

1. What is it?

The Zika virus is a flavivirus mainly transmitted by mosquitoes of the genus *Aedes* that was first isolated in 1947 in the Zika forest in Uganda.

2. What is the epidemiological situation today?

Until 2007, only a few cases of Zika virus disease were reported, all in Africa. Then major outbreaks occurred in 2007 and 2013, in Micronesia and Polynesia, respectively¹. In March 2014, Chile notified the PAHO/WHO of a confirmed case of local (mosquito-mediated) transmission in Easter Island. In May 2015, Brazil confirmed local transmission of the virus in the northeast of the country. Since then, the virus has spread to 45 countries or territories in the Americas - basically all those countries where the vector is present - including several states in the USA.

An estimated 80 to 120 million people will have been infected by the end of the current outbreak (that will last 2-3 years), including 1.5 million pregnant women.



¹ Complete genome sequencing of the virus has identified two lineages (one African and one Asian) and has confirmed that the strain circulating in America is closely related to the one that affected French Polynesia.

3. Why has the virus suddenly spread so rapidly?

The rapid spread of the virus can be attributed to the fact that it is a newcomer to the Americas, which means that the entire population is susceptible to infection because no one has been previously exposed.

Furthermore, the *Aedes* mosquito is widely distributed in the region and already transmits other viral diseases, including dengue and chikungunya.

4. How is it transmitted?

The Zika virus is transmitted to humans mainly through the bite of infected mosquitoes of the genus *Aedes*.

Sexual transmission has also been reported (virus has been detected in semen up to 6 months after the infection) but the real impact on public health of this route of transmission is difficult to evaluate. The virus can also be transmitted through blood, but this is an uncommon mechanism.

Finally, vertical transmission of the virus (from mother to child during pregnancy) is the most worrying aspect of the virus, since it can cause a wide range of neurological alterations, including microcephaly.

5. How is it treated?

- No approved vaccine exists to prevent Zika virus infection and there are no drugs to cure the disease. Clinical trials have been launched to test a series of promising vaccine candidates.
- The recommended treatment for the symptoms is rest, rehydration and paracetamol to relieve fever and pain. Aspirin and other anti-inflammatory drugs, such as ibuprofen, should be avoided until dengue fever has been ruled out because these medications can increase the risk of bleeding in that setting.
- People infected with the Zika virus should avoid mosquito bites to limit local transmission to others and practice safe sex during 6 months to avoid sexual transmission.

6. How is it diagnosed?

Most people infected with Zika virus will not develop symptoms. An estimated one out of 4-5 people will develop fever, rash, joint pain or conjunctivitis. Clinical diagnosis of Zika is not easy because the symptoms are similar to those of dengue and chikungunya, two other infectious diseases transmitted by the same mosquito.

During the first three to five days of onset of symptoms, the virus can be detected by polymerase chain reaction (PCR) techniques. After this initial period, infection can only be confirmed by serologic assays that detect the presence of virus-specific antibodies, but previous infections with other flaviviruses can complicate the interpretation of these tests.

7. If the symptoms are mild, why is Zika virus a concern? Zika and pregnancy

Zika and pregnancy

Brazil reported an alarming rise in the number of cases of foetal and newborn malformations that closely correlated with the rise in the incidence of Zika infections. To date, Brazil authorities have confirmed more than 2,500 microcephaly cases linked to congenital Zika infection. Numerous studies have confirmed that the virus can infect the foetal nervous system and cause malformations (Zika congenital syndrome) that include microcephaly, neurological and ocular alterations, and foetal loss. This places Zika as the **first mosquito-borne virus with teratogenic effects**.

The highest risk of malformations seems to be during the first trimester of pregnancy (a risk estimated at 1-13%). It is still not clear whether the risk is similar for asymptomatic women, or if the risk is enhanced by other factors such as co-infections by other viruses. There is evidence that apparently healthy babies born to infected mothers can present development problems in the first months of life.

Zika and neurological alterations in adults

The Zika outbreak has also been associated with an increase in cases of a neurological syndrome called Guillain-Barré among adults. Other neurological disorders have also been reported in patients shortly after or during Zika virus infection, although the frequency seems to be very low.

8. Have there been any cases in Europe or Spain?

In Europe, 21 countries have reported more than 2,000 travel-associated cases. In Spain, the National Network of Epidemiological Surveillance has confirmed 321 imported Zika virus cases (123 of them in Catalonia), all of them imported except for two cases of sexual transmission.

Europe is, for the moment, the only continent where no local transmission of the virus has been reported, although another potential vector, *Aedes*

albopictus (or tiger mosquito) is found along the entire Mediterranean coast.

9. Is there cause for alarm?

The situation in Europe is very different from that of Latin America, where the vector is present in a large area and where social and health care conditions have facilitated the rapid spread of the virus. In Europe, *Aedes aegypti* is absent and the presence of *Aedes albopictus* is much less common, particularly during the winter months. Therefore, although occasional cases of local transmission and even some small outbreaks can be expected, the likelihood of a major epidemic remains extremely low.

WHO considers Catalonia as a zone with moderate to high risk of Zika virus introduction (due to the presence of *Aedes albopictus* and considerable international travel).



10. What are the recommendations in countries without local transmission?

The countries without local transmission should step up controls and epidemiologic monitoring, but the situation does not represent a cause for alarm.

The most important recommendation at this time concerns pregnant women, who are advised to avoid travelling to areas where they would be exposed to the risk of infection with the Zika virus.

Furthermore, the use of condoms is recommended for male and female travellers that return from a country with ongoing virus transmission (6 months or throughout the entire pregnancy if partner is pregnant; 8 weeks if no symptoms appear for women).

The Zika virus is yet another example of emerging infectious disease that proves that pathogens have no respect for borders and must be dealt with on a global scale. Resources should be assigned to investigating the effects of the virus on the foetus and the nervous system and to developing better serological diagnostic tools, safe vaccines for women in child-bearing age, and drugs that can interrupt transmission of the virus.

The information in this document was last revised on 18 May 2017 and is subject to possible changes over the coming months as a result of new information concerning the epidemiology of the disease and scientific discoveries.