



## Prevalence of *Giardia* Infection (Giardiasis): A Waterborne Disease

Alex Leung\*

Department of Family Medicine, The University of Alberta, Edmonton, Alberta, Canada

### DESCRIPTION

An intestinal illness called *Giardia* causes cramping in the stomach, bloating, nausea, and sessions of watery diarrhoea. It is brought on by a microscopic parasite that is present all over the world, particularly in places with unclean water and poor sanitation. One of the most frequent causes of waterborne illness is *Giardia* infection (giardiasis), which is brought on by the microscopic parasite (germ) *Giardia*. *Giardia* parasite can be found on surfaces, in food, drink, and soil that has come into contact with infected human or animal faeces (poop).

The most common intestinal parasites, or disease-causing organisms, linked to waterborne illness are *Giardia*. These organisms have complex life cycles and are protozoans but not bacteria or viruses. The organisms are in a cyst or oocyst stage outside of the host, which is comparable to a plant seed or a small egg. The *Giardia* cyst is too small to be seen with the naked eye and ranges in size from 8 to 14  $\mu\text{m}$  (micrometres or microns). Since 1979, these microorganisms have been implicated in over 100,000 waterborne sickness outbreaks that have been recorded.

### SYMPTOMS AND TRANSMISSION

*Giardia* is commonly spread through: Drinking or swallowing contaminated swimming pool water; contact with giardiasis patients, particularly in child care facilities; swallowing *Giardia* organisms picked up from contaminated surfaces, such as changing tables, door handles, and toys; eating contaminated food; and exposure to faeces while engaging in sexual activity. *Giardia* is an intestinal parasite that affects both humans and animals. Giardiasis is contagious among animals and can be acquired by them. However, the *Giardia* parasite that sickens humans is different from the one that harms animals. So it's unlikely that a wild animal or a pet will cause giardiasis.

Giardiasis symptoms can range from being asymptomatic (having no symptoms) to having severe chronic (long-lasting or often recurrent) diarrhoea. These symptoms can reflect those of other gastrointestinal conditions. The average incubation period is seven days, but it can range from 3 to 25 days. Giardiasis's

primary symptoms are nausea, vomiting, diarrhoea, stomach cramps, and a low-grade fever. Both weight loss and dehydration may result from these symptoms. Giardiasis typically lasts for 2 to 6 weeks in healthy individuals, but in people with weak immune systems, chronic cases can last from few months to 2 years.

The parasite can be passed in the faeces of both human and animal, hence found in both human and animal intestines. It has a protective shell that enables it to live for extended period of time outside the body and in the environment. The parasites are discharged once the cysts have broken down inside the host. When parasite cysts are mistakenly ingested, infection results. After consumption, the stomach's acids trigger the cysts or oocysts to excyst (like an egg hatching), and the organism starts to multiply in the intestines. Giardiasis has been found to be caused by at least 10 such *Giardia* cysts. An infected person or animal's bowel movement can discharge millions of germs, which makes the person sick at any time after consuming the parasite unintentionally.

*Giardia* is relatively prevalent intestinal parasite. Although *Giardia* parasites can infect anyone; children, people without access to hygienic drinking water, and people who engage in anal/oral-anal sex without using protection are at higher risk.

### PREVENTION AND TREATMENT

There are a number of strategies to reduce the chance of getting giardiasis. Use soap and clean, running water to wash your hands frequently for at least 20 seconds. Wash your hands frequently, especially before and after eating, using the restroom, or coming into contact with someone else's or your own germs (such as changing a diaper). Even if the water seems clean, it may still have parasites in it. Never use untreated water from wells, swimming pools, lakes, or rivers. Giardiasis can also be avoided by washing all fruits and vegetables in hot water. Avoid eating raw meat or undercooked. Use extra caution in nations where the water and food may be tainted.

Several prescriptions medications, including metronidazole, nitazoxanide, and tinidazole, are available to treat giardiasis.

**Correspondence to:** Alex Leung, Department of Family Medicine, The University of Alberta, Edmonton, Alberta, Canada, E-mail: leungalex@hotmail.com

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Some infections resolve by themselves with no medical intervention. In order to prevent dehydration, diarrhoea should be treated by consuming enough fluids. Treatment is typically not advised if you or your child tests positive for *Giardia* and does not exhibit any symptoms. Infections are not fatal with proper care and natural immune system, but they can be life-threatening for AIDS patients, young children, the elderly, or

someone recovering from severe surgery. After experiencing mild to moderate digestive problems, the majority of giardiasis patients completely recover within two months. Long after the illness has passed; some people still have dehydration, malnutrition, impairment in children's physical/mental development, and gastrointestinal problems including lactose intolerance or irritable bowel syndrome.