



THE INTESTINAL PROTOZOA

ENTAMOEBIA HISTOLYTICA

GIARDIA LAMBLIA

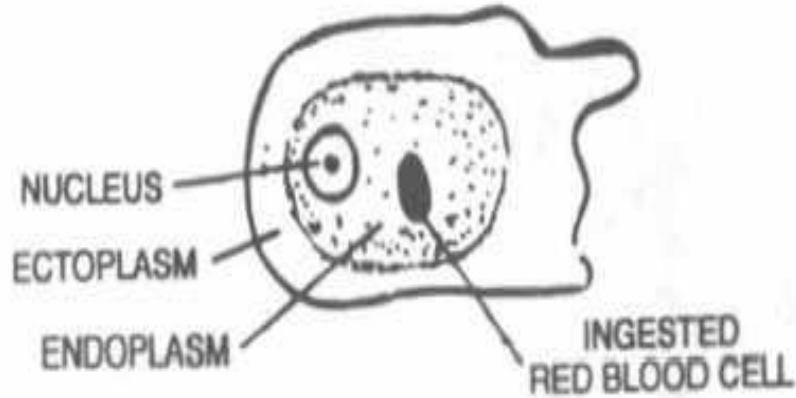
TRICHOMONAS VAGINALIS

Entamoeba histolytica

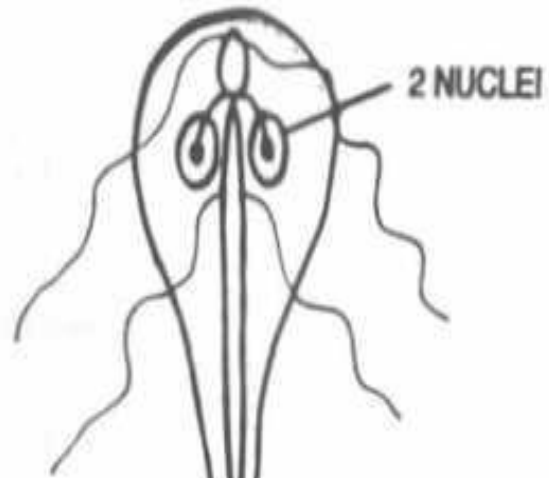
- ▶ Is the causative agent of amoebic dysentery; infection transmitted via the faecal–oral route.
- ▶ It moves by **pseudopodia**

NORMAL HOST

Entamoeba histolytica
TROPHOZOITE



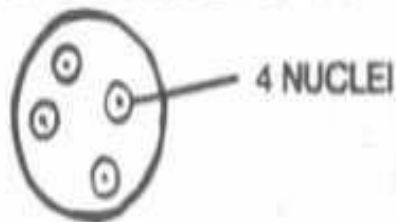
Giardia lamblia
TROPHOZOITE



BINUCLEATED PRECYST





TETRANUCLEATED CYST



CYST




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- ▶ *E. histolytica* exhibits only two morphological forms: the **trophozoite** and **cyst** stages.
 - ▶ Trophozoites are actively motile.
 - ▶ The cyst is spherical, with a thin transparent wall. Fully mature cysts contain four nuclei.

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- ▶ In contrast to the fragile trophozoite, mature cysts can survive environmental temperatures up to 55°C, chlorine concentrations normally found in water supplies, and normal levels of gastric acid.

pathogenesis

- ▶ Ingested cysts from contaminated food or water form trophozoites in the small intestine
- ▶ These pass to the colon, where they feed on intestinal bacteria and may invade the epithelium, potentially inducing ulceration
- ▶ The parasite can further spread to the liver and cause abscesses
- ▶ In the colon, trophozoites form cysts that pass in the feces.

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- ▶ This results in abdominal pain, a couple of loose stools a day, and flecks of blood and mucus in the stool. The infection may become severe, with bloody, voluminous diarrhea.

Diagnosis


- ▶ The stool is examined for the presence of cysts or trophozoites.
- ▶ Up to 80% of infections due to *E. histolytica* are asymptomatic. These asymptomatic cyst-passers are a source of infection to others and may not be detected.

