

The Children's Healthline



communicating today's environmental problems to protect our children's future



Issue: Your child asks for a drink of water...

Do you turn on the faucet and give them a sip of municipal drinking water or do you turn to the bottled water instead? Children are especially at risk for contaminants in the water supply as their bodies are still developing and are more susceptible to environmental threats. Children also drink proportionately more water than adults, which places a still greater risk on them. As concerns mount and more and more people are turning to bottled water as their main source of drinking water, we decided to look further into this issue. Here are some things to consider:

Tap Water

- Regulated by the Environmental Protection Agency and State and Local Agencies
- Plumbing may affect the taste and quality
- Less expensive than bottled water
- More convenient
- Many municipal water plants fluoridate the water supply
- Drinking water comes from ground water sources, such as aquifers, or from surface water sources, such as rivers, lakes, and reservoirs

Bottled Water

- Regulated by Food & Drug Administration, as well as most states
- Can taste better, due to different methods of disinfecting
- Quality can be more consistent, tap water can differ due to plumbing systems
- Relatively expensive and can be inconvenient
- Usually lacks fluoridation
- Sometimes comes from the same source as tap water

Concerns With Drinking Tap Water:

Lead

The Problem:

Many older homes built before 1930 have lead pipes and lead soldering, which was used up until the mid to late 80's, which can affect the level of lead in the water. Exposure to high levels of lead in infants and children can result in lead poisoning, characterized by IQ deficiencies, reading and learning disabilities, reduced attention spans, impaired hearing, hyperactivity, and antisocial behavior among other problems.

What you can do:

If you live in an older home, it might be a good idea to have your water tested for lead. If high levels are detected, options include replacement of plumbing, adding water filters, or switching to bottled water. After prolonged periods of non-use, allowing the tap to run cold for at least thirty seconds before using can also help to lower lead exposure. Also, because lead dissolves more readily in hot water, always use cold water for drinking and cooking. Boiling water before use will only concentrate lead in the water, it will not get rid of it.

Cryptosporidium and Giardia

The Problem:

Cryptosporidium and *Giardia* are intestinal parasites found in animal waste. Both cause flu-like illnesses that can include watery diarrhea, stomach cramps, upset stomach and fever. Those at risk for infection are the immunocompromised, elderly and infants.

What you can do:

As this problem is normally a result of drinking from untreated water sources, educate your children to never drink from roadside springs, rivers, streams or lakes. Rarely, municipal systems become contaminated and alerts along with instructions will be given. If you suspect that your water is contaminated, boiling your water for one full minute will destroy both *Cryptosporidium* and *Giardia*.

Nitrate

The Problem:

Nitrate, a compound commonly used in fertilizers, can seep into the water supply. When nitrate gets into the body's circulatory system, it can interfere with the oxygen-carrying capacity of the blood. Enough contamination can cause serious illness in adults as well as children. It can lead to Blue baby syndrome in small children, especially those under six months.

What you can do:

Again, check with your water supplier to be sure that the levels of nitrates are not at a dangerous level. If you have a private well, make sure to get your water tested by a certified lab. Do not boil the water to try to remove nitrates, they will only become concentrated if this is done. If you are concerned, another option is to drink bottled water or install an appropriate filtration system.

Taste

The Problem:

Many water treatment facilities use chlorine to disinfect the water supply which can leave an unpleasant taste. The taste may also be a result of local conditions, such as the minerals in the water supply or conditions in the river or lake.

What you can do:

If you or your children find the taste unpleasant, one option is to keep a clean container of tap water in the refrigerator. Some of the chlorine taste will dissipate and cold water always tastes better. Other options are bottled water or a water filter. Bottled water is usually disinfected with other methods, such as reverse osmosis or ozonation, which does not leave a taste. Most water filters will also remove the chlorine as well as other substances from the tap water. Check with the manufacturer to make sure it will remove the things you are concerned about.

Things to Consider When Drinking Bottled Water:***The Source*****The Problem:**

The water may be coming from the same place as your tap water. Look at the label which will give the source of the water. If it says *artesian*, *mineral*, or *spring*, the water is coming from an underground source. Some bottlers may also add caffeine or other additives to the water. Look at the label carefully to make sure you are not drinking something you don't want.

Fluoride**The Problem:**

Most areas have fluoridated municipal tap water and only about twenty brands of bottled water available are fluoridated. Fluoride, a naturally occurring element, has been supported by the American Dental Association in that it helps prevent cavities and aids in the development of strong, healthy teeth. Recently, there has also been opposition to fluoridation (See Box below). One thing to keep in mind, children who receive too much fluoride, especially while their teeth are developing, may develop dental fluorosis, a permanent mottling or staining of the teeth.

What to do:

If your main source of drinking water is bottled water, talk to your pediatrician or dentist about the possible use of fluoride supplements for your children. Also, consult your dentist or pediatrician about the proper use of fluoridated toothpaste, especially with very young children. Make sure they are not receiving too much fluoride and also watch to be sure that they are not swallowing the toothpaste.

BREAKING NEWS

A recent article in the Philadelphia Daily News stated, "A growing body of scientific research suggests that long-term fluoride consumption may cause numerous health problems, ranging from cancer and impaired brain function to brittle bones and fluorosis (the white splotches on teeth that indicate weak enamel) (Hertsgaard and Frazer). The opposition to fluoridation comes from some environmental groups and at least one labor union. "Local 2050 of the National Federation of Federal Employees, which represents all the scientists, engineers and other professionals at EPA headquarters in Washington, has voted unanimously to co-sponsor a citizens' petition to prevent fluoridation of California's waters" (Hertsgaard and Frazer).

In conclusion, EPA Scientist Patti Kay Wisniewski in the EPA Region III Drinking Water Branch of the Water Protection Division, says, "For the most part, public drinking water is safe, bottled water isn't necessarily better quality." If you do have concerns about the safety of your water, talk to your water supplier and they will be able to tell you what is in your water, how it has been processed, and if there have been any violations.

For more information on drinking water, call the Safe Drinking Water Hotline: 1-800-426-4791.

You can also take a look at EPA's websites:

www.epa.gov/ogwdw/dwhealth.html

www.epa.gov/ogwdw/wot/ontap.html

For more information on Children's Environmental Health, contact Gail Tindal 215-814-2069 or Dan Welker 215-814-2744.

Works Cited:

Hertsgaard, Mark and Phillip Frazer. *Fluoride fears: There's growing evidence that the cavity-fighting additive can be bad for you.* Philadelphia Daily News. 3/3/99.