



U.S. AIR FORCE

Announcements



- Register for the Epi-Tech Trainings:
 1. Log-on or Request log-on ID/password:
<https://tiny.army.mil/r/zB8A/CME>
 2. Register for Epi-Tech Surveillance Training:
<https://tiny.army.mil/r/7laAB/EpiTechFY16>
- Please enter your name/service and e-mail into the chat box to the left or email the disease epidemiology program at:
usarmy.apg.medcom-phc.mbx.disease-epidemiologyprogram13@mail.mil
 - You will receive a confirmation email within the next 48 hours with your attendance record
- Please mute your phones and DO NOT place us on hold. Press *6 to mute/unmute your phone.

I n t e g r i t y - S e r v i c e - E x c e l l e n c e

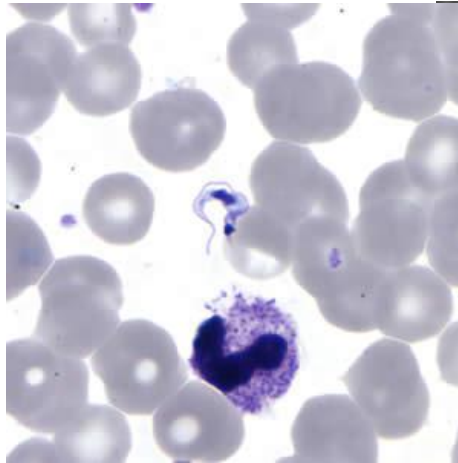


Photo: CDC



Chagas Disease (American Trypanosomiasis)

USAF School of Aerospace Medicine / Epidemiology Consult Services

Presented by: **Dr. Will Reeves**

DSN: 798-3071 (Comm: 937 938-3071)

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U.S. Army Medical Department

ARMY PUBLIC HEALTH CENTER (Provisional)



NAVY AND MARINE CORPS PUBLIC HEALTH CENTER

PREVENTION AND PROTECTION START HERE



Basics of Chagas Disease



Causative agent: *Trypanosoma cruzi*
Kinetoplastida: Trypanosomatidae
Parasitic Protozoa



Photo credit: CDC

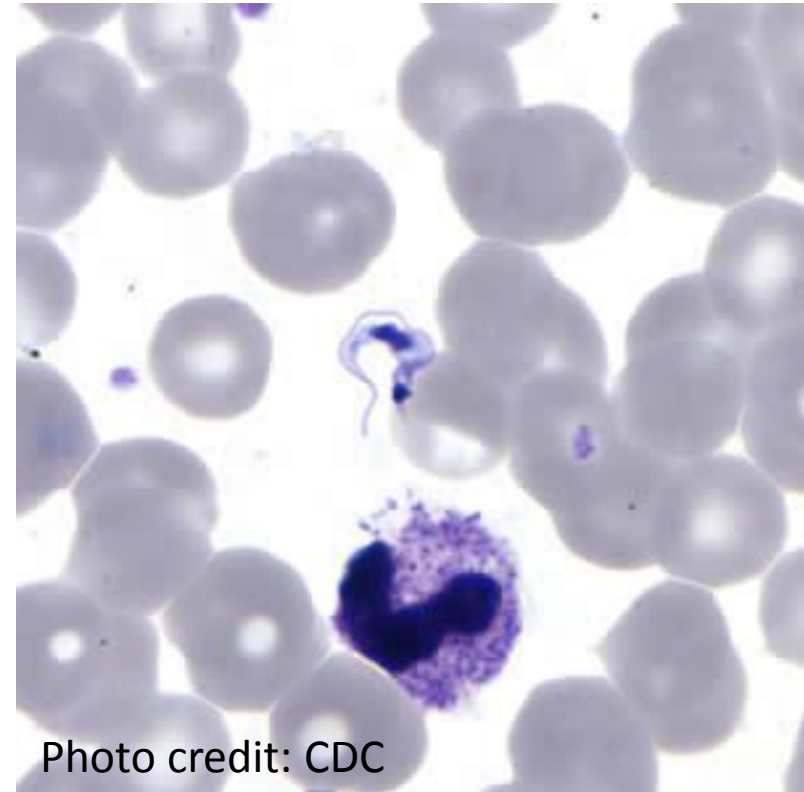


Photo credit: CDC



Acute vs Chronic Disease



Acute: Few weeks to months. Often asymptomatic or mild. Swelling near infection site. <5% mortality mostly in children.