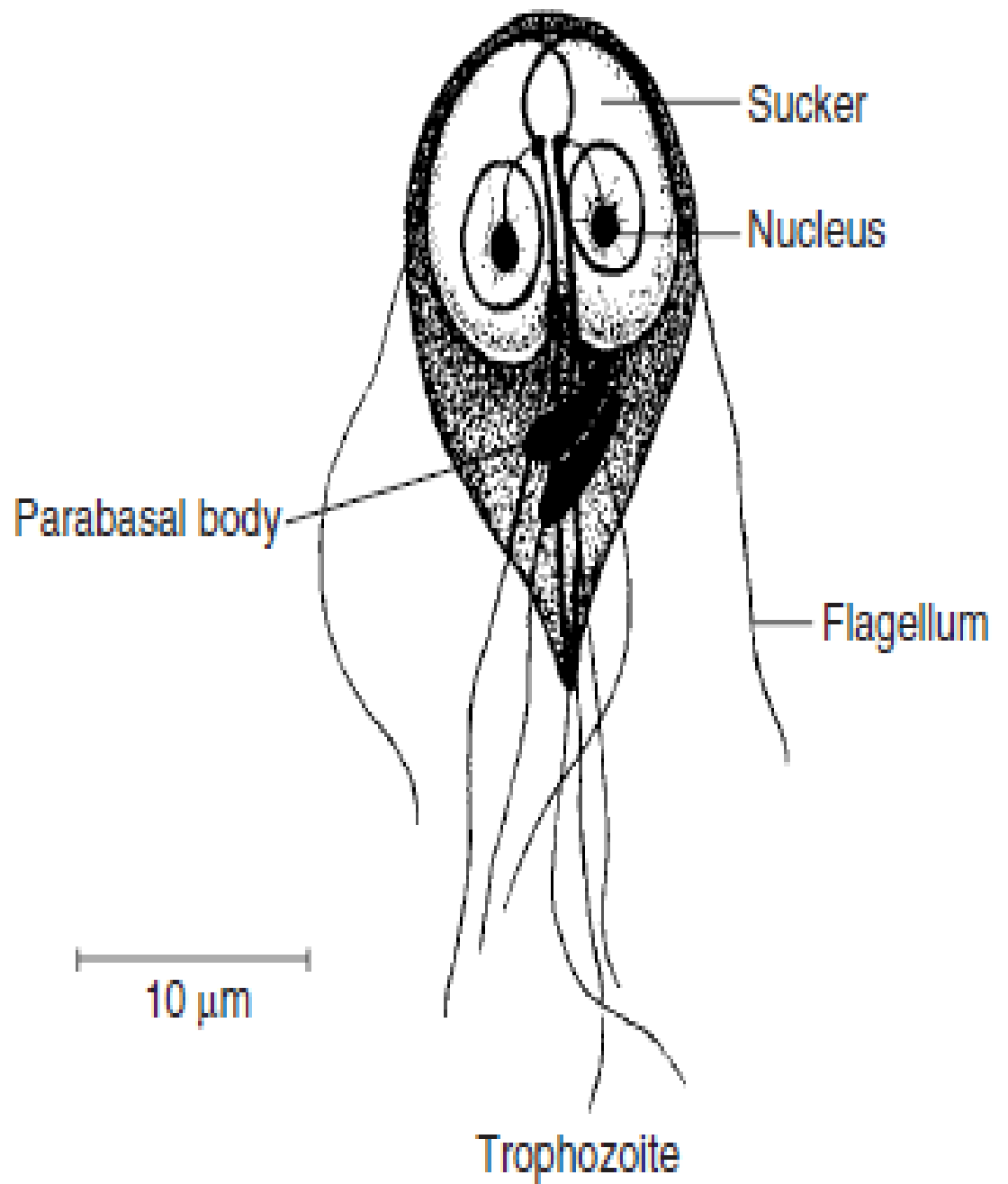
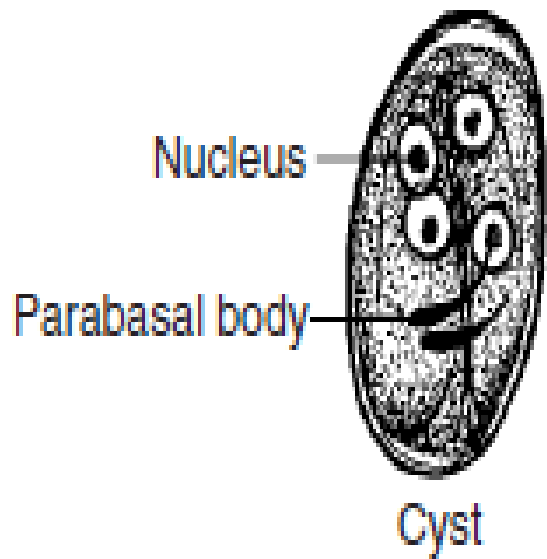
Prevention & treatment

- ▶ Prevention rests on good sanitation: proper disposal of sewage and purification (boiling) of water.
- ▶ Treatment: metronidazole (flagyl®).

