

Zika virus disease: Questions and answers

Online Q&A
20 January 2016

Where does Zika virus occur?

Zika virus occurs in tropical areas with large mosquito populations, and is known to circulate in Africa, the Americas, Southern Asia and Western Pacific.

Zika virus was discovered in 1947, but for many years only sporadic human cases were detected in Africa and Southern Asia. In 2007, the first documented outbreak of Zika virus disease occurred in the Pacific. Since 2013, cases and outbreaks of the disease have been reported from the Western Pacific, the Americas and Africa. Given the expansion of environments where mosquitoes can live and breed, facilitated by urbanisation and globalisation, there is potential for major urban epidemics of Zika virus disease to occur globally.

How do people catch Zika virus?

People catch Zika virus by being bitten by an infected *Aedes* mosquito – the same type of mosquito that spreads dengue, chikungunya and yellow fever.

How does *Aedes* mosquito reproduce?

Only female mosquitoes bite; they are intermittent feeders and prefer to bite more than one person. Once the female mosquito is fully fed, it needs to rest 3 days before it lays eggs. The eggs can survive up to 1 year without water. Once water is available, and small quantities of standing water are sufficient, the eggs develop into larvae and then adult mosquitoes. Mosquitoes get infected from people with the virus.

Where can the *Aedes* mosquito survive?

There are 2 types of *Aedes* mosquito capable of transmitting the Zika virus. In most cases, Zika spreads through the *Aedes aegypti* mosquito in tropical and subtropical regions. The *Aedes aegypti* mosquito does not survive in cooler climate temperatures. The *Aedes albopictus* mosquito can also transmit the virus. This mosquito can hibernate and survive cooler temperature regions.

Can the *Aedes* mosquito travel from country to country and region to region?

The *Aedes* mosquito is a weak flyer; it cannot fly more than 400 meters. But it may inadvertently be transported by humans from one place to another (e.g. in the back of the

car, plants). If it can survive the temperature climate of the destination, it may theoretically be capable of reproducing itself there and introduce Zika virus to new areas.

What are the symptoms of Zika virus disease?

Zika virus usually causes mild illness; with symptoms appearing a few days after a person is bitten by an infected mosquito. Most people with Zika virus disease will get a slight fever and rash. Others may also get conjunctivitis, muscle and joint pain, and feel tired. The symptoms usually finish in 2 to 7 days.

What might be the potential complications of Zika virus?

Because no large outbreaks of Zika virus were recorded before 2007, little is currently known about the complications of the disease.

During the first outbreak of Zika from 2013 - 2014 in French Polynesia, which also coincided with an ongoing outbreak of dengue, national health authorities reported an unusual increase in Guillain-Barré syndrome. Retrospective investigations into this effect are ongoing, including the potential role of Zika virus and other possible factors. A similar observation of increased Guillain-Barré syndrome was also made in 2015 in the context of the first Zika virus outbreak in Brazil.

In 2015, local health authorities in Brazil also observed an increase in babies born with microcephaly at the same time of an outbreak of Zika virus. Health authorities and agencies are now investigating the potential connection between microcephaly and Zika virus, in addition to other possible causes. However more investigation and research is needed before we will be able to better understand any possible link.

Guillain-Barré syndrome is a condition in which the body's immune system attacks part of the nervous system. It can be caused by a number of viruses and can affect people of any age. Exactly what triggers the syndrome is not known. The main symptoms include muscular weakness and tingling in the arms and legs. Severe complications can occur if the respiratory muscles are affected, requiring hospitalisation. Most people affected by Guillain-Barré syndrome will recover, although some may continue to experience effects such as weakness.

Should pregnant women be concerned about Zika?

Health authorities are currently investigating a potential link between Zika virus in pregnant women and microcephaly in their babies. Until more is known, women who are pregnant or planning to become pregnant should take extra care to protect themselves from mosquito bites.

If you are pregnant and suspect that you may have Zika virus disease, consult your doctor for close monitoring during your pregnancy.

What is microcephaly?

Microcephaly is a rare condition where a baby has an abnormally small head. This is due to abnormal brain development of the baby in the womb or during infancy. Babies and children with microcephaly often have challenges with their brain development as they grow older.

Microcephaly can be caused by a variety of environmental and genetic factors such as Down's syndrome; exposure to drugs, alcohol or other toxins in the womb; and rubella infection during pregnancy.