Chronic: Long term cardiac or intestinal complications. Fatal 30%



Photo credit: CDC



Relevance



Humans and Mammals are susceptible hosts.

Over 8 Million people in Central and South America have Chagas Disease.

**An estimated 300,000 individuals infected in the USA.
30000-45000 cardiomyopathy cases
(CDC Data)**

**CDC reports 6 cases of locally acquired Chagas disease
CONUS.**



Relevance



CDC estimate ~66–638 annual congenital cases CONUS and ~20-200 in Europe.

Blood donations screened after 2003.

Military Relevance: US forces deploy or are stationed within the range of the vectors.

Military working dogs can be infected



Vectors and Transmission



Primary Transmission:

Vector-borne by “kissing bugs” (Triatominae).
Transmitted in the feces of the bugs.

Secondary Transmission:

Blood Transfusion/Organ Transplant

Eating infected bugs



Kissing Bug Behavior



Photo: Wikipedia

Habitats: In areas with animal nests, cracks in walls

Attracted to lights in TX, NM, AZ

Avoid these habitats.

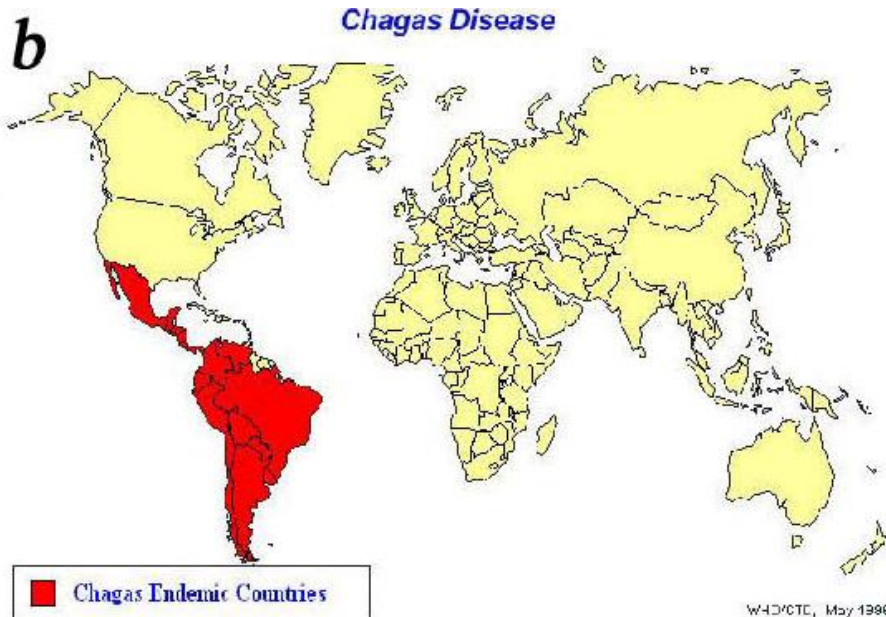




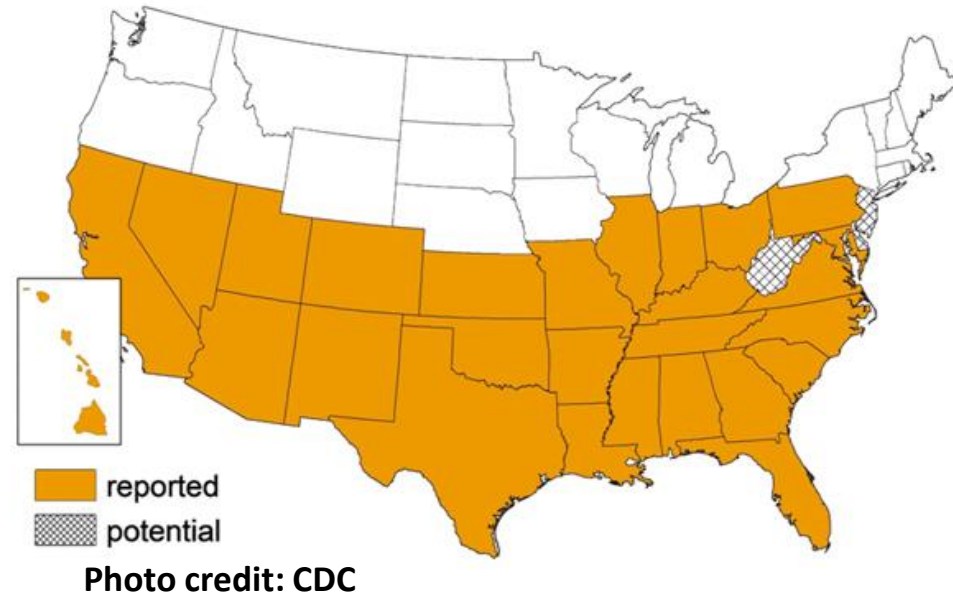
Distribution



Chagas Disease and the Vectors are essentially restricted to the New World. (Largely excluding Caribbean).
(Note: *Linshcosteus* and *Triatoma rubrofasciata*)



Vector distributions in the USA

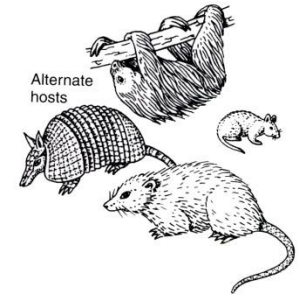




Preventive Actions



Avoiding bugs is critical





What About Repellents and Permethrin?



No data to really give support to the use of repellents.





Control Actions



Exclude Vectors

Avoid Light Attraction

Screen Blood

Keep Insects Away from Food



Diagnosics

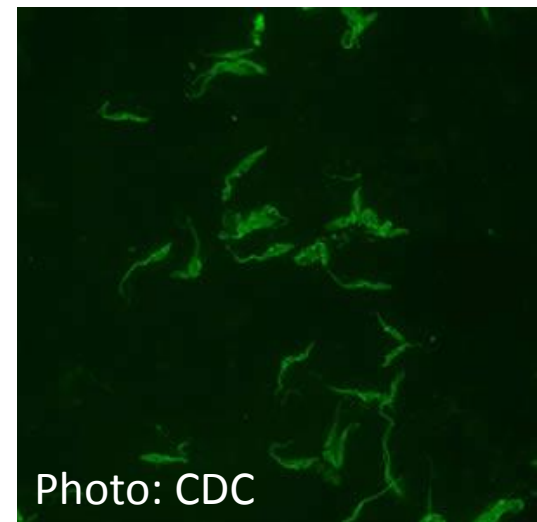


Indirect fluorescent antibody and ELISA are available from cDC.

Cross-reactive with similar parasites (*Leishmania* and *T. rangeli*)

PCR

[CDC recommends confirmatory testing especially if suspicious.]



5.60 TRYPANOSOMIASIS

Clinical Description

Reference 8

