



كلية الرشيد الجامعة

قسم تقنيات المختبرات الطبية

الطفيليات الطبية

Trypanosoma

المرحلة الثانية – النظري

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Trypanosoma

There are 2 species :

1-*Trypanosoma brucei*: causing African trypanosomiasis (sleeping sickness)

2-*Trypanosoma cruzi*: causing American trypanosomiasis (Chagas' disease)

1- *Trypanosoma brucei*

Morphology

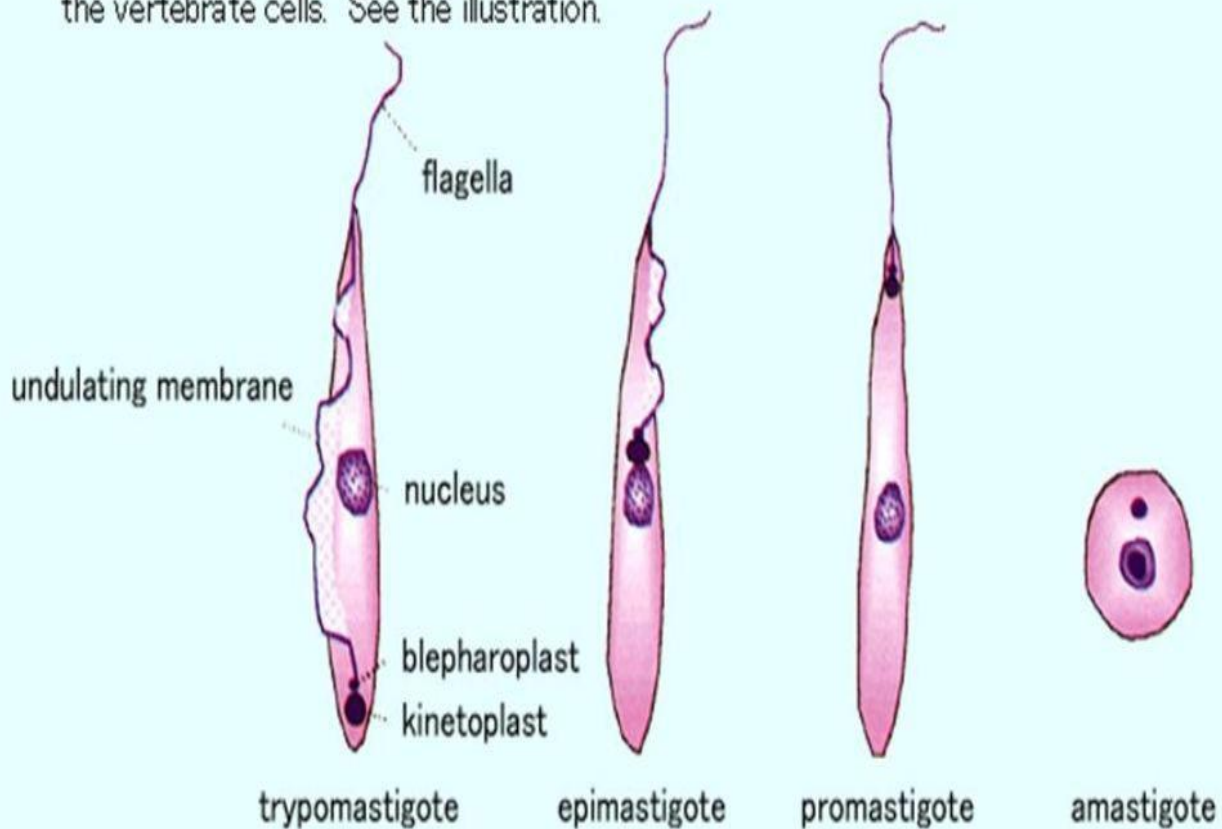
A- Epimastigoite

- spindle shape.
- kintetoplast beside to central nucleus.
- Undulating membrane is short terminal free flagellum

B- Trypamastigoite:

- spindle shape
- has undulating membrane
- the nucleus is central
- free flagellum
- Kinetoplast in posterior of nucleus

the vertebrate cells. See the illustration.



