

Disease of the Day

Giardiasis

Causative organism

- ✓ *Giardia intestinalis*
- ✓ *Giardia lamblia*
- ✓ *Giardia duodenalis*

- ✓ Kingdom Protista
 - Mastigophora

 - Flagellated protozoan
 - 2 nuclei
 - No mitochondria

Transmission

- ✓ Fecal-oral transmission
- ✓ Ingestion of cysts in food or water
 - Hosts include: Beavers, raccoons, muskrats, dogs, cats & humans
- ✓ People at risk
 - Day-care workers
 - Hikers
 - Immunocompromised
 - AIDS
 - Poor nutrition

Signs/symptoms

- ✓ Mild
 - Flatulence, indigestion, nausea,
- ✓ Severe
 - Vomiting, diarrhea, abdominal cramps, weight loss

Pathogenesis

- ✓ Cysts are ingested
- ✓ Transform into trophozoites (2 per cyst)
- ✓ Attaches to the mucosal epithelium
- ✓ Some migrate into the bile duct
- ✓ Interfere with the absorption of nutrients

Diagnosis

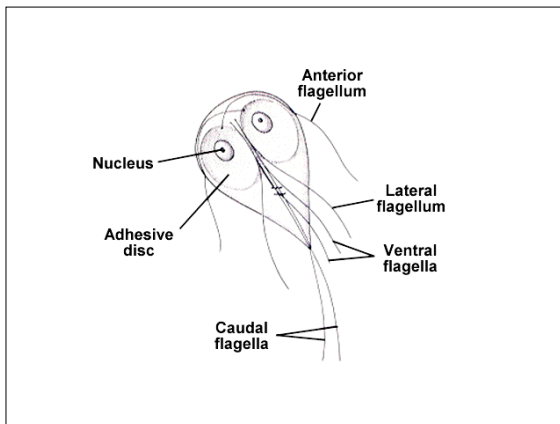
- ✓ Microscopic examination of stool
 - Cysts or trophozoites
- ✓ String test
 - Swallow a string - remove after 5 hr
- ✓ Antibody based detection system
- ✓ Endoscopy - last resort

Treatment

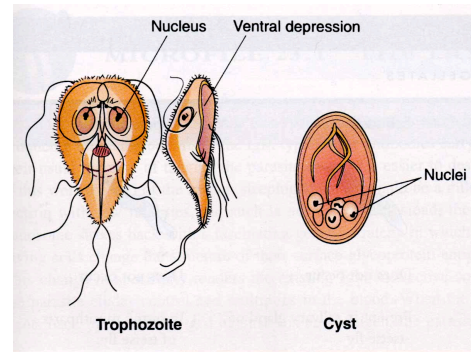
- ✓ Metronidazole - drug of choice
- ✓ Quinacrine
- ✓ Furazolidone
- ✓ Tinidazole
- ✓ Paromomycin

Prevention

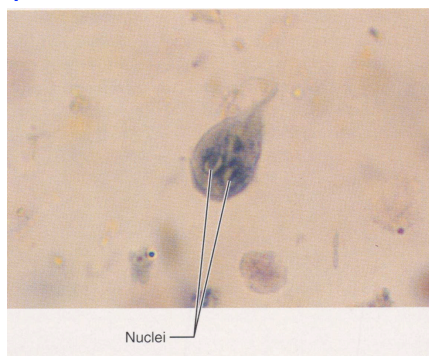
- ✓ Boiling water for 1 minute
- ✓ A few drops of bleach, iodine/quart
- ✓ Filtration systems



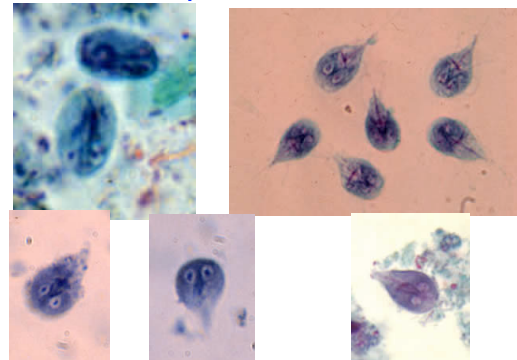
Stages



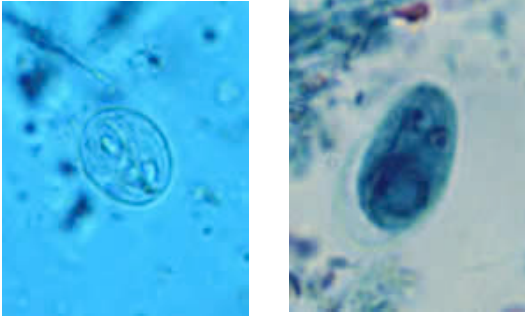
Trophozoite



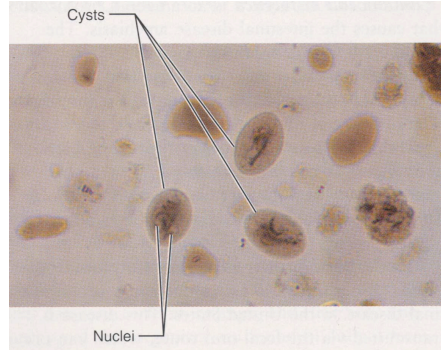
Giardia Trophozoites



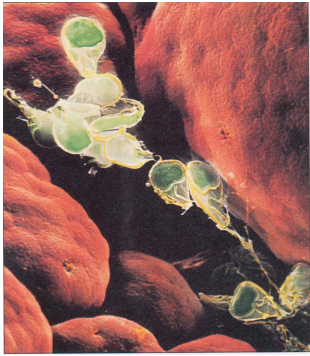
Giardia cysts



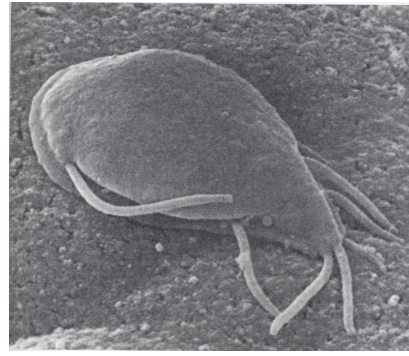
Cyst



Trophozoite



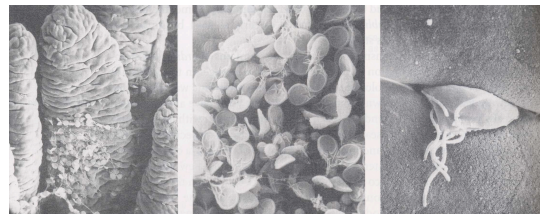
Trophozoite attached



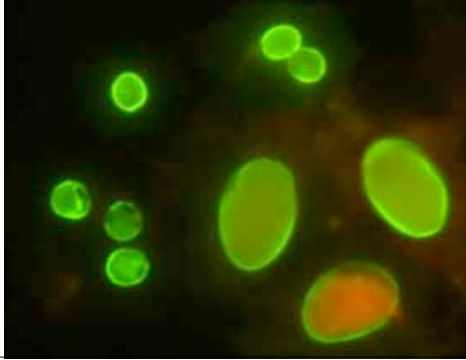
Adhering marks



Trophozoites around microvilli



Fluorescent antibody detection



Molecular markers

