


Trypanosomes

<i>Trypanosoma gambiense</i>	
Kinetoplasty (whips)	
Trypanosomatidae	
 <p>Extracellular trypanosome movement in the bloodstream</p>	
Occurrence	West Africa
Disease	sleeping sickness , chronic form
Infectious stage and method of infection	metacyclic trypomastigote - inoculative (when stabbed with a <i>gloss</i>)
Diagnostics	microscopy
Therapy	suramine, arsenic compounds
MeSH ID	D014347 (https://www.medvik.cz/bmc/link.do?id=D014347)

Trypanosomes are parasitic protozoa belonging to the class of **flagella**.

Trypanosoma gambiense and Trypanosoma rhodesiense

The equivalent name of Trypanosoma gambiense is Trypanosoma brucei

- **occurrence** : they are connected by the same continent - **Africa** - but each occurs in a different part:
 - T. gambiense: *West* Africa
 - T. rhodesiense: *East* Africa
- they have a single **flagellum** that forms an undulating membrane along the body
- they are extracellular parasites
- we find them in *blood* , *lymph* and *cerebrospinal fluid*
- **carrier** : **tse-tse fly** or **glossina**
- **source of infection** :
 - T. gambiense: **sick person**
 - T. rhodesiense: **reservoir animals** (humans enter the trypanosome life cycle randomly)

⚠ In human disease, both species cannot be distinguished


Life cycle

1. trypanosomes develop in the gut, sucker and salivary glands of the carrier
2. *glossina* sucks **trypomastigotes**
3. procyclic trypomastigotes travel to the salivary glands and transform into **epimastigotes**
4. at the end of their development, glossins appear in the saliva as so-called **metacyclic trypomastigotes** = the only stage capable of *infecting* humans
5. as soon as the glosin stings, it releases trypanosomes into human skin = **inoculatory transmission**
6. The sting of a fly is very painful

Disease

You can find more detailed information on the *Sleeping Disease* page.

Trypanosoma cruzi

<i>Trypanosoma cruzi</i>	
Kinetoplasty (whips)	
Trypanosomatidae	
 <p>Trypanosoma cruzi trapped in the digestive tract</p>	
Occurrence	Central and South America
Disease	Chagas disease (American trypanosomiasis)
Infectious stage and method of infection	metacyclic trypomastigote - contaminating (from faeces of sucking bedbugs)
Diagnostics	microscopy, serology, xenodiagnosis (sucking of bugs)
Therapy	does not exist
MeSH ID	D014349 (https://www.medvik.cz/bmc/link.do?id=D014349)

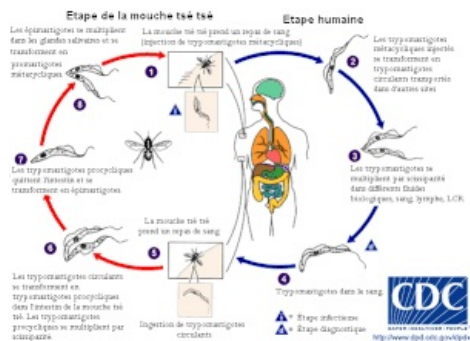
- slender whipworm with a wavy body
- **invasive, extracellular and intracellular parasite** = enters nuclear cells (endothelial cells, muscle cells of all types and neuroglia)
- **transmission** :
 - *bugs* - especially
 - *transplacentally*
 - *transfusion (blood)*
 - *orally* - rarely - this can happen with insufficient heat treatment of the nine-banded armadillo, from which the bug is infected

Life cycle

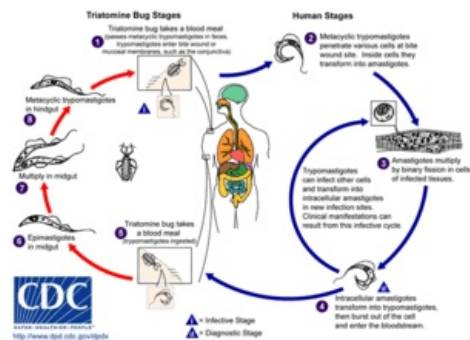
1. Trypanosomes **multiply in the intestine** of bugs (subfamily *Triatominae*) in the form of **epimastigotes** , which turn into infectious **trypomastigotes** in the rectum of bugs .
2. Then the bugs attach **to humans** → they start **sucking** (especially at night).
3. When sucking bugs , **they harden** - trypanosomes are present in the feces - the so-called **contaminating mode of transmission** .
4. Trypanosomes are able to actively penetrate **the skin** .
5. Metacyclic trypomastigotes penetrate the body cells of the host, where they multiply intensively as small **amastigotes** .
6. After several divisions, shortly before the cell ruptures, amastigotes turn into trypomastigotes, which are released into the bloodstream and initiate infection of other cells.
7. Additional blood bugs become infected when the blood is sucked.

Disease

You can find more detailed information on the Chagas disease page .



Life cycle of trypanosomes transmitting sleeping sickness.



Life cycle of *T. cruzi*

Links

External links

- Trypanozomy (česká wikipedie)
- Trypanosomatid (English wikipedia)

References

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- VOLF, Petr a Petr HORÁK. *Paraziti a jejich biologie*. 1. vydání. Praha : Triton, 2007. 318 s. s. 78,80. ISBN 978-80-7387-008-9.