

Protection against Zika just as important during winter

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Credit: Louisiana State University

Just because temperatures are cooling down as winter approaches, it's no time to let your guard down when it comes to mosquitoes that can carry the Zika virus. James Diaz, MD, DrPH, Professor and Program Director

of Environmental/Occupational Health Sciences at LSU Health New Orleans School of Public Health, details characteristics of the mosquitoes capable of transmitting the Zika virus in the United States, their habitats and biting behaviors, as well as control measures, in a paper published in the December 2016, issue of *Wilderness & Environmental Medicine*.

"Not only can the eggs of *Aedes* species [mosquitoes](#) survive winter, wide variations in [daytime temperatures](#) can stimulate egg-laying and shorten the time it takes for mosquitoes to become infective after biting a person with Zika," notes Diaz. "What's more, researchers have shown that while relatively rare, *Aedes aegypti* mosquitoes are able to transmit Zika to their offspring, a mechanism allowing the virus to survive from one season to the next."

Aedes species eggs can survive in conditions that adult mosquitoes cannot. Even when their source of water has evaporated, eggs can survive desiccation, remaining environmentally stable and viable up to a year and easily spreading to new locations. All it takes is a little rain for them to hatch.

Diaz dispels the oft-repeated misconceptions about the biting behaviors of mosquitoes. "It's not just dawn and dusk when people must take precautions. *Aedes* mosquitoes are primarily daytime biters and sip feeders, preferring multiple small-sip human blood meals when they can sense, see and repeatedly attack their hosts best, but they can also bite at night in well-lit areas."

Diaz rates the effectiveness of various methods of control and protection, including physical, chemical, biological and genetic control of the mosquitoes, as well as personal protective strategies to prevent being bitten – from wearing long sleeves, long pants and clothing impregnated with insecticides to a comparison of mosquito repellents.

"With a probable case of locally transmitted Zika reported in Texas in November, we now have Zika on both sides of Louisiana," says Diaz. "As we learn more about the consequences of Zika infection, including the recent revelation that babies of Zika-infected mothers who had normal head sizes at birth have been diagnosed with microcephaly months later, it is vital that we know this enemy and remain vigilant in protecting ourselves. Moreover, the defensive lessons learned now combined with ongoing research in flaviviral immunology and genetic mosquito vector control will better prepare us for the next arthropod-borne pandemic in our changing world ecosystem."

Provided by Louisiana State University

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