



SEM 4 PRACTICAL PARA REVISION



Each Slide has Two Questions

Q1: Identify??

متنشاش

Q2: A. Parasite Life cycle (DH, IH, RH, Habitat, Stages of life cycle, Infective stage, Diagnostic stage, Mode of infection).

B. Diagnostic specimens or samples.

C. Most important or commonest C/P

D. Most important or commonest Complication

E. Specific treatment



Parasitic Infections Affecting CNS and Special senses



➤ Parasitic Infections Affecting CNS :

Free living amoeba:

- Primary Amoebic Meningoencephalitis
- Granulomatous Amoebic Meningoencephalitis

***Trypanosoma brucei* :**

- Sleeping Sickness

Entamoebae histolytica

- Secondary Amoebic Cerebral Abscess

***Taenia solium*:**

- NeuroCysticercosis



1) Pathogenic Free-Living Amoebae

1) *Naegleria fowleri*



➤ *Naegleria fowleri* morphological stage:

Amoeboid Trophozoite:

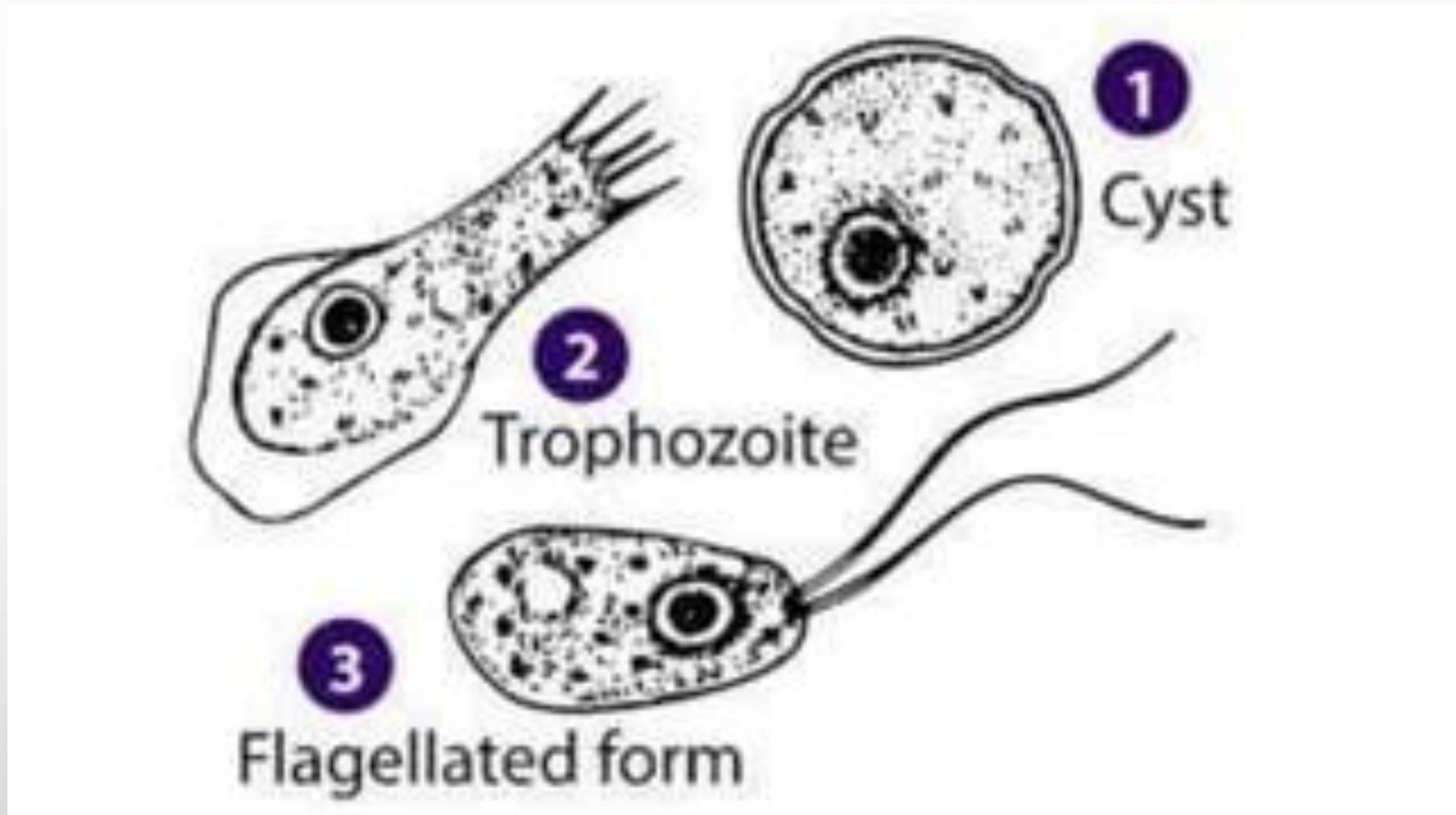
- (in tissues and CSF)
- Elongate with broad anterior end, tapering posterior end.
- with single pseudopodium.
- 15 μ

Flagellate Trophozoite

- (when contact with water)
 - Pear shaped
 - two long equal flagellae

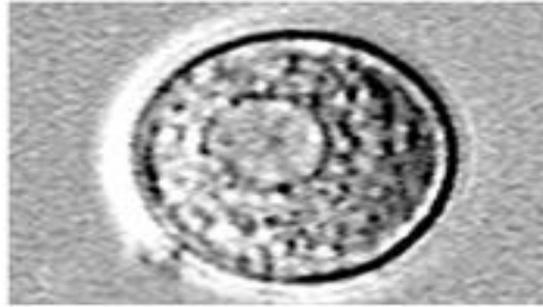
Cyst:

- Occurs in soil (never in tissues):
- Rounded
- 10 μ m.



***Naegleria fowleri* morphological stage:**

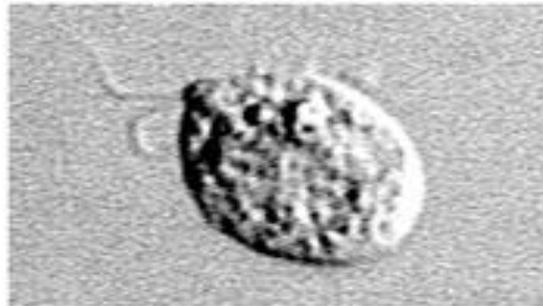
Naegleria fowleri
morphological stage:



