# Water Facts of Life

"Ride the Water Cycle" with these fun facts.

- There is the same amount of water on Earth as there was when the Earth was formed. The water from your faucet could contain molecules that dinosaurs drank.

- Water is composed of two elements, Hydrogen and Oxygen. 2 Hydrogen + 1 Oxygen = $H_2O$.

- Nearly 97% of the world's water is salty or otherwise undrinkable. Another 2% is locked in ice caps and glaciers. That leaves just 1% for all of humanity's needs — all its agricultural, residential, manufacturing, community, and personal needs.

- Water regulates the Earth's temperature. It also regulates the temperature of the human body, carries nutrients and oxygen to cells, cushions joints, protects organs and tissues, and removes wastes.

- 75% of the human brain is water and 75% of a living tree is water.

- A person can live about a month without food, but only about a week without water.

- Water is part of a deeply interconnected system. What we pour on the ground ends up in our water, and what we spew into the sky ends up in our water.

- The average total home water use for each person in the U.S. is about 50 gallons a day.

- The average cost for water supplied to a home in the U.S. is about $2.00 for 1,000 gallons, which equals about 5 gallons for a penny.

- Water expands by 9% when it freezes. Frozen water (ice) is lighter than water, which is why ice floats in water.

# Be Hydro-Logical

**FACT:** More water is used in the bathroom than any other place in the home.
**ACTION:** Turn off the water when you brush your teeth and shave. Install low-flow toilets, shower heads and faucet aerators and you'll save thousands of gallons/liters of water a year. It's a savings that should reduce your water bill.

**FACT:** Today there are many more people using the same amount of water we had 100 years ago.
**ACTION:** Don't waste water. Use it wisely and cut back wherever you can.

**FACT:** A dripping faucet can waste up to 2,000 gallons/7,600 liters of water a year. A leaky toilet can waste as much as 200 gallons/260 liters of water a day.
**ACTION:** Check your plumbing and repair any leaks as soon as possible.

**FACT:** Lead in household plumbing can get into your water.
**ACTION:** Find out if your pipes are lead or if lead solder was used to connect the pipes. If you have lead in your plumbing system, when you turn on the tap for drinking or cooking, let the water run until it's cold. Never use water from the hot tap for cooking or drinking.

**FACT:** What's dumped on the ground, poured down the drain, or tossed in the trash can pollute the sources of our drinking water.
**ACTION:** Take used motor oil and other automotive fluids to an automotive service center that recycles them. Patronize automotive centers and stores that accept batteries for recycling. Take leftover paint, solvents, and toxic household products to special collection centers.

**FACT:** On average, 50% - 70% of household water is used outdoors for watering lawns and gardens.
**ACTION:** Make the most of the water you use outdoors by never watering at the hottest times of the day or when it's windy. Turn off your sprinklers when it's raining. Plant low-water use grasses and shrubs to reduce your lawn watering by 20% - 50%.

**FACT:** Lawn and garden pesticides and fertilizers can pollute the water.
**ACTION:** Reduce your use of pesticides and fertilizers and look for safer alternatives to control weeds and bugs. For example, geraniums repel Japanese beetles; garlic and mint repel aphids; and marigolds repel white flies.

**FACT:** Although most people get their water from regulated community water supplies, others rely on their own private wells and are responsible for their own water quality.
**ACTION:** If you own a well, contact your local health department or Cooperative Extension Service representative to find out how to test the quality of your well water.

**FACT:** Your city government and state officials regularly make decisions that affect the quality of your drinking water resources.
**ACTION:** As the population grows and housing and industrial interest expand, attend local planning and zoning meetings and ask what's being done to protect water resources from contamination. Let elected officials know that you expect them to use their hydro-logic to protect the water.

**FACT:** Public water utilities regularly test the quality of the drinking water they provide to customers.
**ACTION**: Call your water utility and ask for a copy of their latest water quality report.

# Water Myths & Realities

**Myth:** We have less water today than we did 100 years ago.
**Reality:** There is the same amount of water on Earth today as there was when the Earth was formed three billion years ago. The difference is that today many more demands are placed on water. Because our demands on water continue to grow but our supplies don't, everyone should lend a hand to conserve, protect, and get involved with decisions that affect our water resources.

**Myth:** We don't have to think about drinking water.
**Reality:** We can no longer take our drinking water for granted. Public participation is vital to protecting our water resources, building adequate treatment plants, improving water delivery, analyzing costs versus risks, and enacting appropriate legislation.

**Myth:** Once you use water, it's gone.
**Reality:** After water is used, it's recycled ... innumerable times. Some water is recycled for use within a week, other water may not be used again for years. Water is resilient and responds well to treatment. However, using water and abusing water by contaminating lakes, streams, and wells with toxic chemicals are two different things. To keep our drinking water safe, we need not only appropriate treatment, but also appropriate source protection.

