

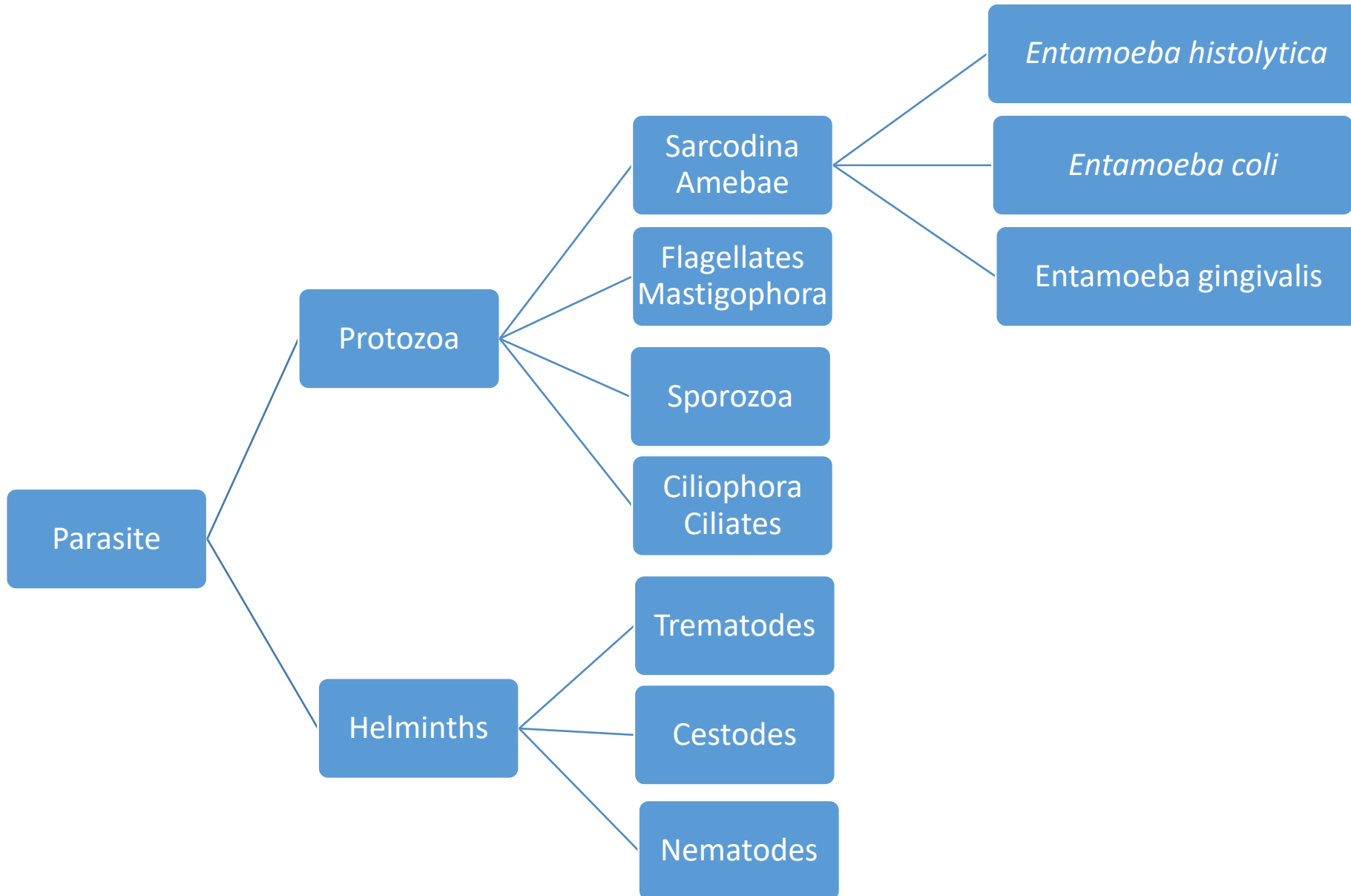
Lab 10

Parasitology

By
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Classification of parasites



