Scientific Insect White Paper Zika Virus

Symptoms

- About 4 IN 5 people infected with Zika virus NEVER develop symptoms
- The most common symptoms of Zika are fever, rash, joint pain, or conjunctivitis (red eyes). Other common symptoms include muscle pain and headache. The incubation period (the time from exposure to symptoms) for Zika virus disease is not known, but is likely to be a few days to a week.
- The illness is usually mild with symptoms lasting for several days to a week.
- Zika virus usually remains in the blood of an infected person for a few days but it can be found longer in some people.
- Severe disease requiring hospitalization is uncommon.
- Deaths are rare.

Diagnosis

- The symptoms of Zika are similar to those of dengue and chikungunya diseases spread through the same mosquitoes that transmit Zika.
- See your healthcare provider if you develop the symptoms described above and have visited an area where Zika is found.
- If you have recently traveled, tell your healthcare provider when and where you traveled.
• Your healthcare provider may order blood tests to look for Zika or other similar viruses like dengue or chikungunya.

Treatment

• No vaccine or medications are available to prevent or treat Zika infections.
• Treat the symptoms:
  o Get plenty of rest.
  o Drink fluids to prevent dehydration.
  o Take medicine such as acetaminophen to relieve fever and pain.
  o Do not take aspirin and other non-steroidal anti-inflammatory drugs (NSAIDs), like ibuprofen and naproxen. Aspirin and NSAIDs should be avoided until dengue can be ruled out to reduce the risk of hemorrhage (bleeding). If you are taking medicine for another medical condition, talk to your healthcare provider before taking additional medication.

If you have Zika for the first week of your illness, during the first week of infection, Zika virus can be found in the blood and passed from an infected person to a mosquito through mosquito bites then an infected mosquito can spread the virus to another person also through mosquito bites. During the first week after onset of symptoms, Zika virus disease can often be diagnosed by performing reverse transcriptase-polymerase chain reaction (RT-PCR) on serum. Virus-specific IgM and neutralizing antibodies typically develop toward the end of the first week of illness; cross-reaction with related flaviviruses (e.g., dengue and yellow fever
viruses) is common and may be difficult to discern. Plaque-reduction neutralization testing can be performed to measure virus-specific neutralizing antibodies and discriminate between cross-reacting antibodies in primary flavivirus infections.

Zika virus is a mosquito-borne flavivirus transmitted primarily by *Aedes aegypti* mosquitoes. These vectors also transmit dengue and chikungunya virus and are found throughout much of the Americas, including parts of the United States. The virus is also known to be transmitted sexually, as well as through blood transfusions and laboratory exposure.

**Recommendations for Pregnant Women Considering Travel to an Area of Zika Virus Transmission**

Because there is neither a vaccine nor prophylactic medications available to prevent Zika virus infection, CDC recommends that all pregnant women consider postponing travel to areas where Zika virus transmission is ongoing. If a pregnant woman travels to an area with Zika virus transmission, she should be advised to strictly follow steps to avoid mosquito bites. Mosquitoes that spread Zika virus bite both indoors and outdoors, mostly during the daytime; therefore, it is important to ensure protection from mosquitoes throughout the entire day. Mosquito prevention strategies include wearing long-sleeved shirts and long pants, using U.S. Environmental Protection Agency (EPA)–registered insect repellents, using permethrin-treated clothing and gear, and staying and sleeping in screened-in or air-conditioned rooms. When
used as directed on the product label, insect repellents containing DEET, picaridin, and IR3535 are safe for pregnant women.

Recommendations for Pregnant Women with History of Travel to an Area of Zika Virus Transmission: SEE YOUR DOCTOR

How to Treat Pregnant Women with Diagnoses of Zika Virus Disease: SEE YOUR DOCTOR

Diagnostic Testing

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Main Concern of the spread of Zika Virus: microcephaly

What is microcephaly and what causes it?

The term refers to a rare neurological condition in which children have unusually small heads. In many cases it also means a baby's brain is smaller and may not have developed properly. The condition can be caused by hundreds of factors, both genetic and environmental. Genetic disorders associated with microcephaly include Down's syndrome and
other chromosomal disorders. Possible environmental factors include lack of oxygen to a baby’s brain in utero or during birth, drug/alcohol use during pregnancy, malnutrition, and injury to the brain, exposure to radiation or toxins. Infections such as chicken pox or rubella have also been documented to lead to the condition.

What is the prognosis for a child with the condition?

The spectrum of ways in which a child can be affected by microcephaly varies widely. About 10 percent of children are born with normal intelligence, and having a small head is mostly a superficial issue. At the other end are those who cannot talk or walk and need constant care. Then there are those in between who are high functioning but have intellectual disabilities, difficulties with speech or coordination, or seizures. While there’s no treatment or way to reverse the condition, early intervention treatments — such as speech therapy, occupational therapy and other special needs therapy — have helped some children.

How common is microcephaly?

In the United States, officials estimate that 25,000 children are born with microcephaly each year, but experts say that not all of them suffer from a neurological condition.

Is there a cause and effect?

There’s still a lot of work to be done. Scientists have only been able to confirm the simultaneous presence of the virus and microcephaly in a
limited number of babies and are still working their way through other suspected cases to get more information. Brazil is a large country, and there are cases in far-flung states. Part of the reason for the delay is that diagnostic tools to tell whether someone has had Zika are still not readily available. The virus typically clears a person’s blood within a few days to a week, meaning that it’s tricky to detect a past infection. In some cases, tests are able to tell someone had some kind of Zika-like infection in the past but are unable to tell whether it was actually Zika or a similar virus known as dengue fever.

Experts say more epidemiological evidence is needed that looks at groups of pregnant women with and without the Zika virus to rule out other factors such as fetal alcohol syndrome, environmental factors or other types of infections.