



Drinking Water Quality: What You Need to Know

Most of us don't think about the water we drink. We turn on a tap, fill a glass, and drink. But how much water do you really need to drink every day? Is the water you're drinking safe or would bottled water be safer? What can you do if your tap water suddenly became contaminated? Read on to find out how much you know about the drinking water in your own home.

How Much Water Do You Need?

Your body weight is more than 50% water. Without water, you couldn't maintain a normal body temperature, lubricate your joints, or get rid of waste through urination, sweat, and bowel movements.

Not getting enough water can lead to dehydration, which can cause muscle weakness and cramping, a lack of coordination, and an increased risk of heat exhaustion and heat stroke. In fact, water is so important that a person couldn't last more than five days without it.

So how much water do you need? Enough to replace what you lose daily through urination, sweating, even exhaling. And your need for water increases:

- In warm or hot weather
- With vigorous physical activity, such as exercise or working in the yard
- During bouts of illness, especially if you have a fever, are vomiting, having diarrhea or coughing

You often hear that you need to drink eight 8-ounce glasses of water each day. The Institute of Medicine's Food and Nutrition Board recommended that women actually need 91 ounces of water daily, and men need 125 ounces.

It is a good idea to track how much water you drink for a few days just to get a feel for the amount needed. You can get enough water each day by drinking water and consuming fluids like soup and drinks, along with lots of fruits and vegetables, which contain water. Keep in mind that if you're going to do something strenuous, like playing sports or running, you'll need extra water before, during, and after.

Water Quality: Is Tap Water Safe?

You need to stay hydrated -- that's clear -- but is the tap water in your home safe? It is considered generally safe if it comes from a public water system in the United States, such as one run and maintained by a municipality. The Environmental Protection Agency (EPA)

has the authority to monitor all public water systems and sets enforceable health standards regarding the contaminants in drinking water.

When drinking water leaves a treatment plant on its way to your house, it must meet strict safety standards. That doesn't mean that your water is free of all contaminants, but that the levels of any contaminants don't pose any serious health risk.

Of course, accidents can happen. If the water supply becomes contaminated by something that can cause immediate illness, the supplier must promptly inform you. Suppliers also need to offer alternative suggestions for safe drinking water. In addition, they have 24 hours to inform customers of any violation of standards that could have major impact on health following a short-term exposure.

Water Quality: What Contaminants Are in Water?

Water can be contaminated in several ways. It can contain microorganisms like bacteria and parasites that get in the water from human or animal fecal matter. It can contain chemicals from industrial waste or from spraying crops. Nitrates used in fertilizers can enter the water with runoff from the land. Various minerals such as lead or mercury can enter the water supply, sometimes from natural deposits underground, or more often from improper disposal.

The EPA has set minimum testing schedules for specific pollutants to make sure that levels remain safe. Still, some people may be more vulnerable than others to potential harm caused by water contaminants, including:

- People undergoing chemotherapy
- People with HIV/AIDS
- Transplant patients
- Children and infants
- Pregnant women and their fetuses

By July 1 of each year, public water suppliers are required to mail their customers a drinking water quality report, sometimes called a consumer confidence report or CCR. The report tells where your water comes from and what's in it. If you don't get one, or have misplaced it, you can ask for a copy from your local water supplier. Many reports can be found online. If you have any questions after reading your report, you can call your water supplier to get more information.

You can also call the EPA's Safe Drinking Water Hotline at (800) 426-4791 to get information and ask questions about the quality and safety of drinking water.

Well Water: Safety and Quality

For almost one out of every seven Americans, a private well is the primary source of drinking water. Private wells are not regulated by the EPA. Well water safety can be affected by many factors, including:

- How the well was built
- Where it's located
- How it's maintained
- The quality of the aquifer supplying the well
- Human activities in your area

The EPA recommends that you talk with local experts, have your well water tested regularly, and not let problems go untended.

Bottled Water: Safety and Quality

According to the Beverage Marketing Corporation, Americans drank 9.7 billion gallons of bottled water in 2012, a 6.2% increase over the previous year.

One argument advanced for the use of bottled water is its safety, yet there isn't the same guarantee of safety with bottled water as there is for the water in your tap.

The FDA regulates bottled water as a food. That means it requires identification of the source (spring, mineral), regulates allowable levels of chemical, physical, microbial and radiological contaminants, requires Good Manufacturing Practice standards for boiling and bottling, and regulates labeling.

However, the FDA doesn't have the ability to oversee a mandatory testing program like the EPA does with public water suppliers. So, although it can order a bottled water recall once a problem has been found, there is no guarantee that the bottle of water you bought is safe.

Water Quality: Contaminants in the Pipes

Occasionally, your tap water can become contaminated as a result of breaks in the water line, although one of the biggest problems is lead getting into the water from pipes. Even "lead-free" pipes can contain as much as 8% lead.

The best way to avoid consuming lead from tap water is to only use water from the cold tap for drinking, cooking, and making baby formula and to let the water run for a minute before using it.

Health Effects of Drinking Contaminated Water

How contaminated water effects your health depends on the type of contaminants. For example:

- *Cryptosporidium* is a pathogen that sometimes gets into water supplies. It can cause a gastrointestinal disease that could be fatal.
- *Nitrates* can contaminate water and pose an immediate threat to infants. In the intestines, nitrates are converted to nitrites, which prevent blood from transporting oxygen. An enzyme present in the system of older children restores the blood's ability to carry oxygen.

- *Lead* can cause both physical and mental developmental problems in infants and children. Adults who have been drinking lead-tainted water for a number of years can experience kidney problems and high blood pressure.

Does boiling contaminated water make it safe to drink? It depends on the contaminant. Boiling water can kill germs, but things like lead, nitrates, and pesticides aren't affected. And since boiling reduces the volume of water, it increases the concentration of those contaminants.

Water Quality and Water Filters

In an effort to make their drinking water safer, some people use water filters at home. There are four main kinds:

- *Activated carbon filters* can remove certain organic contaminants that affect taste and odor. Some systems are also designed to remove chlorination byproducts, solvents, and pesticides, or certain metals such as copper or lead.
- *Ion exchange units* with activated alumina can remove minerals such as calcium and magnesium, which make water hard. This is often used in combination with another filtration method, such as carbon absorption or reverse osmosis.
- *Reverse osmosis units* with carbon can remove nitrates and sodium as well as pesticides and petrochemicals.
- *Distillation units* boil water and condense the steam, creating distilled water.

No one system will remove all water contaminants. If you do decide you want to install a system, you should have your water tested by a certified laboratory first to find out what's in your water.

No matter which water filtering system you choose, you need to maintain it; otherwise, contaminants build up in the filter and make the water quality worse than it would be without the filter.

It's important to know that a home water filter won't protect you from water that has been declared unsafe. If that happens in your area, follow the advice of your local water authorities until the water is declared safe to drink once more.