



Embassy of Brazil in Pretoria

INFORMATION ON THE ZIKA VIRUS OUTBREAK IN BRAZIL

*Para informação em português/
For information in Portuguese, visit
<http://combateaedes.saude.gov.br/>*

In the context of the outbreak of Zika virus in Brazil, the Embassy of Brazil in Pretoria reiterates that no restrictions on tourism or on international trade are currently in force. Traveling to the country is still safe and foreigners are welcome. In any case, just as when traveling to any other foreign country, tourists must be well informed and take appropriate precautions to avoid being infected by the virus.

In particular, pregnant women are advised to consult their doctor before the trip and to take measures to reduce the chance of having contact with the mosquito that transmits the disease, such as keeping doors and windows closed or using protective mosquito nets, wearing pants and long-sleeved shirts and using repellents that are not harmful to pregnant women.

Zika is an acute viral disease, which was first identified in Brazil in 2015. The virus is endemic to the East and West of the African continent, with sporadic circulation reports in Africa, Asia and Oceania. In the Americas, Zika virus was only found in early 2014, 3.500 kilometers from the Chilean mainland. Cases of Zika virus have also been recently reported in Canada, Germany, Italy, Japan, United States and Australia.

The virus is transmitted by the *Aedes aegypti* mosquito - the same vector of dengue and chikungunya – and the disease was quickly identified as epidemic by Brazilian public authorities following an outbreak of exanthem (itchy rashes on the skin), especially in the Northeast region of the country.

About 80% of people infected by the Zika virus do not develop clinical manifestations, whether they are adults or children. The main symptoms are headache, low-grade fever, mild joint pain, skin rashes, itching and redness in the eyes. Other, less frequent symptoms are swelling in the body, sore throat, coughing and vomiting. Overall, the evolution of the disease is benign and the symptoms disappear spontaneously after 3-7 days. However, joint pain may persist for approximately one month. Severe and atypical forms are rare, but when they occur they may exceptionally lead to death, as identified in November 2015 for the first time in history.

The disease became a greater concern in the end of 2015, when Brazilian public health authorities, medical community and scientists found that the contagion of women

by Zika virus during pregnancy could be associated to the birth of babies with microcephaly, a severe congenital malformation in which the fetus' brain does not develop properly. Microcephaly can also be caused by infectious agents other than Zika virus, such as syphilis, toxoplasmosis, rubella, cytomegalovirus or herpes virus.

From October 22 2015 until January 23 2016, 4.180 suspected cases of babies with microcephaly were reported in 830 municipalities in 24 Brazilian states. Of this total, 460 cases have been ruled out and 270 have been confirmed as microcephaly, 6 of them related to Zika virus. Up until 2014, less than 200 cases of newborns with microcephaly were reported in the country every year.

With a universal and integrated public healthcare system, Brazil reacted swiftly to the epidemic, studying the virus's behavior and indentifying the pathogenesis of the disease (how it arises and evolves) and associated risk factors. As a result, Brazil was able to quickly associate microcephaly and Zika virus.

The Brazilian government has set up an unprecedented task force, with ample financial, technological and scientific resources, to prevent and combat the mosquito and the disease in short, medium and long terms. About 520,000 public officers and thousands of volunteers throughout Brazil are joining forces to visit homes and locations where the mosquito breeds in order hinder it from spreading further. In addition, several public initiatives to support such mobilization are being implemented to raise awareness and fight the disease.

All construction sites of facilities that will host the Olympics in Rio 2016 have been receiving visits from health environmental surveillance agents to control outbreaks of mosquito. During the Games, all venues will be monitored by such public agents, who will be working in the search, elimination or treatment of deposits that could become potential mosquito outbreaks, among other measures.

Brazil is combining efforts of specialists from different areas of medicine around the world to conduct investigations in the country. There is constant dialogue with international entities such as the World Health Organization (WHO) and the Centers for Disease Control and Prevention (CDC), as well as with other countries which are cooperating with Brazil to tackle the epidemic. The issue is a national priority, treated with transparency and agility.

For more information, read the Q&A about the mosquito:

- What is the Zika virus?

