

DENGUE: Notes about the Disease

Dengue is a viral tropical mosquito-borne disease that does occur in North Carolina, though, so far, only in persons who have arrived or returned here from an area affected by the disease at the time. The dengue virus occurs in four different serotypes (1-4), each with its own geographic distribution. All four serotypes have existed in the western hemisphere since 1977, including an intermittent presence in Texas for over two decades. The disease continues to wax and wane year-by-year in Latin America and the Caribbean.

The flu-like common form of dengue, dengue fever, is the most common arboviral disease in the world. Because of the severe myalgias and arthralgias that can accompany this disease, it has been aptly nicknamed “breakbone fever.” Fortunately, dengue hemorrhagic fever and dengue shock syndrome—potentially fatal forms of the infection—are far less common and require previous infection with a different dengue virus serotype.

Historically, the classic vector for dengue has been the *Aedes aegypti* mosquito. Other *Aedes* species have been somewhat less efficient transmitters of the dengue viruses. A few western North Carolina counties have harbored *A. aegypti* in the past, but dengue transmission has not been documented in this state, at least during the past century. Notwithstanding, *A. aegypti*'s ecologic niche in NC has been almost completely supplanted by *Aedes albopictus*, the “Asian tiger” mosquito.¹ First documented in Texas in 1985, *A. albopictus* had spread to much of the southeastern US within a decade, including most NC counties.² This pesky insect breeds quite nicely in small pockets of contained water, something humans often conveniently but unknowingly provide via old tires, flower pots, bird baths, etc. Like *A. aegypti*, the Asian tiger mosquito is a daytime biter and does so quite enthusiastically. Thus, one of the dengue viruses could occur in NC if one or more of our imported human case patients were bitten by *A. albopictus* mosquitoes while in a viremic state, resulting in the establishment of autochthonous dengue transmission.

Effective prevention of dengue in NC is two-fold. Foreign travelers should be made aware of precautions to prevent mosquito bites in dengue areas of the world, and—here at home—we should avoid exposure and prevent mosquito breeding in environments under our control by eliminating their breeding sites.

1. Nolan Newton, personal communication.
2. N. Lutz, “A North Carolina Summer Pest: The Asian Tiger Mosquito *Aedes albopictus*,” *EcoAccess*, Fall 2000, www.ecoaccess.org/info/wildlife/pubs/asiantigermosquitoes.html.