

PUBLIC HEALTH FACT SHEET



COUNTY MICHIGAN
HEALTH DIVISION

Department of Health & Human Services

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Nitrate

What is Nitrate?

Nitrate is a form of Nitrogen. Ammonia entering the soil from animal or human wastes is converted to nitrate by bacteria. Fertilizers, which contain Nitrogen, can also be changed into nitrate.

Nitrates may occur naturally in groundwater. However, they are generally found where there have been various "activities" on the ground surface (farming, lawn fertilizers and septic systems).

Nitrates found in groundwater often indicate open pollution pathways from the ground surface. When present, particularly at harmful levels, they indicate the need for additional testing.

Can I tell if my water contains high levels of Nitrate?

No. Nitrate contamination can not be identified by looking, tasting, or smelling the water. The only way to identify nitrate contamination is to have the water tested.

Who are affected by high levels of Nitrate?

- infants, birth to one year of age. The greatest risk is to infants under three months of age.
- infants that are breast-fed, whose mothers drink well water containing unsafe levels of nitrate.
- premature infants or infants with special health problems (diarrhea).
- the fetus of a pregnant woman who drinks well water containing unsafe levels of nitrate.

What are unsafe levels of Nitrate in drinking water?

Levels at or above 10 mg/l (PPM).

How does Nitrate affect health?

Infants and young children who drink water containing high levels of nitrate can suffer from a condition known as Methemoglobinemia (blue baby syndrome). This condition affects the blood's ability to absorb oxygen, resulting in a bluish color. Adults and older children are generally not affected, unless the levels of nitrate are extremely high.

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Can Nitrates cause Cancer?

Nitrates have been shown to form N-nitrosamines, which have proven to cause cancer in test animals. Cancers of the stomach and intestines are the main concerns. Studies to date have not provided convincing evidence of an increased cancer risk.

What can be done with water that has an elevated Nitrate level?

Water treatment can remove nitrates from the water. Reverse osmosis, ion exchange, and distillation are effective in nitrate removal. However, they may be expensive and require regular maintenance to remain effective. Constructing a new well or correcting the source of the nitrate contamination, if possible, may be a better solution.

For more information on Nitrate, call (248) 858-1406 or toll free 1 (800) 848-5533.

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