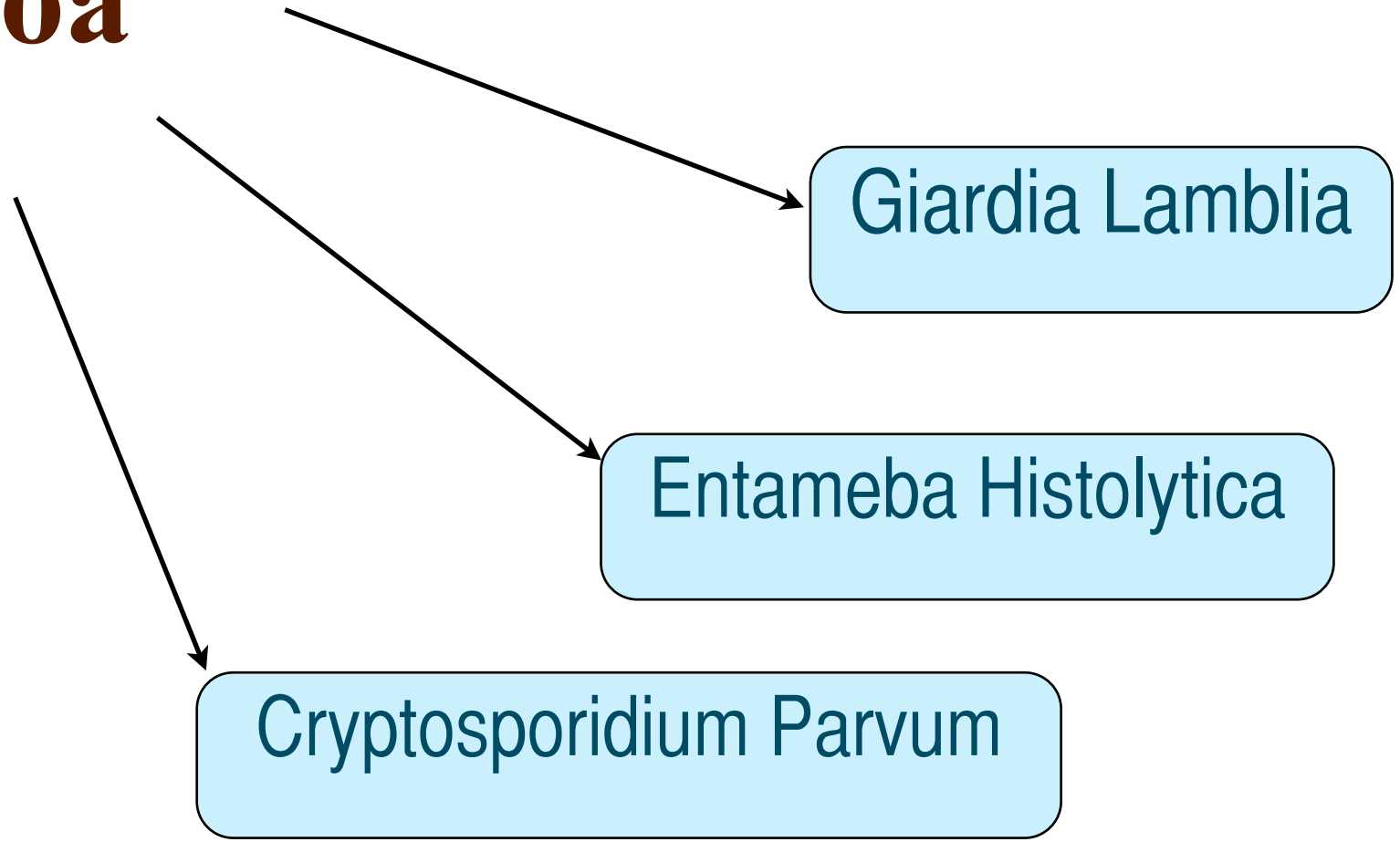
# Intestinal` Protozoa

NOTE:

This is just a review of the slides and is not enough

Important points are in **red**.