The Zika virus is actually an arbovirus (a large group of viruses), transmitted by the bite of the *Aedes aegypti* mosquito, which is also the cause of the dengue fever. Zika was first identified in Brazil in April 2015. The virus received the same designation of the place of origin of its identification in 1947, after being detected in sentinel monkeys that were being used to monitor for the presence of yellow fever in the Zika forest in Uganda.

- What are the symptoms?

About 80% of people infected by the Zika virus do not develop clinical manifestations, whether they are adults or children. The main symptoms are headache, low-grade fever, mild joint pain, skin rashes, itching and redness in the eyes. Other, less frequent symptoms are swelling in the body, sore throat, coughing and vomiting. Overall, the evolution of the disease is benign and the symptoms disappear spontaneously after 3-7 days. However, joint pain may persist for approximately one month. Severe and atypical forms are rare, but when they occur they may exceptionally lead to death, as identified in November 2015 for the first time in history.

- How is the virus transmitted?

The most frequent mode of transmission is through the bite of the *Aedes aegypti* mosquito. Other possible forms of transmission of the Zika virus need to be examined in depth based on further scientific studies. There is no evidence of Zika virus transmission through breast milk, as well through urine, saliva or semen.

- Is there a vaccine against Zika?

There is no vaccine against the Zika virus. The development of vaccines against the Zika virus is part of Brazil's National Plan Against the *Aedes aegypti* and its related investments. As this requires time for research to be conducted, however, it is essential that prevention and control measures against *Aedes aegypti* are adopted, because as well as combating Zika they will also help avoid other diseases such as dengue and chikungunya.

- What is the treatment?

There is no specific treatment for Zika viral infection. The recommended treatment for symptomatic cases consists of acetaminophen (paracetamol) or dipyron to control fever and reduce pain. If an itchy rash occurs, antihistamines might be considered.

The use of aspirin and other anti-inflammatory drugs is not recommended, due to the increased risk of bleeding complications associated with infections caused by other flaviviruses.

- What precautions should be taken?

Prevention/Protection

* Install mosquito nets on windows and doors, wear long-sleeved clothing - pants and shirts - and apply insect repellent on exposed areas of the body. * It is advisable to stay in places where mosquito nets or other barriers available.

Attention

* If you notice the presence of skin rashes, red eyes or fever, seek health care. * Do not take medication or attempt any treatment on your own before consulting a doctor. * Seek medical advice on birth control and contraceptive methods.

- How is Zika virus diagnosed?

In most suspected cases of dengue, chikungunya and Zika, confirmation is made by clinical and epidemiological criteria. In the case of Zika, commercial serological diagnosis is not available yet. The test chosen to help in identifying areas of transmission of such diseases and in framing control measures is called RT-PCR, and is performed by laboratories of reference within Brazil's Unified Health System (SUS) network. After the confirmation of one case in a particular area, other infections can be clinically diagnosed, through medical assessment of symptoms, and through the medical protocols currently used for dengue and chikungunya.

- What other types of tests are currently under development, and where?

The Evandro Chagas Institute is developing a serological test. Due to Brazil's specific circumstances with regard to the circulation of other flaviviruses, which causes many serological cross-reactions, the test is recommended with certain reservations and is being made available to "sentinel" laboratories for the purpose of Zika diagnosis in Brazil. In addition to the serological test, the Institute has also carried out the complete genetic sequencing of the Zika virus circulating in Brazil.

- How do these tests contribute to further research and development?

The complete genetic sequencing of the Zika strains isolated from febrile patients will significantly contribute to the understanding of various aspects of the virus. Particularly significant was the detection of the Zika genome in two cases resulting in deaths, which enabled the international scientific community to envision an as-yet-undescribed evolution of Zika infections, a possible subject for future scientific studies.

- Are there any reports of Zika virus outbreaks in other countries?

Zika is considered endemic, though not widespread, in East and West Africa. And serological evidence in humans suggests the virus has been spreading in Asia since 1966. According to the Pan American Health Organization/World Health Organization's latest epidemiological bulletin, 22 countries/territories in the Americas have detected the indigenous transmission of the Zika virus (American Virgin Islands, Barbados, Bolivia, Brazil, Colombia, Dominican Republic, Ecuador, El Salvador, French Guiana, Guadalupe, Guatemala, Guyana, Haiti, Honduras, Martinique, Mexico, Panama, Paraguay, Puerto Rico, St. Martin, Suriname and Venezuela).