Giardia lamblia

- ▶ *Giardia lamblia* is the causative agent of giardiasis—a severe diarrhoeal disease.
- ▶ The most common route of spread is via the faecal–oral route, although spread can also occur through ingestion of contaminated water.

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- ▶ *Giardia* possesses both a trophozoite and a cyst form
 - ▶ When viewed from the top, the trophozoite has two nuclei and central parabasal bodies give it the appearance of a face with two eyes and mouth with four pairs of flagella.



GIARDIASIS

- ▶ Giardiasis is most often symptomatic.
- ▶ When disease occurs, it is in the form of diarrhea lasting up to 4 weeks with foul-smelling, greasy stools. Abdominal pain, nausea, and vomiting are also present.
- ▶ Disease manifestations appear related to intestinal malabsorption, particularly of fat and carbohydrates
- ▶ *Giardia do NOT invade the intestinal wall, there is NO blood in the stool!!!*

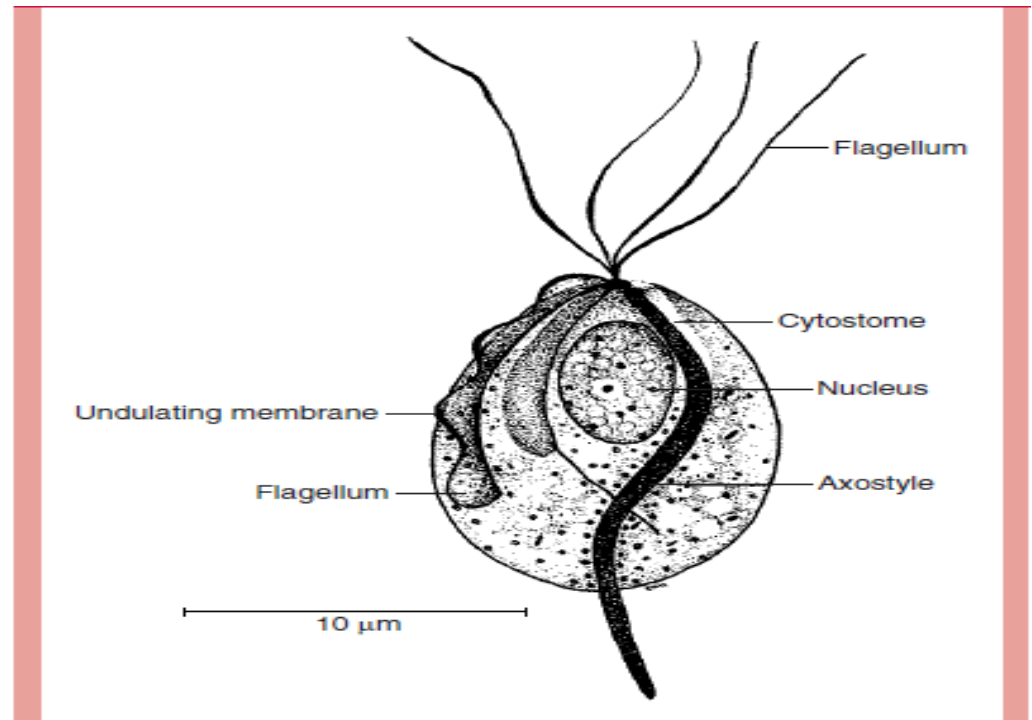
Diagnosis & treatment

- ▶ For diagnosis and control of *Giardia*: Examination of stool for cysts or trophozoites.
- ▶ Treat these patients with **metronidazole**

Urogenital protozoa

- ▶ *Trichomonas vaginalis*: is transmitted sexually and hangs out in the female vagina and male urethra.
- ▶ The trophozoite of *Trichomonas vaginalis* is flagellated.
- ▶ There is no cyst form in the life cycle of *Trichomonas*

- ▶ A female patient with this infection may complain of itching (pruritus), burning on urination, and copious vaginal secretions.



Diagnosis & treatment

- ▶ Diagnosis of *Trichomonas*:

Microscopic examination of vaginal discharge and urine reveal *Trichomonas vaginalis*.

- ▶ Treat these patients with **metronidazole**



THANK YOU!