Life cycle

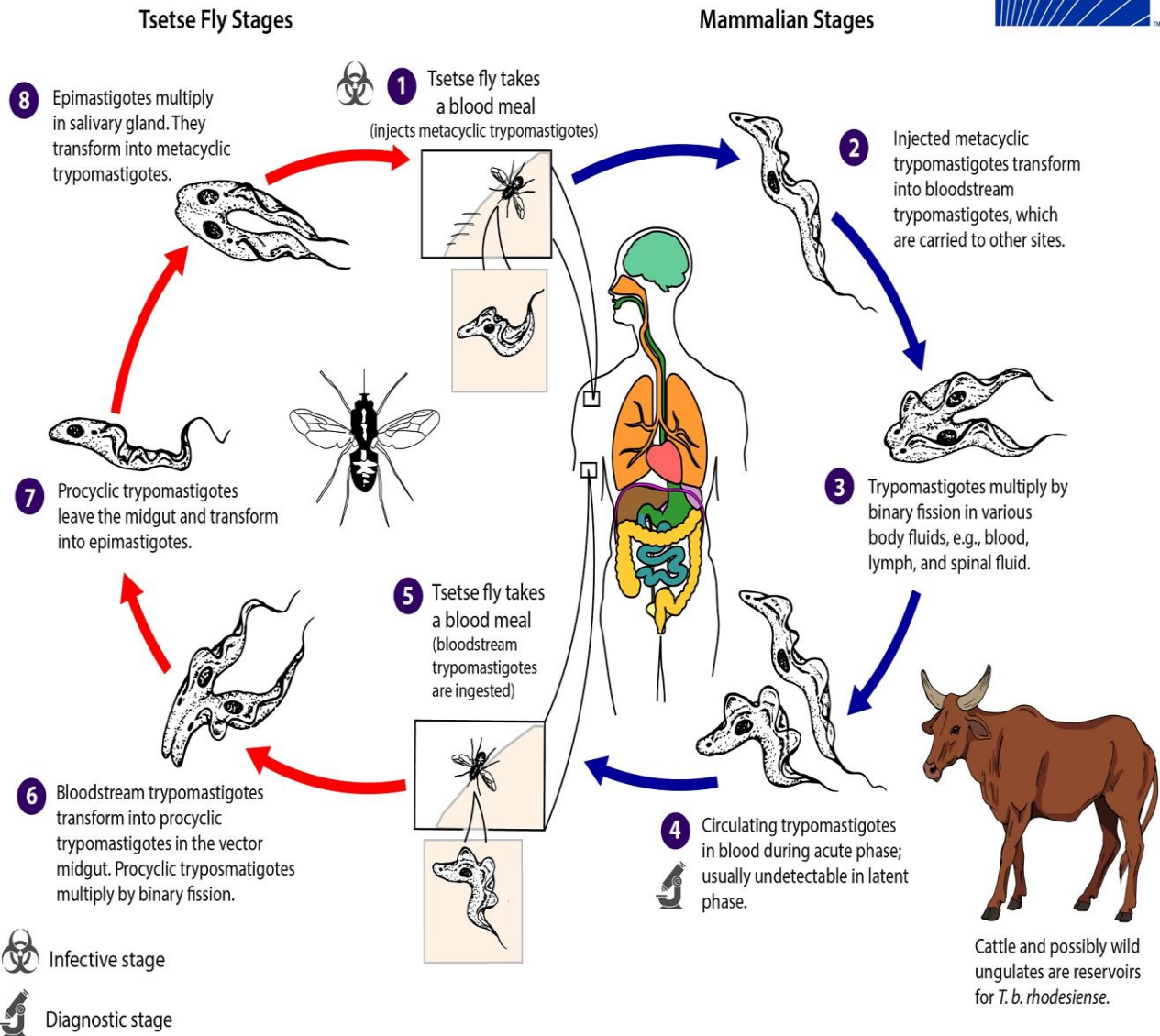
- Intermediate host (vector): tse tes fly.
- definitive host: vertebrates.
- Reservoir host: pigs and others domestic animals
- Infective stage: trypomastigote forms are infective to humans.
- Disease: African trypanosomiasis or sleeping sickness

- **Habitat** : they multiply rapidly and then invade regional lymph nodes, blood, and finally may involve central nervous system.