Entamoeba histolytica

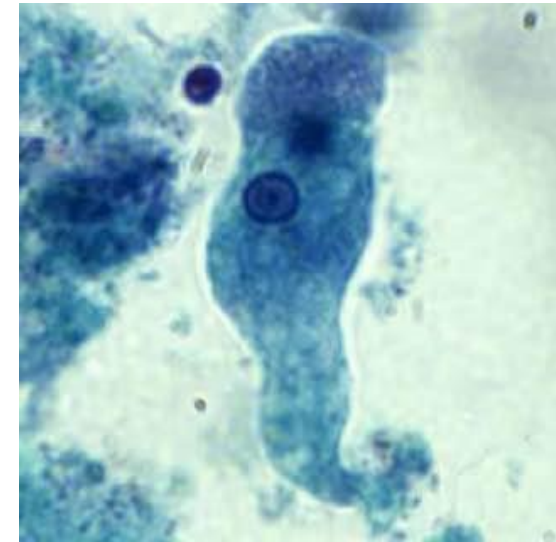
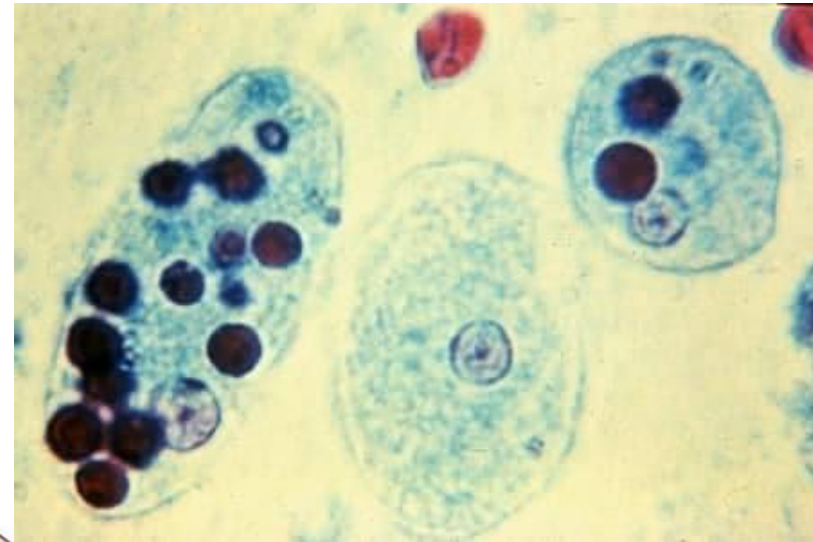
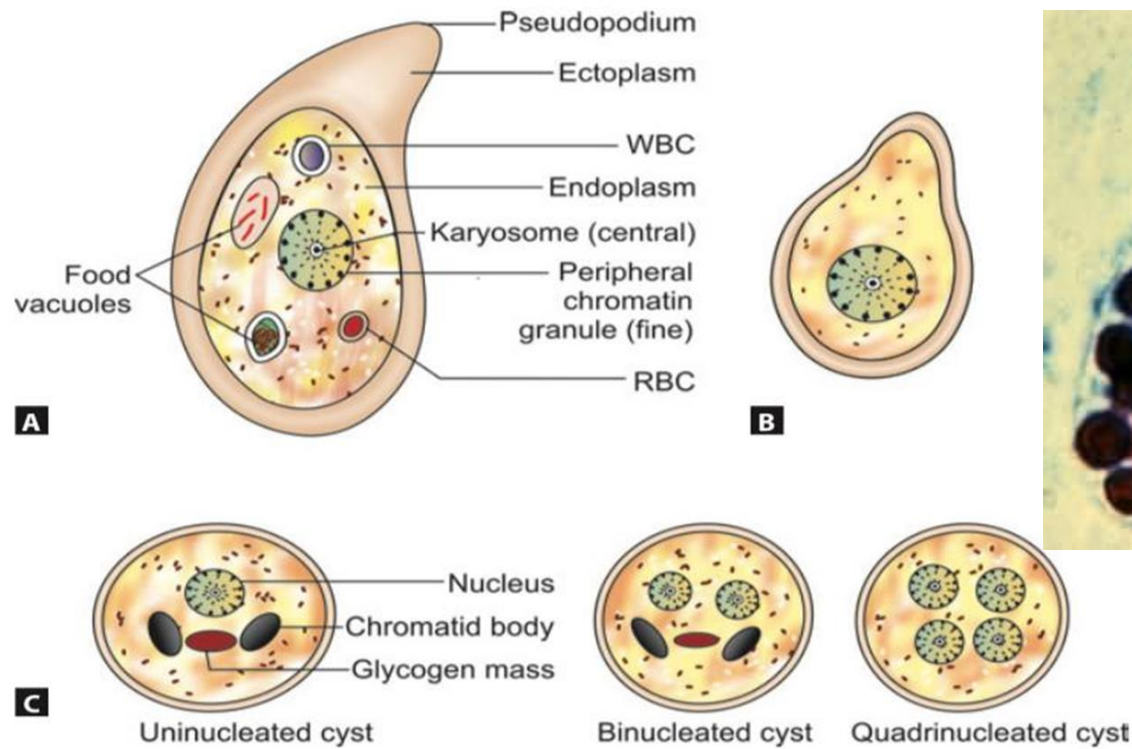
Kingdom	Protista
Subkingdom	Protozoa
Phylum	Sarcomastigophora
Subphylum	Sarcodina
Super class	Rhizopoda
Class	Lobosea
Orders	Euamoebida
Genus	<i>Entamoeba</i>
Species	<i>histolytica</i>