# Giardia Lamblia

## * Life cycle:

Cyst is the infective stage & also diagnostic stage

Cyst are ingested with contaminated water

Trophozites are released from cyst in upper small intestine [duodenum]

Trophozites encyst in large intestine and are released with stool

No need for intermediate animal host

# Giardia Lamblia

## * Pathology:

- Majority, asymptomatic
- Symptomatic infection
  - **Typical picture:** **chronic diarrhea** [for about 6 wks]
  - **Atypical:** Severe diarrhea & malabsorption especially in children

# Giardia Lamblia

## * Lab. Diagnosis:

- **Stool examination :**

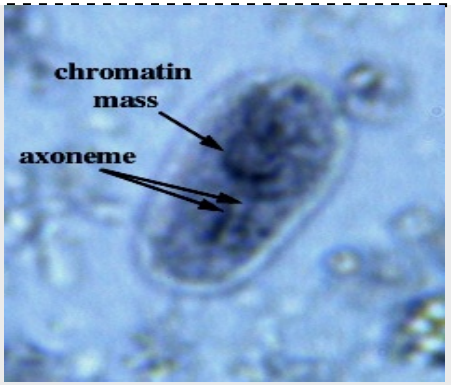
Microscopy for **cysts or trophozoits**

Serology for Detection of Giardia antigens in stools

- **Examination of duodenal contents**

**[duodenal aspirate] : looking for trophozoites**

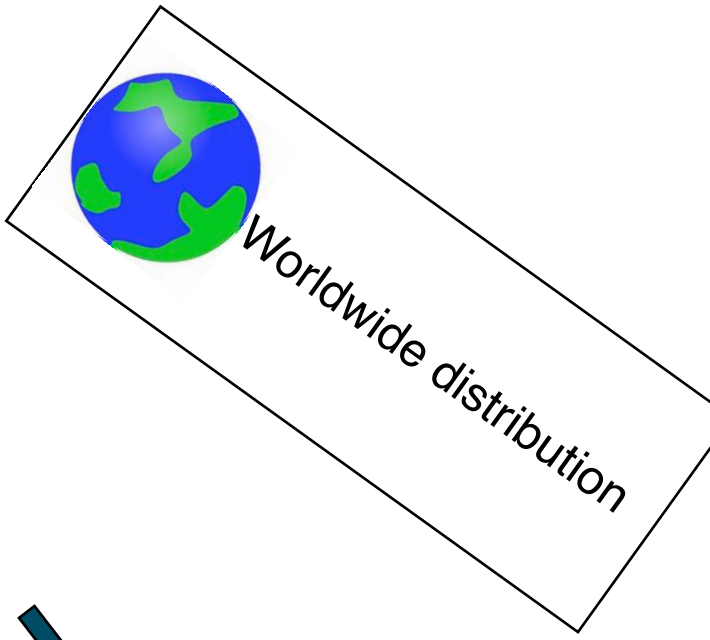
