

Nitrate in Drinking Water from Public Water Systems

What is nitrate and where does it come from?

Nitrate is a naturally occurring oxide of nitrogen. Nitrogen is present in the air and reacts with oxygen and ozone to produce nitrate. Nitrate is an essential component of living things and is a major part of animal manure, human sewage waste and commercial fertilizers. Nitrates can be associated with septic systems and have been used for centuries as fertilizers, in explosives, and as food preservatives.

How can nitrate affect my health?

Infants fed baby formula mixed with nitrate- contaminated water above 10 mg/L are at risk for blue baby syndrome, a condition causing decreased ability of red blood cells to carry oxygen.

Breastmilk is safe for infants even if the water the mother is drinking has more than 10 mg/L nitrate. Women who are pregnant or may become pregnant should not drink water with high nitrate. There is some evidence that drinking water with nitrate above 10 mg/L can increase the risks of miscarriage and certain birth defects.

There is some evidence that long term consumption of nitrate above 10 mg/L by older children and adults may increase the risk of thyroid issues and cancer of the stomach or bladder.

When does nitrate in drinking water become a health concern?

Nitrate is measured in milligrams per liter (mg/L).* The federal government has established a safe drinking water standard (also called maximum contaminant level) for nitrate as 10 mg/L.

If your water has nitrate levels above 10 mg/l, public water system customers will receive a public notice with this information. **Do not give the water to infants under 6 months old or use it to make infant formula. It is advisable to switch to bottled water or other water low in nitrate.** If you are pregnant or have specific health concerns, you may wish to consult your doctor.

Nitrate occurs naturally in surface water and groundwater at concentrations up to 1 to 2 mg/L. At these levels, nitrate is not considered harmful to health.

* Nitrate is also measured in parts per million or ppm. For example, 1 mg/L is the same as 1 ppm.

Learning about nitrate levels in your drinking water from a public water system

Public drinking water providers are required to monitor for nitrate and ensure levels remain at or below the drinking water standard of 10 mg/L. They are also required to make those results public, and they must take action to treat water to meet the drinking water standard or use an alternate water source. If your water comes from a public water system, you can find results on the [Oregon Drinking Water Services Data Online website](#). Your drinking water provider may also be required to provide a Consumer Confidence Report to its customers every year. This report contains the most recent nitrate test results. Contact your drinking water provider for a copy of the most recent consumer confidence report.

Safely using nitrate-contaminated water

Do not boil the water!

Boiling contaminated water does not remove nitrate and can increase nitrate levels.

Can I wash my food with nitrate-contaminated water?

Yes. The amount of water left on food after washing is not enough to pose risks to health for people who eat the food.

Can I irrigate or water my garden with nitrate-contaminated water?

Yes.

Can my family bathe and shower in nitrate-contaminated water?

Yes. Nitrate does not easily enter the body through the skin. Bathing, swimming and showering with water that has levels of nitrate over 10 mg/L is safe as long as you avoid swallowing the water. Supervise children under six months of age when they are bathing and brushing teeth to ensure they do not swallow the water.

Can I wash dishes, utensils, and clean food preparation areas?

Yes. Only a very small amount of water clings to smooth surfaces, such as dishes. Water having more than 10 mg/L of nitrate can be safely used to wash and sanitize dishes, tables and eating utensils.

Can I use nitrate-contaminated water for general cleaning and laundry?

Yes. Very little water remains on washed surfaces and in laundered fabrics. Because these articles are not placed in the mouth, water with nitrate above 10 mg/L can be safely used for general cleaning and washing of clothing, bedding, and linens.

What about my pets?

Nitrate affects small and young animals the same way as human infants. Household pets should not drink water with nitrate more than 10 mg/L. For livestock, consult your veterinarian.

For domestic well owners

Domestic (private) well owners are generally responsible for testing and treating their drinking water. Visit www.healthoregon.org/wells, email Domestic.Wells@ODHSOHA.Oregon.Gov or call 971-673-0440 to reach the OHA Domestic Well Safety Program for more information.



Note: Private well users in the Lower Umatilla Basin Groundwater Management Area (parts of Morrow and Umatilla Counties) can find information about free well testing at testmywell.oregon.gov or pruebadepozo.oregon.gov.



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