Entamoeba histolytica

- *Entamoeba histolytica* is a **unicellular** pathogenic parasite that distributes world - widely (commonly in tropical and subtropical regions).
- **Disease: Amoebiasis** (amoebic dysentery and amoebic liver abscess).
- **Host:** Human (single host).
- **Mode of transmission:** by a Feco-oral route, ingestion of contaminated food or water.
- **Infective phase** or stage : **Cyst.**
- **Invasive phase** or stage: **Trophozoite.**

Phases and morphology of *Entamoeba histolytica*

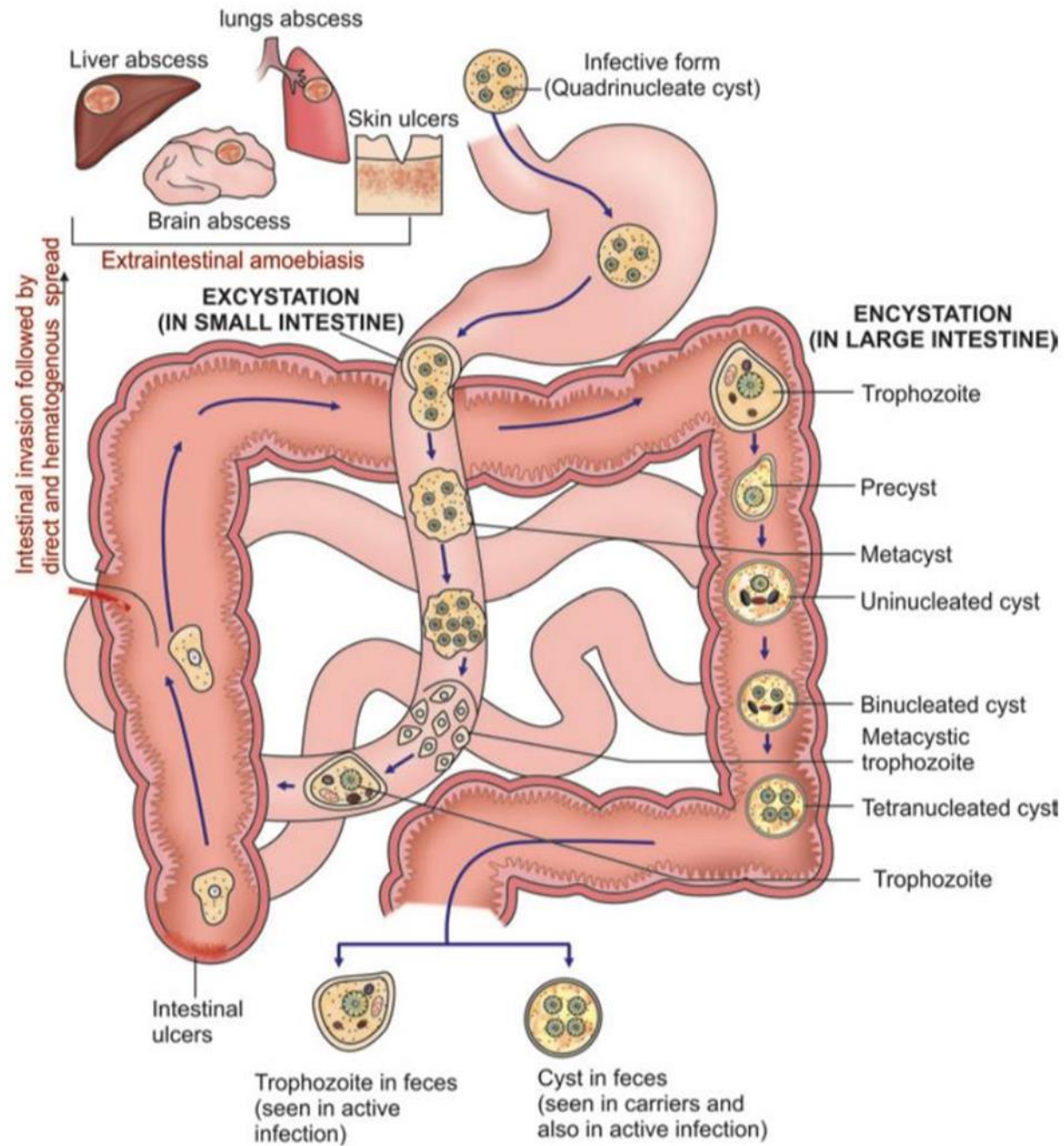
- *E. histolytica* passes by three stages or phases: Trophozoite, precyst and cyst.



Figs 3.1A to C: *Entamoeba histolytica* (schematic diagram) (A) trophozoite; (B) precyst; (C) cysts

