

Insec(tc)ure*:

Are you insecure about your insect cures?

A UT Urban IPM Lab Newsletter for the Pest Management Industry

Chagas Disease Not a High Risk in Tennessee

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Nearly a month ago, I received an email from a resident of Ooltewah, Tennessee, in southern Hamilton County. She found the insect in Figure 1 in her den and another on the deck at the door threshold. The week earlier, she had woken to a firm red swelling between her lips and nose that did not hurt or itch and a single puncture mark in the swollen area. The swelling had dissipated by the day she sent the email, but some hyperpigmentation was still present.

She wondered if the insect in Figure 1 was *Triatoma sanguisuga*, also known as a kissing or cone-nose bug. Additional images were sent upon my request (Figures 2 and 3). She wanted the identity confirmed before requesting testing for Chagas disease.



Figure 1. Insect suspected as *Triatoma sanguisuga*.



Figure 2. Close up of dorsal view of the suspect *Triatoma sanguisuga*



Figure 3. Close up of lateral view of the suspect *Triatoma sanguisuga*.

Kissing Bugs

In Tennessee, we have two species of *Triatoma*, *T. sanguisuga* and *T. lectularia*. These two species are similar in size (0.6 – 0.9 inches), but *T. lectularia* has hairs over much of its body, including the [mouthparts](#). The insect in the image doesn't look hairy, so I tentatively identified it as *T. sanguisuga*. *Triatoma* have flat, oval-shaped adult bodies that are brown to black with yellow, red or orange bands around the edge of the abdomen. Large beady eyes are found near the base of the cone-shaped head and the piercing-sucking mouthparts are held under the body at rest. Legs are thin and long. Other look-a-like insects that might be confused with *Triatoma* spp. include [boxelder bugs](#), and other [assassin bugs](#), including [wheel bugs](#). [Western conifer seed bugs](#) may also be confused with kissing bugs, but these aren't commonly encountered in Tennessee either. You can submit suspect kissing bugs to me, [your county Extension agent](#), or the Texas A&M citizen science project, <https://kissingbug.tamu.edu/contact/>.

Kissing bugs are blood feeders that are active at night and, thus, most likely to bite humans while they sleep. Their name derives from the bites occurring near the mouth and eyes. While most people have localized reactions to the bite, that is, swollen, irritating bumps, more rarely, others may experience anaphylaxis, a potentially life-threatening condition if medication is not given quickly. The occurrence of other animal hosts and harborage near your home may explain the kissing bugs' presence. *Triatoma* spp. feed on various animals, including wild and domesticated dogs, birds, rodents, reptiles and livestock. Kissing bugs commonly feed on medium-sized mammals such as skunks, raccoons, opossums and armadillos. Like many pests, they harbor near their hosts in cracks, crevices or voids, which may be found in chicken enclosures, dog houses or kennels, stacked firewood, rodent burrows, outbuildings and under porches.

Kissing bugs occur, but are infrequently encountered, in Tennessee or the southern U.S. A scan of the submissions to my lab indicates four specimens have been identified between 1998 and 2004, two were identified via images in 2019 and the UT Extension Soil, Plant and Pest Center in Nashville reported nine from 2013 to 2021. These insects are more common in South and Central America as well as Mexico, as is the organism that causes Chagas disease.

Chagas Disease

A parasite, *Trypanosoma cruzi*, can be spread to humans when a kissing bug's parasite-infected feces are rubbed into the bite wound or into the eyes, nose or mouth. The resulting Chagas disease can cause typical flu-like symptoms (fever, vomiting, headaches, rashes, and/or diarrhea), but many people are asymptomatic, showing no signs of parasite infection. About a quarter of those infected with *T. cruzi* will develop chronic Chagas disease with multiple complications such as arrhythmia or a dilated heart, colon or esophagus (Figure 4). Not all Chagas disease is caused by kissing bugs. The parasites can also be transmitted to humans via transplanting infected organs, contaminated blood donations, or from mother to baby. Animals may also become sick with Chagas disease after eating an infected kissing bug. Around 8 million cases have occurred worldwide, with most in Latin America.

Although *Triatoma* species are found in 28 southern U.S. states and approximately half of the adult U.S. kissing bugs have *T. cruzi*, Chagas disease incidence is still low here. Lower U.S. incidence may be related to the well-built homes that deny kissing bugs' easy access to the interior. Another reason for lower incidence, strangely enough, is that U.S. *Triatoma* do not defecate near the bite site.

