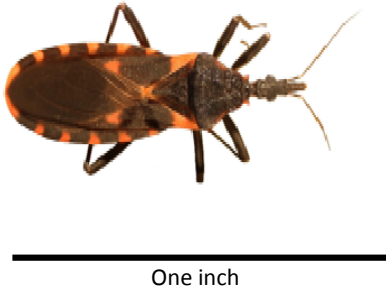


Chagas Disease (American Trypanosomiasis)

What is Chagas disease?

Chagas disease or American Trypanosomiasis, is an infectious disease caused by a protozoan parasite, *Trypanosoma cruzi*, transmitted to animals and people by insect vectors, triatomine bugs or "kissing bugs," that are found only in the Americas.

Photo: *Triatoma sanguisuga*



Courtesy of Gabriel L. Hamer; Texas A & M University;
<http://kissingbug.tamu.edu/found-a-bug/#identification>

How do people get Chagas disease?

People get infected in various ways. The main way Chagas disease is transmitted is from the insect vectors called triatomine bugs. These blood-sucking bugs get infected by biting an infected animal or person. Once infected, the bugs pass parasites in their feces. These bugs are nocturnal and when people are sleeping, they emerge.

After the bugs bite and ingest blood, they defecate on the person. The person can become infected when the parasites in the insect feces are rubbed into breaks in the skin, or into mucus membranes or saliva. This requires prolonged contact with the insect, which is more common in developing countries in Central and South America where substandard, mud-walled dwellings are common.

The protozoan is present in the blood, thus a potential risk exists for transmission through blood donations, organ transplantation or congenital transmission from a pregnant woman to her baby.

Although insect exposure is the most common mode of transmission in people, in endemic areas people can become infected through consumption of uncooked food contaminated with feces from infected bugs. Infants can also become infected through congenital transmission (from a pregnant woman to her baby).

Is Chagas disease contagious person-to-person?

Chagas disease is not directly transmissible from person-to-person, with the exception of congenital transmission, or through casual contact with infected animals. Louisiana has had a few isolated and sporadic cases reported since 2004.

Very few domestically locally-transmitted cases have been reported. Because many cases are asymptomatic or have only minor symptoms, most of these people are identified when giving blood. The number of reactive blood donation screenings has increased. However, this increase is due to universal testing of the blood supply since 2007 for the presence of the organism or antibodies to the organism. This increase in reactive blood donation screenings does not represent a true increase in confirmed cases because the test is highly sensitive with many false positive tests and more testing overall is likely to increase the number of reactive donations.

Where can Chagas disease be found?

Chagas disease is endemic in Latin America, principally rural areas. Vectorborne transmission does not occur in the Caribbean (for example, in Puerto Rico or Cuba). Rare vectorborne cases of

Chagas disease has been noted in the southern U.S. Most cases of Chagas disease in the U.S. are imported cases seen in Latin American immigrants. Our standards of living and dwellings in the U.S. do not lend themselves to transmission, so domestic transmission is extremely rare.

The organism, *T. cruzi*, is commonly found in raccoons, armadillos, opossums and other small mammals throughout the southeastern United States.

Who is at risk in Louisiana?

Triatomine bugs and the protozoa, *T. cruzi*, has been endemic in Louisiana wildlife for ages. It is important to note that not all triatomine bugs are infected with the parasite that causes Chagas disease, and because homes in Louisiana are built to prevent insect invasion, these bugs rarely get inside. The chance of getting Chagas disease from a triatomine bug in the United States is low.

How does the disease progress?

There are two stages of Chagas disease:

- 1) an acute flu-like disease occurs within a relatively short incubation period after exposure, and lasts for a few weeks or months
- 2) a chronic disease may remain hidden for decades, but can involve cardiac and intestinal complications that occur in about 20% to 30% of cases, usually 10 to 20 years after initial infection. The other 70% to 80% never develop the chronic stage of the disease.

Both stages can be either symptom-free or life-threatening.

Can my dog get Chagas disease in Louisiana?

Chagas disease is seen in up to 10 dogs each year in Louisiana. Dogs have a shorter lifespan, but the disease process is similar to that which occurs in humans. Dogs have two stages of the disease, just as do humans.

What should I do if I think I have Chagas disease?

You should discuss your concerns with your health care provider, who will examine you and ask you questions (for example, about your health and where you have lived). Chagas disease is diagnosed by blood tests.

How is Chagas disease treated?

There are two approaches to therapy: antiparasitic treatment, to kill the parasite; and symptomatic treatment, to manage the symptoms and signs of infection.

Antiparasitic treatment is most effective early in the course of infection, but is not limited to cases in the acute phase. In the United States, this type of treatment is available through the Centers for Disease Control and Prevention (CDC). Most people do not need to be hospitalized during treatment.

Symptomatic treatment may help people who have cardiac or intestinal problems from Chagas disease. For example, pacemakers and medications for irregular heartbeats may be life saving for some patients with chronic cardiac disease.

Prevention

No drugs or vaccines for preventing infection are currently available.

In Louisiana, prevent house infestation by:

- Sealing cracks and gaps around windows, walls, roofs, and doors
- Removing wood, brush, and rock piles near your house
- Using screens on doors and windows and repairing any holes or tears
- If possible, making sure yard lights are not close to your house (lights can attract the bugs)
- Sealing holes and cracks leading to the attic, crawl spaces below the house, and to the outside
- Having pets sleep indoors, especially at night
- Keeping your house and any outdoor pet resting areas clean, in addition to periodically checking both areas for the presence of bugs

Travelers to endemic areas who sleep indoors, in well-constructed facilities (for example, air-conditioned or screened hotel rooms), are at low risk for exposure to infected triatomine bugs, which infest poor-quality dwellings and are most active at night. Preventive measures include spraying infested dwellings with residual-action insecticides, using bed nets treated with long-lasting insecticides, wearing protective clothing, and applying insect repellent to exposed skin.

Also in endemic areas, travelers should be aware of other possible routes of transmission, including bloodborne and foodborne.

Where are triatomine bugs typically found?

Triatomine bugs (also called reduviid bugs, "kissing" bugs, assassin bugs, cone-nosed bugs, and blood suckers) can live indoors, in cracks and holes of substandard housing, or in a variety of outdoor settings including:

- Beneath porches
- Between rocky structures
- Under cement
- In rock, wood, brush piles, or beneath bark
- In rodent nests or animal burrows

- In outdoor dog houses or kennels
- Near pet resting areas
- In chicken coops or houses

Triatomines are primarily nocturnal and feed on the blood of mammals (including humans), birds, and reptiles. Triatomine bugs live in a wide range of environmental settings, generally within close proximity to a blood host.

What can I do if I see a triatomine bug?

Please do not touch or squash the bug. Place a container on top of the bug, slide the bug inside, and fill it with rubbing alcohol or, if not available, freeze the bug in the container. Any material containing bug parts or feces should also be submitted for testing, preferably in a plastic bag or clean sealable container. Then, you may take it to your local extension service, health department, or a university laboratory for species identification.

In the event that none of these resources is available in your area, you may email CDC's Division of Parasitic Diseases and Malaria (parasites@cdc.gov) for species identification or *T. cruzi* testing.

Surfaces that have come into contact with the bug should be cleaned with a solution made of 1 part bleach to 9 parts water (or 7 parts ethanol to 3 parts water).