

FACT SHEET: ARSENIC IN DRINKING WATER

What is arsenic?

Arsenic is an element that occurs naturally in soil and bedrock throughout Marion County. It has also been used commercially in products such as wood preservatives and pesticides.

How can arsenic affect my health?

Your health risks are determined by the following factors:

- the amount of arsenic in your water,
- the amount of water you drink each day,
- the number of years you drink the water, and
- your individual sensitivity to arsenic.

Long-term exposure to arsenic in drinking water is known to increase risks of skin, bladder, lung, liver, colon, and kidney cancer. Other health effects may include blood vessel damage, high blood pressure, nerve damage, anemia, stomach upsets, diabetes, and skin changes.

Very high exposure to arsenic can cause noticeable changes to skin and nails. Arsenic exposure can cause a certain pattern of skin changes that resemble warts, called "hyperkeratosis." Fingernails may show ridges and yellowing. Dark or light spots may also appear. Consult your physician if you have any health problems that you think may be caused by arsenic exposure.

Are there special concerns about children's health?

Yes. Prenatal and early childhood exposures to arsenic can increase the risk of lung cancer and respiratory disease in later life. Arsenic exposure has also been associated with lower IQ scores in school-aged children and can affect learning. The current standard is intended to protect the developing fetus and young children from these effects.

What level of arsenic is safe?

The federal drinking water standard for arsenic is set at 10 parts per billion (ppb). For private residential wells, there is no state or federal requirement that you stop using your water, regardless of the arsenic level. However, if your arsenic level is more than 10 ppb, the Marion County Public Health Department recommends that you stop using your water for drinking or food preparation. Continuing to use your water is a personal decision that you must make yourself, based on the health risks and other factors such as cost and convenience. The following table provides a general guide for the average person.

Arsenic level below 10 parts per billion (ppb)	This water is safe to drink and use for food preparation.
Arsenic level 10 parts per billion (ppb) or greater	Do not drink your water or use it to prepare foods that require a lot of water if the arsenic level is above 10 ppb. Washing foods and dishes in the water is safe, and is not a significant source of exposure.

What about bathing/showering or other uses?

If your arsenic level is less than 300 ppb, uses other than drinking, such as showering, bathing, and flushing toilets, are safe. Arsenic is not easily absorbed through intact skin. Arsenic does not evaporate into the air.

How can I reduce my exposure to arsenic?

Several ways are available to reduce your exposure to arsenic in your well water. Each option has advantages and disadvantages that you should consider carefully.

- **Treat the well water**

Two major ways can remove arsenic from well water: 1) Point-of-use devices attached to your tap remove most of the arsenic from that tap. 2) Point-of-entry devices remove arsenic from your water before it enters the house so that all your taps provide clean water.

These systems can use **reverse osmosis**, **distillation**, or special **iron and aluminum units** to remove the arsenic. Other systems, such as water softeners and pitcher filters, *will not* remove arsenic. The effectiveness of a treatment system depends on how well it is maintained and the level of arsenic in your water. Choosing a system that has been tested and certified is important. Information on certified water treatment systems can be found at the websites for the National Sanitation Foundation (www.nsf.org) and the Water Quality Association (www.wqa.org).

- **Drink bottled water**

Use of bottled water may help reduce arsenic exposure. However, bottled water is not subject to U.S. EPA standards for public drinking water and not all bottled water is the same. Bottlers who belong to the International Bottled Water Association (www.bottledwater.org) are required to ensure that arsenic concentrations are 10 ppb or under.

- **Connect to a Public Water Supply or Community Well**

Hooking up to a public water supply or community-owned well may be possible. These wells must be maintained and tested for compliance to federal and state standards that are protective of health. This option may be expensive or may not be available if you do not live near such a supply. Citizens Energy Group, the local water utility, will be able to tell you whether a connection to public water is available to you: www.citizensenergygroup.com.

- **Put in a new well**

Drilling a new well with appropriate precautions regarding location, depth, and construction may provide water that has little or no detectable arsenic. However, a new well is not guaranteed to be arsenic free. Arsenic levels in your new well may start low but could increase over time.

You can find more information on arsenic at the following websites:

U.S. Environmental Protection Agency

water.epa.gov/drink/contaminants/basicinformation/arsenic.cfm

Agency for Toxic Substances & Disease Registry

www.atsdr.cdc.gov/substances/toxsubstance.asp?toxid=3

U.S. Health & Human Services

sis.nlm.nih.gov/enviro.html

U.S. Geological Survey

water.usgs.gov/nawqa/trace/arsenic