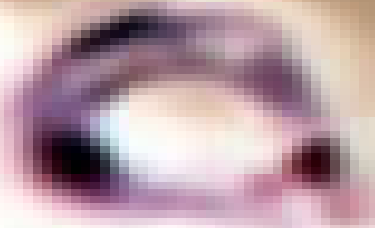
Trypanosoma cruzi

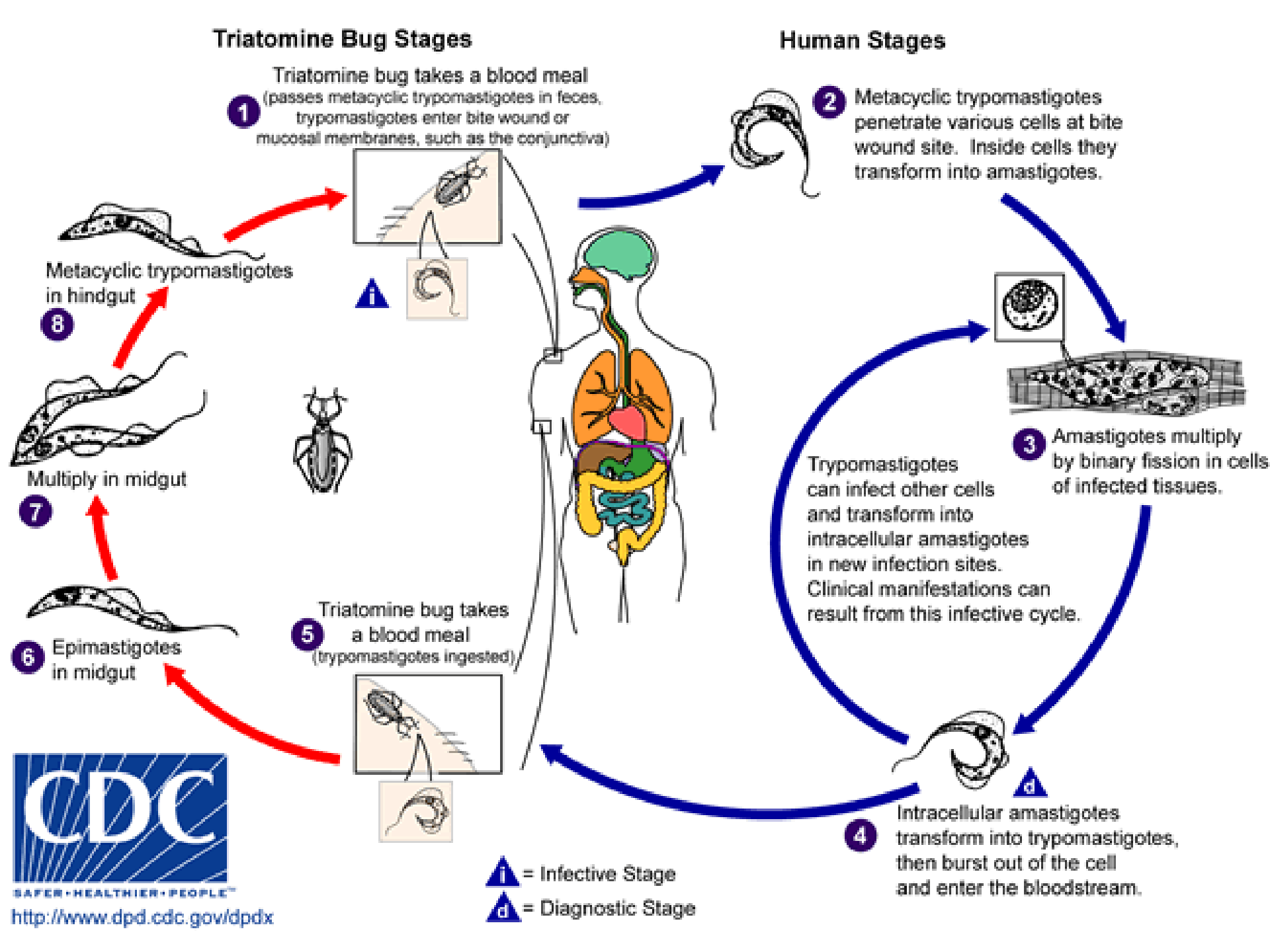


Morphology

- Spindle-shaped, about 20 microns in length in the peripheral blood.
- In tissue, a leishmanial form, 1.5-4 microns in diameter
- Both forms have nucleus and a kinetoplast