Click here for *E. histolytica* Trophozoite phase in stool

<https://www.instagram.com/reel/DBzLAd8N00m/?igsh=aTY0NXV5dDIyY2Nk>



Life cycle of *Entamoeba histolytica*

Diagnosis

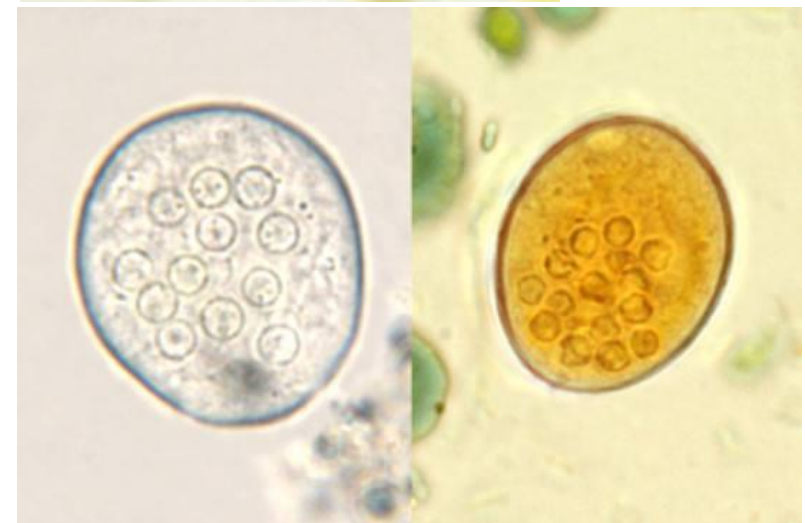
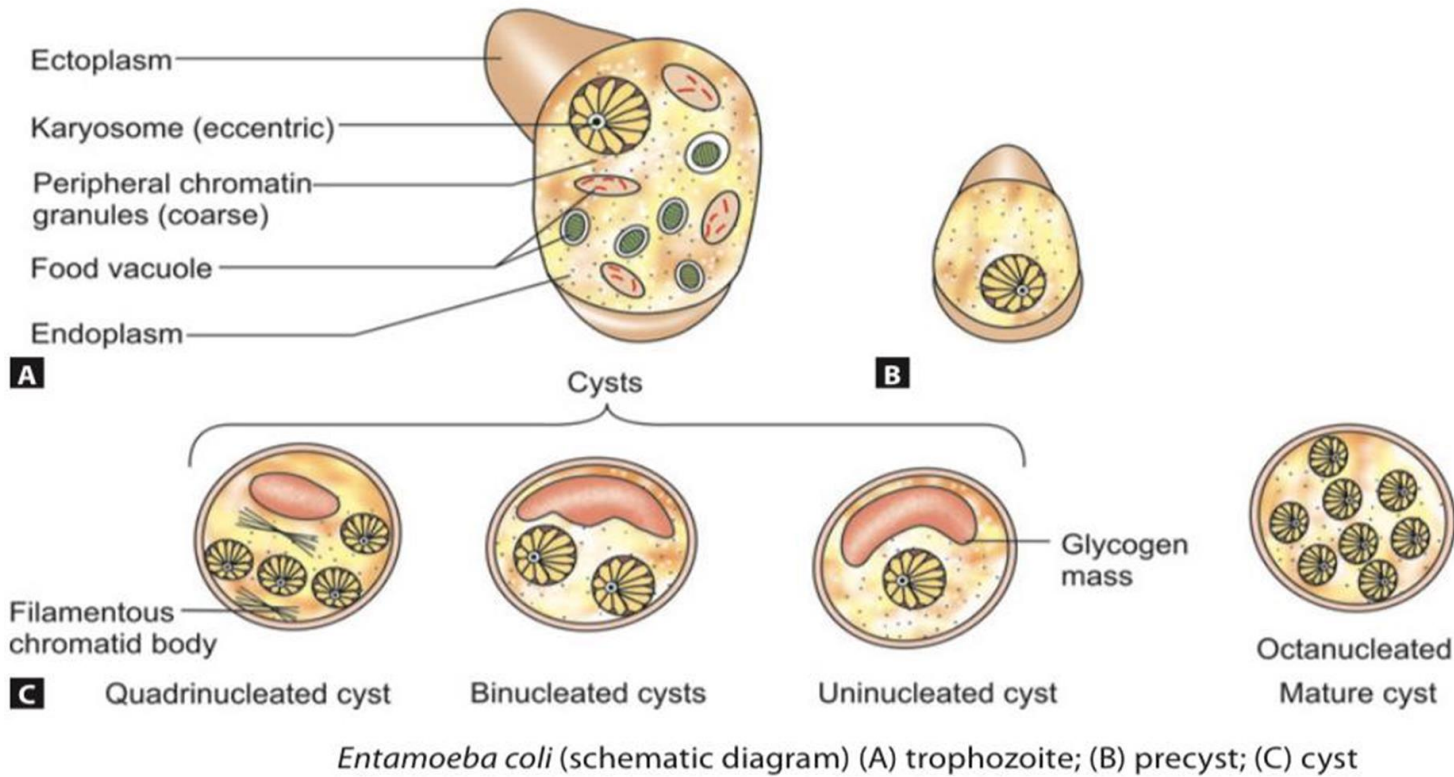
- Stool microscopy by wet mount, permanent stains, etc—detects cysts and trophozoites
- Stool culture: Polyxenic and axenic culture
- Stool antigen detection (copro-antigen)— CIEP, ELISA, ICT
- Serology: Amoebic antigen—ELISA and Amoebic antibody—IHA, ELISA and IFA
- Isoenzyme (zymodeme) analysis.
- Molecular diagnosis: Nested multiplex PCR and real time PCR

