes, lifestyle, other chemicals, and preexisting illness.

Still, arsenic is known to increase the risk of developing these illnesses and likely contributes to some of the cases we see.

It is difficult to predict whether arsenic in drinking water will affect you, or what the effects will be. The risk that you will get sick depends on:

- Your individual sensitivity to arsenic.
- The amount of arsenic in the water.
- How much water you consume.
- How many years you drink the water.

Exposures that can cause serious health problems for some people may have no effect on others. Also, two people with similar exposures may develop totally different health problems. *However, more exposure to arsenic increases the likelihood that health problems will occur. Reducing exposure reduces the risk.*

Should I get my well tested for arsenic?

We encourage you to test your private well to evaluate the safety of your drinking water supply. Arsenic levels are higher than 10 ppb in many wells in Washington. The only way to know how much arsenic is in your water is to test it.

Because the amount of arsenic in well water can vary throughout the year, you should test for it in late summer and in the early spring to see if there are seasonal differences.

Laboratories usually charge \$20 to \$35 for the test. You can find a list of labs online at: <https://fortress.wa.gov/ecy/laboratorysearch> or by calling the Washington State Department of Ecology's Laboratory Accreditation Unit at 360-871-8840. The laboratory can provide instructions for taking a sample and will often supply a container.

What do my test results mean?

To lower people's risk of health problems, the federal Safe Drinking Water Act requires 10 ppb or less arsenic in *public drinking water suppliers* that serve more than fourteen homes. When setting this requirement for arsenic, the U.S. Environmental Protection Agency considered the health risks, as well as the cost and difficulty of removing arsenic down to that amount.

Although a few counties in Washington have rules for arsenic in private water systems, *there is no state-wide standard for arsenic in private wells*. Where there are no county rules, it is up to each private well owner to decide whether he or she wants to take steps to reduce the levels of arsenic in their well water.

We recommend that water used for drinking or food preparation contain no more than 10 ppb arsenic. While reducing arsenic below 10 ppb can lower your chance of developing health effects, it is not low enough to completely eliminate that risk.

If your water contains between 10 ppb and 50 ppb arsenic, your chance of developing health problems increases. We recommend you not drink water containing these levels or use it for food preparation over the long term.

In either case, you will need to balance the health risks, costs, and convenience when deciding whether or not to continue to use your water supply.

If your water contains more than 50 ppb arsenic, we recommend you stop using it immediately for drinking and food preparation.

Since arsenic does not pass through your skin very easily and does not easily evaporate, it is okay to bathe and clean with water unless it contains more than 500 ppb. If the levels in your water are greater than 500 ppb, you should call your local health department or the Department of Health for advice.

How can I reduce my exposure to arsenic from my well?

There are several ways to reduce your exposure to arsenic in your well water. Each alternative has advantages and disadvantages to consider. If you have arsenic in your water above 500 ppb, you should talk to your local health department or the Department of Health before choosing an option.

Use Bottled Water

Drinking and cooking with bottled water can reduce your exposure immediately while you consider your options. However, it can be inconvenient and costly in the long run. You should also contact the bottled water supplier to ask about the levels of any impurities, including arsenic, that their water may contain.

Treat the Well Water

Many water filters on the market can improve the taste and remove odors from drinking water but do not remove arsenic. Some home water treatment systems that use reverse osmosis, distillation, or special filtration material can reduce the amount of arsenic in the water. These systems vary in cost and the amount of water they can supply every day. Point-of-entry equipment, commonly referred to as a whole-house system, treats all the water used in the house. Point-of-use systems treat water at a single tap, such as a kitchen sink faucet.

The quality of your water will affect how well the treatment system works and how much maintenance it will require.

We recommend installing equipment that has been certified by NSF International, a not-for-profit public health and safety company that tests home water treatment systems. Call 1-800-673-6275 or go to their website, <http://www.nsf.org>. After installation and routine maintenance, your water should be tested to ensure that the system is removing arsenic.

Drill a New Well

A new well installed at a different location or depth may or may not provide water with acceptable levels of arsenic. However, it is an option that may be worth pursuing in some situations.

Connect to a Public Water Supply or Community Well

It may be possible to connect to a public water supply or community well if one is nearby. These water systems must be maintained regularly and meet federal and state public health standards. Contact your local water utility to ask about the possibility of connecting to a public supply.