

Just the Facts... Chagas (pronounced SHA-gus) disease, also referred to as American Trypanosomiasis is a parasitic disease that affects roughly 8 million people in Mexico, Central and South America. It is considered a rare infectious disease in the southern United States, but has been detected in Texas, Louisiana and Oklahoma. The disease is caused by the flagellate protozoan parasite *Trypanosoma cruzi* (*T. cruzi*). This parasite causes both acute (short term) and chronic (long term) symptoms which can become life-threatening. The parasite is transmitted (vectored) to humans, dogs and other mammals by triatomine insects. These insects are known by numerous common names, varying by country, including “kissing bug”, “cone nose bug”, “benchuca”, “vinchuca”, “chipo” and “barbeiro.”

Who is at risk of getting Chagas disease?

Chagas disease is a problem in the Americas and Mexico. Significant percentages of people living in rural areas under poor housing conditions in Mexico, Central and South America are at risk of acquiring the disease. In these situations, the human population shares the same habitat with the triatomine insect that vectors Chagas disease. Military personnel traveling or deployed in areas where Chagas disease is endemic are also at risk and should take preventive measure to protect themselves from the triatomine insect vector.

How do you get Chagas disease?

The most common method of contracting Chagas disease is through exposure to parasite infected feces of triatomine insects. Infections occur when infected feces are rubbed into bite wounds or into the eyes or mouth. Humans can also acquire the parasites by eating uncooked food or drinking beverages contaminated with infected feces from triatomine insects. The *T. cruzi* parasite can also be transmitted through blood transfusions, organ transplantation, transplacentally (mother to unborn child) and accidentally in laboratory settings. The disease is not spread through person-to-person contact.

How do triatomine insects become infected with *T. cruzi*?

These insects become infected when they feed on the blood of animals that serve as reservoirs for the *T. cruzi* parasites. Over 150 wild and domestic animal species including humans, dogs, cats, rats, mice, opossums, armadillos and bats are known reservoirs. In the United States, infected triatomine insects and reservoir hosts have been found from Texas to Florida and as far north as Oklahoma and Maryland.

How do triatomine insects transmit *T. cruzi*?

Triatomine insects feed on blood, but the disease is not transmitted by the bite of these insects. The mouthparts of this insect are modified like sharp straws, made for piercing skin and sucking blood. The bite from a triatomine is initially painless and most people don't realize that they have been bitten. However, the bite site soon becomes an itchy welt. As the insects feed they defecate, leaving fecal droppings contaminated with the *T. cruzi* parasites on the surface of the skin around the bite wound. The parasites can then enter the blood when the victim scratches or rubs the feces into the bite wound, breaks in the skin, or rubs the parasite contaminated feces into the eyes or mouth. The species that have adapted to living in human dwellings are called “domesticated” triatomines. During the daylight hours, these insects hide in cracks and crevices in floors, walls, house plants, furniture and up within the ceiling rafters of a structure. At night, the insects emerge from these areas in search of a blood meal. When they find a host, the insects search the body for areas where the skin is thin and easy to puncture, often around the mouth and eyes.



What are the symptoms of Chagas disease and how are they treated?

There are acute and chronic effects of Chagas disease. Within 1 month after infection, acute symptoms may be experienced. There may be an inflamed swelling or chagoma (called Romaña's sign when swelling involves the eyelids) at the site of entry of the parasites. In some cases, the acute stage of infection may pass unnoticed. However, in some cases (< 5%) death may result from acute heart failure or inflammation of the brain or spinal cord (meningoencephalitis), usually in children less than 2 years old. Medication for Chagas disease is usually only effective when given during the acute stage of infection.

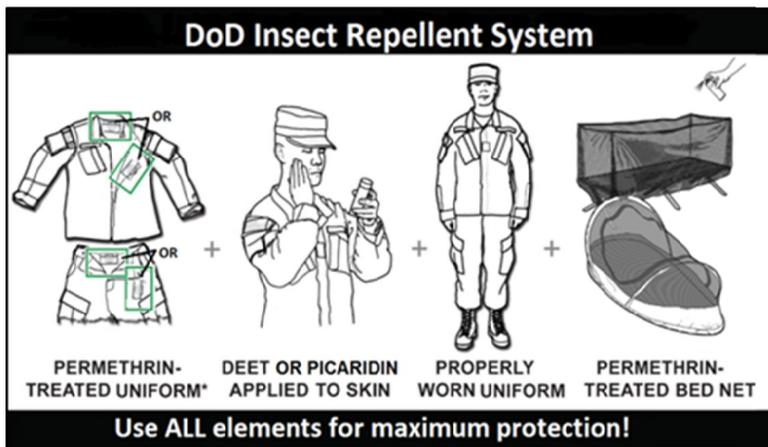
Chronic symptoms may not occur for years or even decades after the initial infection. Symptoms include enlargement of the heart muscle, nervous system disorders, and dementia. The colon and esophagus can also be affected, leading to severe constipation and problems with swallowing. There are no effective medications for Chagas disease in the chronic stage of infection. Standard treatment methods are used to manage symptoms only. No vaccine is currently available.

What should you do if you are bitten by a triatomine insect and/or may have contracted Chagas disease?

Contact a health care professional. Make sure you mention your exposure to a triatomine insect and/or that you have been in a Chagas disease endemic area. Diagnosis of Chagas disease can be made through laboratory blood tests. If possible, save the insect in a plastic bag or a vial for identification.

What can I do to protect myself from getting Chagas disease?

Once a rural problem, Chagas disease has expanded into urban areas. In the endemic areas of Mexico, Central and South America, Soldiers should utilize the Department of Defense (DoD) insect repellent system to protect themselves from triatomine insects. Preventive measures may also include spraying infested dwellings with residual insecticides. If traveling in these endemic areas, sleep indoors in well-constructed facilities (air-conditioned or screened hotel rooms) or under a permethrin-treated bed net. Remember that poorly constructed housing and structures utilizing mud, adobe or palm thatch construction are prime habitats for triatomine insects. In addition, Soldiers and travelers should be aware of other possible routes of transmission such as food-borne transmission (drinks and uncooked food contaminated with triatomine feces). Clean and disinfect any surfaces that may have come in contact with triatomine insects.



Personal Protective Measures for Soldiers

Wearing permethrin treated clothing and using DEET repellent on the skin and sleeping under permethrin-treated bed nets will provide maximum protection from triatomine insect bites. Standard bed nets available to protect Soldiers while sleeping include the Lightweight, Self-Supporting, Pop-Up Bed Nets factory-treated with permethrin, available in Coyote Brown (NSN 3740-01-518-7310) or OD Green (NSN 8415-01-516-4415). Untreated Bed Nets (NSN 7210-00-266-9736) should be treated with 0.5% permethrin aerosol (NSN 6840-01-278-1336) before setting up to prevent triatomine insects from biting through the net.

Where can I find additional information on Chagas disease?

- Centers for Disease Control and Prevention: <http://www.cdc.gov/parasites/chagas/>
- World Health Organization: <http://www.who.int/mediacentre/factsheets/fs340/en/>
- Texas Department of State Health Services: <https://www.dshs.state.tx.us/idcu/disease/chagas/>
- University of Florida, Entomology and Nematology: http://entnemdept.ufl.edu/Creatures/URBAN/Triatoma_sanguisuga.htm