**Myth:** If lead is in your water, it's the treatment plant's fault.
**Reality:** The most common source of lead in drinking water is plumbing in your home. Your plumbing may have lead pipes or lead solder in the connections. Lead is a contaminant that is particularly harmful to pregnant women and young children. If you are concerned about lead in your water, contact your local health authorities or water utility to find out how you can have your water tested by a certified laboratory. If tests reveal that the lead content of your water is above 15 parts per billion, you should reduce your exposure to it.
Hints: 1. Since warm water absorbs more lead than cold, always use cold water when you cook.
2. Because water standing in pipes tends to absorb lead, clear the pipes before drinking by letting your tap run until the water is cold.

**Myth:** There are more pollutants in drinking water today than there were 25 years ago.
**Reality:** Not necessarily. Twenty-five years ago, we did not have the technology to know what was in our drinking water. Today, we have sophisticated testing instruments that enable us to know more about our water than ever before. The drinking water community is continually improving treatment processes as it learns more each year.

**Myth:** Using a home water treatment device will make tap water safer or healthier to drink.
**Reality:** Some people use home water filters to improve the taste, smell, or appearance of their tap water, but it does not necessarily make the water safer or healthier to drink. Additionally, all home treatment devices require regular maintenance. If the maintenance is not performed properly, water quality problems may result.

**Myth:** Bottled water is safer than tap water.
**Reality:** Not necessarily. Unlike tap water, the quality of finished bottled water is not government-monitored. Studies have shown that microbes may grow in the bottles while on grocers' shelves. You don't need to buy bottled water for safety reasons if your tap water meets all federal, state, or provincial drinking water standards. If you want water with a different taste, you can buy bottled water, but it costs up to 1,000 times more than tap water. Of course, in emergencies, bottled water can be a vital source of drinking water for people without water.

**Myth:** "New" water is better than treated water.
**Reality:** There is very little water on Earth that is new. Most of our water has been touched by some type of human or animal activity. Even in remote wilderness areas, studies have found bacteria contaminating water. Therefore, it's always best to drink water that you know has been treated. Before drinking water from a stream, boil it for one minute at sea level or three minutes at higher elevations. This will completely kill all bacteria, viruses, and germs.

# Water Q & A

**Q.** Can I tell if my drinking water is okay by just looking at it, tasting it, or smelling it?
**A.** No. None of the chemicals or microbes that could make you sick can be seen, tasted, or smelled.

**Q.** When I'm working in the yard, I'm tempted to take a drink from my garden hose. Is this safe?
**A.** No. The water is safe, but a standard vinyl garden hose has substances in it to keep it flexible. These chemicals, which may get into the water as it goes through the hose, are not good for you. In addition, the outside thread openings at the end could be covered with germs.

**Q.** If I travel overseas, in which countries is the water safe to drink?
**A.** Besides the United States and Canada, the water is generally safe to drink in western Europe, Australia, New Zealand, and Japan. In other countries, you should insist on carbonated bottled water for drinking and brushing your teeth.

**Q.** Is the fluoride and chlorine in my drinking water safe?
**A.** Yes. When added or naturally present in the correct amounts, fluoride in drinking water has greatly improved the dental health of American and Canadian consumers. Many tests have shown that the amount of chlorine found in treated water is safe to drink, although some people object to the taste. NOTE: even in the correct amounts, fluoride or the disinfectant chloramine in drinking water makes the water unsuitable for use in kidney dialysis machines or aquariums.

**Q.** Water often looks cloudy when first taken from a faucet and then it clears up. Why is that?
**A.** The cloudy water is caused by tiny air bubbles in the water similar to the gas bubbles in beer and carbonated soft drinks. After a while, the bubbles rise to the top and are gone.

**Q.** What is "hard" water?
**A.** The answer may surprise you. Hardness in drinking water is caused by two nontoxic chemicals-usually called minerals — calcium and magnesium. If either of these minerals is present in your water in substantial amounts, the water is said to be "hard," because making a lather or suds for washing is "hard" (difficult) to do. Thus cleaning with hard water is difficult. Water containing little calcium or magnesium is called "soft" water. (Maybe it should be called easy, the opposite of difficult.) Water that does not contain enough calcium or magnesium may be "too soft."

**Q.** What is the cost of the water I use in my home?
**A.** Prices vary greatly around the United States and Canada, but the typical cost is about $2 for 1,000 gallons/3785 litres. At that price you get approximately 5 gallons/20 litres of tap water for a penny.

**Q.** Many areas near the ocean do not have large supplies of fresh water. Why can't ocean water be treated to make drinking water
**A.** Ocean water can be treated, but the process is expensive. The cost of converting salt water to drinking water has been estimated at $5 to $7 for each 1,000 gallons/3785 litres instead of the $.30 to $.50 for treating 1,000 gallons/3785 litres of fresh water.

**Q.** Why is ocean water salty?
**A.** Rainwater doesn't contain any salt, but when it falls on the ground, salt from the soil dissolves in the water as it flows back down to the ocean. When this water evaporates from the ocean, the salt stays behind. This has been going on for more than a billion years. That is why the ocean is now very salty.

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