Giardia trophozites has two nuclei




Giardia cyst has four nuclei

**Metronidazole**

# Entameba Histolytica




## * Life cycle:

**Cyst is the infective stage & also diagnostic stage**

Cyst are ingested with contaminated water

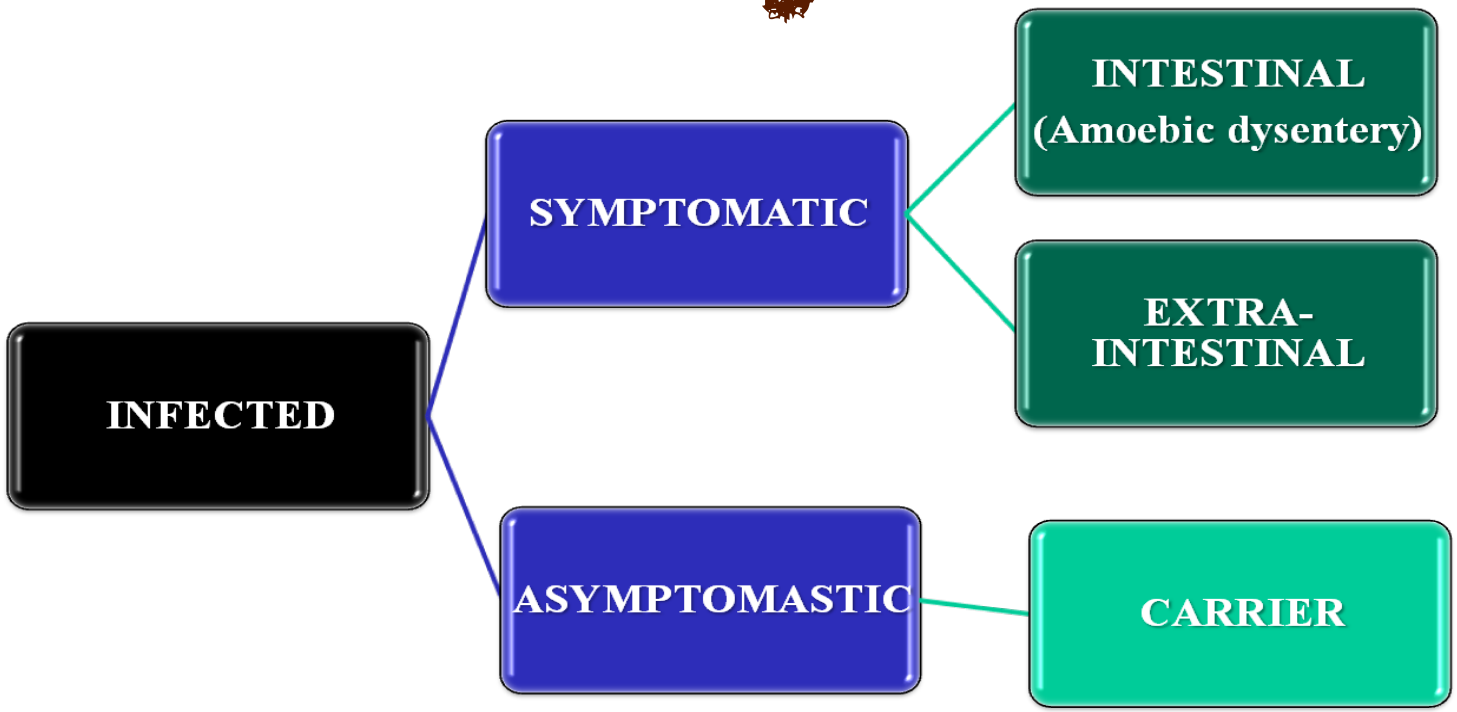
Trophozites are released from cyst in upper small intestine and migrate to large intestine

Trophozites encyst in large intestine and are released with stool

Ameba may enter bloodstream and be carried to liver, lungs & brain

# Entameba Histolytica

## * Pathology:



# Entameba Histolytica

## * Pathology:

>> Remember they're Histolytica they lyse the tissue.

### Intsetinal amebiasis :

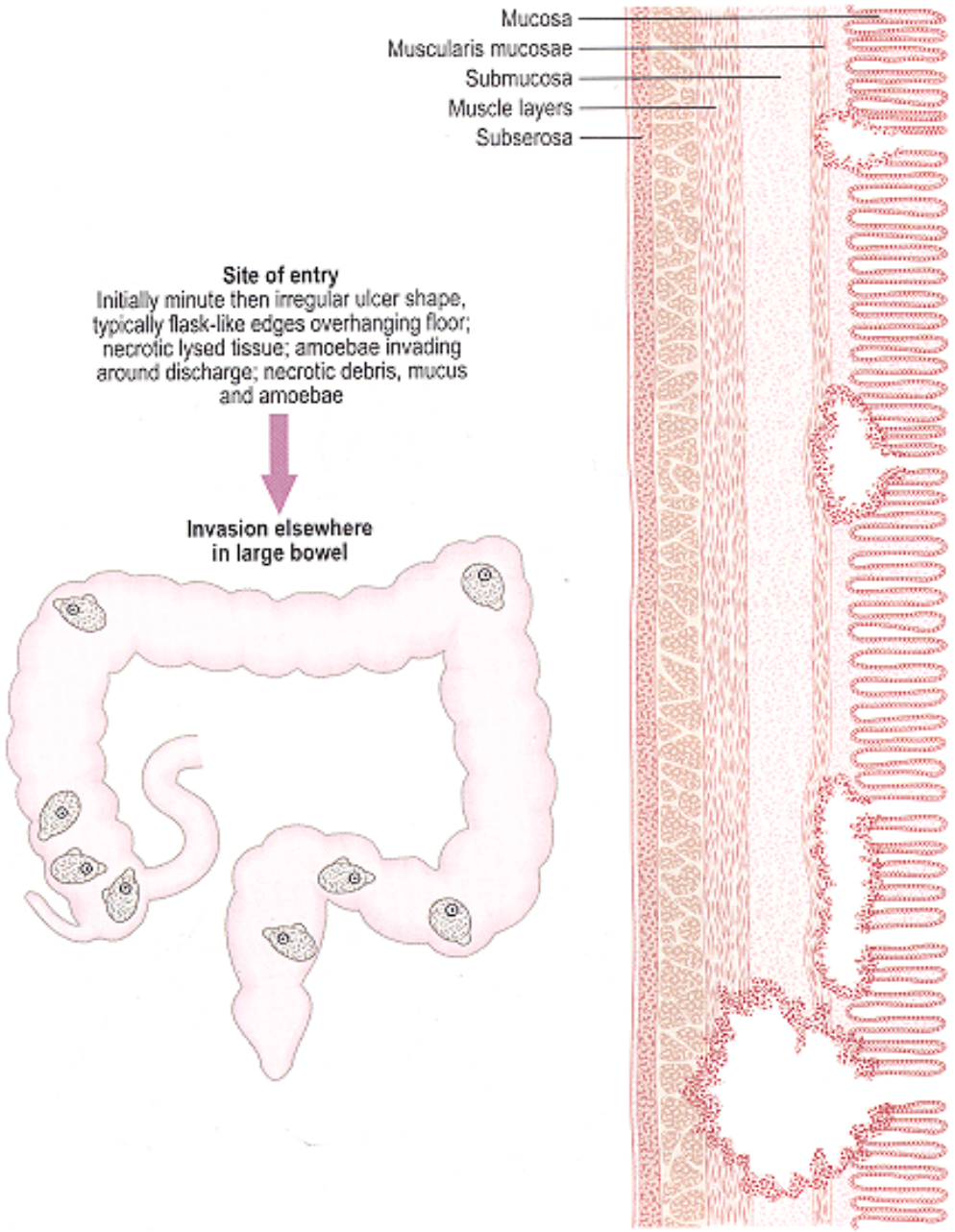
- Hydrolyse host tissues with their active enzymes present on the surface membrane of the trophozoite. [They're invasive!]

