



Chemicals in Private Drinking Water Wells Fact Sheet Florida Department of Health, Bureau of Environmental Health

This fact sheet discusses possible health risks from exposure to low levels of xylenes typically found in drinking water wells.

Xylenes

What are xylenes?

Xylenes are a group of three closely related chemicals. Xylenes are a colorless, sweet-smelling, flammable liquid. Xylenes occur naturally in petroleum and coal tar. They form during forest fires.

Chemical industries produce xylenes from petroleum. They are one of the top 30 chemicals produced in terms of volume. Xylenes serve as cleaning agents, thinner for paint and in paints and varnishes.

How might exposure to xylenes in drinking water occur?

- Drinking water from a well contaminated with xylenes
- Living near uncontrolled hazardous waste sites containing xylene products
- Breathing vapors released in a home's indoor air from water with xylenes in it

What is the standard for xylenes in drinking water?

The Florida Department of Environmental Protection drinking water standard for xylenes is 10,000 micrograms per liter of water (10,000 ug/L). There is no required sampling of private drinking water wells for xylenes.

How can xylenes affect my health?

To protect health, drinking water standards are set at very low levels. Drinking water every day at or below the drinking water standards 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 does not cause illness. Then, to be on the safe side, scientists typically set drinking water standards hundreds or thousands of times less than the "no-effect level." Therefore, drinking water with levels slightly above the standards for a short time does not significantly increase the risk of illness. The risk of illness, however, increases as the level of xylenes 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?)

How chemical exposures may affect someone can range widely from one person to the next. The drinking water standard is set to protect the most sensitive individuals exposed to a chemical. A number of personal factors also determine health effects. 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 chemical exposures to effect someone, in general?

Drinking water with levels of xylenes well above the drinking water standard for extended periods increases the risk of damage to the nervous system, liver and kidneys.

How likely are xylenes to cause cancer?

The ability of xylenes to cause cancer in humans is unknown. The International Agency for Research on Cancer has determined that xylenes are not classifiable as to its ability to cause cancer in humans.

Is there a medical test for xylene exposures?

Laboratory tests can detect xylenes or its breakdown products in exhaled air, blood, or urine. There is a high degree of agreement between the levels of exposure to xylenes and the levels of xylenes breakdown products in the urine. However, a urine sample must be provided very soon after exposure ends because xylenes quickly leave the body. These tests are not routinely available at your doctor's office.

Is it safe to keep drinking water with xylenes in it?

Levels of xylenes less than the drinking water standard of 10,000 ug/L are not likely to cause illness. Drinking water with levels slightly above the standard for a short time does not significantly increase the risk of illness. However, because health risks increase as the levels of a chemical (or how long a person drinks it) increases, it is best to drink water that meets standards.

For additional health information, please call the Florida Department of Health at 850-245-4240 or visit us online at www.floridahealth.gov/environmental-health/drinking-water/Chemicals-HALs.html

For more information about the health effects from exposure to xylenes in different situations and at higher levels than those usually found in drinking water wells, please see the ATSDR ToxFAQs for xylenes at www.atsdr.cdc.gov/toxfaqs/tfacts71.pdf