Cyst stage



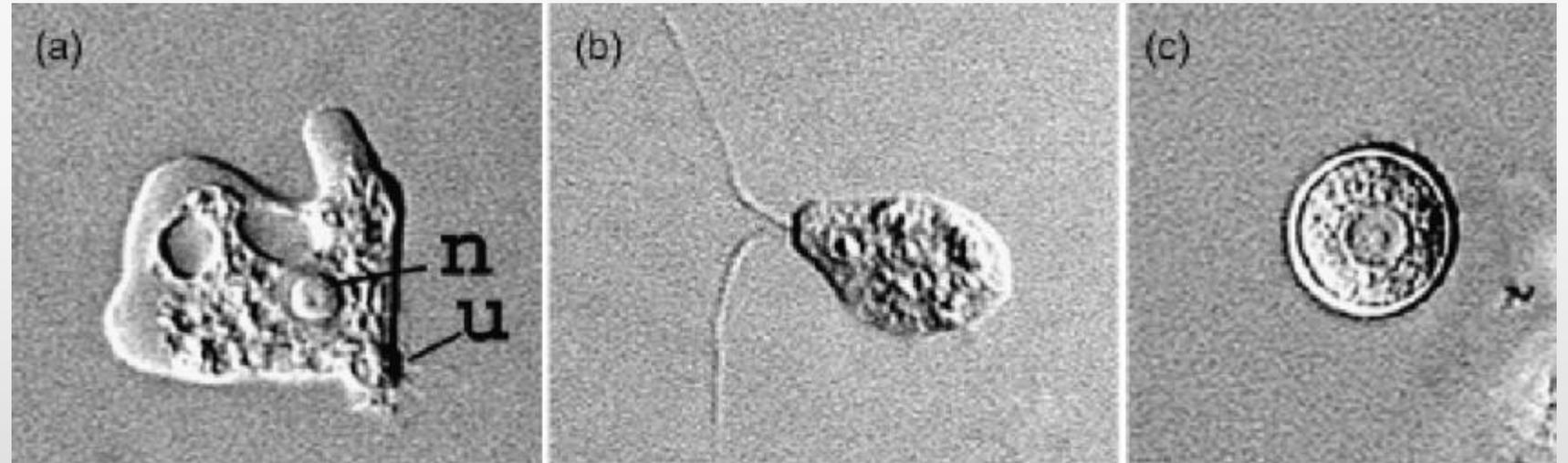
Trophozoite stage

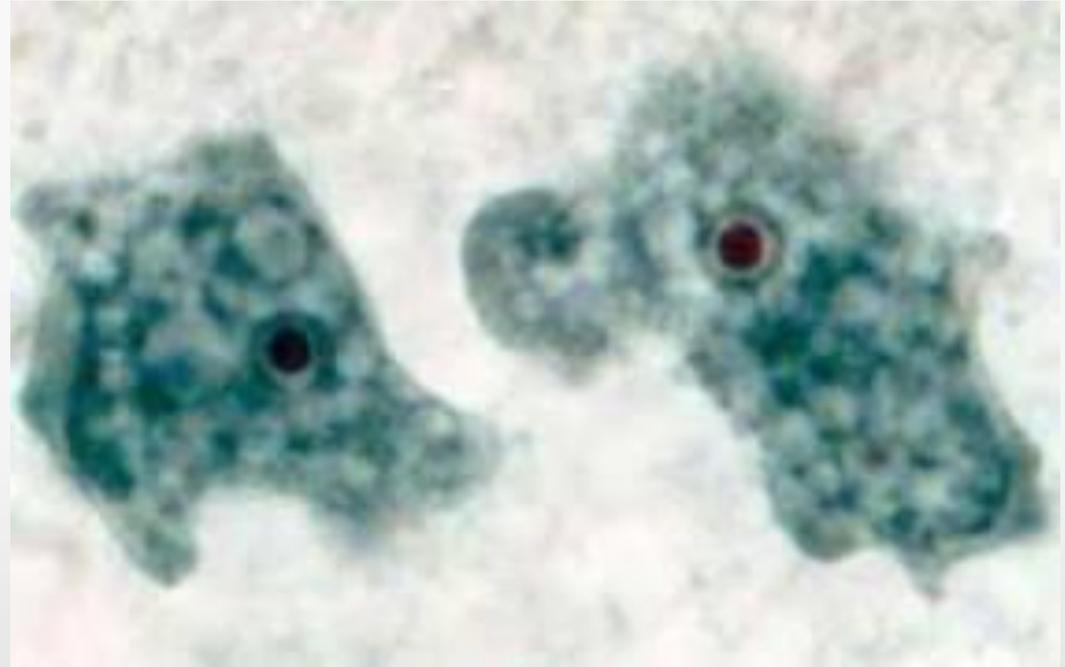
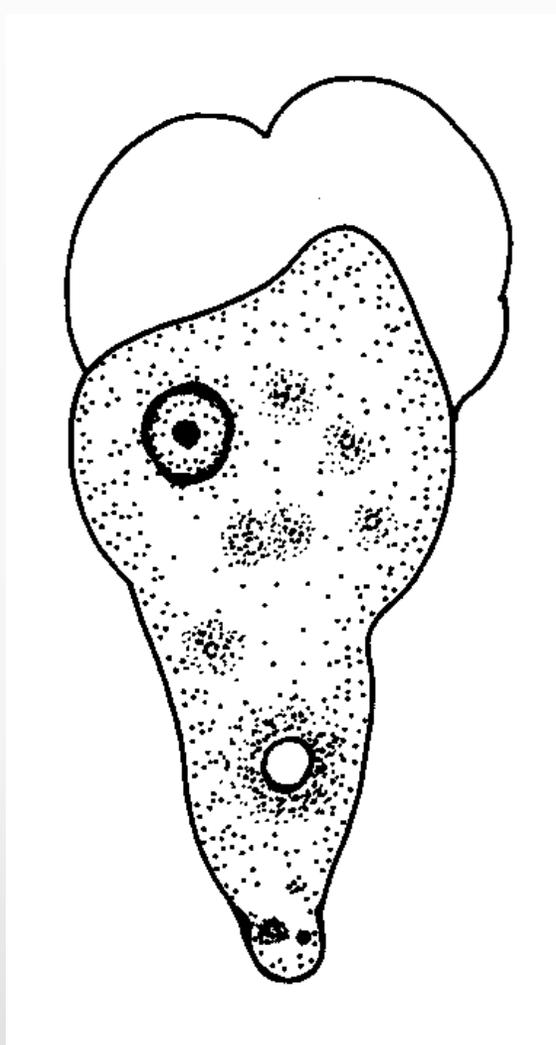


Flagellated stage

Naegleria fowleri morphological stage:

- (a).....?
- (b)?
- (c)?





***Naegleria fowleri* Amoeboid Trophozoite**



Pathogenic Free Living Amoebae

2) *Acanthamoeba castellani*

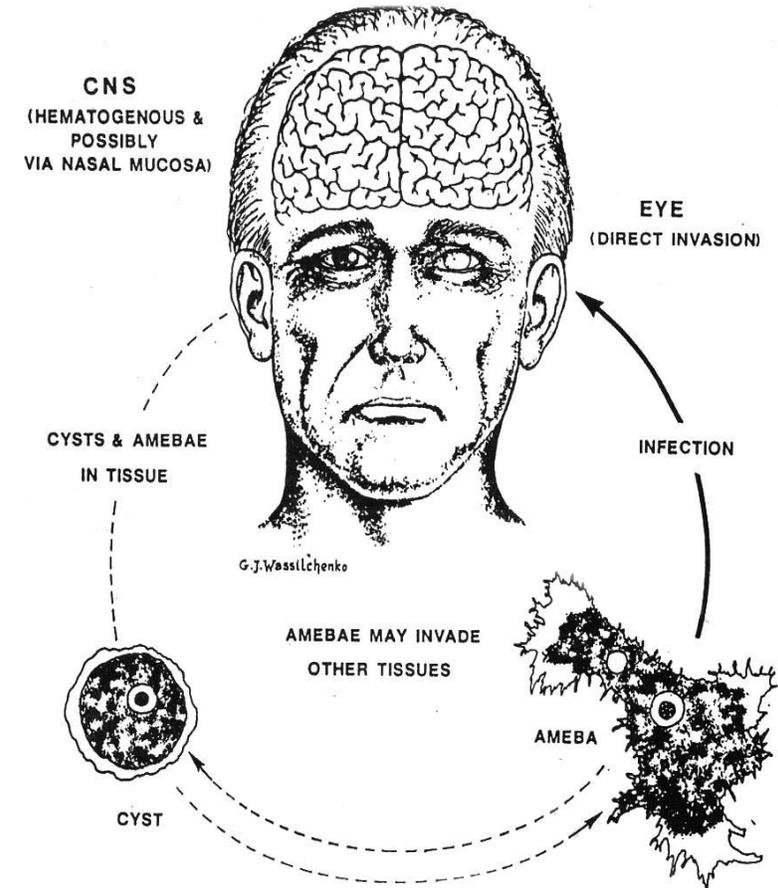
Acanthamoeba castellani Morphology

Trophozoite:

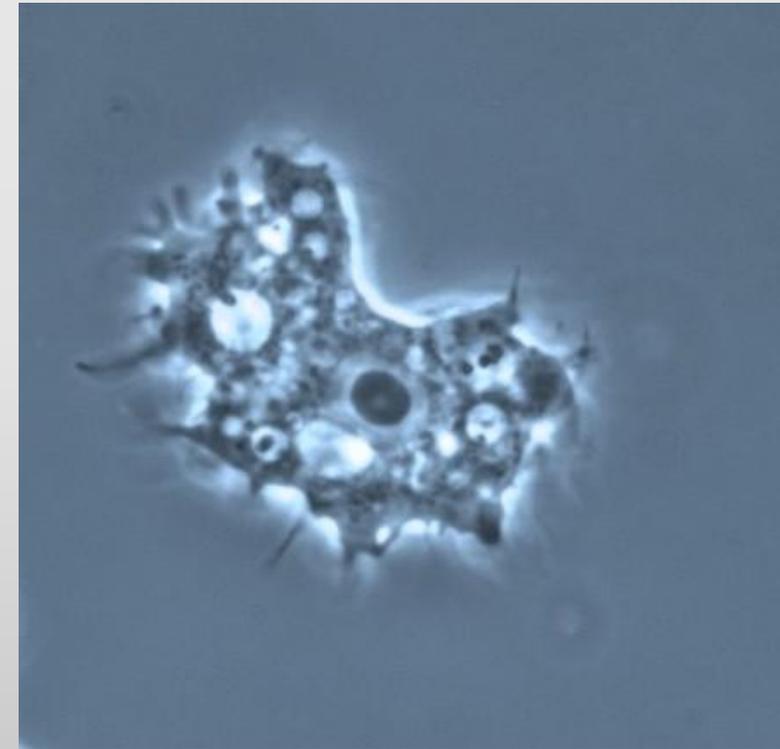
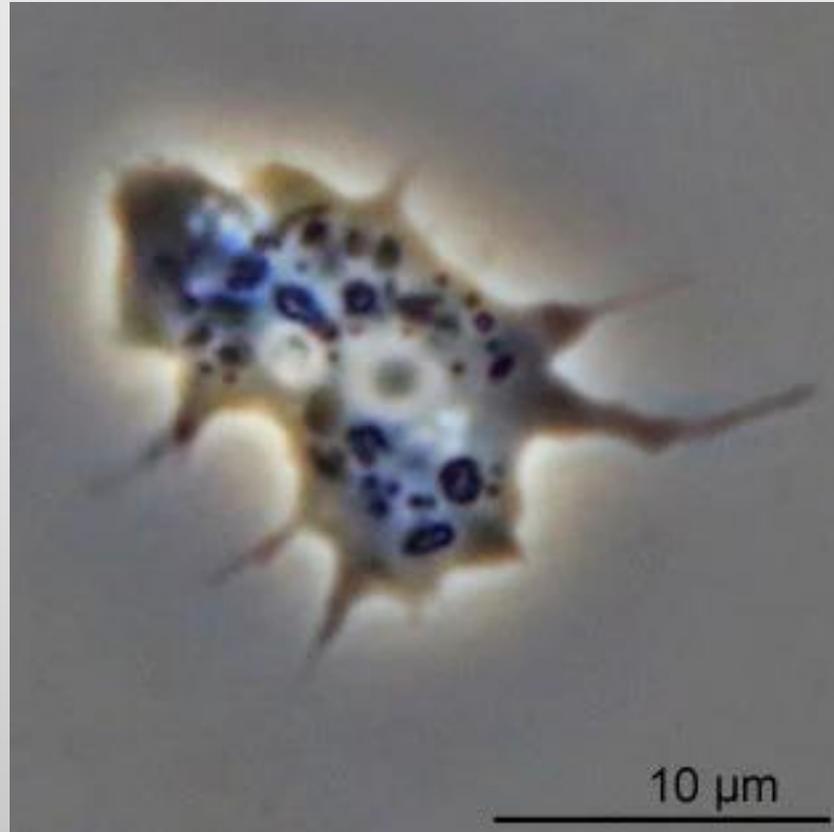
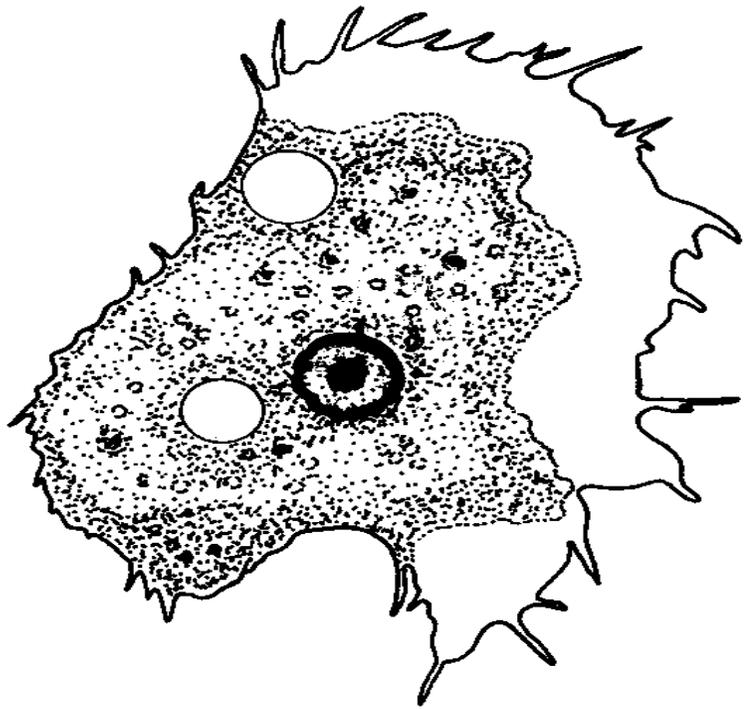
- Amoeboid
- Cytoplasm is well differentiated
- Pseudopodia are multiple and spiky (Acanthopodia).
- 20-40 μm in size

Cyst:

- Double wall
- Rounded
- 20 μm .

