

Is your well water, well?



NITRATE

Q: WHAT IS NITRATE?

A: Bacteria in nature can change nitrogen to nitrate. Nitrate is also found in fertilizers, human and animal waste and other chemicals like pesticides.

Q: WHY IS NITRATE IN DRINKING WATER A CONCERN?

A: Newborn infants become ill if they drink water or formula made with water that has a high level of nitrate. This illness is known as 'blue baby syndrome' because the baby's skin looks a bluish color. A baby with this condition needs immediate medical attention. However, very little danger of this illness exists for children who are six months of age or older.

Q: HOW MUCH NITRATE OR NITRITE IS TOO MUCH?

A: Nitrate is converted to nitrite in an infant's stomach by bacteria. Florida has set up a maximum level for nitrate of 10 milligrams per liter and for nitrite 1.0 milligram per liter for drinking water. These levels are set to guard against blue baby syndrome. These levels are required for all public water systems, and are recommended for private wells.

Q: HOW DO NITRATES GET INTO DRINKING WATER?

A: Rain or irrigation water can carry nitrate down into groundwater from sources like fertilizer, animal waste, or human sewage. Runoff from barnyards or feedlots often results in high levels of nitrate in groundwater. Septic systems not working, or overuse of fertilizer, can also increase the amount of nitrate in groundwater.

Q: IS BREASTFEEDING SAFE?

A: The Florida Department of Health encourages breast feeding, when possible. However, when nursing mothers drink water that has nitrate in it, it may increase the amount of nitrate in breast milk. As such, it is wise for nursing women to avoid drinking water with elevated nitrate. Until the drinking water meets safety standards for nitrate, safer sources of drinking water for nursing mothers are bottled water and public municipal water.

WWW.FLHEALTH.GOV/WELLSTEST



CONTACT WATER PROGRAMS FOR MORE INFORMATION

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Q: HOW OFTEN SHOULD I HAVE MY WELL TESTED?

A: It is a good idea to have your well tested for nitrate once a year. There are no statewide regulations requiring well owners to test for nitrate, so the owners of private wells must set up and pay for their own water testing. You should have your water tested for nitrate and bacteria if you are a woman who is pregnant or planning on becoming pregnant. You should test your well water if you are planning to give infants private well drinking water. You can look up labs here by using Internet Explorer: <http://appprod.dep.state.fl.us/labs/cgi-bin/aams/index.asp>

Q: IS WATER FROM A PUBLIC WATER SUPPLY OR BOTTLED WATER SAFE?

A: Nitrate testing is required for both public water supplies and bottled water on a routine basis. These sources of water are safe for an infant to drink or in making infant formula.

What if nitrates are found in my water?

■ **If the nitrate level in your well water is above the health limit of 10 mg/L**, do not give the water to any infant under 6 months of age, either directly or in formula. The Department recommends giving water from a tested source shown to be low in nitrate and safe from bacteria. Water bottled for sale must meet the nitrate standard, so it is safe for infants to drink or to use to mix formula.

■ **Do not boil to “treat” high nitrate water.** Boiling water does not remove nitrates. Boiling water may make the nitrate level higher, so that could make the situation worse.

■ **Have your well inspected.** High nitrate levels often mean there are other problems with a well. It is important to have your well inspected by a licensed well contractor to make sure the well is built properly. If rainwater or storm water enters the well, this can cause nitrate and bacteria problems. Repairing the well or building a new, deeper, well often results in a significant decrease in the nitrate level. To find a water well contractor, access the Florida Department of Environmental Protection’s website at <http://waterwebprod.dep.state.fl.us/wwcvc/>

■ **Consider installing a water treatment device.** There are water treatment devices that can be installed on your home water system that will remove nitrates. Consult with a water treatment contractor or contact your County Health Department for more information. www.floridahealth.gov/programs-and-services/county-health-departments/find-a-county-health-department/index.html. Please be aware that any home water treatment device can fail to work so consider this option with caution.

■ **Identify and remove sources of nitrate near the well.** Proper siting and care of fertilizers, animal wastes and sewage systems should prevent well contamination. If a nitrate source is too close to the well and you cannot control the source, then you may need to think about permanently sealing the well. You may also need to get the well replaced by a licensed well contractor.

Keep your well water,  well.



What are the health risks of having too much nitrate in my drinking water?

Too much nitrate in drinking water poses a risk to pregnant women and infants less than six months of age. Giving infants water with high amounts of nitrate or feeding them formula made with such water could cause a condition called 'blue baby syndrome,' also known as 'methemoglobinemia'. Normal bacteria in an infant's stomach can turn nitrate into nitrite. Nitrite can interfere with the infant blood's ability to carry oxygen. As the condition worsens, the baby's skin turns a bluish color, especially around the eyes and mouth. If nitrate levels in the water are high enough and prompt medical care is not sought, death can result. Some scientific studies have suggested that pregnant women who drink water with high amounts of nitrates are more likely to have babies with birth defects. Nitrate ingested by the mother may also lower the amount of oxygen a fetus receives.

Why are young infants more susceptible?

As an infant ages, its stomach acidity increases, reducing the number of bacteria that can change nitrate into nitrite. As a child begins to eat solid food, at about six months of age, the conversion of nitrate to nitrite in the stomach is no longer a problem. Pregnant women, people with reduced stomach acidity, and people with certain blood disorders may also be at risk for nitrate-induced methemoglobinemia.

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well.