

Mustansiriyah University

College of science

Biology Dept.

Zoology

4th class

Zoonoses lab. (6)

- A} Intestinal ----- 1) *E. histolytica*
2) *G. lamblia*
3) *Cryptosporidium*
- B} Urogenital Tract----- *Trichomonas vaginalis*
- C} Blood and Tissue----- 1) *Plasmodium*
2) *Toxoplasma*
3) *Trypanosoma*

TOXOPLASMOSIS

TOXOPLASMOSIS :-It is an infection caused by the parasite

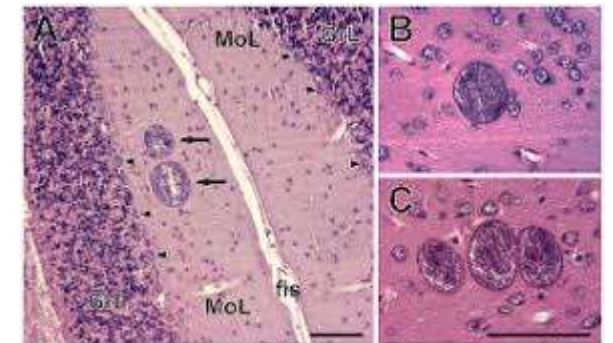
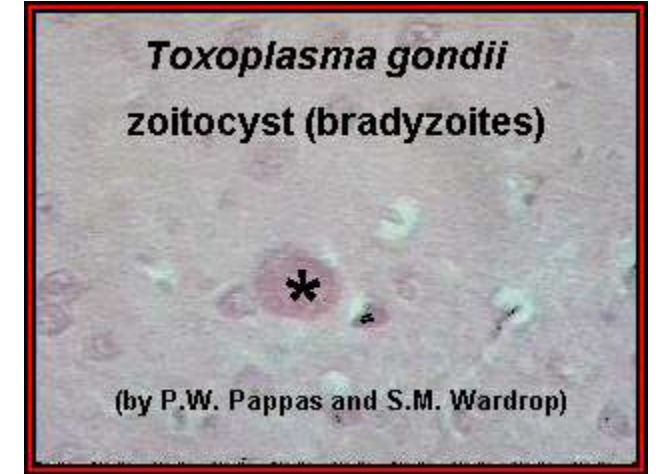
Toxoplasma Gondii.

- The protozoan *Toxoplasma gondii*, is a coccidian, intracellular parasite responsible for zoonotic infections in man and other mammals

- ❑ A disease of the blood and lymphatic system.
- ❑ **Cats** are a critical part of the life cycle.
- ❑ It is usually acquired by eating undercooked meats but can also be acquired by contact with cat feces.
- ❑ Primary problem is a **congenital infection of fetus**, resulting in either a stillbirth or a child with severe brain damage or vision problems.
- ❑ The normal final host is **cat** and relatives in the family.

Life Cycle: Two phases
Intestinal and extra intestinal

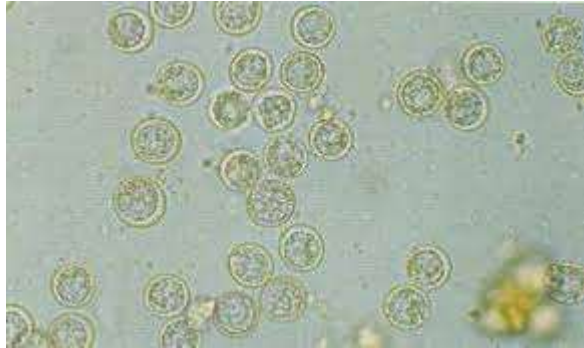
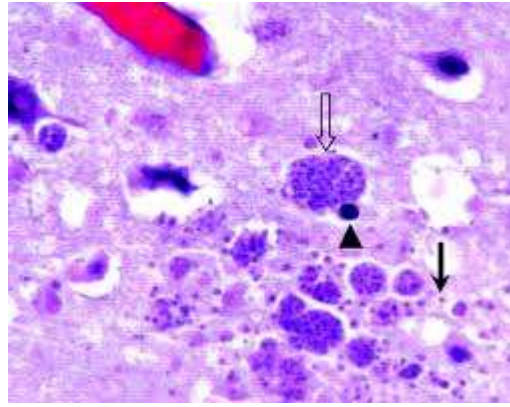
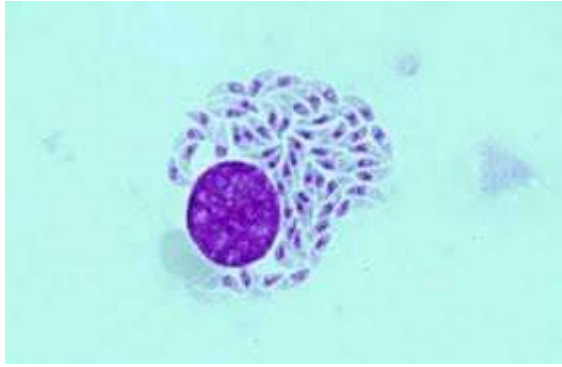
- 1} Oocysts- Only members of the cat family shed oocysts
- 2} Trophozoites- Tachyzoites are the actively proliferating trophozoites, which are observed during the acute stage of infection.
- 3} Tissue cysts (bradyzoites): Tissue cysts are found most commonly in the brain and in skeletal and cardiac muscle but can occur in any organ.