ZIKA VIRUS AND MICROCEPHALY

- What is microcephaly?

Microcephaly is a congenital malformation in which the brain does not develop properly. Babies with microcephaly are born with a head circumference which is smaller than normal. (The normal circumference is at least 32cm.) This congenital malformation can result from a number of different factors, including infectious chemical and biological substances, bacteria, viruses, and radiation.

- Is there confirmation that the increase in cases of microcephaly in Brazil is due to the Zika virus?

When the Oswaldo Cruz Institute in Brazil detected Zika in the amniotic fluid of two pregnant women whose fetuses had microcephaly, and later the Evandro Chagas Institute identified the virus in a newborn baby with microcephaly (a fatal case), it was able to scientifically establish a connection between the Zika virus and the microcephaly cases currently being observed in Brazil.

- During what stage of pregnancy is there the greatest susceptibility to the virus?

In the cases reported so far, most of the pregnant women whose babies have developed microcephaly did themselves display symptoms of the Zika virus - mainly in the first three months of pregnancy. But women should be careful not to come into contact with the *Aedes aegypti* mosquito at any time during pregnancy.

- What are the Brazilian Ministry of Health's current recommendations for pregnant women?

The Brazilian Ministry of Health emphasizes that pregnant women should not use any drugs that are not prescribed by a healthcare professional, that they should undergo all the required prenatal examinations, and that they should inform a healthcare professional of any alteration they perceive during pregnancy. It is also important that they take measures to avoid contact with the *Aedes aegypti* mosquito, for example by using insect repellents that are suitable during pregnancy, wearing long sleeves, and being careful not to let stagnant water accumulate anywhere in their home or workplace. Also, pregnant women should consult their doctor prior to traveling, whatever the destination.

- How is the diagnosis for microcephaly carried out? Is it possible to detect microcephaly during prenatal exams?

In Brazil, an initial physical examination of newborn babies is routine, and should be carried out within 24 hours of birth. This is one of the key moments to carry out an active search for possible congenital anomalies. It is also possible to diagnose microcephaly during prenatal exams. However, pregnant women should ask their physician about the medical imaging modality recommended to their case.

- What is the treatment for microcephaly?

There is no specific treatment for microcephaly. There are support procedures that can assist in the development of the baby and the child, and Brazil's Unified Health System (SUS) network recommends these procedures. As each child with microcephaly may develop different complications - including respiratory, neurological and motor complications - medical specialists in a number of different areas might become involved. Recommended services include primary care, specialized rehabilitation, examinations and diagnosis, hospital services, and also orthotics and prosthetics in applicable cases.

- Can microcephaly kill or cause serious consequences?

In about 90% of cases, microcephaly is associated with intellectual disability (the exceptions are when the condition is inherited, in which case the baby's cognitive development can be normal). The type and severity of the sequelae vary from case to case. A connection has already been identified between infection by the Zika virus and severe cases of microcephaly, including those leading to death. In these serious cases, the Zika virus RNA was identified while other known viruses such as dengue and chikungunya were found to be absent.

- Can children and babies affected by the Zika virus experience neurological problems?

It is fundamental to avoid rumors and speculations. There are no documented cases of sequelae in children who contracted Zika after they were born. Microcephaly is a condition identified only at birth. People of any age can be infected by the virus, not only children.

- Which Brazilian states are recording higher than average numbers of microcephaly cases?

Brazil's Ministry of Health investigates 3.488 suspected microcephaly cases throughout the country. A report published on January 27 shows that 270 cases have been confirmed as microcephaly, six of which related to the Zika virus. 462 reported cases have been dismissed. By January 23, 4.180 suspected microcephaly cases have been reported.

According to that report, cases have been registered in 830 cities throughout 24 Brazilian States. The Northeast region concentrates 86% of the reported cases, Pernambuco being the State with the largest number of cases which remain under investigation (1.125), followed by the States of Paraíba (497), Bahia (471), Ceará (218), Sergipe (172), Alagoas (158), Rio Grande do Norte (133), Rio de Janeiro (122) and Maranhão (119).