

# PUBLIC HEALTH REFERENCE SHEET

## Giardia



<b>Name</b>	<i>Giardia lamblia</i>
<b>Reservoir &amp; Transmission</b>	-Human, wild, and domestic animals (e.g., dogs, cats, cattle, beaver) -Ingestion of organisms via contaminated water or food -Person-to-person (daycare centers, institutions)
<b>Incubation Period</b>	Usually 3–25 days or longer; median 7–10 days
<b>Common Symptoms</b>	Diarrhea, abdominal cramps, bloating, weight loss, or malabsorption
<b>Gold Standard Diagnostic Test</b>	Microscopic identification of cysts or trophozoites
<b>Risk Groups</b>	Persons with HIV may have more serious and prolonged giardiasis
<b>Geographic Significance</b>	Worldwide

### What is giardiasis?

Giardiasis is a diarrheal disease caused by the microscopic protozoan parasite *Giardia*. Once a person or animal (for example, cats, dogs, cattle, deer, and beavers) has been infected with *Giardia*, the parasite lives in the intestines and is passed in feces. The risk of humans acquiring *Giardia* infection from dogs or cats is low. The exact type of *Giardia* that infects humans is usually not the same type that infects dogs and cats. Once outside the body, *Giardia* can sometimes survive for weeks or months. *Giardia* can be found within every region of the U.S. and around the world.

### What is the occurrence of giardiasis?

Giardiasis is a global disease that infects nearly 2% of adults and 6%–8% of children in developed countries worldwide. Nearly 33% of people in developing countries have had giardiasis. In the United States, *Giardia* infection is the most common intestinal parasitic disease affecting humans. *Giardia* infection rates have been known to go up in late summer. Between 2006–2008 in the United States, known cases of giardiasis were twice as high between June and October as they were between January and March.

### How is giardiasis transmitted?

- Swallowing *Giardia* cysts picked up from surfaces (such as bathroom handles, changing tables, diaper pails, or toys) that contain feces from an infected person or animal.
- Drinking water or using ice made from water sources where *Giardia* may live, especially in lakes, rivers, springs, ponds, and streams.
- Eating uncooked food that contains *Giardia* organisms.
- Having contact with someone who is ill from giardiasis.
- Traveling to countries where giardiasis is common (sub-Saharan Africa: all of the countries south of the Sahara Desert, such as South Africa, Gambia, and Kenya. Other common areas include south and southeast Asia, particularly India and Nepal).

### Who is at risk for giardiasis?

Though giardiasis is commonly thought of as a camping or backpacking-related disease and is sometimes called “Beaver Fever,” anyone can get giardiasis. People more likely to become infected include:

- Children in childcare settings, especially diaper-aged children.
- Close contacts of people with giardiasis (for example, people living in the same household) or people who care for those sick with giardiasis.

The mention of any non-federal entity and/or its products is for informational purposes only, and is not to be construed or interpreted, in any manner, as federal endorsement of that non-federal entity or its products.

# PUBLIC HEALTH REFERENCE SHEET



## Giardia

- People who drink water or use ice made from places where *Giardia* may live (for example, untreated or improperly treated water from lakes, streams, or wells; chemical disinfection is not always reliable).
- Service members, backpackers, hikers, and campers who drink unsafe water, do not properly disinfect surface contaminated water (boiling, filters that remove cysts) or who do not practice good hygiene (i.e., proper hand washing).
- People who swallow water while swimming and playing in recreational water where *Giardia* may live, especially in lakes, rivers, springs, ponds, and streams.
- International travelers.
- People exposed to human feces through sexual contact or otherwise.

### What are the signs and symptoms of giardiasis?

Symptoms of giardiasis normally begin 1 to 3 weeks after becoming infected and may last 2 to 6 weeks in otherwise healthy people. Occasionally, symptoms last longer. These symptoms may also lead to weight loss. Some people with *Giardia* infection have no symptoms at all, but they can shed cyst for several months. A variety of intestinal symptoms include:

- Diarrhea
- Gas or flatulence (may appear as temporary lactose intolerance)
- Greasy stool that can float
- Stomach or abdominal cramps
- Upset stomach or nausea
- Dehydration
- Bloody diarrhea is typically NOT a feature of giardiasis (*Giardia* is non-invasive)

### How is giardiasis diagnosed?

Because *Giardia* cysts can be excreted intermittently, multiple stool collections (i.e., three stool specimens collected on separate days) increase test sensitivity. The use of concentration methods and trichrome staining might not be sufficient to identify *Giardia* because variability in the concentration of organisms in the stool can make this infection difficult to diagnose. Therefore, fecal immunoassays that are more sensitive and specific should be used.

Rapid immune-chromatographic cartridge assays are also available but should not take the place of routine ova and parasite examination. Only molecular testing (e.g., polymerase chain reaction) can be used to identify the subtypes of *Giardia*.

### How is giardiasis treated?

Several drugs can be used to treat *Giardia* infection. Effective treatments include metronidazole, tinidazole, and nitazoxanide. Alternatives to these medications include paromomycin, quinacrine, and furazolidone. Some of these drugs may not be routinely available in the United States. Persons with HIV infection may have more serious and prolonged giardiasis. Different factors may shape how effective a drug regimen will be, including medical history, nutritional status, and condition of the immune system.

### How can giardiasis be prevented?

Treating drinking water with calcium hypochlorite, chlorine tablet/kits, or iodine tablets is the mainstay of individual and unit-level water disinfection in military settings when bottled water or other approved water supply is not available. Chemical disinfection with iodine or chlorine has a low to moderate effectiveness in killing *Giardia*.

The mention of any non-federal entity and/or its products is for informational purposes only, and is not to be construed or interpreted, in any manner, as federal endorsement of that non-federal entity or its products.

# PUBLIC HEALTH REFERENCE SHEET

## Giardia



### What are some public health considerations?

- Document the circumstances under which the case patient was exposed including duty exposure, occupational activities, environmental exposures, or other high-risk activities.
- Document if case patient works in, lives in, or attends a high transmission setting such as food handling, daycare, school, group living, health care, training center, or ship.

### References:

Defense Health Agency. 2022. *Armed Forces Reportable Medical Events Guidelines and Case Definitions*.

<https://www.health.mil/Reference-Center/Publications/2022/11/01/Armed-Forces-Reportable-Medical-Events-Guidelines>

“Giardia,” Centers for Disease Control and Prevention, last reviewed May 19, 2022.

<https://www.cdc.gov/parasites/giardia/>

Heymann, David L. ed. 2022. *Control of Communicable Diseases Manual*. 21st Edition. Washington DC: APHA Press.

The mention of any non-federal entity and/or its products is for informational purposes only, and is not to be construed or interpreted, in any manner, as federal endorsement of that non-federal entity or its products.