- Lesions are found in the cecum, appendix, or colon.

- They may heal, or perforate >> peritonitis.

- Ameboma :Granulomatous mass obstructing the bowel.

## Invasion of the large intestine




Types of ulcer:

| | |
|---|---|
| **The primary ulcer** | Invasion of mucosa via crypts<br>Repair may:<br>–overtake necrosis with healing<br>–keep pace with necrosis causing persistent superficial lesions |
| **'Flask-shaped'** | Lag behind–extension |
| **Extension in mucosa** | Muscularis mucosae relatively resistant<br>Accumulation of amoebae superficial to it<br>Lateral extension of lytic necrosis |
| **Formation of sinuses** | Abscesses may coalesce under intact mucosa<br>Later mucosa may slough with widespread ulceration |
| **Deep extension** | Muscularis mucosae eventually pierced (directly or via vessels)<br>Deep necrosis of sub-mucosa, even muscle and sub-serosa |

# Entameba Histolytica

## * Complications:

Complications and sequelae

**Perforation**
**Haemorrhage (rare)**

Peritonitis
Haemorrhage

**Secondary infection**

Surrounding inflammatory reaction and fibroblastic proliferation

**Amoeboma (rare)**
(Clinically simulates neoplasm)
– intussusception
– obstruction

A mass under oedematous mucosa with
– internal abscesses of necrotic tissue and amoebae
– surrounding granulomatous tissue zone with eosinophils, lymphocytes and fibroblasts
– outer firm nodular fibrous tissue