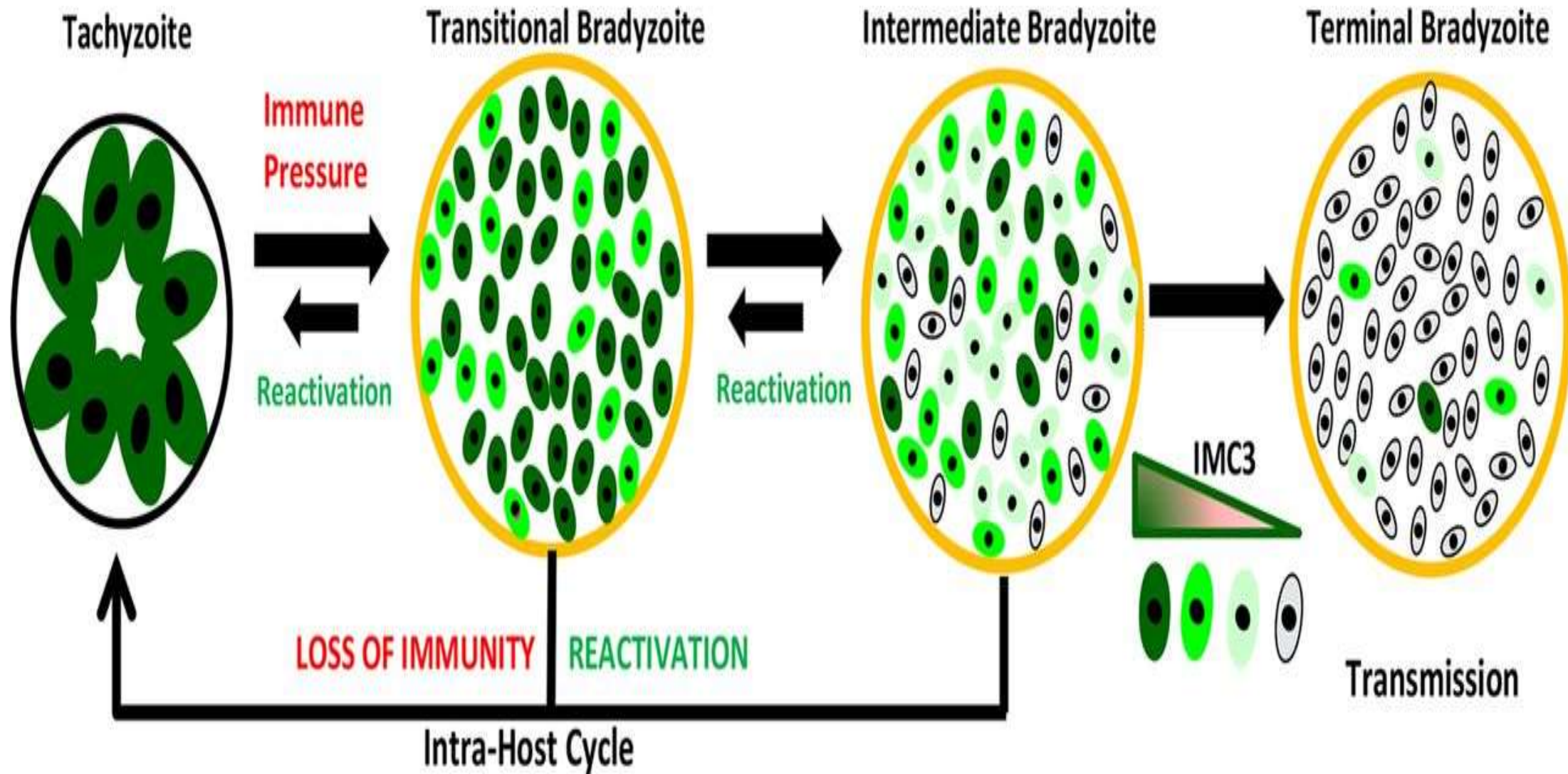


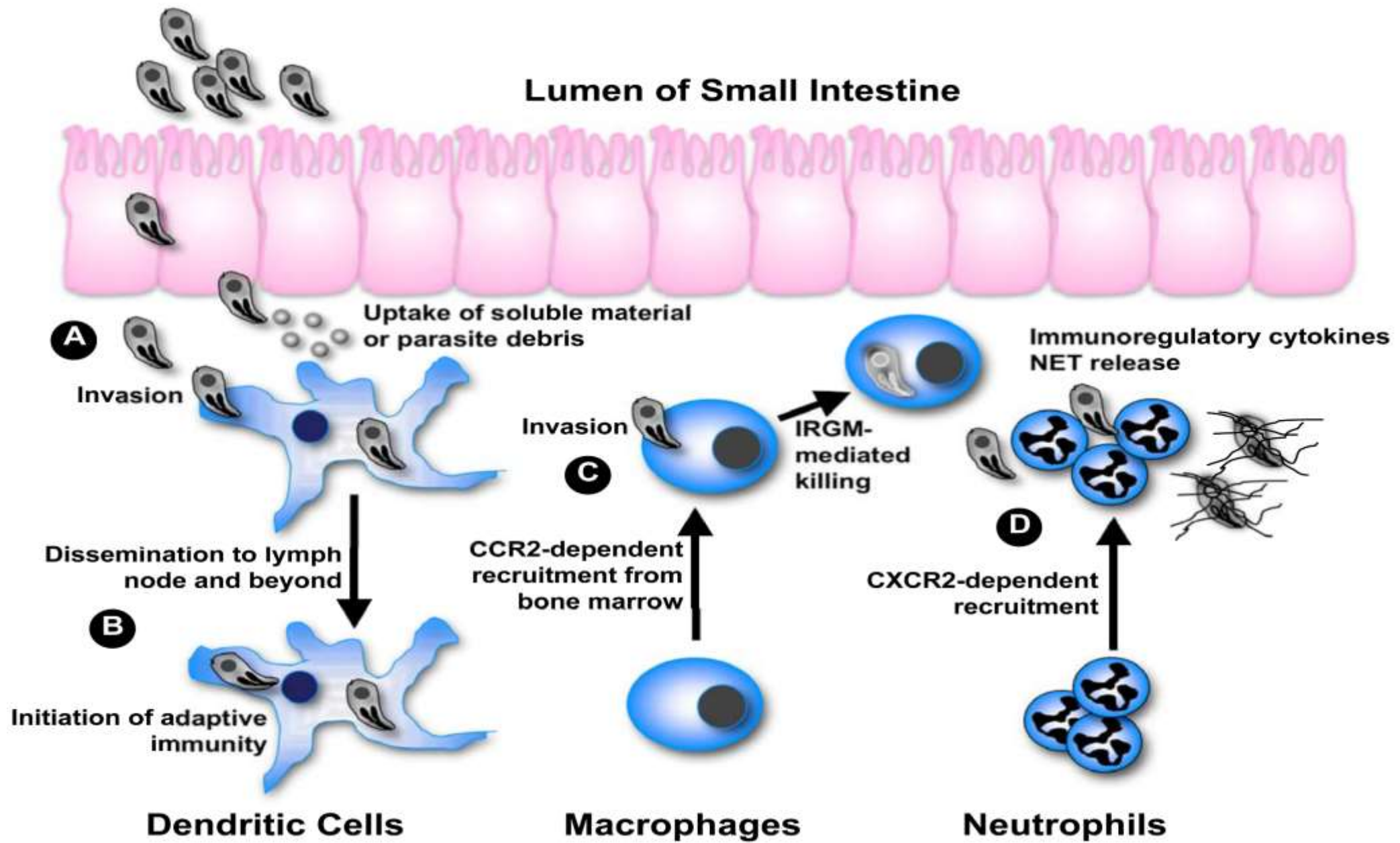
Oocysts
