



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

*This fact sheet discusses possible health risks from exposure to low levels of PFOS and PFOA typically found in drinking water.*

## **Perfluorooctane Sulfonate (PFOS) Perfluorooctanoic Acid (PFOA)**

### **What are PFOS and PFOA?**

Perfluorooctane Sulfonate (PFOS) and Perfluorooctanoic Acid (PFOA) are part of a group of chemicals called perfluoroalkyl substances (PFASs). These are a family of man-made compounds that do not occur naturally. They break down very slowly. PFOS and PFOA are the most common and the best-studied of these compounds. Most exposures occur through consumer products and food. They may also get into drinking water wells.

In the past, these chemicals served to make products resist stains, grease, and water. They were used in many common products, such as:

- Carpet
- Clothing and other fabrics
- Non-stick cookware and other consumer goods
- Some firefighting foams

Most production of PFOS and PFOA has stopped, but there are still some uses.

### **How might exposure to PFOS and PFOA occur?**

- Drinking contaminated well water
- Nursing infants exposed to contaminated breast milk
- Contact with water or soil near where manufacturers or firefighters used them

### **What is the standard for PFOS and PFOA in drinking water?**

The U.S. Environmental Protection Agency (EPA) has set a health advisory level (HAL) of 0.07 micrograms per liter (0.07 µg/L) for both PFOS and PFOA. If both chemicals are present in the water, this level applies to their combined concentrations. This level is set to be protective for both cancer and non-cancer effects over a lifetime. There is no required sampling of private drinking water wells.

### **How can PFOS and PFOA 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 does not 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 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 (eating, drinking, or breathing)?

How chemical exposures may affect someone can range widely from one person to the next. 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 affect someone, in general?

Drinking water with levels of PFOS and PFOA well above the drinking water standard for an extended period may increase the risk of low birth weight, developmental problems, liver damage, kidney damage, immune system disorders, high cholesterol, or thyroid disease.

#### **How likely are PFOS and PFOA to cause cancer?**

The U.S. EPA has determined that there is some evidence that PFOA can cause cancer in humans. Animal and human studies indicate that PFOA may cause liver, pancreatic, testicular, or kidney cancer. The International Agency for Research on Cancer has determined that PFOA is possibly carcinogenic to humans. There is very limited information on the ability of PFOS to cause cancer.

#### **Is there a medical test for PFOS or PFOA exposures?**

The Florida Department of Health does not recommend blood testing. It is currently not known how PFOS and PFOA levels in blood relate to your health. However, you should make any decisions on treatment or testing with your doctor.

#### **Is it safe to keep drinking water with PFOS or PFOA in it?**

Levels of PFOS and PFOA less than the drinking water advisory level of 0.07 µg/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 does not exceed the advisory level.

**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](http://www.floridahealth.gov/environmental-health/drinking-water/Chemicals-HALs.html)

**For more information about the health effects from exposure to PFOS or PFOA in different situations and at higher levels than those usually found in drinking water wells**, please see the EPA Drinking Water Health Advisory page at [www.epa.gov/ground-water-and-drinking-water/drinking-water-health-advisories-pfoa-and-pfos](http://www.epa.gov/ground-water-and-drinking-water/drinking-water-health-advisories-pfoa-and-pfos)