African Trypanosomiasis

Trypanosoma brucei gambiense & *Trypanosoma brucei rhodesiense*



Pathogenesis (symptoms)

Cyclical fever spike (approximately every 2 weeks), headache, mental apathy, the trypomastigote spread from the skin through the blood to the lymphatic system. Caused enlarged lymph nodes especially posterior cervical region and the typical somnolence usually progresses to coma result of encephalitis .

Diagnosis

1. Microscopic Examination of stained & unstained blood films .
2. aspiration from lymph nodes and concentrated spinal fluid
3. Animal inoculation.
4. Serological test.

2- *Trypanosoma cruzi*

Morphology

A-Trypamastigoite :(C or U shape)

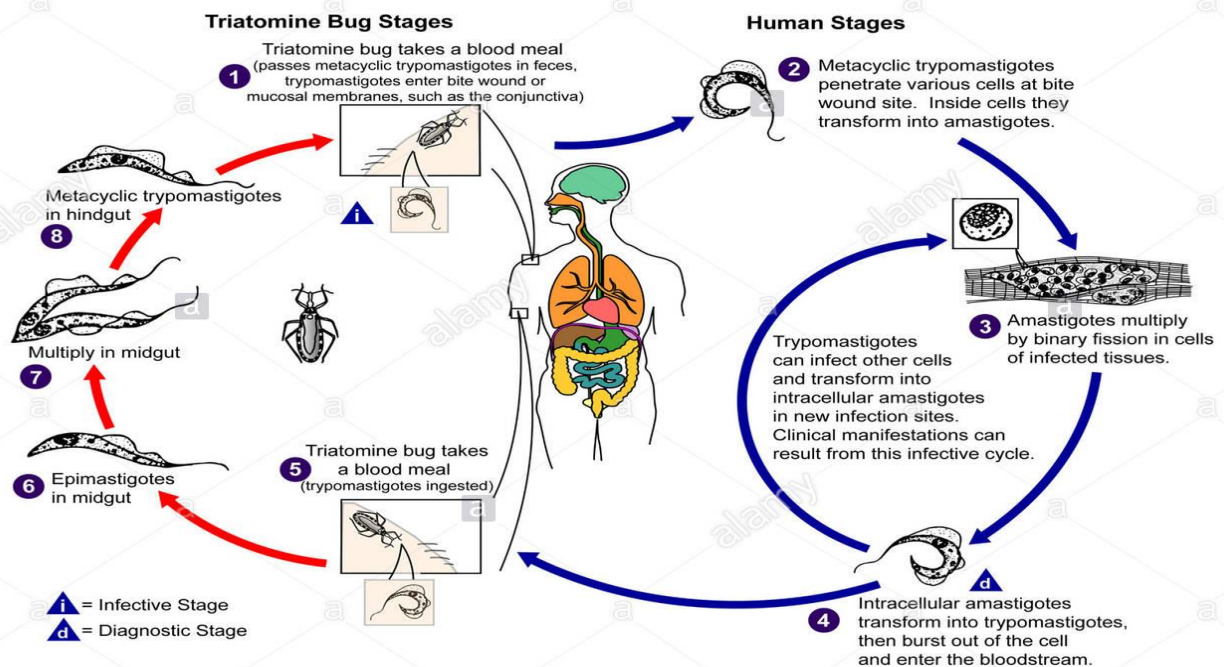
B-Epimastigoite

C-Amastigote

Life cycle

- Intermediate host (vector): reduviid bug
- definitive host: vertebrates.
- Reservoir host: cat, dog, and pigs.
- Infective stage: trypomastigotes forms are the infective forms found in feces of reduviid bugs.
- Disease: American trypanosomiasis (Chagas' disease)
- Habitat : They are found in muscular tissue, nervous tissue, and Reticuloendothelial system Trypomastigotes are found in the peripheral blood.

Trypanosomiasis, American (Chagas disease) (*Trypanosoma cruzi*)



Pathogenesis (symptoms)

muscle is the most frequently and severely affected tissue. In addition, neuronal damage leads to cardiac arrhythmias , hepatosplenomegaly, myocarditis, and enlargement of the esophagus and colon and loss of tone in the colon (megacolon) In the chronic phase.

Diagnosis

1. Blood films: (Trypanastigote C- shape) .
2. Biopsy of lymph nodes, liver, spleen, or bone marrow may demonstrate organisms in amastigote stage
3. Animal inoculation.
4. Serological test.