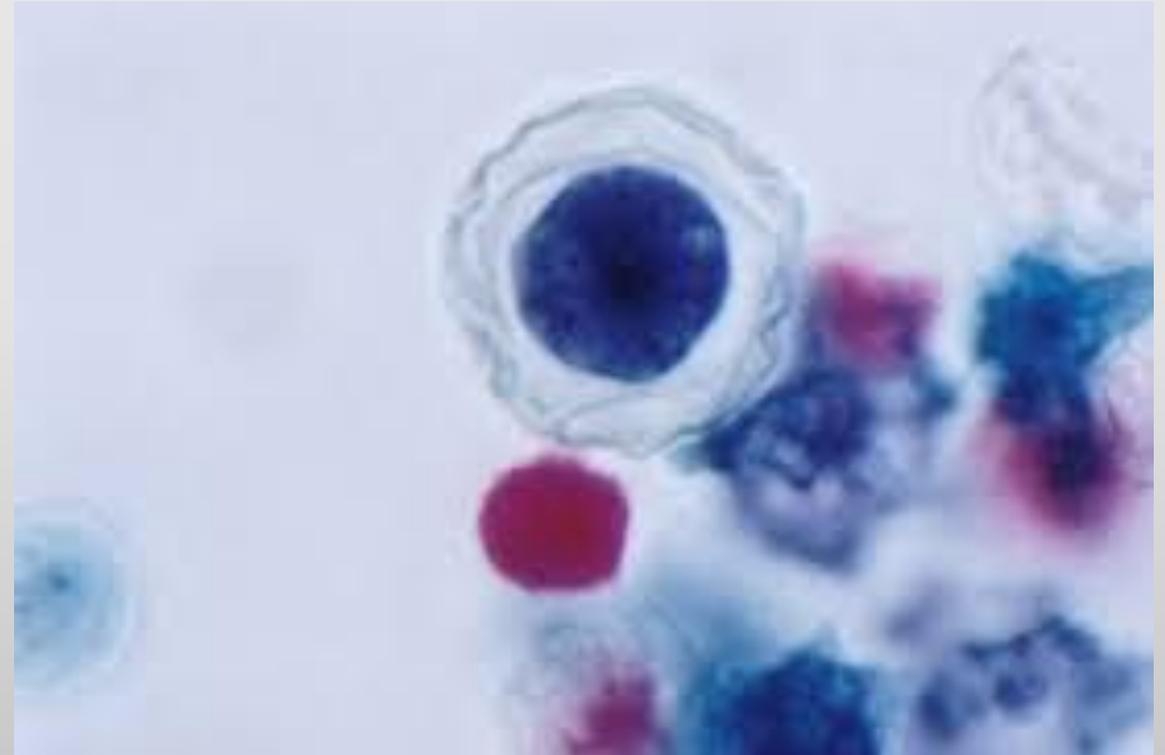
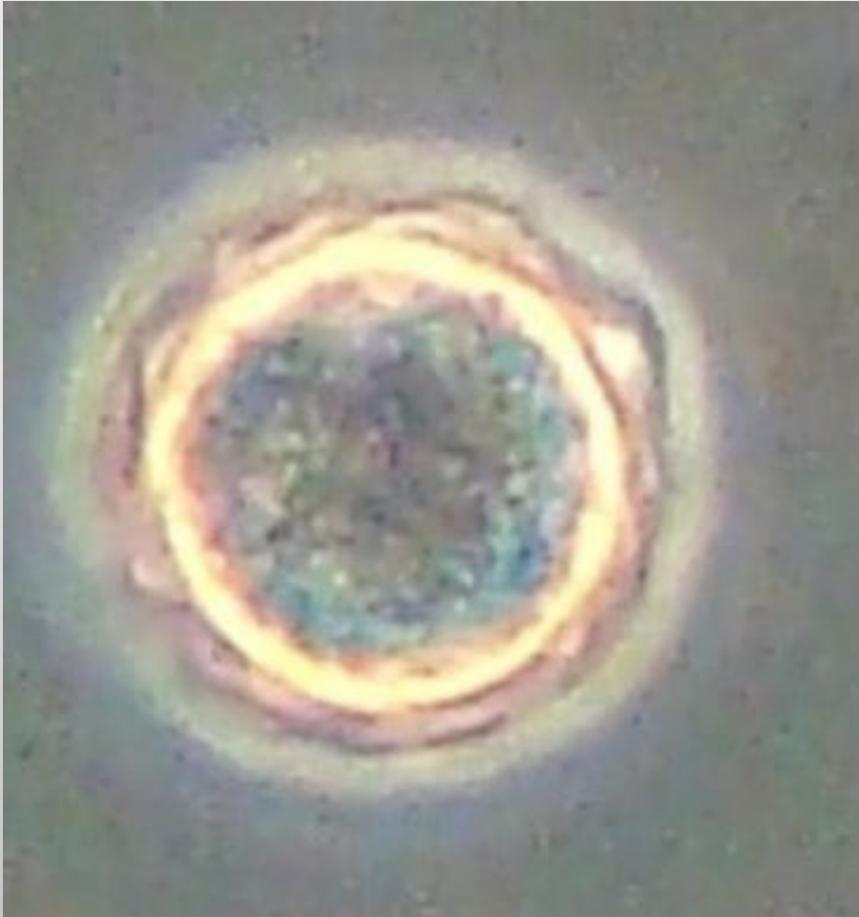


Acanthamoeba castellani Trophozoite:

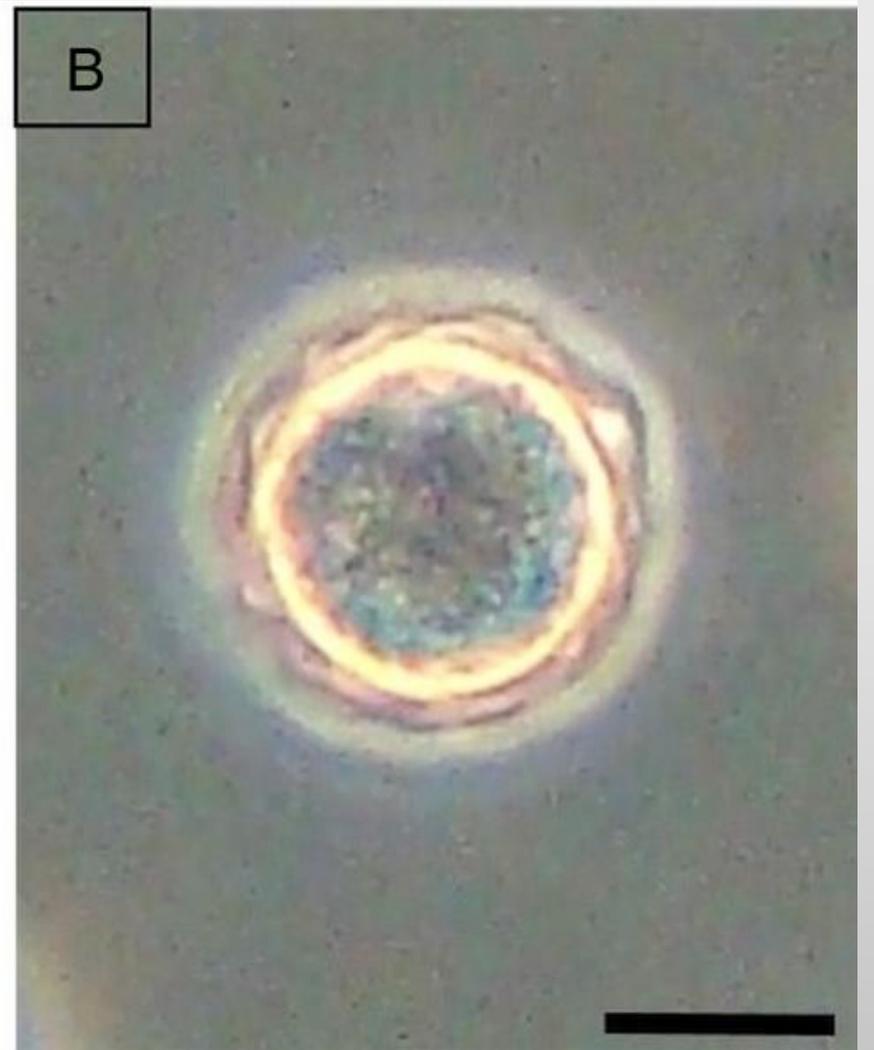




Acanthamoeba castellani cyst:



(A).....?
(B).....?