{**cat**}

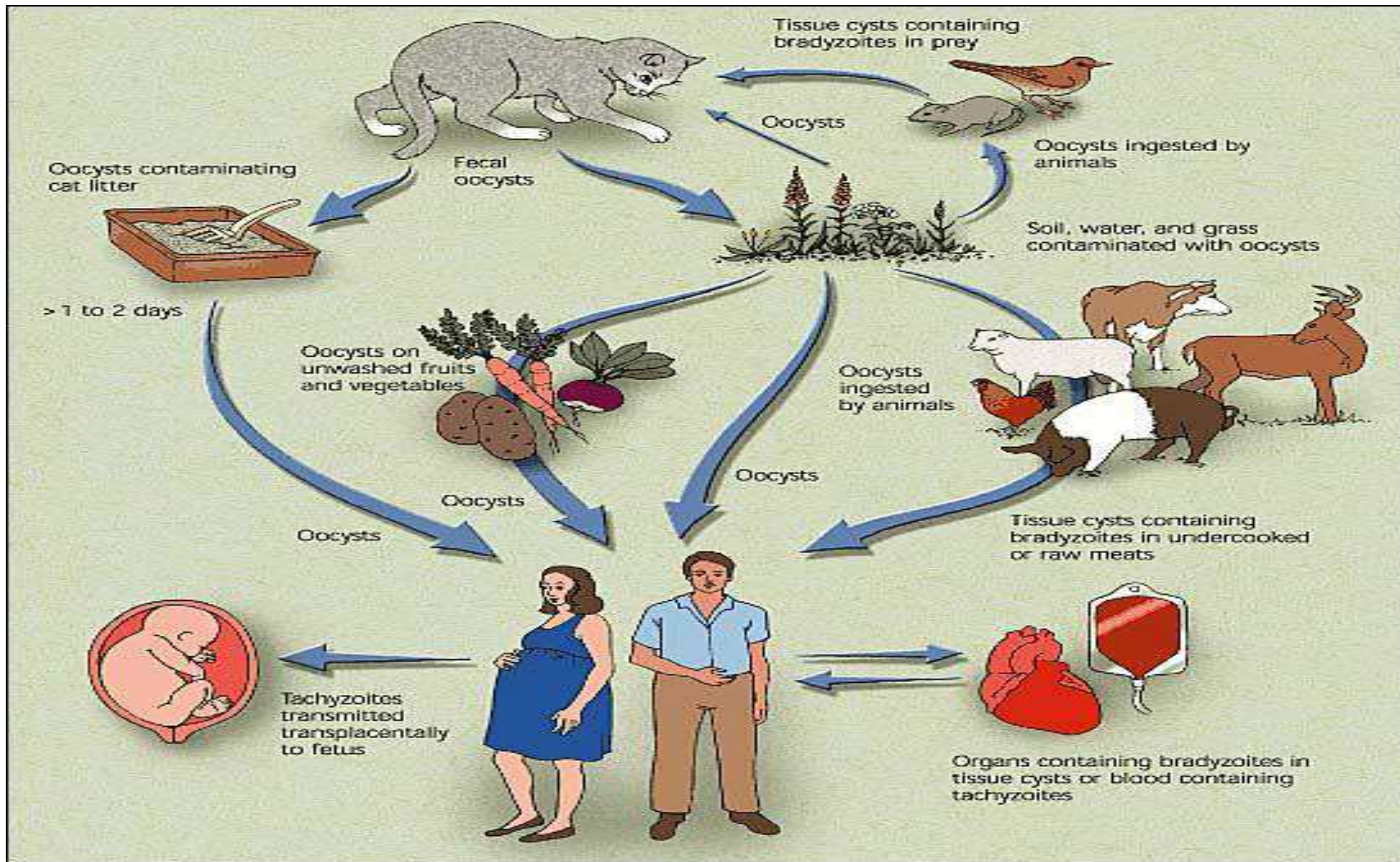
Trophozoites-

Tissue cysts