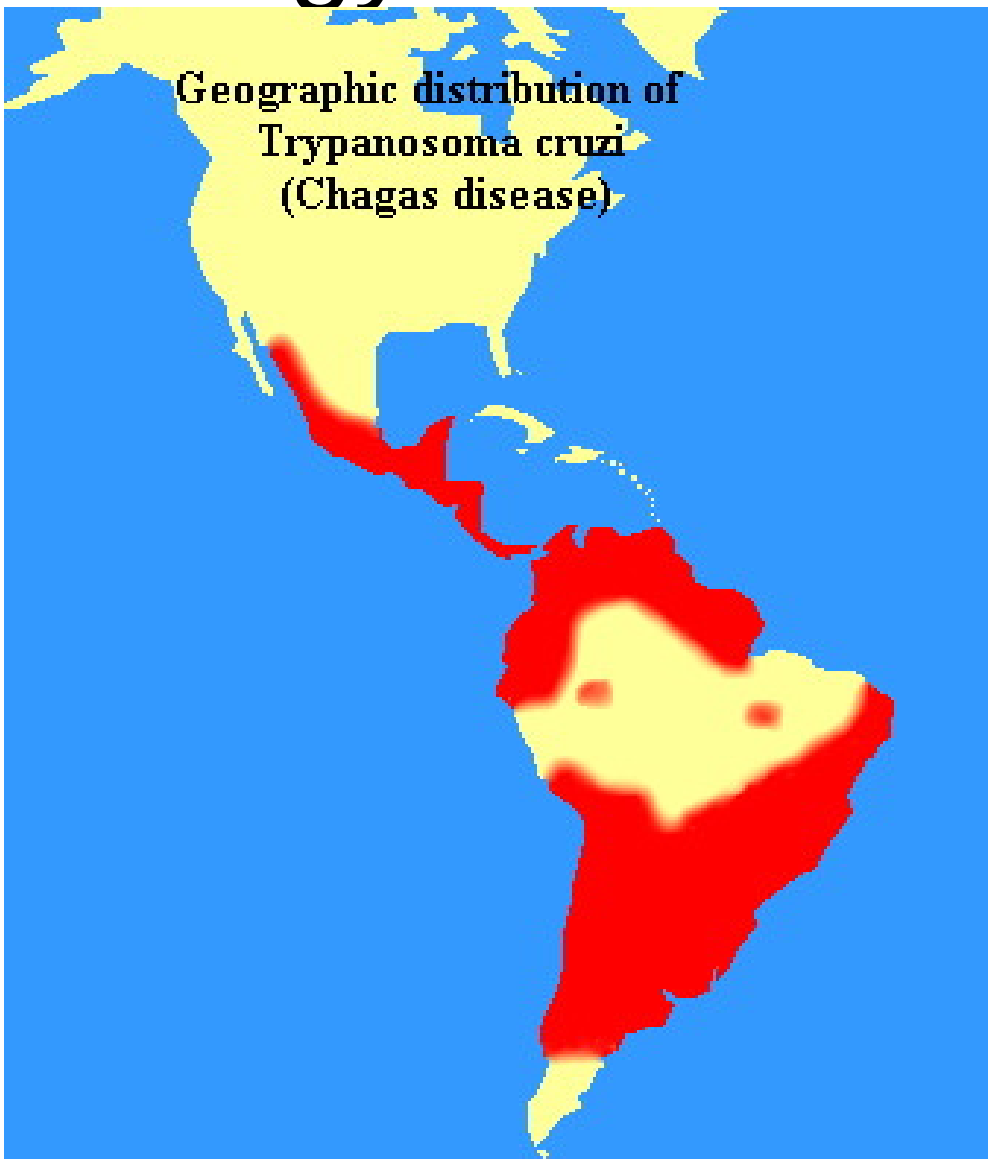
Life Cycle

- Reservoirs are various animals including armadillos with trypanosomes in the bloodstream → ingested by a tratomid or cone-nosed bug → undergo transformation → infective stage → excreted in feces → contaminates bite site or adjacent mucous membranes → both trypanosomal and leishmanial stages → the latter causing the damage and inflammatory response, the former available for hematogenous spread to other tissues and for uptake by the vector


Triatomine Bug Stages
Human Stages
Triatomine bug takes a blood meal
(passes metacyclic trypomastigotes in feces, trypomastigotes enter bite wound or mucosal membranes, such as the conjunctiva)
1
2
Metacyclic trypomastigotes penetrate various cells at bite wound site. Inside cells they transform into amastigotes.
i
Metacyclic trypomastigotes in hindgut
8
Multiply in midgut
7
3
Amastigotes multiply by binary fission in cells of infected tissues.
Trypomastigotes can infect other cells and transform into intracellular amastigotes in new infection sites. Clinical manifestations can result from this infective cycle.
Epimastigotes in midgut
6
Triatomine bug takes a blood meal
(trypomastigotes ingested)
5
d
4
Intracellular amastigotes transform into trypomastigotes, then burst out of the cell and enter the bloodstream.
i = Infective Stage
d = Diagnostic Stage
CDC
SAFER·HEALTHIER·PEOPLE™
http://www.dpd.cdc.gov/dpdx

Epidemiology

- Mexico
- Central and South America



Diagnosis

- In acute stage: finding of parasites in blood

- In chronic stage: Usually serology required, occasionally parasites seen in blood
  - Xenodiagnosis occasionally employed

symptomatology

- Acute:
  - Myocarditis
  - Encephalitis
  - Local swelling at inoculation site (dhagoma) if periorbital, called Romana's sign
- Chronic:
  - Cardiomyopathy with conduction disturbances
  - Megacolon
  - Megaesophagus
  - Occasionally mega bronchus, megaureter, and megabiliary tract

Treatment

- Acute:
  - Lampit (an aminoquinoline) available from the Center for Disease Control, Atlanta, Georgia
- Chronic:
  - Symptomatic and supportive

Prevention

- Vector control
- Improved housing
- Avoid transfusion from potentiallyh infected individuals (blood can be treated by addition of gentian violet to equal 1% of total volume)