

Asians, Europeans genetically prone to severe dengue,;Africans best protected in this respect: study

The dos and don'ts when it comes to dengue.

Scientists have identified gene variants that make people of Asian and European ancestry more prone to developing severe dengue.

Dengue fever is endemic to tropical and subtropical regions of East Asia and the Americas, but the virus responsible for the disease has recently spread to North America and Europe due to the introduction of its vectors — mosquitoes of the *Aedes* genus — into these regions.

The dengue virus can lead to a wide spectrum of illness, ranging from classic dengue fever (DF) to the potentially-fatal dengue shock syndrome (DSS).

Ethnic diversity has long been considered as one of the factors explaining why the severe forms of dengue are more prevalent in Southeast Asia than elsewhere, as previously shown in epidemiological research, yet the phenomenon has never been explained by human genetics.

Researchers, led by Anavaj Sakuntabhai from National Center for Scientific Research (CNRS) in France, studied the genetics of 411 patients admitted with dengue virus infection to three hospitals in Thailand between 2000 and 2003.

The study, published in the journal *PLOS Neglected Tropical Diseases*, identified two genes related to blood vessel inflammation that confer risk of severe dengue, and four genes related to metabolism that affect risk of classic dengue fever.

Further experiments showed that variations in the genes led to observable changes in cellular dynamics.

A comparison with the genetic databases of individuals of African and European origin showed that the prevalence of these variations varies based on ethnic ancestry.

“The particular genetic risk conferred by these genes indicates that Southeast and Northeast Asians are highly susceptible to both phenotypes, while Africans are best protected against severe dengue,” said Mr. Sakuntabhai.

“Europeans, on the other hand, are less susceptible to classical dengue fever but more susceptible to severe dengue fever,” he said.

This research offers insights that can help understand the pathophysiology of this infectious disease and develop new therapeutic approaches

Receive the best of The Hindu delivered to your inbox everyday!

Please enter a valid email address.

It helped heal scratch wounds in 24 hours

END