Entamoeba coli

- *E. coli* is a **unicellular** nonpathogenic amoeba that colonies the large intestine.
- **Host:** Human (single host).
- **Mode of transmission:** by a Feco-oral route, ingestion of contaminated food or water.
- **Infective phase** or stage : **Cyst.**
- **Invasive phase** or stage: **Trophozoite.**

Phases and morphology of *Entamoeba coli*

- *E. coli* passes by three stages or phases: Trophozoite, precyst and cyst.



Click here for *E. Coli* cyst phase in stool

<https://www.facebook.com/share/v/1D3PRngzhW/?mibextid=wwXIfr>

Entamoeba gingivalis

- *Entamoeba gingivalis* It is a unicellular nonpathogenic parasite. It is the first parasitic amoeba of humans to be described; recovered from the soft tarter between the teeth. It inhabits in the mouth rather than in the large intestine.
- **Host:** Human (single host).
- **Mode of transmission:** direct contact with infected salvia.
- **Infective phase** or stage and **Invasive phase** or stage: **Trophozoite.**

Phases and morphology of *Entamoeba gingivalis*

- *E. gingivalis* have only one phase: Trophozoite.

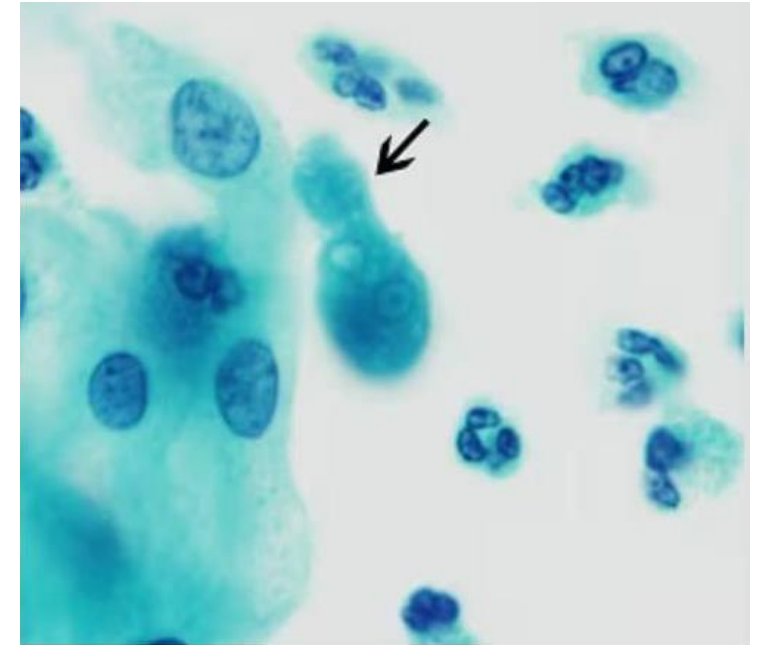
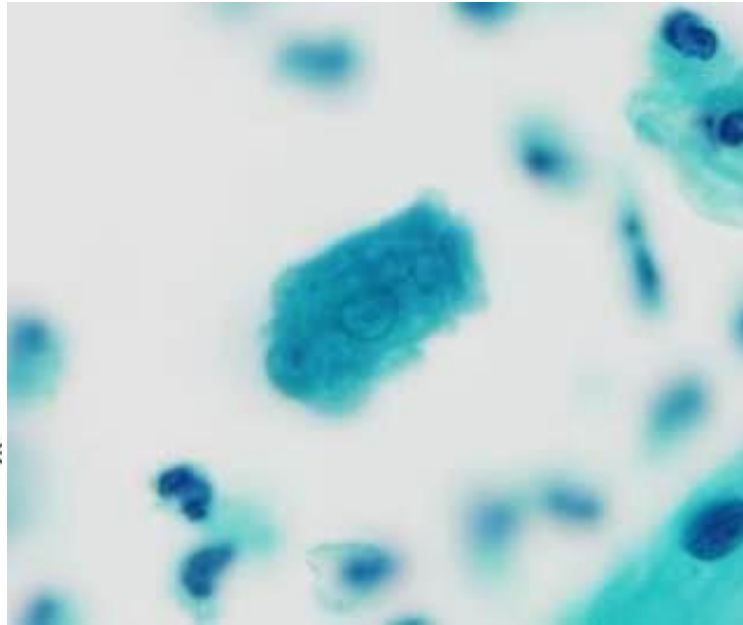
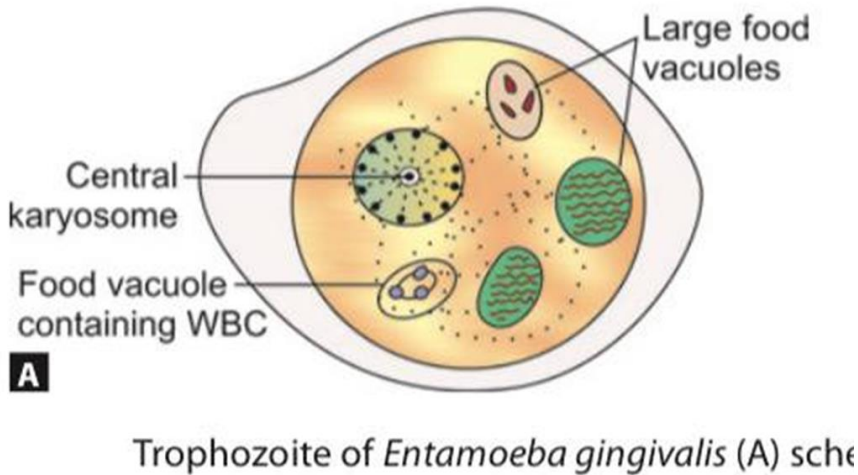


