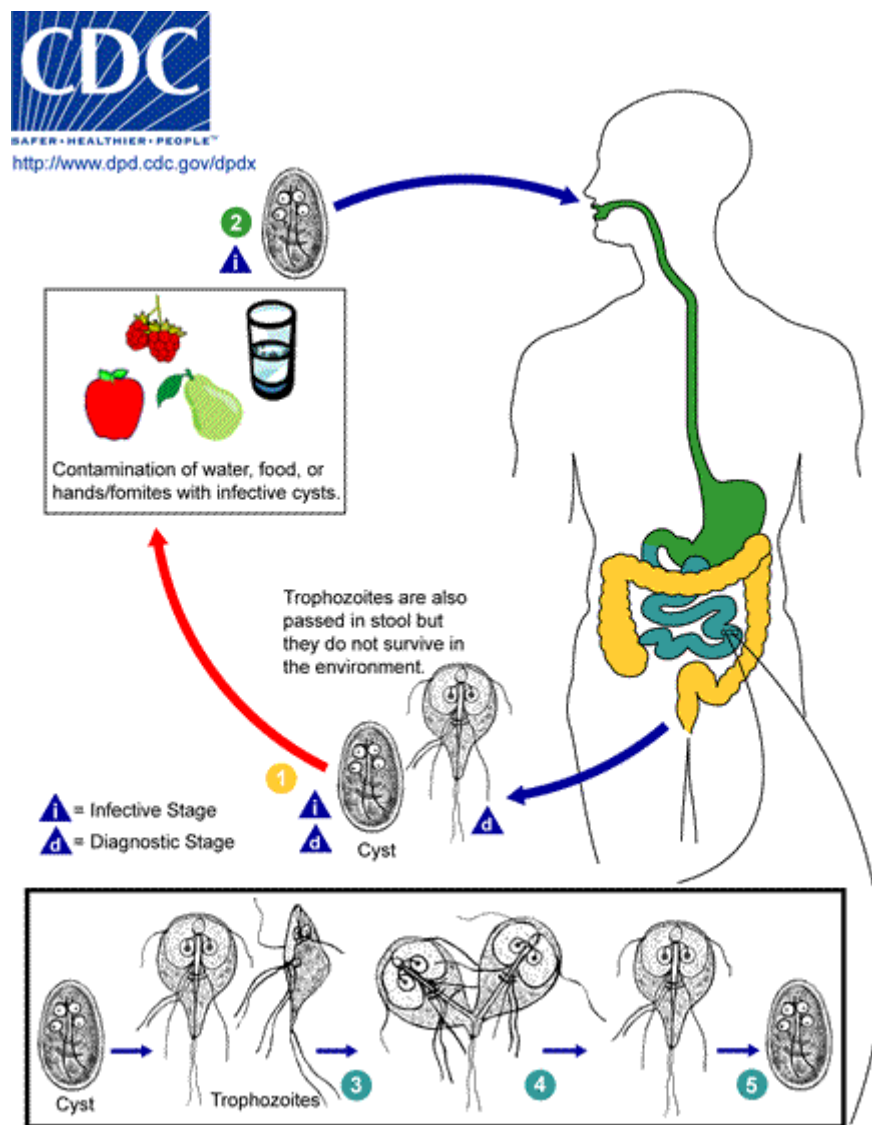


Giardiasis

Causal Agent:

Giardia intestinalis is a protozoan flagellate (Diplomonadida). This protozoan was initially named *Cercomonas intestinalis* by Lambl in 1859 and renamed *Giardia lamblia* by Stiles in 1915, in honor of Professor A. Giard of Paris and Dr. F. Lambl of Prague. However, many consider the name, *Giardia intestinalis*, to be the correct name for this protozoan. The International Commission on Zoological Nomenclature is reviewing this issue.

Life Cycle:



Cysts are resistant forms and are responsible for transmission of giardiasis. Both cysts and trophozoites can be found in the feces (diagnostic stages) ①. The cysts are hardy and can survive

several months in cold water. Infection occurs by the ingestion of cysts in contaminated water, food, or by the fecal-oral route (hands or fomites) ②. In the small intestine, excystation releases trophozoites (each cyst produces two trophozoites) ③. Trophozoites multiply by longitudinal binary fission, remaining in the lumen of the proximal small bowel where they can be free or attached to the mucosa by a ventral sucking disk ④. Encystation occurs as the parasites transit toward the colon. The cyst is the stage found most commonly in nondiarrheal feces ⑤. Because the cysts are infectious when passed in the stool or shortly afterward, person-to-person transmission is possible. While animals are infected with *Giardia*, their importance as a reservoir is unclear.

Geographic Distribution:

Worldwide, more prevalent in warm climates, and in children.

Clinical Features:

The spectrum varies from asymptomatic carriage to severe diarrhea and malabsorption. Acute giardiasis develops after an incubation period of 1 to 14 days (average of 7 days) and usually lasts 1 to 3 weeks. Symptoms include diarrhea, abdominal pain, bloating, nausea, and vomiting. In chronic giardiasis the symptoms are recurrent and malabsorption and debilitation may occur.

Laboratory Diagnosis:

Giardiasis is diagnosed by the identification of cysts or trophozoites in the feces, using direct mounts as well as concentration procedures. Repeated samplings may be necessary. In addition, samples of duodenal fluid (e.g., Enterotest) or duodenal biopsy may demonstrate trophozoites. Alternate methods for detection include antigen detection tests by enzyme immunoassays, and detection of parasites by immunofluorescence. Both methods are available in commercial kits.

Diagnostic findings

- Microscopy
- Molecular methods
- Bench aid for *Giardia*

Treatment:

Several prescription drugs are available to treat giardiasis including metronidazole and tinidazole. Nitazoxanide has provided some encouraging results in the management of giardiasis in children