An arthropod-borne protozoal disease

2. **American Trypanosomiasis (Chagas' disease):** The main clinical signs are fever, malaise, hepatosplenomegaly and lymphadenopathy in the acute phase. Many patients present without clinical signs. An inflammatory response at the site of infection (chagoma) may last up to 8 weeks. Chronic infection can lead to myocarditis and meningoencephalitis.

Laboratory Criteria for Diagnosis

2. American Trypanosomiasis: (any of the following)

- Positive parasitology (direct, xenodiagnosis, blood culture), or
- Positive serology for *Trypanosoma cruzi* antibodies (IgM) by indirect haemagglutination test (IHA), indirect immunofluorescent antibody test (IFAT), direct agglutination test (DA), or ELISA.

Case Classification

2. American Trypanosomiasis:

- **Probable:** (Endemic areas) a case with unexplained fever, hepatosplenomegaly and a *chagoma* (inflammation at site of infection).
- **Confirmed:** A clinically compatible case that is laboratory-confirmed.
- **Congenital:** A newborn with positive parasitology (direct, xenodiagnosis, culture).

Required Comments

Specify the form of trypanosomiasis, indicate whether case is suspected, probable, confirmed or congenital and document relevant travel/deployment history to endemic areas (Note: the incubation period of African trypanosomiasis is usually 3 days to a few weeks and longer for *T.b. rhodesiense*; American trypanosomiasis 5-14 days).

Additional Considerations

None.



Treatment



From the CDC:

Two drugs used to treat infection with *Trypanosoma cruzi* are nifurtimox and benznidazole.

In the United States, these drugs are not FDA approved and are available only from CDC under investigational protocols.

Contraindications for treatment include severe hepatic and/or renal disease.



U.S. AIR FORCE



QUESTIONS ?

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Contact Information



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