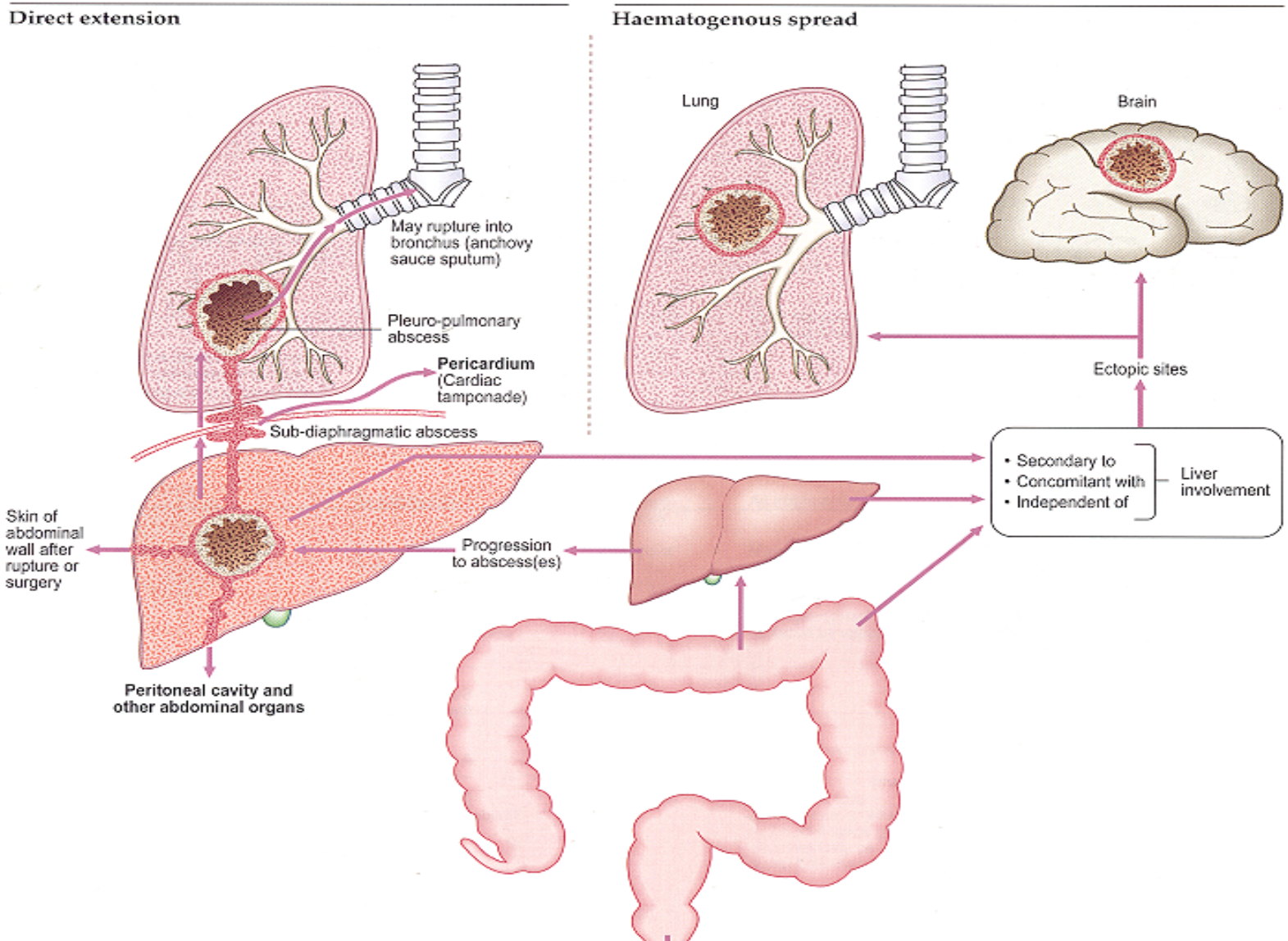
**Invasion of blood vessels**

**Extraintestinal lesions**-page 52

**Direct extension outside bowel**

# Entameba Histolytica

## Extra-intsetinal amebiasis :



# Entameba Histolytica

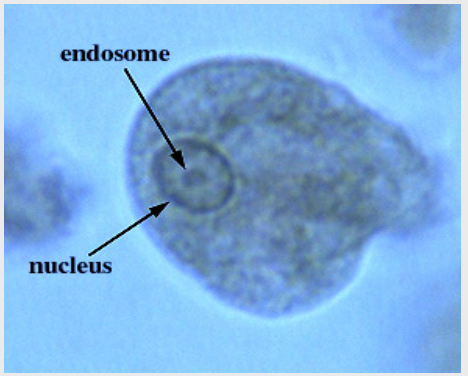
## * Lab. Diagnosis:

- Intestinal :
  - **Stool examination :**

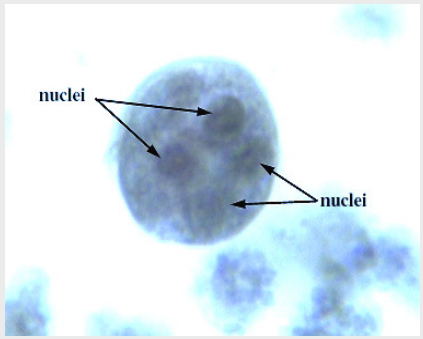
    Microscopy for **cysts** or **trophozoites**
  - **Serology** for Detection of Giardia antigens in stools