Figure E: Trophozoite of *E. gingivalis*, stained with Papanicolaou's (Pap) stain, showing an extended pseudopod (arrow).

Click here for *E. gingivalis* trophozoite phase
<https://www.instagram.com/reel/C8UHrFLJB6e/?igsh=a2cyZjcwejIwNWZp>

	<i>E.histolytica</i>	<i>E. coli</i>	<i>E. Gingivalis</i>
1) Trophozoite			
• Cytoplasm	Clearly defined into ectoplasm and endoplasm	Differentiation into ectoplasm and endoplasm indistinct.	Clearly defined into ectoplasm and endoplasm
• Location	The end of small Intestine and the large intestine (cecum and sigmoido-rectal) and sometimes tissues (liver, lung, spleen, brain).	Large intestine	Gingival tissue
• Inclusion	Red blood cells Present. No bacteria	Bacteria. No blood cells	White blood cells, bacteria and epithelial cells
• Nucleus			
a. Karyosom	Small, central	Large, eccentric	Central
a. Nuclear membrane	Delicate with fine chromatin dots.	Thick, with coarse chromatin granules	Thick with coarse chromatin granules

	<i>E .histolytica</i>	<i>E .coli</i>	<i>E. gingivalis</i>
2) Cyst	Infective stage	Infective stage	No cyst
Nuclei in mature cyst	4	8	
Glycogen mass in the precyst	Seen in uninucleate stage	Seen up to quadrinucleate stage	
Chromatoid bars	1 – 4 with rounded ends .	Splinter-like with angular ends.	
3) Disease	Amoebiasis. 1-primary amoebiasis in the large intestine 2-secondary amoebiasis in the liver and tissues.	Non pathogenic	Non pathogenic
4)Diagnosis	<ul style="list-style-type: none"> Microscopic examination of stool specimens contain trophozoite and cyst stages. Serology is the method of choice for diagnosis of amoebic liver disease. 	Microscopic examination of stool specimens contain trophozoite and cyst stages.	Microscopic examination of gingival swab contains trophozoite stage.