

Oregon Department of Human Services

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TECHNICAL BULLETIN

HEALTH EFFECTS INFORMATION

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GIARDIA

For More Information Contact:

**Environmental Toxicology Section
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RELATED FACT SHEETS ALSO AVAILABLE:

A fact sheet relating to coliform bacteria and their significance in water is also available from the Department of Human Services

WHAT IS GIARDIASIS:

Giardiasis is the illness caused by infestation of the digestive tract by the organism *Giardia lamblia* and closely related species. This organism is a single-celled parasite that can infect the digestive systems of humans and animals. The cysts that can lead to infection are frequently found in contaminated surface water. If a sufficient number of these cysts are ingested (the infective dose may be as few as 10 cysts) the cysts can develop into fertile adults which proliferate rapidly in the digestive tract. The illness can last for months or even years if it is not diagnosed and treated to kill the organisms and cysts.

WHAT ARE THE SYMPTOMS OF INFECTION?

The incubation period after ingestion of cysts may be as short as 3 days or longer than 3 weeks. Most commonly symptoms become apparent in 7 to 10 days after exposure to contaminated water or food. Diarrhea, abdominal cramps and nausea are the most common symptoms of giardiasis. However, not everyone who becomes infected will have symptoms of illness.

WHAT SHOULD I DO IF I HAVE SYMPTOMS AND SUSPECT I HAVE BEEN EXPOSED TO *GIARDIA* CYSTS:

If you have been exposed to untreated or inadequately disinfected water or if you have had close association with a person who has giardiasis, and you have any or all of the above symptoms, especially if the symptoms reappear frequently or persist for longer than a few days you should see your physician and discuss the possibility that you have intestinal infection. There are several tests your doctor can perform to determine if you have giardiasis.

IS THERE AN EFFECTIVE MEDICAL TREATMENT FOR GIARDIASIS:

Yes there are several drug therapies that are very effective in arresting the development of *giardia* in the digestive tract and eliminating infective cysts.

WHAT ARE SOME COMMON WAYS PEOPLE BECOME INFECTED:

Most people become infected with *Giardia lamblia* by drinking water or eating food contaminated with the feces of infected animals or people. Persons who use untreated or poorly treated surface water, or inadequately protected shallow wells or springs, are at serious risk for infection. Campers, hikers, hunters, fishermen and others who have recently used water from untreated or untested sources may have been exposed. Children who swim or play in surface water may become infected due to incidental swallowing of water, whether or not they intentionally drink it. People working in daycare especially with children in diapers are at increased risk of exposure as are uninfected children in the same settings. Users of treated surface water from community and public systems may become exposed due to inadequate treatment or by treatment failures within their water systems. Infection is due to poor hygiene practices that allow contamination of food and the environment with intestinal waste.

ARE THERE WAYS I CAN TREAT MY OWN WATER TO MAKE IT SAFE FROM *GIARDIA*:

The most effective and reliable water treatment to kill *Giardia* and its infective cysts, as well as a host of other infective organisms, is to bring the water to a rolling boil before using it in food, beverage or for drinking. There are also commercial treatment kits that rely on chlorine, iodine, bromine or other disinfectants to kill organisms in water. Be sure to follow instructions carefully and observe all precautions recommended by the manufacturer. Since suspended materials in water can seriously interfere with chemical disinfectants, the most reliable treatment is boiling.

WHAT CONSUMERS ON PUBLIC OR COMMUNITY WATER SYSTEMS SHOULD KNOW ABOUT *GIARDIA* CONTROL:

On June 29, 1989 new federal regulations for public water systems using surface water or groundwater that is subject to surface influence were published. The EPA rule called "Surface Water Treatment Rule (SWTR)" consists of requirements to control *Giardia*, *Legionella*, viruses, bacteria and turbidity in water. It requires that all such systems filter the water to obtain 99.9% removal of viruses and *Giardia* cysts; and to disinfect the filtered water. The effectiveness of disinfection is dependent on temperature, turbidity (cloudiness), pH (acidity), type of disinfectant and the length of time the water is in contact with disinfecting agent. Only systems which can achieve the 99.9% virus and *Giardia* cyst removal by disinfection alone will be able to avoid filtration of their water.