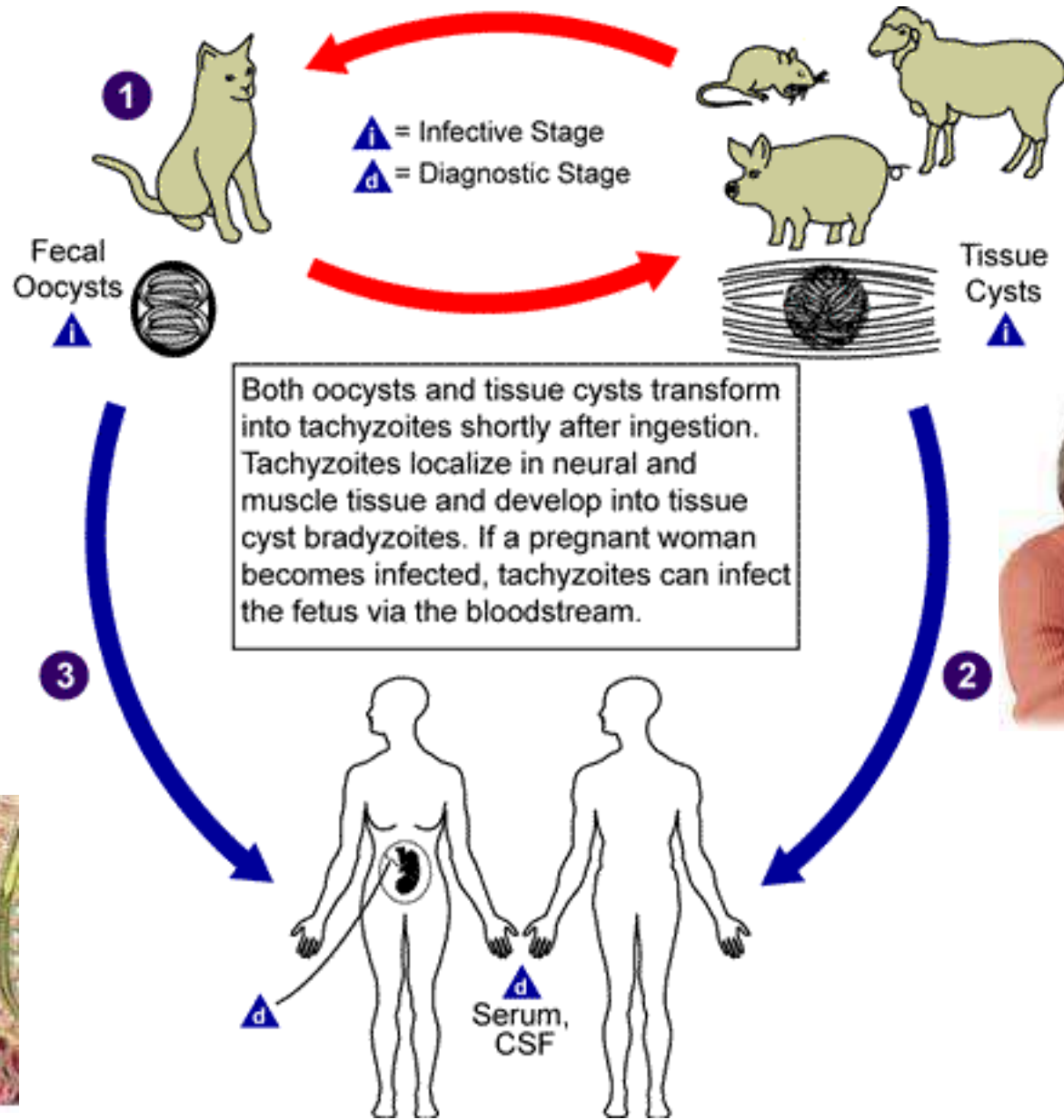




Sporozoite



Tachyzoite



Signs and Symptoms:

- Fever
- Sore throat
- Sore muscles
- Tiredness
- Swollen glands
- Temporary blurred vision or loss of vision

Development in Cat: -Organisms (either sporozoites from Oocysts or Bradyzoites from tissue cysts) invade the muscle cells of cats small intestine. oocysts develop exit from the host cells into the gut lumen of the cat and pass out via feces

Structure of Sporozoites:-

- ❑ In each Oocysts **two** sporocysts form and in about 48 hours four sporozoites form within sporocyst.
- ❑ The Oocyst with its each Sporozoites when ingested can either repeat its sexual cycle in a Cat

Events on Development in man :-

- ❑ When man ingests Oocysts with eight Sporozoites excreted in Cats feces, can establish an infection and reproduces Asexually
- ❑ In humans Oocysts open in duodenum and releases eight Sporozoites which pass through the gut wall.
- ❑ Circulate in body and invade various cells.

Implications on Human Health

In Humans produces

1. Congenital Toxoplasmosis
2. Post natal Toxoplasmosis



A fetus may contract toxoplasmosis through the placental connection with its infected mother

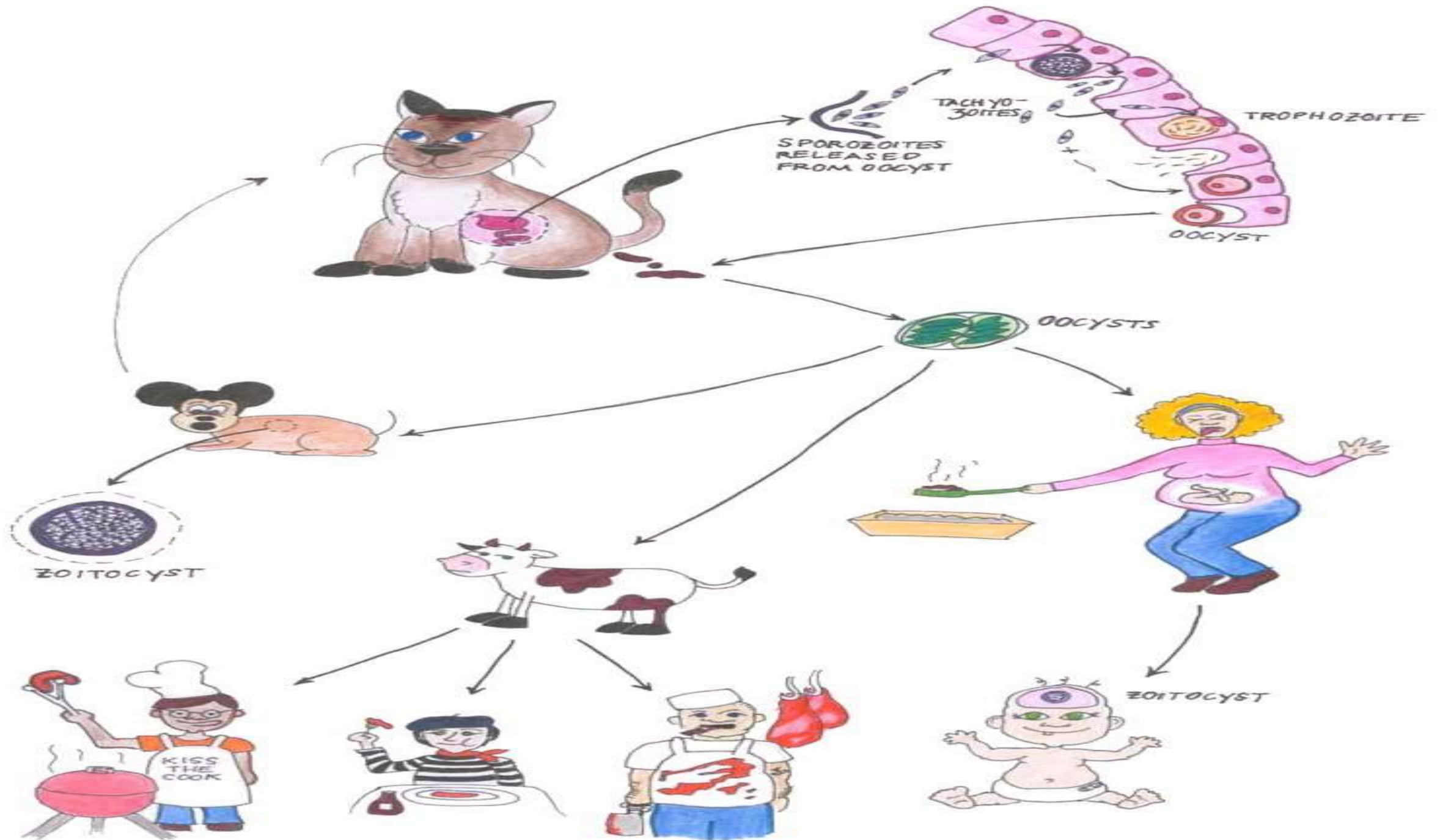
The mother may be infected by:

Improper handling of cat litter



Handling or ingesting contaminated meat





Diagnosis:

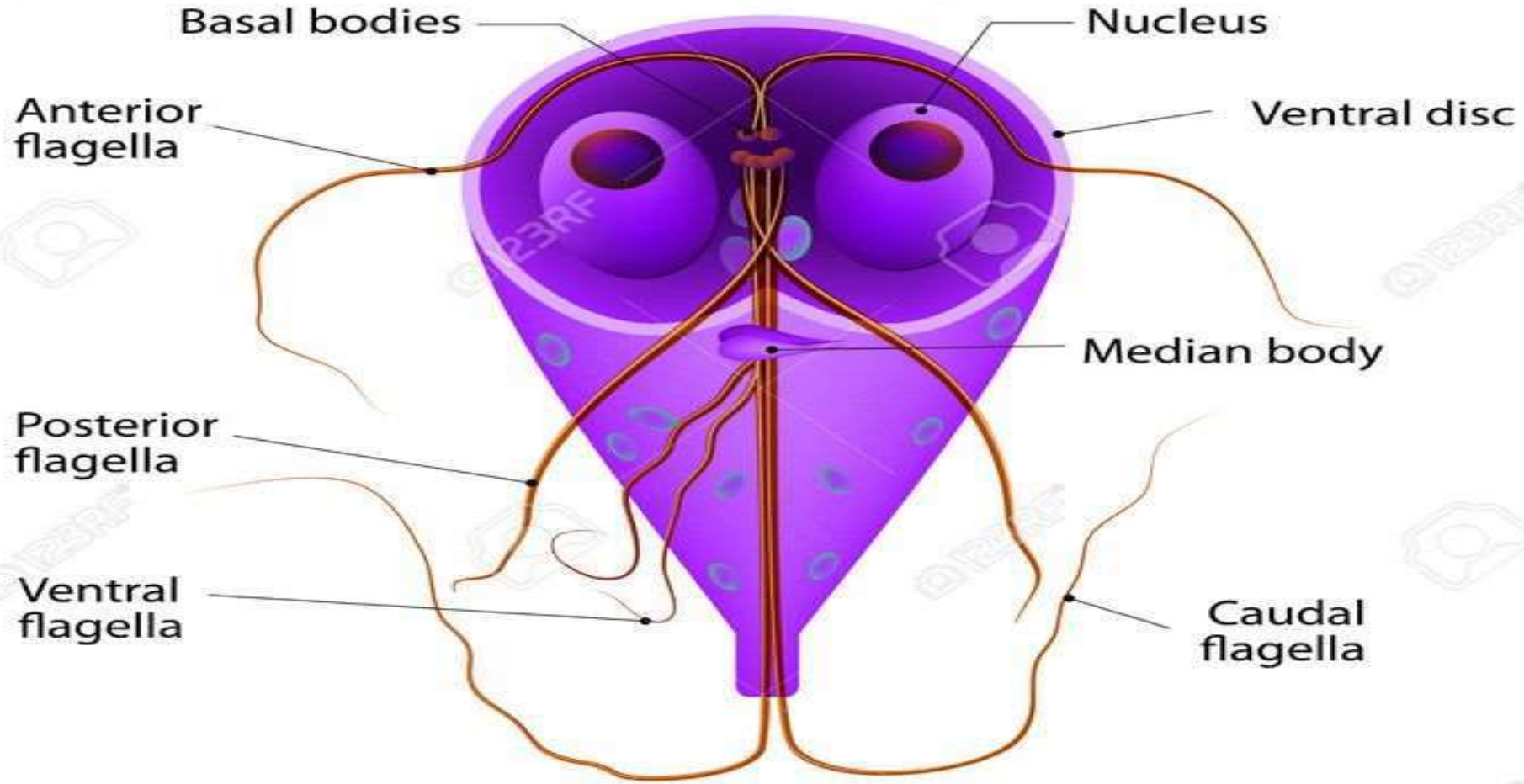
- Serological tests
- Polymerase chain reaction (PCR)
- Histological demonstration of the parasite and or its antigens (i.e. immunoperoxidase stain)
- Isolation of the organism

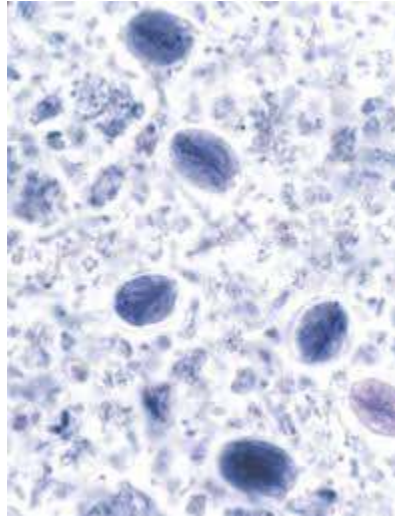
GIARDIA LAMBLIA

Giardiasis is an infection that occurs in the intestinal region of the body, primarily targeting the stomach and small intestine.