How is Zika virus disease treated?

The symptoms of Zika virus disease can be treated with common pain and fever medicines, rest and plenty of water. If symptoms worsen, people should seek medical advice. There is currently no cure or vaccine for the disease itself.

How is Zika virus disease diagnosed?

For most people diagnosed with Zika virus disease, diagnosis is based on their symptoms and recent history (e.g. mosquito bites, or travel to an area where Zika virus is known to be present). A laboratory can confirm the diagnosis by blood tests.

What can I do to protect myself?

The best protection from Zika virus is preventing mosquito bites. Preventing mosquito bites will protect people from Zika virus, as well as other diseases that are transmitted by mosquitoes such as dengue, chikungunya and yellow fever.

This can be done by using insect repellent; wearing clothes (preferably light-coloured) that cover as much of the body as possible; using physical barriers such as screens, closed doors and windows; and sleeping under mosquito nets. It is also important to empty, clean or cover containers that can hold even small amounts of water such as buckets, flower pots or tyres, so that places where mosquitoes can breed are removed.

Should I avoid travelling to areas where Zika virus is occurring?

Travellers should stay informed about Zika virus and other mosquito-borne diseases and consult their local health or travel authorities if they are concerned.

To protect against Zika virus and other mosquito-borne diseases, everyone should avoid being bitten by mosquitoes by taking the measures described above. Women who are pregnant or planning to become pregnant should follow this advice, and may also consult their local health authorities if travelling to an area with an ongoing Zika virus outbreak.

Based on available evidence, WHO is not recommending any travel or trade restrictions related to Zika virus disease. As a precautionary measure, some national governments have made public health and travel recommendations to their own populations, based on their assessments of the available evidence and local risk factors.

Can El Niño have an effect on Zika?

The *Aedes aegypti* mosquito breeds in standing water. Severe drought, flooding, heavy rains and temperature rises are all known effects of El Niño—a warming of the central to eastern tropical Pacific Ocean. An increase in mosquitos can be expected due to expanding and favourable breeding sites. Steps can be taken to prevent and reduce the health effects of El Niño, in particular by reducing the mosquito populations that spread Zika virus. WHO and partners are working together to provide support to ministries of health to:

- increase preparedness and response to El Niño;
- strengthen any action that helps control mosquito populations such as source reduction measures targeting main mosquito breeding spots, distribution of larvicide (insecticide that is specifically targeted against the larval life stage of the *Aedes* mosquito) to treat standing water sites that cannot be treated in other ways (cleaning, emptying, covering), etc.;
- strengthen vector surveillance (e.g. how many breeding sites in an area, percentage of sites reduced) and
- monitor the impact of actions to control the mosquito populations.

Individual households can also help reduce mosquito populations. Containers that can hold even small amounts of clear water such as buckets, flower pots or used tyres should be emptied, cleaned or covered so that mosquitoes cannot use them to breed (including during severe drought).

What gaps do we have in our understanding of Zika virus?

Key issues to be addressed in our understanding of Zika virus disease include:

- Epidemiological characteristics of the virus, e.g. its incubation period, the role mosquitoes play in transmitting the virus and its geographical spread.
- Potential medical countermeasures (including treatments and vaccines) that can be developed.
- How Zika virus interacts with other arboviruses (viruses that are transmitted by mosquitoes, ticks and other arthropods) such as dengue.
- Development of more specific laboratory diagnostic tests for Zika virus that can reduce misdiagnosis that may occur due to the presence of dengue or other viruses in a test sample.

What is WHO doing?

WHO is working with countries to:

- Define and prioritize research into Zika virus disease by convening experts and partners.
- Enhance surveillance of Zika virus and potential complications.
- Strengthen capacity in risk communication to help countries meet their commitments under the International Health Regulations.
- Provide training on clinical management, diagnosis and vector control including through a number of WHO Collaborating Centres.
- Strengthen the capacity of laboratories to detect the virus.
- Support health authorities to implement vector control strategies aimed at reducing Aedes mosquito populations such as providing larvicide to treat standing water sites that cannot be treated in other ways, such as cleaning, emptying, and covering them.
- Prepare recommendations for clinical care and follow-up of people with Zika virus, in collaboration with experts and other health agencies.