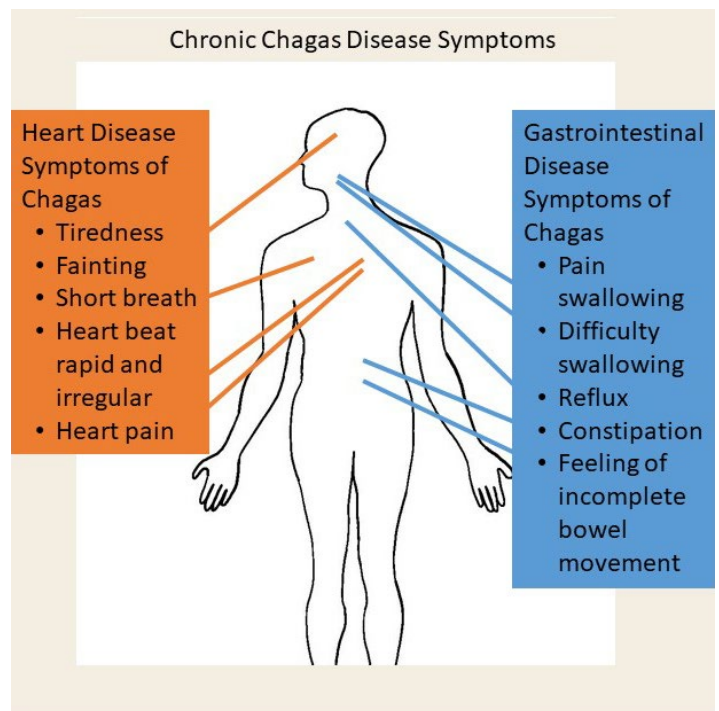


Figure 4. Chronic symptoms of Chagas disease. Credit: UT E&PP

Should we be overly concerned about Chagas disease in Tennessee? Not at the moment. Before 2010, one Tennessee human Chagas case was reported. We did see a slight uptick from 2010 to 2018, with nine cases occurring. Although only one was determined to be locally acquired, the origins were unknown for six. It's suspected that Chagas disease incidence may be higher than reported, but incidence would still be low. However, just because cases are low doesn't mean we should be taking risks near kissing bugs. If kissing bugs are found, follow the pest management recommendations below and contact a healthcare professional if you suspect you may have Chagas disease.

Chagas risk may be greater for a dog living in Tennessee, especially if they spend the night outdoors. A 2010 study found that 6% of dogs tested from 31 Tennessee counties were positive for *T. cruzi*, the parasite that causes Chagas disease. One hundred percent of the dogs in the study that lived outdoors tested positive. Therefore, it's essential to protect your dog from kissing bugs too. If dogs spend the night outdoors, reduce lighting around their kennel, consider screening the enclosure, and move items like wood piles that can harbor kissing bugs away from the kennel.

Kissing Bug Management

Preventing kissing bug entry into the home, eliminating potential kissing bug harborage indoors and outdoors, and reducing wildlife hosts near homes and dog kennels are essential to lowering interactions with these bugs.

- Move leaf, rock, wood and debris piles away from the home, dog kennel and other structures (Figure 5).
- Pest-proof the exterior of the home to prevent kissing bugs from entering. Seal gaps around window frames, doors and pipe or other penetrations into the foundation or other exterior surfaces. Ensure crawlspace, attic and soffit vents are screened, and existing screening is free of holes.
- Use yellow bug lights to reduce insect attraction to the structure.
- Reduce rodent and wildlife activity next to the home.
- Apply perimeter treatments to the foundation wall and surrounding soil, the siding/foundation wall interface, and around entry points, including windows, doors, vents and penetrations. See [UT Extension publications W 658 A Quick Reference Guide to Pesticides for Pest Management Professionals Working in and Around Structures](#) and [PB 1303 Managing Pests Around the Home](#) for insecticidal treatment suggestions.
- If kissing bugs are found indoors, reduce clutter to remove potential harborage. Treat cracks and crevices, the edges and corners of rooms, and the edges of door and window frames with a pesticide that lists these sites on the label.



Figure 5. Move leaf piles away from the structure to reduce harborage for kissing bugs.

I once had someone with kissing bugs in the middle of extensive home renovations. They should have slept under fine mesh netting in this situation because they could not exclude the kissing bugs.

Modified from Hessoock, E., R. T. Trout Fryxell and K. Vail. 2020. W957 Kissing Bugs: Not So Romantic. UT Extension. <https://extension.tennessee.edu/publications/Documents/W957.pdf>

Other references

<https://citybugs.tamu.edu/factsheets/biting-stinging/others/ent-3008/>

<https://insectlab.russell.wisc.edu/2015/12/08/was-that-a-kissing-bug/>

<https://extension.arizona.edu/what-you-should-know-about-kissing-bugs>

https://www.cdc.gov/parasites/chagas/gen_info/vectors/t_lecticularia.html

<https://extension.tennessee.edu/publications/Documents/pb1303.pdf>

<https://extension.tennessee.edu/publications/Documents/W658.pdf>

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Insec(tc)ure is edited by Jennifer Chandler and Pat Parkman and archived online at

<https://epp.tennessee.edu/urban-ipm-newsletters/>

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