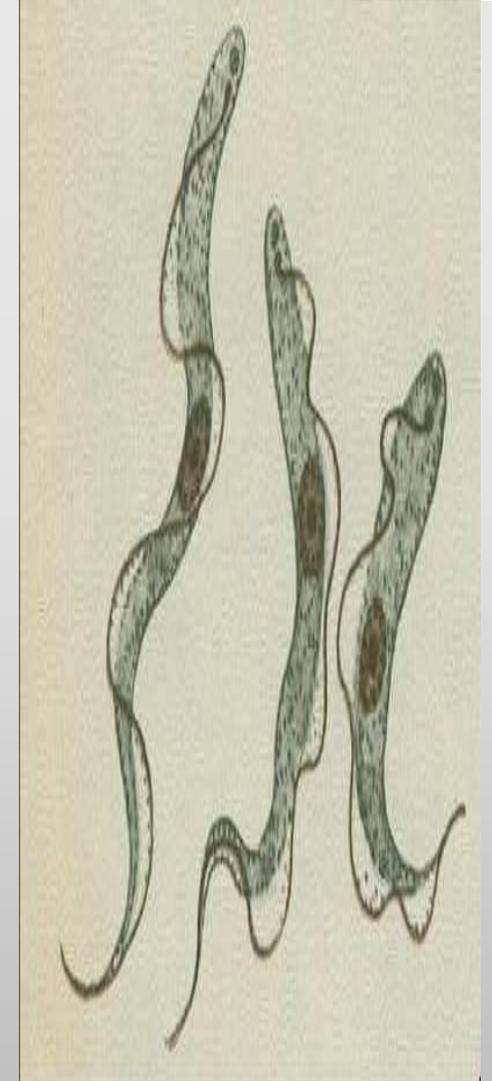


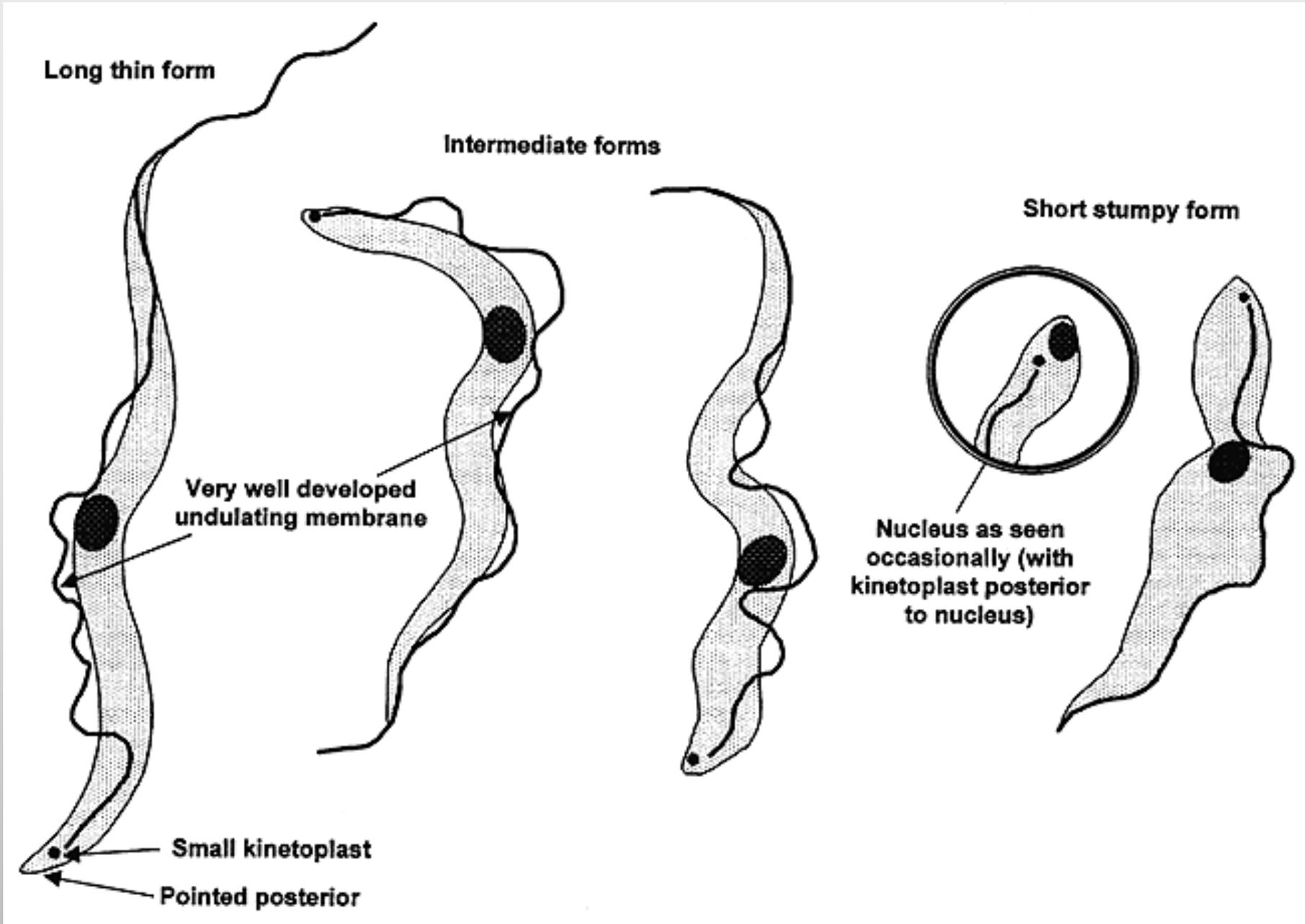


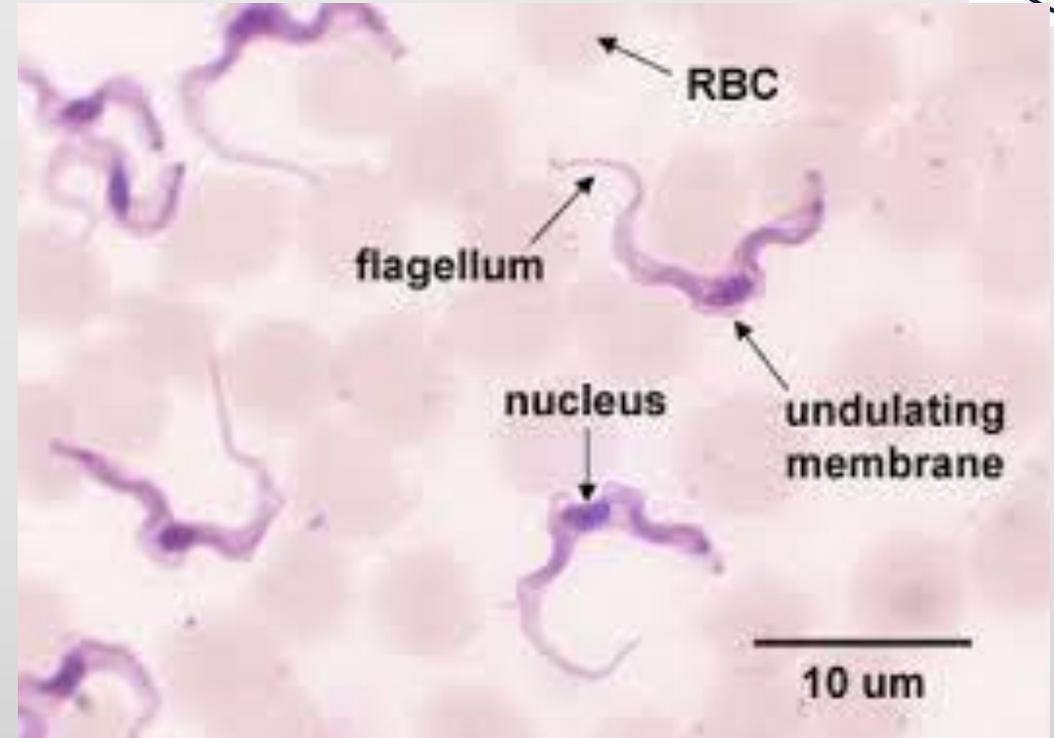
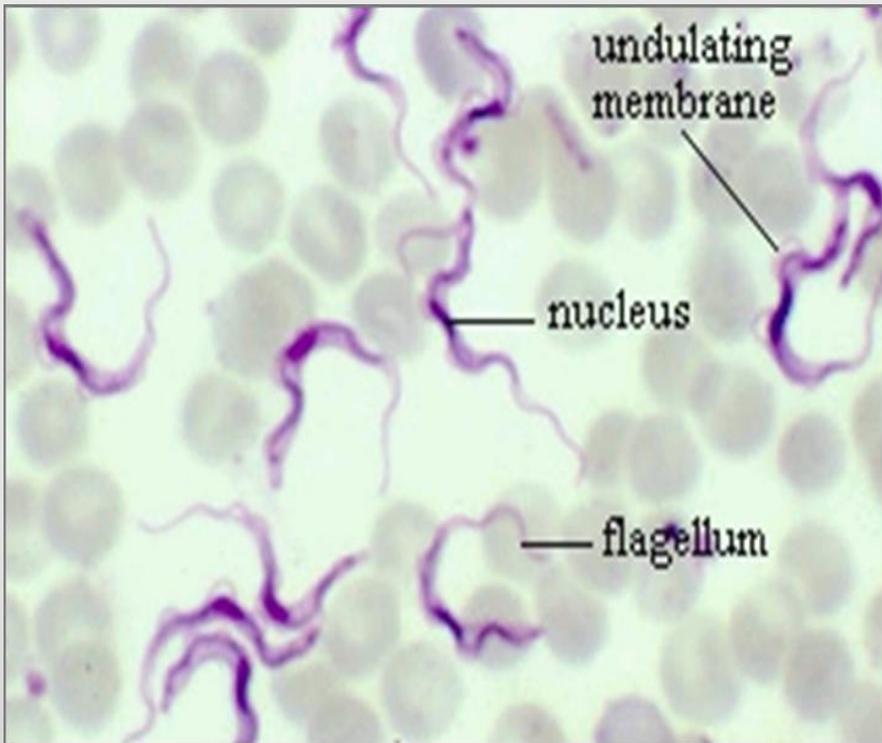
3) African Trypanosomiasis Sleeping sickness

Trypomastigote has 3 forms in vertebrate host

Morphological form	Characters
1- <u>Long slender</u> form	30 u in length, with a free flagellum & actively motile
2- <u>Intermediate</u> form	22 u in length, with a short free flagellum
3- <u>Short stumpy</u> form	15 u in length, without a free flagellum

