

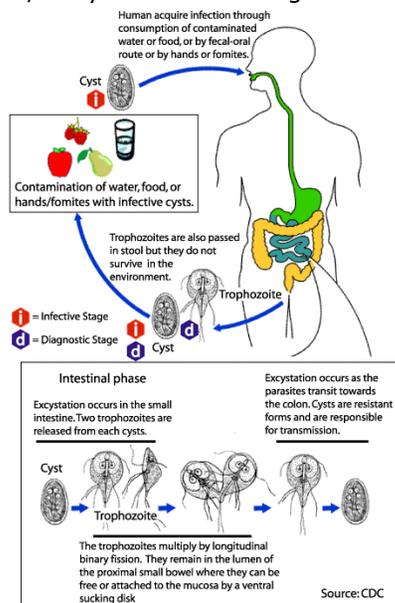
GIARDIA

What is giardia?

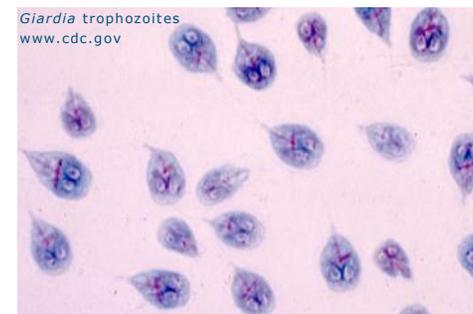
- Giardia is the most common human intestinal parasite in the world. This parasite causes the disease giardiasis. It is a nationally notifiable disease in Canada.
- Transmission is usually fecal-oral by ingestion of water contaminated with human or animal feces.
- Giardia cysts, shed by infected beavers, are infectious to humans, and they contaminate water supplies in North America.
- Other species such as deer or voles also shed giardia cysts in their feces. However, these animals are infected with a different species of giardia which is not infectious to humans.

Giardiasis is sometimes nicknamed “beaver fever”. Although it is more of a misnomer as most water contamination happens by humans.

- Infection in animals is usually asymptomatic (no clinical signs shown). Younger animals may sometimes show clinical signs such as diarrhea, dehydration and weight loss.



- Giardia cysts and trophozoites are found in the feces of infected hosts.
- Only the cysts can survive in the environment. The cysts can survive for months in a moist, humid environment.
- Infectious cysts can also be found in water contaminated with infected feces.



Where is giardia found?

Prevention methods

- The main principle of control in human giardiasis is proper personal hygiene. It is impractical to treat giardiasis in wildlife.
- To kill cysts, there needs to be a combination of chlorine, with warm water temperatures as well as long contact times.
- Adults and children in daycare centers should be educated about the importance of proper hand washing after using the toilet, handling diapers, and before handling or eating food.

- Individuals that camp must make sure feces are buried downstream and away from all drinking sources. This prevents contamination of the water bodies.
- Anyone camping should make sure that surface water is always boiled for a minimum of one minute before using it for drinking or cooking. Another solution would be to use a water filter that has an absolute pore size of one micron or smaller, or a filter that is NSF rated for 'cyst removal'.



Ingesting as little as 10 cysts is enough to cause illness.

How common is giardiasis in humans?

- Giardiasis has a global prevalence of approximately 280 million cases per year.
- In Canada, there are over 9,000 cases (and a few deaths) reported yearly.
- Giardia infections in Ontario are more prevalent in urban areas. They are mostly found around Lake Huron and Georgian Bay.

How do people get giardiasis?

- Infected hosts shed giardia cysts in their feces during the entire period of infection.
- These cysts are infectious. They can live for a long period of time in the proper environment.
- Most human infections occur from human-to-human transmission by contaminated water sources, or by fecal-oral route.
- Human infection from beavers is more likely to occur from direct contact with infected animals.
- Beavers usually become infected by ingestion of water contaminated with human feces.

What are the symptoms in humans?

- The majority of human giardiasis cases are asymptomatic.
- If clinical signs develop, they will be present 3-20 days after ingestion of cysts. Symptoms last 1 to 2 weeks and include:
 - Chronic diarrhea and abdominal pain
 - Fatigue
 - Weight loss
 - Sometimes nausea and vomiting
- Certain cases become chronic and last months to years. They can develop more severe symptoms such as allergic skin rashes, irritation, intolerance to certain foods, arthritis and damage to the lining of the intestines.
- Giardiasis in children is more of a concern. They can cause stunted growth, malabsorption of nutrients as well as severe diarrhea.

Can it be treated?

- Giardiasis can be treated with antibiotics for 5-10 days.

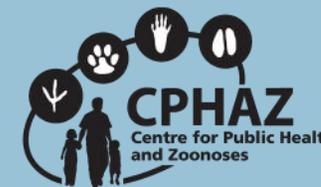
Who is most at risk of becoming infected?

- Giardiasis is more common in institutions and daycare centers. This is because children are not yet toilet trained and wear diapers.
- Outdoor activities, such as camping, are associated with higher incidence of giardiasis due to increased risk of exposure to contaminated water sources or infected hosts, as well as potentially having more relaxed hygiene practices.
- The greatest number of giardiasis cases are reported during warmer months of the year (July to October).
- Participation in anal-intercourse or oral-anal activities is also linked to higher incidences of giardia infection.



Beavers are the major wildlife reservoir capable of transmitting giardia to humans.

Most human infections occur from human-to-human transmission by contaminated water sources, or by fecal-oral route.



ACKNOWLEDGEMENTS

We would like to acknowledge the work of Derek Nichols, Jennifer Georgieff, and Karren Lemay in developing these information sheets.

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