

FAQ

The role of mosquitoes in Germany in the transmission of Zika Virus



How likely is a mosquito-borne Zika virus epidemic in Germany?

Currently, the risk of Zika virus transmission by mosquitoes is considered relatively low in Germany. First, the pathogen must become introduced into Germany by a traveler infected in an affected country. A mosquito feeding on this person's blood in Germany must be vector-competent for Zika virus, i.e. it must be susceptible to the virus, to replicate it in its body and to carry it in its salivary glands in order to transmit it during another blood meal. Further efficient transmission also depends on the mosquito density.

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Are the yellow fever mosquito and the Asian tiger mosquito related species?

The Asian tiger mosquito (*Aedes albopictus*) and the yellow fever mosquito (*Aedes aegypti*) are two different mosquito species of the same genus *Aedes*. In Brazil, it is assumed that Zika virus is mainly transmitted by the yellow fever mosquito.

Can the Asian tiger mosquito transmit Zika virus?

The Asian tiger mosquito is a highly efficient vector of numerous viruses, among them e.g. dengue and chikungunya viruses. Some of these viruses and Zika virus belong to the same virus family, i.e. they are closely related. Laboratory investigations indicate that the Asian tiger mosquito is able to transmit Zika virus.

Does the Asian tiger mosquito represent a threat for a spread of Zika virus in Germany?

In South America, the yellow fever mosquito *Aedes aegypti* seems to be the main vector of Zika virus. This species is not present in western and Central Europe. However, there are indications that the Asian tiger mosquito is also able to transmit Zika virus. Although this species has gained a foothold in Germany, the risk of an epidemic transmission of Zika virus by this mosquito is considered low, as the spatial distribution of the Asian tiger mosquito still is extremely limited and the population density is generally low.

Can endemic mosquitoes transmit Zika virus in Germany?

To date, there are insufficient data on the vector competence of endemic mosquito species for Zika virus.

What do I do if I find a possibly “dangerous” mosquito?

Under the current climatic conditions, there is no reason for concern, as mosquitoes endemic in Germany are not considered to be particularly effective vectors of viruses representing a health risk for humans, and the number of Asian tiger mosquitoes in Germany is very limited. Often the endemic species *Culiseta annulata* is mistaken for the Asian tiger mosquito, as it is very large and has tiger-like stripes (the Asian tiger mosquito has stripes, too, but is a very small species).

Interested citizens can become active mosquito researchers and support the FLI in the citizen science project “Mückenatlas” by submitting collected mosquitoes. Every submitter will get a feedback. Further information is available under www.mueckenatlas.com

Are mosquito bites a reason for concern, particularly in southern Germany?

No. So far, the Asian tiger mosquito has only been found locally and in small numbers in Germany. To become infected with Zika virus, there must be a human source for the mosquito. After feeding blood on this person, the mosquito would have to be able to replicate the virus and to transmit it, and, moreover, to find another susceptible human host. This cannot be excluded, but is highly unlikely.