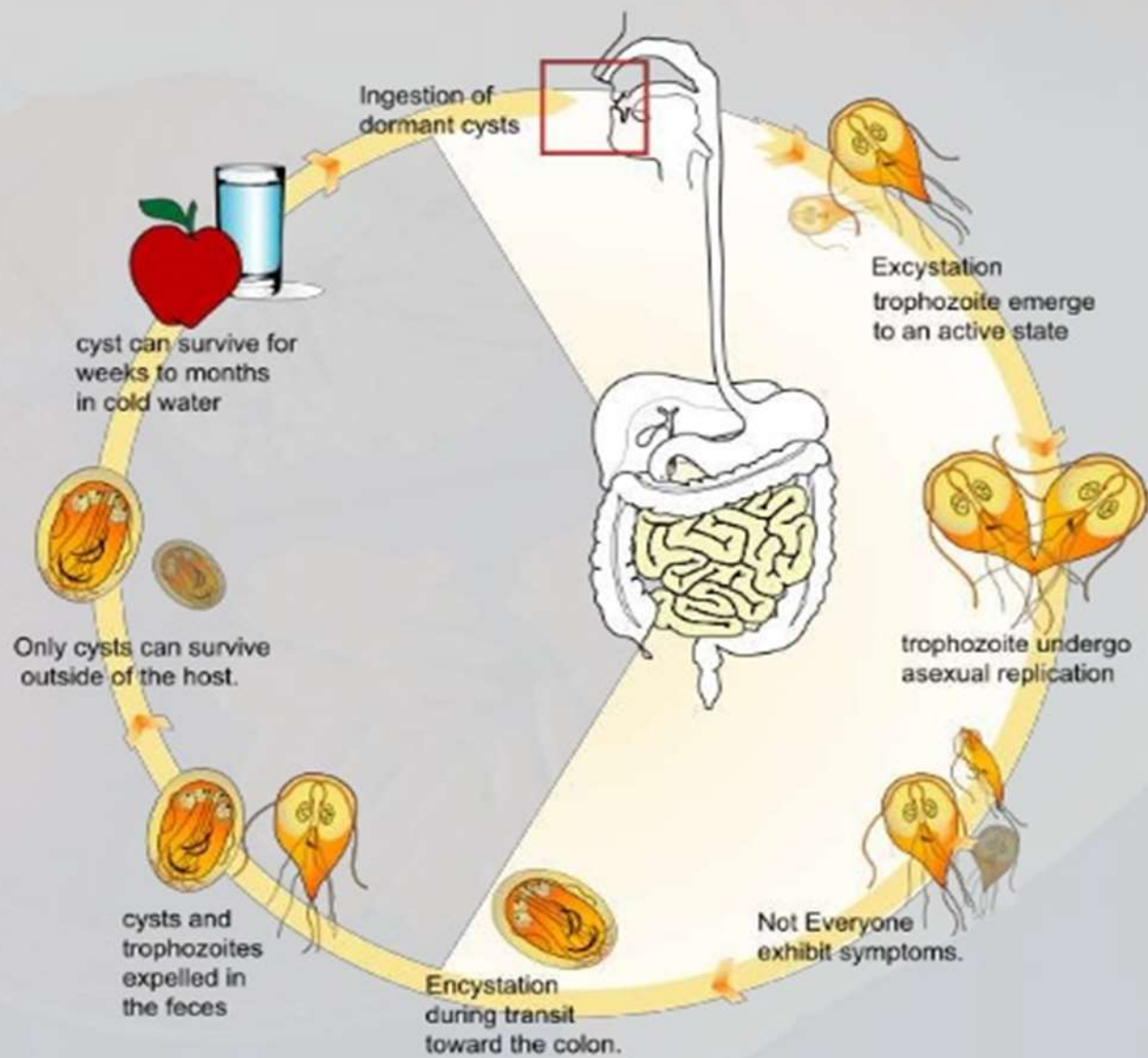
- Mainly caused by *Giardia lamblia* also known as *Giardia intestinalis*
- Most commonly found in the mucosa of the small intestine that are lined with enterocytes, the simple columnar epithelial cells.
- Spreads through contact with infected people, eating contaminated food & water.
- Pet dogs & cats also frequently contract Giardiasis.

