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The Experts in Pest Control

Kissing bugs in the U.S. and associated risk of Chagas Disease

Recent news headlines have featured kissing bugs invading the U. S. Kissing (or *triatomine*) bugs are blood-feeding insects that are notoriously associated with transmitting a serious and potentially fatal illness known as Chagas disease. Amid the sensationalism attached to these bugs, it's important to know that *triatomine* bugs are not “new” to the U.S., and the bugs themselves aren't deadly.

Also, the risk of contracting Chagas disease in the U.S. (via the bite of one of these bugs) is low. In short, the *triatomine* bug species found in the U.S. rarely feed on humans, do not live inside human dwellings (unlike those in Latin American countries), and exhibit feeding behaviors that are not conducive to parasite transmission. Additionally, not all *triatomine* bugs (even the species most commonly implicated in disease transmission) are infected with the disease-causing parasite to begin with.



Classification	Identification	Distribution
<ul style="list-style-type: none">Order: <i>Hemiptera</i> (same as bed bugs).Family: <i>Reduviidae</i>.Subfamily: <i>Triatominae</i>. referred to as <i>triatomine</i> bugs.	<ul style="list-style-type: none">Adults: ½ to 1 inch in length; w oval shape.Color: black or dark brown with yellow, orange or red horizontal stripes around edge of the abdomen.Slender head with a prominent beak. Head narrows at the base to form a distinct neck.	<ul style="list-style-type: none">Found in 28 states across U.S. (south of the Great Lakes).Primarily found in the southern U.S.Prevalent in Mexico, Central and South America, (with the majority of species concentrated mainly in tropical and subtropical areas).

Habitat Preferences

Sylvatic	Periodomestic	Domestic*
<ul style="list-style-type: none">Preference to inhabit rodent nests and burrows and natural hiding places such as caves, rock piles and fallen logs.These habitats attract rodents, amphibians and reptiles hosts (for these bugs to feed on).<i>Triatomine</i> bug species found in U.S. are Sylvatic.	<ul style="list-style-type: none">Preference to inhabit chicken coops, stables, rabbit /guinea pig hutches.Feed on the blood of domestic animals / birds. May also feed on wild animals or humans, if the opportunity presents itself.	<ul style="list-style-type: none">Preference to inhabit human dwellings and prefer to feed on the blood of human or domestic animals.Most commonly infest houses with thatched roofs of straw or palm leaves, or rough-walled houses made from adobe mud bricks, or timber-framed houses with mud walls.

*Because of their preferences to live with humans and feed on human blood, these *triatomine* species are important in the transmission of Chagas Disease. These *triatomines* are found in Mexico, Central and South America, NOT in the U.S.

Kissing (*Triatomine*) Bugs

Triatomine bugs are so named because many feed on human blood, biting their faces when they are sleeping. These bugs have long beak-like mouthparts, which have also earned them the nickname of “*conenoses*”.

Feeding

Triatomine bugs are nocturnal, coming out at night to feed. They feed on the blood of mammals (including humans), birds and reptiles, with each species having different host preferences. During the daytime, they hide in cracks and crevices.

Chagas Disease (*American Trypanosomiasis*)

Chagas disease is caused by the protozoan parasite *Trypanosoma cruzi*. The CDC estimates as many as 8 million people are infected with Chagas disease in Mexico, Central and South America.

Transmission by *Triatomine* Bugs:

1. *Triatomine* bugs become infected with *T. cruzi* parasites when they bite an infected person or animal. Once infected, kissing bugs are able to pass the *T. cruzi* parasite in their feces.
2. During feeding, *triatomines* defecate on or near their host, passing the parasite in their feces. Transmission occurs when infected fecal material is rubbed into bite wound or mucous membrane (eyes, mouth) and the parasite enters the body.

Other Routes of Transmission:

- Consumption of entire (infected) *triatomine* bug.
- Blood transfusion with infected blood (U.S. blood supply is screened for *T. cruzi*).
- Infected mothers can pass to unborn infants or through nursing.

The greatest transmission risk to humans is in regions where domestic *triatomine* species are abundant. Domestic *triatomine* bugs live in close proximity to man and have feeding patterns that cause them to defecate soon after engorgement while still on host.

Triatomine Species that are important vectors

- *Triatoma infestans* – most common vector – live in close association w humans; found over wide geographic range in S. America.
- *Rhodnius prolixus* – found primarily in Central America.
- *Panstrongylus megistus* – known as a major disease vector in Brazil.

Keep *Triatomines* Away

In the U.S., management strategies for *triatomine* bugs are focused on non-chemical methods. Prevent *triatomine* bugs from living on your property and/or entering your house, by:

- Sealing up gaps around windows and doors/cracks or crevices in the foundation/openings or potential entry points where utility lines enter the structure.
- Use screens on doors and windows.
- Removing wood piles, rock piles and other debris.
- Replacing porch light bulbs with less attractive yellow bulbs, or turning lights off at night (*triatomines* are attracted to lights).
- Keeping outdoor pet areas clean, regular inspections for *triatomine* bugs – if possible have pets sleep indoors at night.
- Maintain property by keeping vegetation trimmed, grass mowed, removing trash and filling in burrows to make it unattractive to rodents and other *triatomine* bug hosts.



Chagas Disease RISK from *Triatomine* Bugs in the U.S.

There is a **LOW** Incidence of Human Cases of Chagas Disease in North America due to:

1. Habitat and host preferences of *triatomine* bug species in the U.S.

– Most are sylvatic – preferring to live in the “wild” and feed on wild animal hosts encountered there; Occasionally, *triatomines* are found around structures beneath porches or decks, but are unable to enter indoors due to the solid construction of houses. These *triatomines* prefer to feed on wood rats, armadillos, opossums and other non-human hosts.

2. Feeding behavior – *triatomine*

bug species in the U.S. have a time delay between feeding and defecation. Since parasites can only be passed in the bug’s feces – the feces are not coming into contact with the animals (or humans) that these bugs are feeding on.

Sources:

- Mullen and Durden. “True Bugs (Hemiptera)” Medical and Veterinary Entomology, 2nd Edition. Boston: Elsevier Inc., 2009. 83-93. Print.
- U.S. Centers for Disease Control and Prevention “Parasites – American Trypanosomiasis” 19 July 2013. Web 25 November 2015. http://www.cdc.gov/parasites/chagas/gen_info/vectors/

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