

New mosquito-borne viral disease found in South Central Texas

August 1 2014, by Paul Schattenberg



The *Aedes albopictus* or Asian tiger mosquito (shown here) is one of the two mosquito species known to commonly transmit chikungunya. The other is *Aedes aegypti*. Both species are found in Texas. Credit: Mike Merchant

Chikungunya, a viral disease transmitted by mosquitoes, has been

identified in five Texas counties—four of them in South Central Texas—and may become endemic to the state, according to Texas A&M AgriLife Extension Service entomologists.

As far as the Texas cases are concerned, at this time it appears in each instance the disease was contracted in one of the countries where it is more common, said Sonja Swiger, AgriLife Extension entomologist at the Texas A&M AgriLife Research and Extension Center in Stephenville.

"The first confirmed case of the disease in Texas was in Williamson County, and the most recent confirmed case was in Bexar County," said Molly Keck, AgriLife Extension entomologist and integrated pest management specialist, Bexar County.

According to the Texas Department of State Health Services, cases have also been confirmed in Gonzales, Travis and Harris counties.

The Centers for Disease Control and Prevention website notes [chikungunya](#) is not considered fatal, but can have serious symptoms, including severe joint pain and swelling, fever, muscle pain, headache and rash. Those most at risk are the very young, people over 65 and individuals with chronic medical conditions. The virus is not spread from person to person, and there is no treatment other than managing the symptoms.

Keck said the disease is fairly well known in Africa, Asia and Europe, but has more recently found its way into the Caribbean and the Americas.

"The bad news is that the insect species that commonly transmit chikungunya, the *Aedes aegypti* and *Aedes albopictus* [mosquitoes](#), are found in Texas," she said. "So we have the mosquito that vectors the

disease and we have the host, humans. And since the disease pathogen is also present, we have all three components to potentially make the disease endemic."

Endemic means being characteristic of or prevalent in a particular population, area or region.

"Since the virus is known to be in the area, people who have symptoms should go to a physician to determine what is causing their illness," said Wizzie Brown, AgrLife Extension entomologist, Travis County. "A blood test is required to test for chikungunya."

Brown said if people treat their symptoms at home without seeing a doctor, it can cause instances of the disease to be under-reported.

Keck noted it is "very likely" that chikungunya can become endemic to Texas, possibly on a greater scale than the West Nile virus.

"With West Nile, birds are the primary host and humans are the final or end host," she explained. "The virus never reaches a high enough level in our bodies for a mosquito to pick it up from us. Therefore, there is a third player, birds, necessary for transmission of West Nile. But they are not necessary as a vector for chikungunya."

Swiger said health officials now know of two cases in Florida where people were exposed to chikungunya locally, most likely through a mosquito vector.

"These individuals had not traveled to any of the areas where the disease is prevalent," Swiger said. "At this point, it seems like just a matter of time before the virus spreads more widely in the U.S."

She said both *Aedes aegypti* and *Aedes albopictus* mosquitoes can carry

the disease, but *A. aegypti* is primarily found in the southern U.S. while *A. albopictus* has a much greater geographic range. Mapping of the two species by the Centers for Disease Control and Prevention shows *A. aegypti* is found in scattered areas of the southern U.S., whereas *A. albopictus*, or the "Asian tiger mosquito," is found widely dispersed throughout the south central, southeastern and mid-Atlantic regions of the country.

For more information about chikungunya, go to www.cdc.gov/chikungunya/.

"While there's not much you can do about chikungunya if you get it, there's still much you can do to prevent mosquito bites in the first place," Keck said. "For example, if you're planning to travel to the Caribbean or one of the countries where chikungunya is more common, be sure to pack some insect repellent to reduce your risk of contracting the disease.

"And now that we have confirmed cases in Texas, it would also be wise to apply insect repellent anytime you spend time outdoors, not just during dawn and dusk when mosquitoes are typically the most active. The mosquito species that transmit chikungunya are extremely active during the day."

Keck said the most effective repellents are those containing DEET.

"Repellents with up to 30 percent DEET are usually safe for young children, but should not be used on babies or infants," she said.

"Extension recommends repellents approved by the EPA and recommended by the CDC for their ability to effectively repel mosquitoes for extended periods of time. These include DEET, picaridin, IR3535 and oil of lemon eucalyptus."

If you need to be outside, try to wear light-colored, loose-fitting shirts or

tops with long sleeves and pants, she said.

"It helps to spray repellent on your clothes too," Keck added.

Swiger said aedes mosquitoes lay their eggs on moist ground around the edges of water or the inside walls of artificial containers. After water accumulates, the eggs become submerged and hatch.

"If conditions are too dry when the eggs are first laid, they will die," she explained. "But if the embryo can develop before it gets too dry, the eggs can withstand adverse conditions for long periods."

Keck said to help prevent mosquito proliferation, homeowners should empty any containers, tires, buckets, bags, birdbaths or other items that may capture rainwater and become a mosquito breeding ground.

"During the hot months, mosquitoes can go from egg to adult within a week; be sure to dump standing water at least every three days," she said. "You can also exclude mosquitoes by keeping doors and windows fully closed and making sure screen doors close tightly and don't have any holes or tears in them."

Janet Hurley, an AgriLife Extension school integrated pest management specialist in Dallas, suggested emptying plastic wading pools weekly and storing them indoors when not in use.

"You should also remember to repair leaky pipes and outside faucets and fill any holes or depressions in trees with sand or mortar," she said.

Hurley said another way to help reduce adult mosquito populations is to mow tall grass areas and reduce the amount of brush or other foliage to eliminate some adult mosquito resting sites.

"You can also consider fog treatment or surface treatments for temporary relief in yards or high-traffic areas," she said. "But only use insecticides that are labeled for that purpose and apply them according to product label directions."

The entomologists said while taking these measures may not keep someone from getting bitten by mosquitoes, they can significantly reduce the number of bites, which will reduce the chance of becoming infected by a mosquito-borne [disease](#).

Provided by Texas A&M University

Citation: New mosquito-borne viral disease found in South Central Texas (2014, August 1) retrieved 20 September 2024 from <https://medicalxpress.com/news/2014-08-mosquito-borne-viral-disease-south-central.html>

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