

Giardiasis

caused by the protozoan parasite *Giardia lamblia*

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Giardia enteritis is a protozoal infection of humans located primarily in the upper small intestine. Many cases of the disease are asymptomatic, but symptoms can include chronic diarrhea, abdominal cramps, bloating, frequent loose stools, fatigue and weight loss. Giardiasis is associated with drinking water from unfiltered surface water sources or shallow wells.

The reservoir includes humans, possibly beaver, and other wild and domestic animals.

Person-to-person transmission occurs by hand-to-mouth transfer. Localized outbreaks can occur from ingestion of contaminated drinking and recreational water. It can also be transmitted via contaminated food.

The disease can be prevented by proper personal hygiene, especially in institutions and daycare centers. Special emphasis should be placed on the need for hand washing with soap before handling food, before eating and after toilet use. Individuals who work with animals should wear protective clothing, and washing hands after handling animals is essential.

The disease in humans

- Most prevalent disease-causing intestinal protozoa worldwide
- Common in day-care centers, nurseries, institutional settings
- Infections may show no clinical signs
- May see acute or chronic diarrhea, bloating, nausea, vomiting
- Cysts not killed by chlorine; can survive several months in cold water
- Present in streams and public water supplies without sand filtration
- People are infected when protozoal cysts are ingested in contaminated water or food
- Person-to-person transmission is most common, but animal-to-person transmission is possible

- Prevention
 - Hand washing before handling food, eating, after toilet use
 - Filtration and protection of public water
 - Sanitary disposal of feces
 - Boil water when necessary
- Control
 - Report to local health authority
 - Isolation if appropriate
 - Disinfection
 - No vaccine available
 - Investigate outbreaks
 - Treat diagnosed cases
- Numerous animals can shed *Giardia* and serve as sources of infection
 - Beaver, muskrats, dogs, cats, sheep, cattle

The disease in dogs and cats

- Infected animals pass the protozoal cyst in their feces; humans are infected when the cyst is ingested
- Puppies and kittens show weight loss, chronic diarrhea, fat or mucous in feces
- Cysts are susceptible to quaternary ammonium compounds, household bleach, boiling, steam and desiccation

JULY 2001



The disease in calves

- Clinical cases of diarrhea are reported
- Soft, poorly formed, pale feces containing mucus

EXPOSURE POINTS!

- Any surface water supply that is not filtered
- Dogs and cats
 - Shedding protozoal cysts in feces
 - Grooming behavior — protozoal cysts present on the coat of the animal, around the muzzle
- City parks – ponds, pets, wildlife
- There is circumstantial evidence of a connection between wildlife and *Giardia* infections; however, more research needs to be done in this area
- High-risk areas for animals — kennels, animal shelters, pet stores, research facilities, teaching facilities, breeding facilities, endemic areas

Prevention

- Sanitation
- Treatment of diagnosed cases
- Vaccine available for small animals

Number of reported human *Giardia lamblia* infections in North Dakota since 1984. (North Dakota Department of Health)

1984	50	1992	154
1985	131	1993	132
1986	104	1994	114
1987	154	1995	102
1988	108	1996	148
1989	162	1997	135
1990	150	1998	82
1991	171	1999	104

Five year median – 112

For more information on this and other topics, see: www.ag.ndsu.nodak.edu