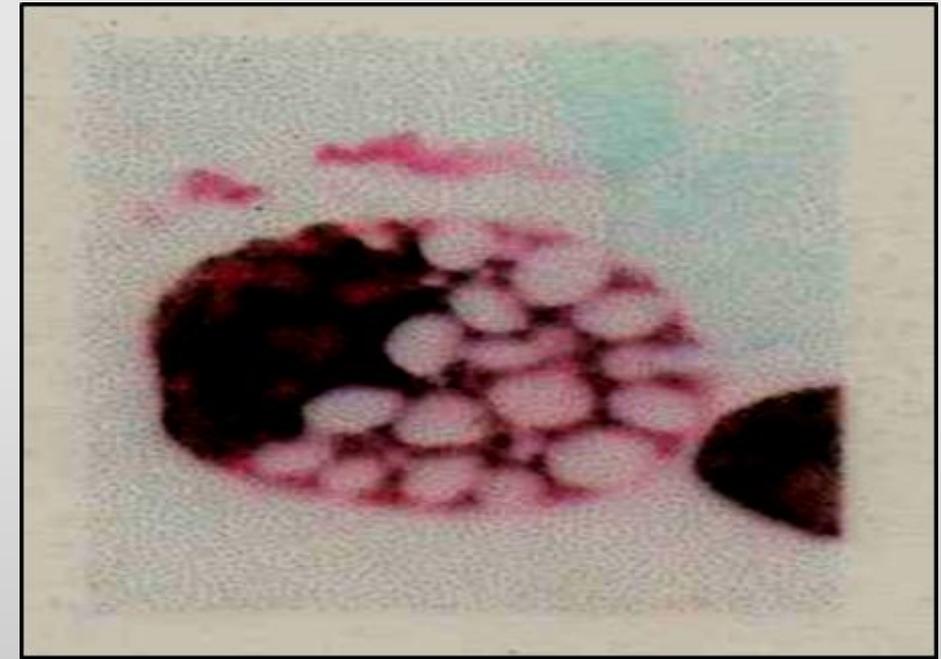
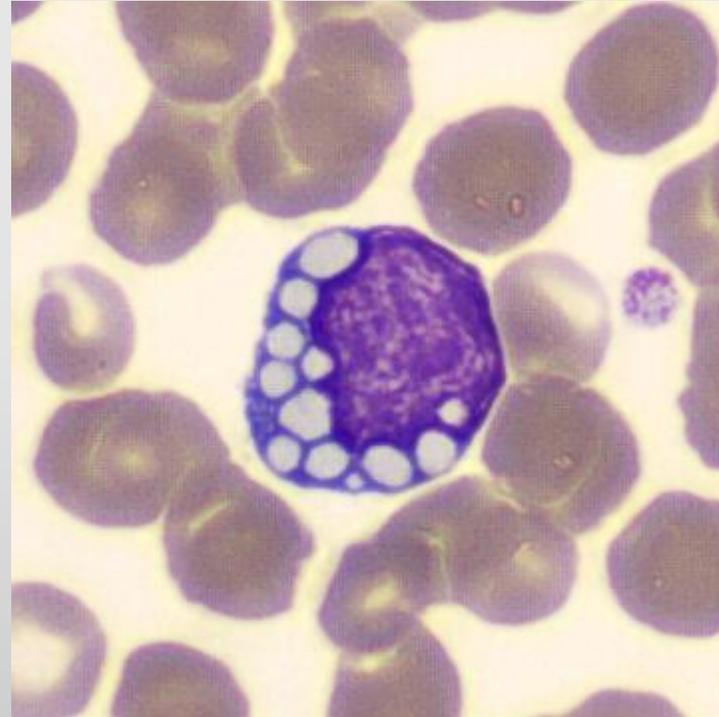






Polymorphic Trypanosomes in blood film

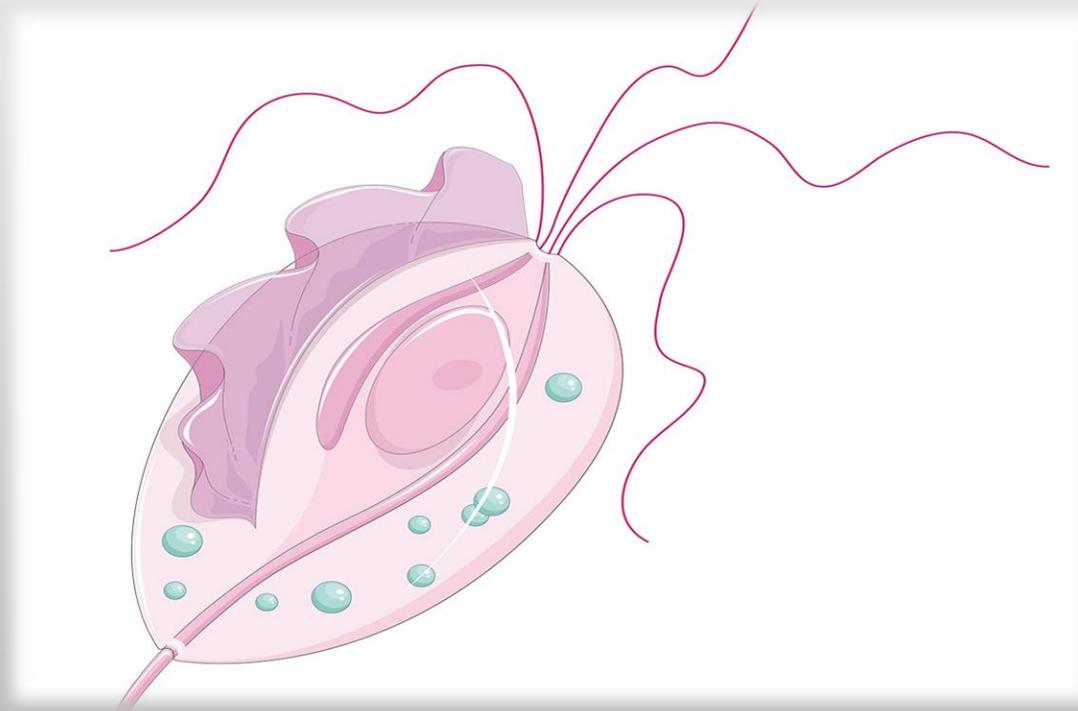
➤ CSF examination: Morula cells of Mott (Vacoulated cytoplasm)





Parasites Affecting The Reproductive System

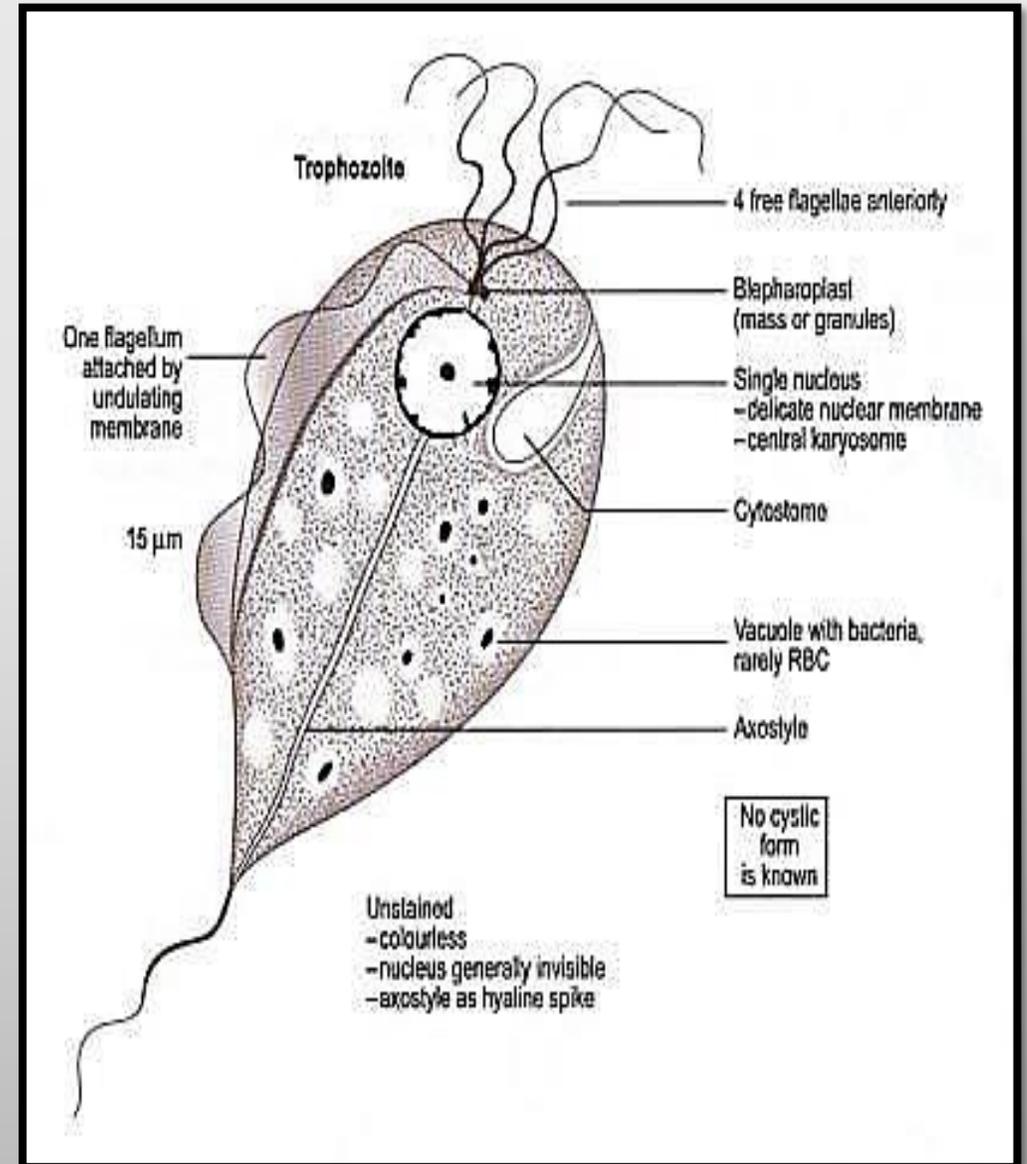
1) *Trichomonas vaginalis*



Morphology

1) Trophozoite:

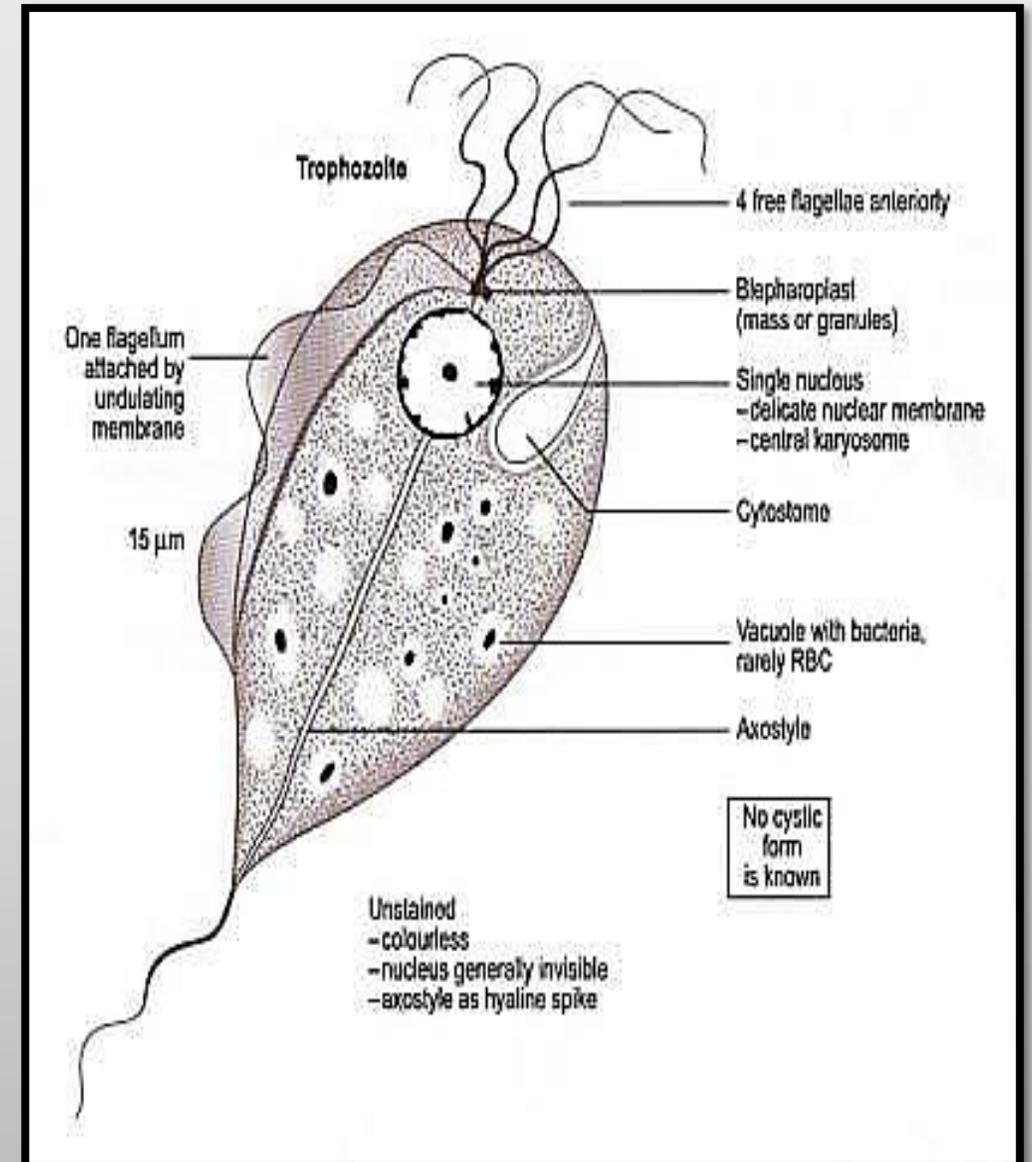
- pear-shaped
- 17x10 μ ,
- with a rapid jerky movement.
- an antero-lateral cytostome.
- The cytoplasm is granular with a single anterior nucleus