- Extra-intestinal:
  - **Serology:** IHA , ELISA
  - **Microscopy** of tissues or fluids (biopsy)

    looking for **trophozoites**

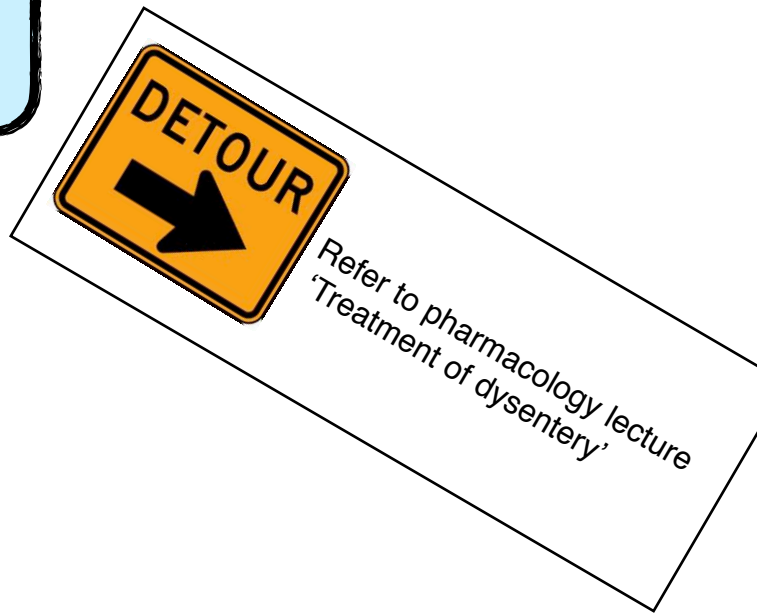



**E.histolytica trophozites has single nucleus**




**E.histolytica cyst has four nuclei**

# Entameba Histolytica

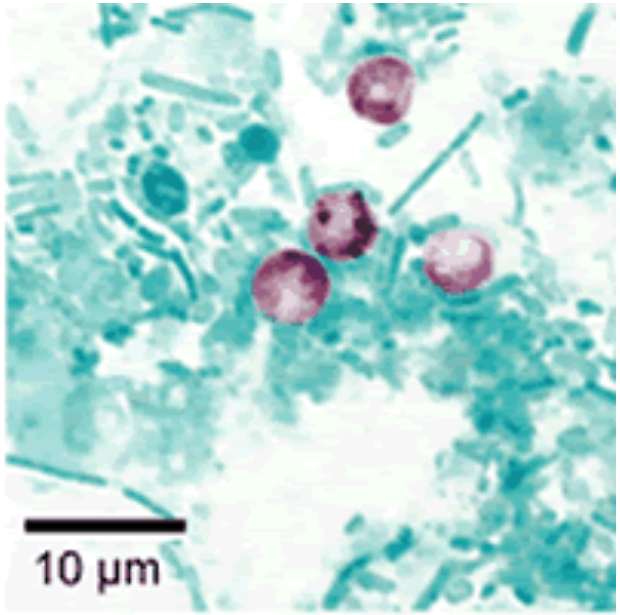
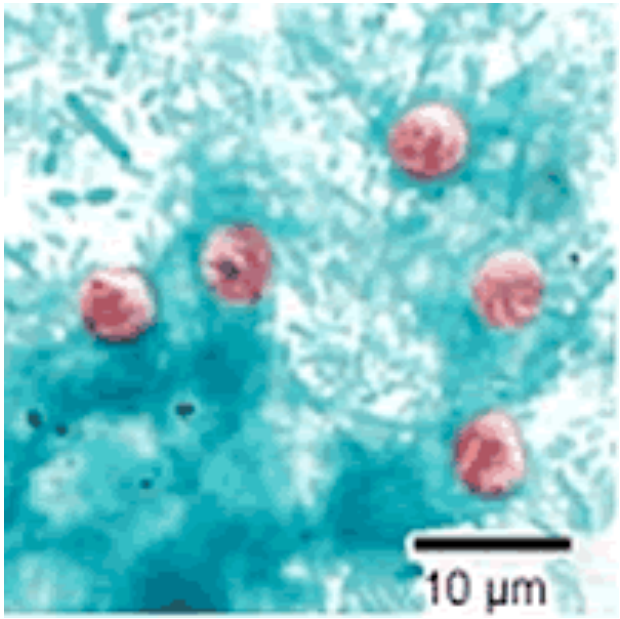
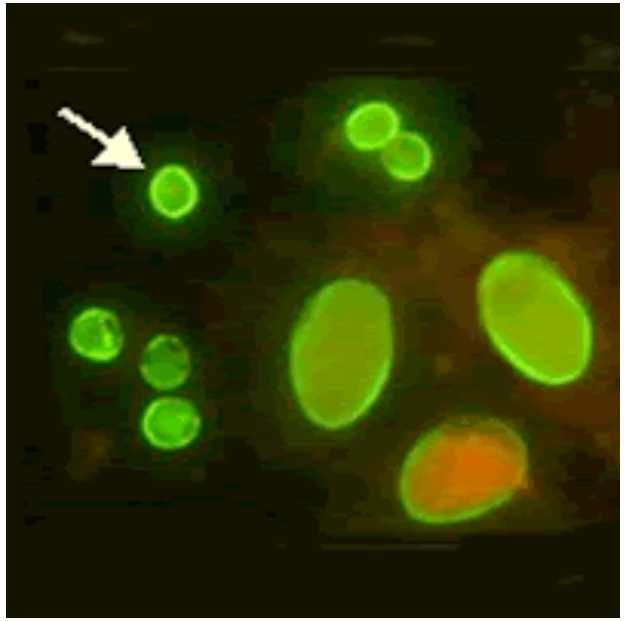