GIARDIA



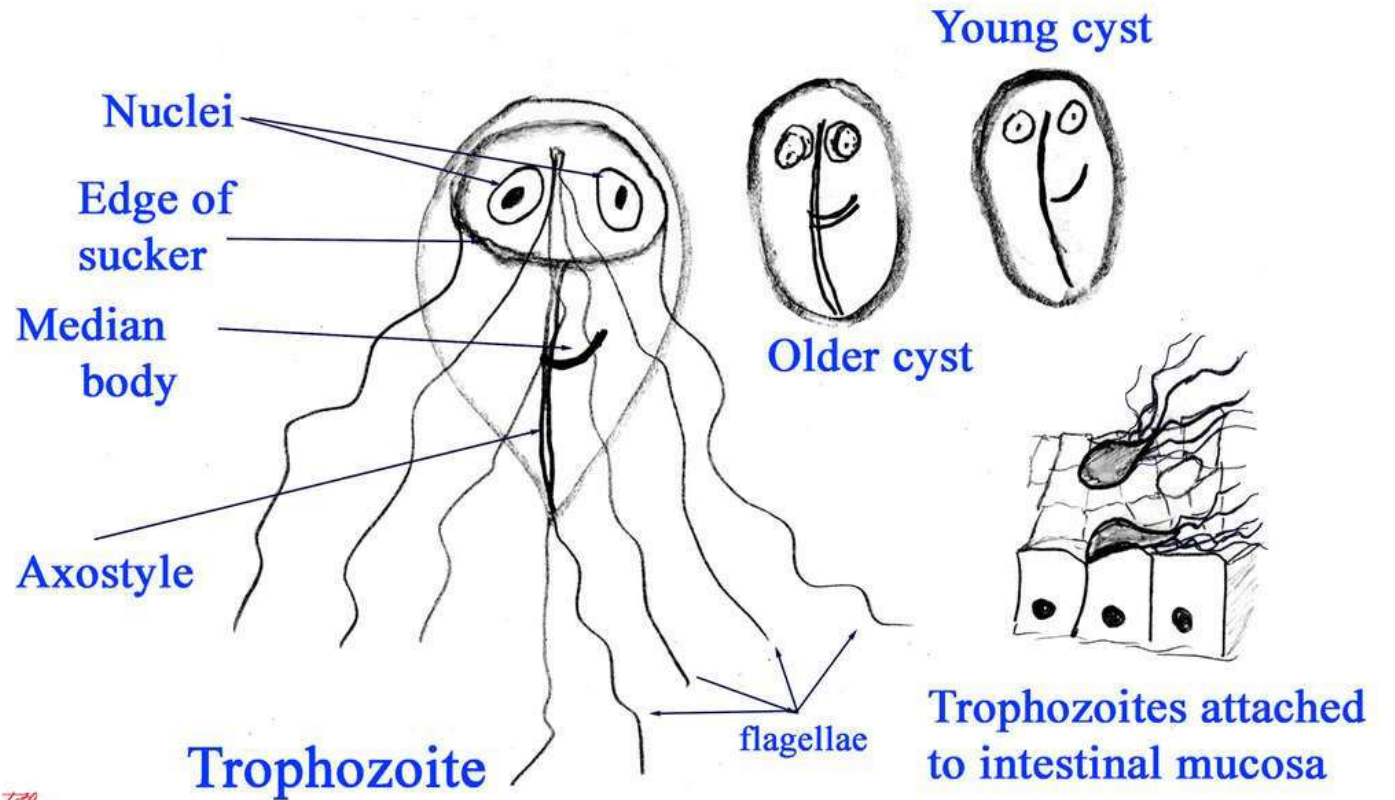
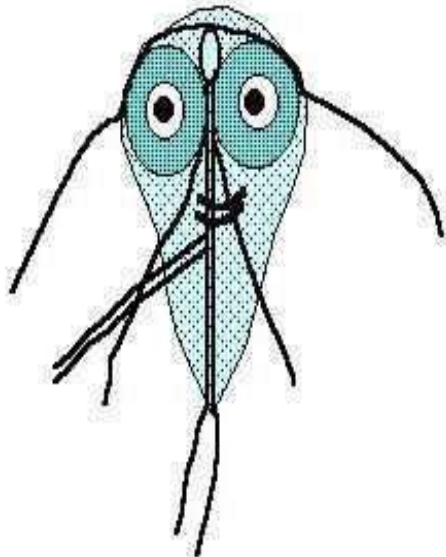


Life cycle



MORPHOLOGY

- Two stages:
1} Trophozoite
2} cyst



Symptoms

- ❑ Incubation period: 1-25 days
- ❑ Most infections asymptomatic
- ❑ Symptoms of clinical disease
 - ❖ Mild to severe gastrointestinal signs
 - Sudden onset diarrhea
 - Foul-smelling stools
 - Abdominal cramps
 - Bloating, flatulence
 - Nausea, fatigue
 - Weight loss

Diagnosis

1 } Direct observation in feces

➤ Trophozoites

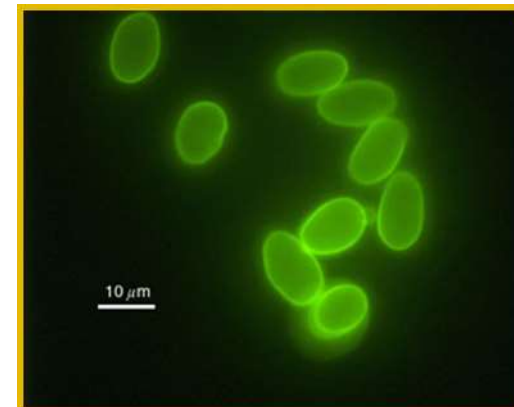
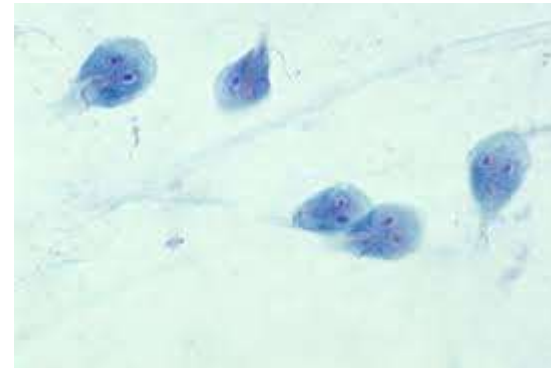
- "Tear drop" shape
- Two nuclei and tumbling mobility

➤ Cysts

- Approximately 13 microns long
- Oval, with 2-4 nuclei

2 } Immunofluorescence

3 } ELISA, PCR





Trophozoites



Cysts



Cysts