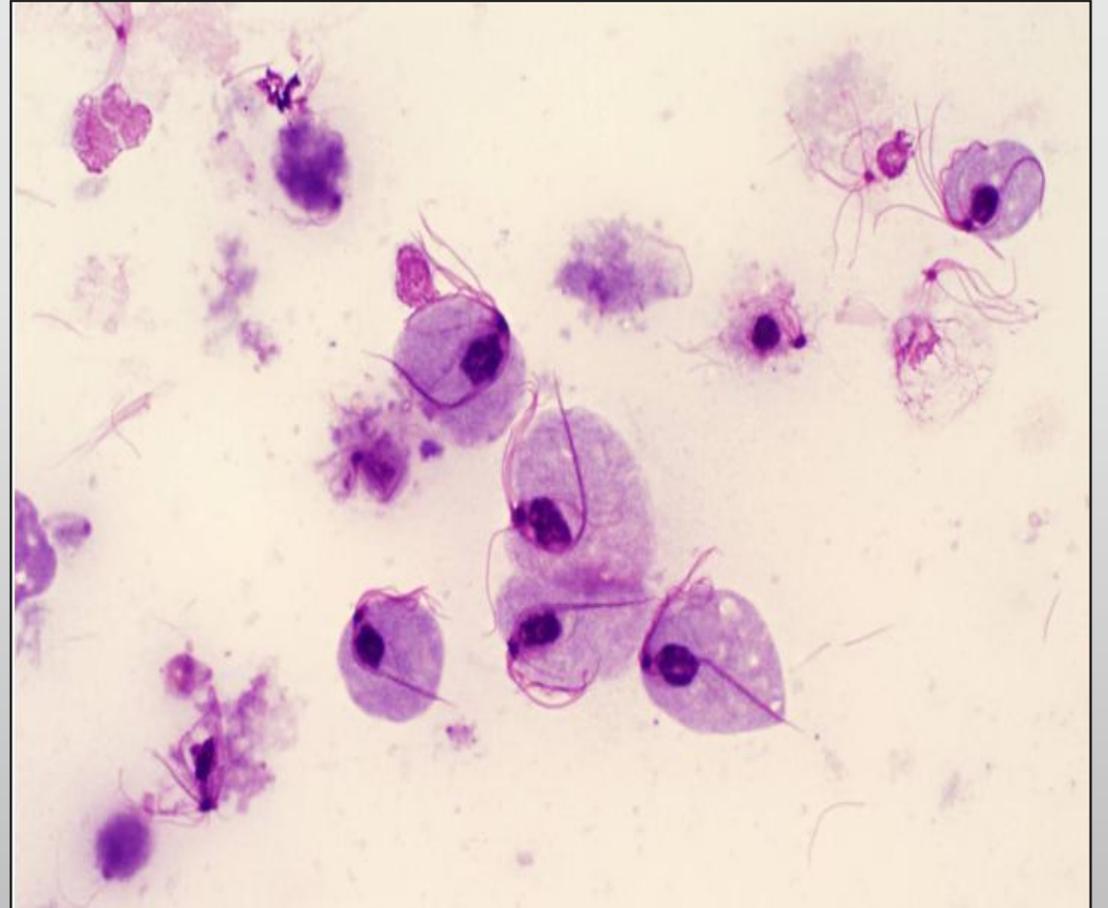


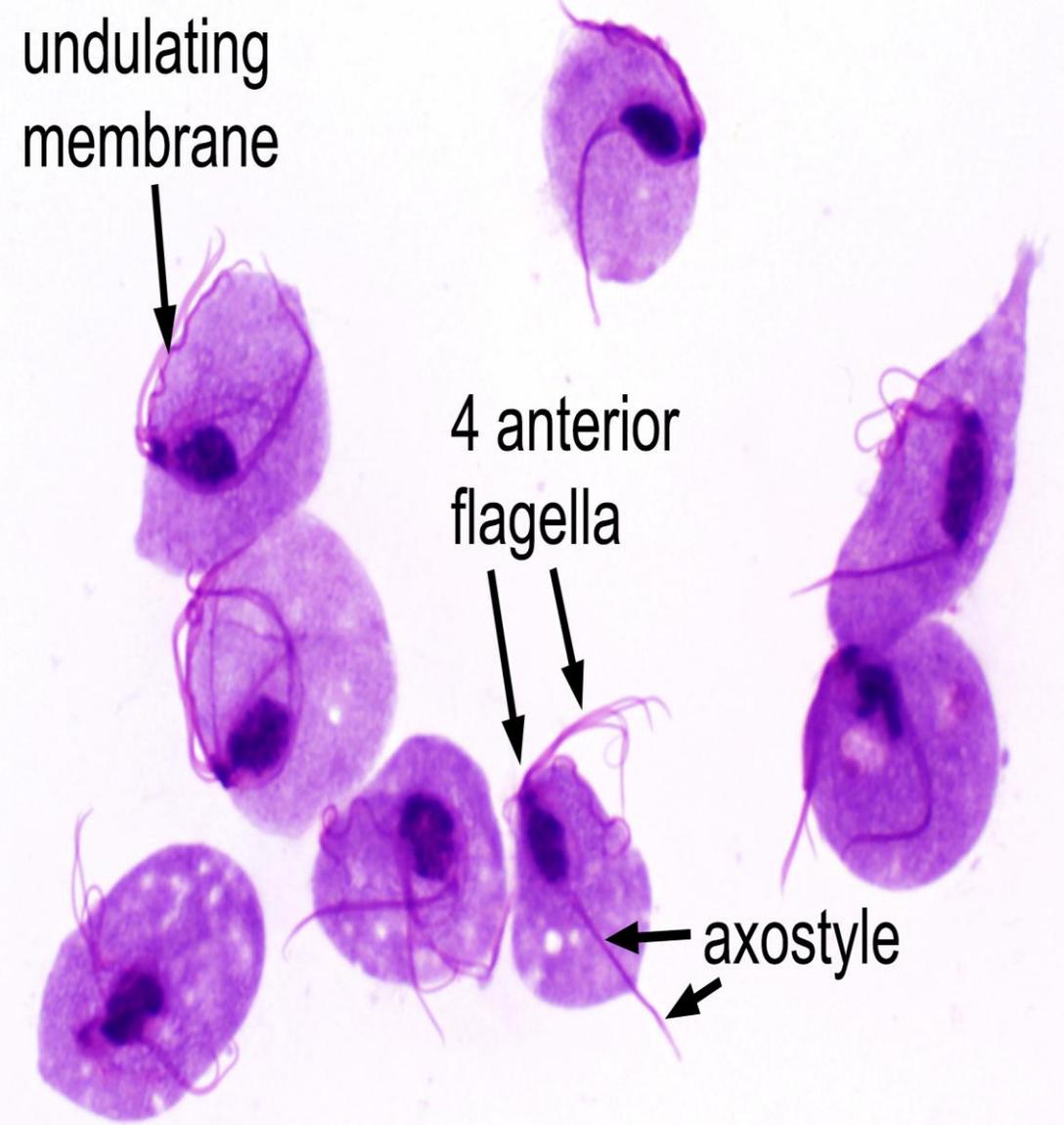
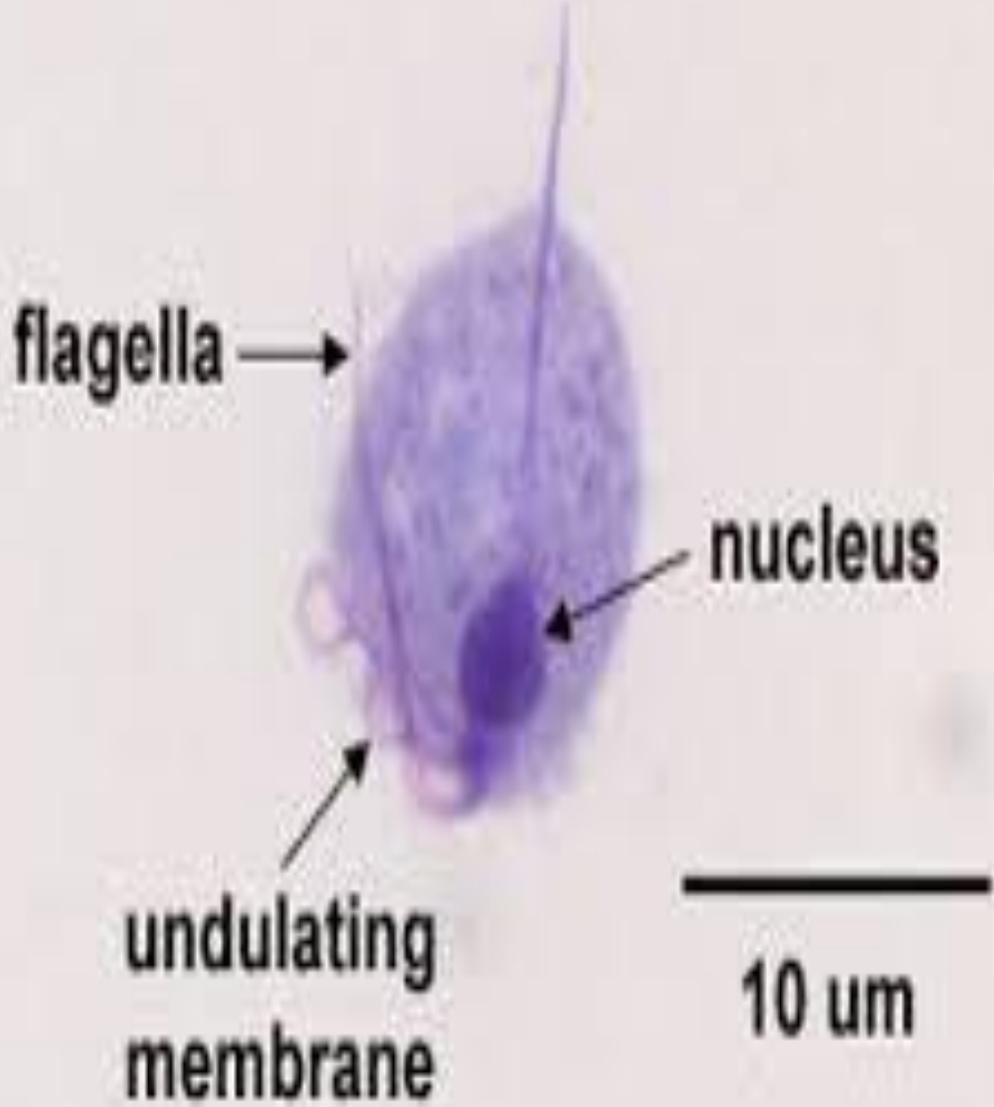
Morphology

- 4 free flagella anteriorly
- 5th flagellum attached to the body by undulating membrane, presents at the anterior 1/3 of body
- 6th flagellum passes through the body as axostyle



Trichomonas vaginalis trophozoites







2) *Toxoplasma gondii*



➤ *Toxoplasma gondii* morphological stages:

Toxoplasma gondii occurs in 4 forms:

- 1) Trophozoite (Tachyzoite).
- 2) Pseudocyst.
- 3) True tissue cyst.
- 4) Oocyst.

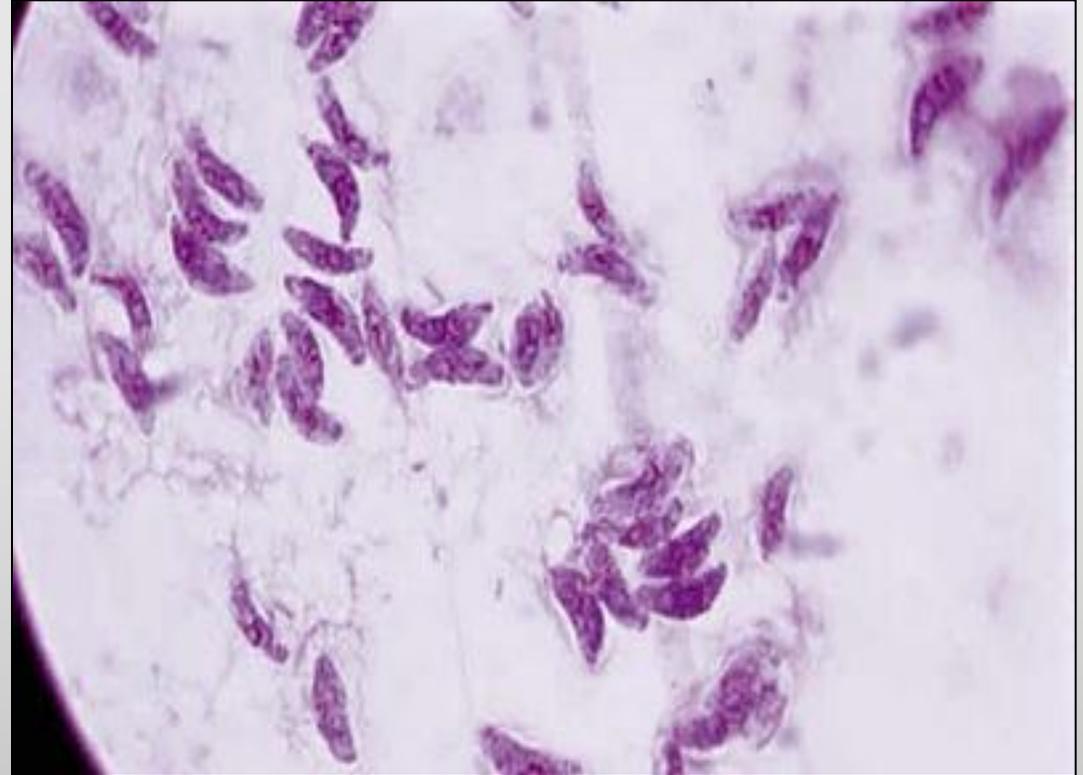
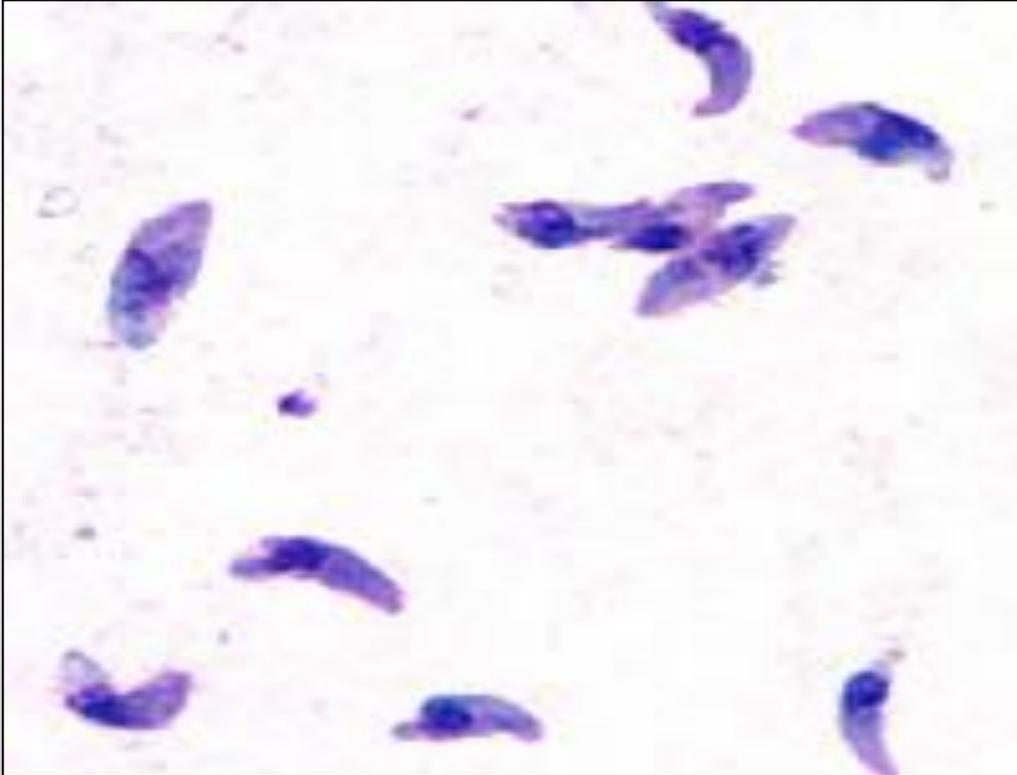


1) Trophozoite (Tachyzoite):

- It is the **active multiplying** stage, found in the **acute stage** of infection.
- *Shape*: crescent, with pointed anterior end and rounded posterior end.
- *Size*: 3x6 μ
- *Content*: has an ovoid posterior nucleus and anterior paranuclear granules.
- *Site*: seen intracellular in various tissues, multiplies within cytoplasmic vacuoles of any **nucleated cell**.



