

# Los Angeles Times

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From the Los Angeles Times

## New virus extends geographic reach

The Chikungunya has found a new species of mosquito to carry it, researchers find.

From Reuters

December 8, 2007

The Chikungunya virus, which causes painful and sometimes crippling symptoms, has spread in the last year because it has found a new species of mosquito to carry it, researchers said Friday.

A single mutation enabled the new virus to infect the Asian tiger mosquito, which itself is spreading to many more countries in Europe and North America, the researchers said.

"This mutation increases the potential for Chikungunya virus to permanently extend its range into Europe and the Americas," Stephen Higgs and colleagues at the University of Texas Medical Branch wrote in the journal PLoS Pathogens.

This is especially true if average temperatures continue to rise with global warming, they wrote. The virus caused outbreaks in India and Italy this year.

Chikungunya is an arbovirus, meaning carried by a blood-sucking insect, and was transmitted mostly by the *Aedes aegypti* mosquito. It caused an epidemic that began in Kenya in 2004 and spread to several Indian Ocean islands including the Comoros, Mauritius, the Seychelles, Madagascar, Mayotte and Reunion.

On tiny Reunion Island alone, more than a third of the population -- 266,000 people -- were infected, with debilitating aches and pains. It killed 260 people.

But because *Aedes aegypti* mosquitoes are not found in Reunion, researchers suspected that something else was carrying the virus.

Knowing that the virus that caused the Reunion outbreak had mutated, the researchers tested it to see whether that mutation gave the virus the ability to infect other mosquito species.

They tried to infect various species, including the Asian tiger mosquito, *Aedes albopictus*, with genetically engineered strains of the virus and found that viruses with the very simple mutation thrived in the tiger mosquitoes.

"This research gives a new insight into how a simple genetic change in a human pathogen can increase its host range and therefore its geographic distribution," they wrote.

"*Aedes albopictus* is abundant and widely distributed in urban areas of Europe and the United States of America, and this work suggests that these areas are now vulnerable to Chikungunya establishment."

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