- Intestinal
  - Asymptomatic (cysts only) -> **Diloxanide Furoate** (Furamide)
  - Symptomatic (cysts and trophozoites) -> **Metronidazole**
- Extra-intestinal -> **Metronidazole**

# Cryptosporidium Parvum

* Opportunistic parasite

## * Lab. Diagnosis:

| Acid fast stain (Z\N) | Safranin | Immunofloresence |
|---|---|---|
|  |  |  |



In immunocomptent > self-limiting \\ In AIDS patients > **Paromomycin**

**14 l Intestinal Protozoa**

1. the pathogenic protozoan with extra-intestinal spread through blood is:

a) Giardia L. b) Entameba coli c) isasporablli d) Entameba histolytica

2. Entameba histolytica trophozites encyst in:

a) the wall of lower part of small intestine
b) wall of retro-sigmoid colon
c) the lumen of colon
d) non of the above

3. Liver abscess is known complication of:

a) fasciola hepatica b) Giardia L. c) schistosoma mansoni d) E. histolytica

4. in antameba histolytica all true except

a) infection can produce flask shaped intestinal ulcer
b) can metastize and give amebic liver abscess.
c) infection cyst contain 4 nuclei
d) cyst can invade intestinal mucosa

**15 I Intestinal Protozoa**

5. the protozoan causing dysenteric symptoms is:

a) blantidium coli  b) entameba histolytica  c) entameba coli  d) giardia lamblia

6. 30-year-old male experienced diarrhea for two weeks with fever, vomiting, malaise and right upper abdominal pain. Physical examination revealed hepatomegaly. CT scan showed a single hypodense mass in the rigth lobe round, with well defined borders. Physician suspected liver abscess due to E. histolytical, investigation should include?

answer) stool examination & indirect hemagglutination

7. flask shaped ulcers in colon are caused by:

a) giardia lamblia  b) Cryptosporidium Parvum  c) entameba histolytica  d) acanthameba

8. giardia lamblia affect mainly:

a) upper small intestine  b) cecum  c) colon  d) rectum

9) infection with giardia lamblia is through:

a) ingestion of trophozite

b) ingestion of cyst.

c) ingestion of oocyst.

d) ingestion of egg.

10) parasite causing duodenitis:

a) Gardia L.  2) E. histolytica  3) toxplasma  4) acanthomeba

11. duodenal aspirate is a good specimen for diagnosis of:

a) teniasis  b) giardiasis  c) ameba dysentry  d) cysticerosis

12. after ingestion of giardia lamblia cyst hatching tke place in:

a) stomach  b) lower part of small intestine  c) upper part of small intestine  d) colon

Answers:

1) d
2) c
3) d
4) d
5) b
6) –
7) c
8) a
9) b
10) a
11) b
12) c

Source: Parasitology students' book