Toxoplasma tachyzoites



2) Pseudocyst:

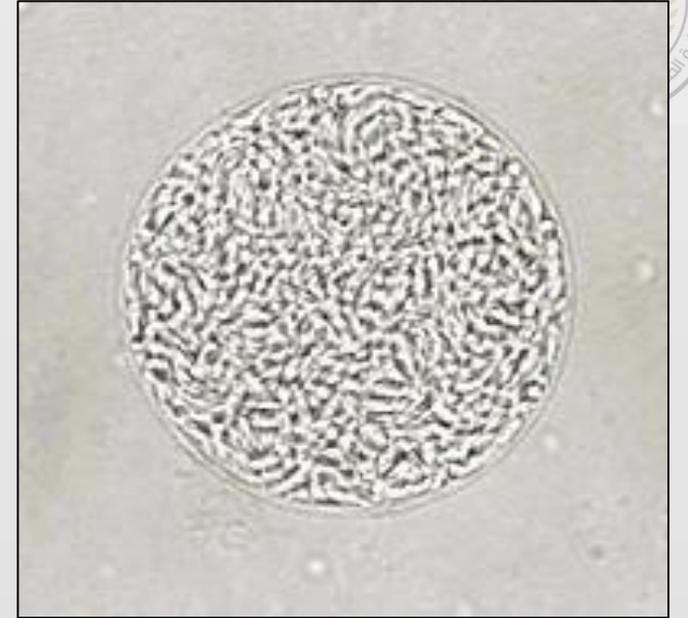
- It is found in the **acute stage** of infection.
- It is full of rapidly multiplying tachyzoites.
- It has **no** cyst wall.
- *Site:* It is localized inside the RECs.



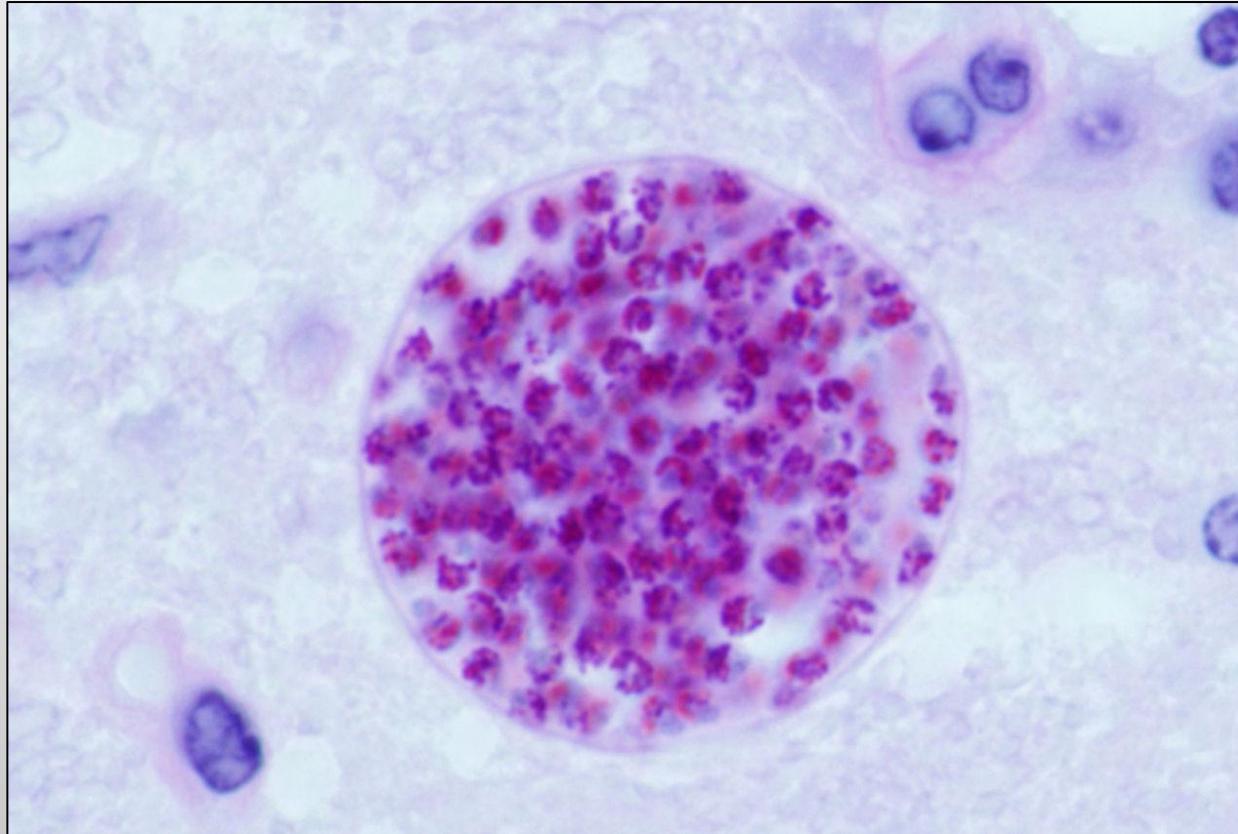
Toxoplasma pseudocyst

3) True tissue cyst:

- It is found in the **chronic stage** of infection.
- *Shape:* The cyst is round or oval
- *Size:* 5-50 μ
- *Content:* contains slowly multiplying bradyzoites.
- It has **cyst wall**.
- *Site:* found in the brain (**most common site**), skeletal and cardiac muscles and various organs.
- It remains viable for years, and immunosuppression causes reactivation of cysts.



Toxoplasma true tissue cyst



3) Oocyst: This stage is only present in **cats** and other felines.

- **Shape:** It is oval, surrounded by a thick resistant wall.
- **Size:** 10x12 μ
- Non-infectious when excreted in unsporulated or immature stage in cat feces.
- It sporulates, by sporogony, within 1-5 days and becomes infectious.
- The **mature** or sporulated oocyst contains 2 sporocysts, each containing 4 sporozoites (**disporocystic tetrazoic oocyst**).
- It may remain viable in moist shaded soil for a year or more.

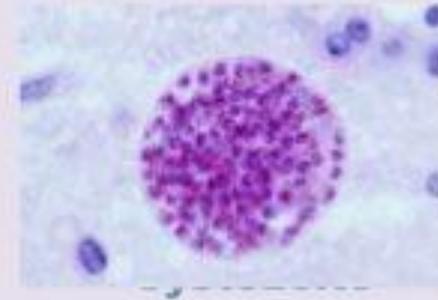




oocyst



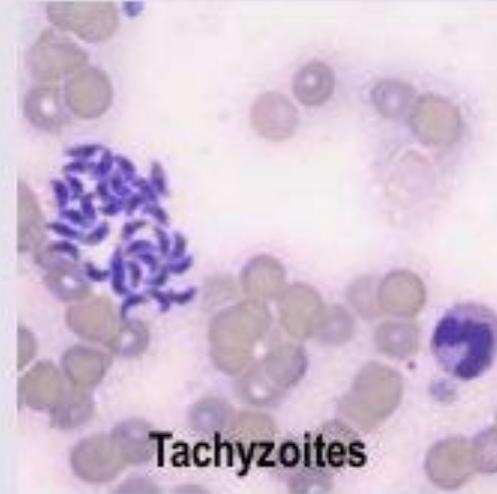
**Sporulated
oocyst**



**Bradyzoites
within
tissue cyst**



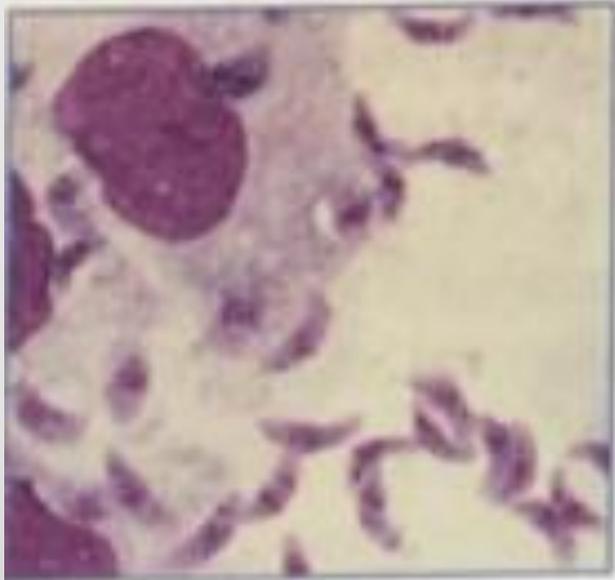
Tachyzoites



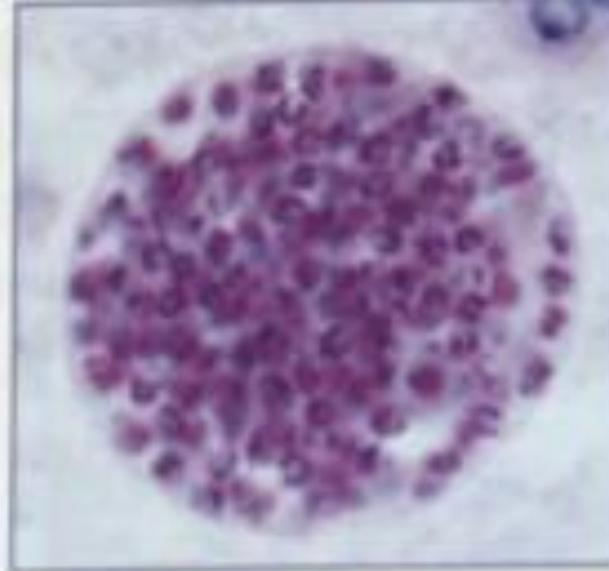
Tachyzoites



Morphology



Trophozoite



Tissue cyst



Oocyst

1. Identify this parasitic stage?

.....

2. The habitat of this parasite in man is

Answer:

- 1. Polymorphic Trypanosomes in blood film**
- 2. Extracellular in the peripheral blood. Then, RECs (Liver, Spleen, Lymph nodes, Bone marrow), CNS**



1. Identify this parasitic stage?

.....

2. The complication of this parasitic infection is

Answer:

1. Trichomonas vaginalis trophozoites

2. Cervical carcinoma

