

# Zika Virus (a Short Review)

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## INTRODUCTION

Zika virus is an emerging mosquito-borne arbovirus in the flavivirus family. The Vector is *Aedes* mosquitoes (which usually bite during the morning and late afternoon/evening hours). Reservoir is unknown [1].

Zika virus was first identified in Uganda in 1947 in rhesus monkeys through a monitoring network of sylvatic yellow fever. It was subsequently identified in humans in 1952 in Uganda and the United Republic of Tanzania. Outbreaks of Zika virus disease have been recorded in Africa, the Americas, Asia and the Pacific [2].

Zika virus causes an infection that is newly emerging in the western hemisphere [3].

## Transmission

An infected *Aedes* mosquito transmit Zika virus to humans. Vertical transmission from the mother to her fetus can also occur. Zika virus RNA has been detected in blood, urine, semen, cerebrospinal fluid, amniotic fluid, and breast milk [4,5].

No recorded case to support transmission of Zika virus through breastfeeding till now [6]. The benefits of breastfeeding may outweigh the potential neonatal risks, and there is no solid evidence to recommend women to discontinue breastfeeding [7].

Sexual transmission have been described; this appears to be an infrequent mode for Zika virus transmission [8,9,10].

## Signs and Symptoms

The incubation period of Zika virus disease is not clear, but is likely to be a few days.

The symptoms are similar to other arbovirus infections such as dengue, and include fever, skin rashes, conjunctivitis, muscle and joint pain, malaise, and headache. These symptoms are usually mild and last for 2-7 days [11].

Potential neurological and autoimmune complications of Zika virus disease were reported by national health authorities in French Polynesia and Brazil during outbreaks in 2013 and 2015 respectively [12].

Recently in Brazil, local health authorities have observed an increase in Zika virus infections in the general public as well as an increase in babies born with microcephaly in northeast Brazil [13].

Agencies investigating the Zika outbreaks are reporting an increasing body of evidence about the link between Zika virus and microcephaly. However, more investigation is needed before we understand the relationship between microcephaly in babies and the Zika virus. Other potential causes are also being investigated [2].

In January 2016, the United States and European Centers for Disease Control and Prevention advised pregnant women to consider postponing travel to any area where Zika virus transmission is ongoing because of the association between congenital microcephaly in parallel with the Zika virus out-break in Brazil [14,15].

An increase in the rate of Guillain-Barré syndrome (GBS) has been observed in association with Zika virus infection [12,15]. A direct causal relationship has not yet been definitively established; investigation is ongoing.

## Diagnosis

Zika virus is diagnosed through PCR (polymerase chain reaction) and virus isolation from blood samples. Diagnosis by serology can be difficult as the virus can cross-react with other flaviviruses such as dengue, West Nile and yellow fever [16].

## Prevention

Mosquitoes and their breeding sites pose a significant risk factor for Zika virus infection. Prevention and control relies on reducing mosquitoes through source reduction (removal and modification of breeding sites) and reducing contact between mosquitoes and people [1].

This can be done by using insect repellent; wearing clothes (preferably light-colored) 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 water such as buckets, flower pots or tyres, so that places where mosquitoes can breed are removed.

Special attention and help should be given to those who may not be able to protect themselves adequately, such as young children, sick or elderly [17].

During outbreaks, health authorities may advise that spraying of insecticides be carried out. Insecticides recommended by the WHO. Pesticide Evaluation Scheme may also be used as larvicides to treat relatively large water containers [2].

Travelers should take the basic precautions to protect themselves from mosquito bites [18].

## Treatment

Zika virus disease is usually relatively mild and requires no specific treatment. People sick with Zika virus should get plenty of rest, drink enough fluids, and treat pain and fever with common medicines. If symptoms worsen, they should seek

medical care and advice [19]. Currently, there is no available vaccine against Zika virus [2].

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