

GIARDIASIS FACT SHEET

Agent: *Giardia intestinalis*, a protozoan parasite

Brief description: An illness caused by the protozoan *Giardia intestinalis* and generally characterized by chronic symptoms including diarrhea, abdominal cramping, bloating, fatigue, weight loss, or malabsorption (greasy, foul smelling stools). Asymptomatic infection occurs and is more common in infants and toddlers. Symptoms may last 4-6 weeks or longer.

Reservoir: Humans and certain mammals (e.g. beavers).

Mode of Transmission: Transmission occurs via ingestion of cysts in fecally contaminated water and less often from fecally contaminated, uncooked food. Person-to-person transmission occurs by hand-to-mouth transfer of cyst(s) from the feces of an infected individual, especially in institutions and day care centers.

Infectious dose: Ingestion of one or more cysts may cause disease.

Incubation Period: Usually 7-10 days, but ranges from 3 - 25 days.

Laboratory Criteria for Diagnosis:

- Demonstration of *Giardia intestinalis* cysts* in stool, OR
- Demonstration of *Giardia intestinalis* trophozoites* in stool, duodenal fluid, or small-bowel biopsy, OR
- Demonstration of *Giardia intestinalis* antigen in stool by a specific immunodiagnostic test (e.g., enzyme-linked immunosorbent assay)

*The cyst is the resting stage of the organism that is resistant to adverse environmental conditions, whereas the trophozoite is the active reproducing form.

Diagnostic Testing:

A. Feces (due to the poor sensitivity of the tests, encourage submission of three specimens obtained at least one day apart).

1. Specimen: Feces.
2. Outfits: IP & PVA (intestinal parasite & polyvinyl alcohol) outfit, order #0520.
3. Form: 3414.
4. Lab Test Performed: Identification of cysts and trophozoites of the organism.
5. Lab Performing Test: Parasitology, Georgia Public Health Laboratory (GPHL) in Decatur.

B. Water

Generally, water is not tested directly for the presence of *Giardia*, but can be screened using a test for fecal coliforms. A positive test for fecal coliforms indicates that water is contaminated by fecal materials. Fecal coliform testing is performed by the Water Laboratory, Georgia Department of Natural Resources, through the coordination of the Epidemiology Branch. All specimens must be submitted with the GPHL. In the event of an outbreak, specific testing of water for *Giardia* can be accomplished in coordination with the Epidemiology Branch.

Case classification:

- **Probable:** a clinically compatible illness that is epidemiologically linked to a confirmed case
- **Confirmed:** laboratory confirmed *Giardia* found in stool

Period of communicability: Entire period of infection (cysts found in stool), often months.

Treatment: Metronidazole is presently the drug of choice in the United States. Albendazole and quinacrine (requires special ordering through a compounding pharmacy) are alternatives. Furazolidone is available in

pediatric suspension for young children and infants, but does not taste good and is therefore difficult to administer. Albendazole can be made into a suspension and has been shown to be as effective as metronidazole in children. Paromomycin can be used during pregnancy (50%-70% effective).

Investigation and Follow-Up: Outbreaks should be investigated immediately to determine the possible source of the infection. Of particular interest are children attending day care centers and common sources, such as municipal water systems. Also consider food contamination by infected food handlers. Institute appropriate prevention and control measures in coordination with the Epidemiology Branch. Advise patients and food handlers about proper handwashing after using the toilet, after handling contaminated clothing or linens, and before cooking.

Reporting: Report confirmed cases **WITHIN 7 DAYS** electronically through the State Electronic Notifiable Disease Surveillance System (SENDSS) at <http://sendss.state.ga.us>, or mail a Notifiable Disease Report Form (#3095). Report any cluster of cases **IMMEDIATELY** by telephone to the local health department, District Health Office, or the Epidemiology Branch at 404-657-2588. If calling after regular business hours, it is very important to report cases to the Epidemiology Branch answering service. If applicable, complete CDC form 52.13, "Investigation of a Foodborne Outbreak," and fax to the Epidemiology Branch at 404-657-7517 as soon as possible.

Reported Cases of Giardiasis in Georgia, 1993-1999

Year	Number of Cases
1993	391
1994	463
1995	572
1996	820
1997	916
1998	1215
1999	1355

References and Further Reading:

1. Centers for Disease Control and Prevention. Case Definitions for Infectious Conditions under Public Health Surveillance. *MMWR* Vol. 46(RR10), 1997: 1-55.
2. Centers for Disease Control and Prevention. Giardiasis Surveillance — United States, 1992—1997. *MMWR* Vol. 49(SS07), 2000:1-13.
3. Chin J, ed. Giardiasis. In: Control of Communicable Diseases Manual. 17th ed. Washington, DC: American Public Health Association, 2000: 220-222.
4. U.S. Food & Drug Administration, Center for Food Safety & Applied Nutrition. *Giardia Lamblia*. In: Foodborne Pathogenic Microorganisms and Natural Toxins Handbook.

Links:

- CDC Giardiasis Fact Sheet – <http://www.cdc.gov/ncidod/dpd/parasites/giardiasis/default.htm>
- FDA Bad Bug Book – <http://vm.cfsan.fda.gov/~mow/chap22.html>

