

# The Tiger Mosquito



## What are the facts?

### Origin

Tiger mosquitoes are spreading all over the world. They originally come from Eastern Asia. They started invading Europe starting in Italy in the late 1990's

It is not the adult mosquitoes that spread globally, but their eggs. Two main forms of 'transport' have been described:

- Through eggs laid in first or second hand tyres (for cars, airplanes, large professional vehicles) that travel the world in containers
- Through eggs laid in lucky bamboos or other plants that are imported for ornamental purposes

As these eggs are not infected by viruses, therefore mosquitoes that emerge from imported eggs are only a nuisance because they bite, not because they can transmit a disease.

Bites from tiger mosquitoes are often much itchier than bites from resident mosquitoes, because our body is not accustomed to their saliva.

The strain invading Europe from the Mediterranean is capable to overwinter in our temperate climates, this is why it spreads so easily. In late autumn, when the days shorten, the eggs stop developing. They will develop further in spring.

Models have shown that large parts of Europe are suitable for the mosquito.

After initial introduction, the mosquito travels with vehicles from infected areas to other areas. This is why parking lots on highways are particularly susceptible to becoming harbours for new populations. These areas have a high frequency of traffic passing through and stopping, and the more vehicles stopping the bigger the probability that there is a fed female mosquito inside the car.

### Reproduction

Female mosquitoes don't need male mosquitoes to start a new colony. Female mosquitoes tend to mate only once in their lifetime. After that they can spread and lay eggs without the need for males.

Only female mosquitoes suck blood. They only do it to provide proteins to produce eggs. Otherwise they feed on plant nectar and other plant materials. Males only feed on nectar and other plant materials. This means that mosquitoes also contribute to pollination and can be useful.

Tiger mosquitoes preferably deposit their eggs at the edge of water in small containers. This is a very efficient strategy, as the eggs become submerged during the next rainfall and thus have plenty water to develop in. Their eggs need less than 10 days to develop.

### Risk to humans

The tiger mosquito preferably establishes itself close to people. That is why urban areas are particularly at risk.

Once a tiger mosquito population is established they can be very annoying, not only because their bites may itch, but because they very actively bite during day. They may ruin the perfect barbecue or prevent you from relaxing having a drink at the terrace of a pub.

**IF** somebody returns from holidays in the tropics with a virus such as dengue, chikungunya or zika in his/her blood, and **IF** that person is living in an area where the tiger mosquito is already established, **THEN** that virus **MAY** be picked up by a tiger mosquito during a blood meal.

Once ingested the virus can develop in a few days during a hot summer in the infected mosquito. Then that mosquito can start infecting family members or neighbours. If this keeps going on, you can have a local outbreak. This already occurs each year a few times and at a small scale in Southern Europe in some of the areas where the tiger mosquito is established.

Mosquitoes are cold blooded animals, and viruses need a minimum temperature to develop. When the outside temperatures increases the virus is more likely to develop and will develop faster. Therefore, Southern Europe is most at risk of such local outbreaks. Nonetheless, because summers can be very hot in most of the continent, local transmission may also be possible further north.



## What can you do against the tiger at home?

If you live in an area with a resident population of tiger mosquitoes make sure that you remove any object that may contain rainwater around your house. This will help reduce the potential breeding sites.

If you have permanent water containers in your garden (rainwater collectors, ponds, ...) or objects that may contain water and that can't be removed, contact your local pest management company. They will be able to advise you on treatment. The best treatments in such instances can be:

- To introduce fish into the pond, or (...?)
- To use biodegradable granules that contain bacteria that are harmless for people but deadly for mosquito larvae. These bacteria are harmless to fish.

## What can you do about dengue, chikungunya or zika?

- **IMPORTANT:** the tiger mosquito does **NOT** transmit the malaria parasite; this is transmitted by another type of mosquito which bites in the evening and at night.

- Before going on holiday in the tropics always check the websites of the ministry of health or the tropical institute of your country to know more about the disease situation in the country of your destination.
- Protect yourself during daytime with mosquito repellents. Because the mosquito does not bite at night, bed nets will not help against this type of viruses! (they do help against malaria mosquitoes).
- Mosquito repellents are very efficient, but only work on the part of the skin where they have been applied (despite what many pseudo professionals may say). Just spraying on limited spots like one would do with perfume **DOES NOT** work.
- You therefore need to use repellents on all the skin parts that are not covered by clothing.
- Mosquitoes can also bite through thin fabrics.
- When also applying sunscreen, first apply the sunscreen, wait a few minutes for it to dry, then apply the repellent.
- If you have a fever after returning from holidays, always inform your GP about your travel and ask for a diagnostic test (**CAUTION:** it may also be malaria).
- In countries along the Mediterranean with established populations of tiger mosquitoes, public authorities systematically treat against adult mosquitoes in the area surrounding the house of reported positive disease cases.



## Where can you find out more about this?

Contact the **CEPA** scientific committee through the **CEPA** Secretariat with your questions, they will be answered rapidly by e-mail. Relevant questions and answers will be posted as part of this fact sheet on the **CEPA** website.

In each country the respective ministries of health and/or tropical institutes provide the public with information in national languages. For obvious reasons we can't list them all here.

Information provided by travel agencies or other non-scientifically backed organisations may not always be accurate. In case of doubt always check with reliable high-quality sources mentioned above or ask us by e-mail.

The European Centre for Disease Prevention and Control (ECDC) offers different documents for further reading. The most important are listed below:

ECDC factsheet for experts:  
[www.ecdc.europa.eu/en/disease-vectors](http://www.ecdc.europa.eu/en/disease-vectors)

ECDC factsheet about dengue:  
[www.ecdc.europa.eu/en/dengue-fever](http://www.ecdc.europa.eu/en/dengue-fever)

ECDC mosquito distribution maps:  
[www.ecdc.europa.eu/en/publications-data](http://www.ecdc.europa.eu/en/publications-data)

[secretariat@cepa-europe.org](mailto:secretariat@cepa-europe.org)