

# Chikungunya virus & Zika viruses

## What are Chikungunya virus & Zika viruses

Both viruses are arthropod-borne viruses (arboviruses) transmitted principally by mosquitoes. Chikungunya derives from a Makonde word meaning “that which bends,” describing the stooped appearance of persons suffering with the characteristic, severe arthralgias. Zika virus first emerged in the Pacific in 2007 in Micronesia.

## Where is it acquired?

Since Chikungunya re-emerged in 2004, millions of cases have occurred throughout countries in and around the Indian Ocean and in Southeast Asia. Transmission has also been documented periodically in temperate areas, such as in Italy in 2007 and France in 2010. Large outbreaks have recently been described in Papua New Guinea, Singapore and the Philippines.

Zika virus re-emerged in French Polynesia in October 2013 and over 300 confirmed cases have been reported. Some parts of Africa also have local transmission.

## Is there Chikungunya virus or Zika virus in Australia?

There have been no locally acquired cases in Australia described to date, however this remains a theoretical possibility. Both viruses are mosquito-borne, primarily by *Aedes aegypti* (which also acts as the vector for dengue virus in Northern Queensland). The species *Aedes albopictus* has not yet established itself in Australia but remains a significant threat and has also played a significant role as a vector for Chikungunya elsewhere. Transmission of Zika virus by *A. albopictus* has been demonstrated in laboratory studies.

## What are the symptoms?

Symptoms of both viruses are similar to dengue fever, and include sudden onset of high fever, polyarthralgias, headache, myalgias, back pain and rash (~50% of cases). Periorbital oedema may be a feature of Chikungunya. Zika is mostly mild and lasts 4-7 days. Chikungunya is characterised by severe polyarthralgias mainly involving the distal joints of the extremities.

## How is it diagnosed?

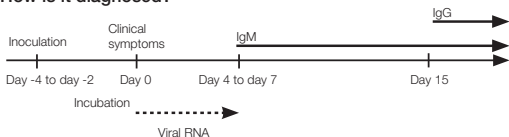


Figure 1: Diagnosis of Chikungunya and Zika viruses- RT-PCR (viral RNA) and Serology (IgG & IgM)

The mainstay of diagnosis for Chikungunya virus is serology. Specific IgM antibodies appear late in the first week and are highest at 3-5 weeks after the onset of illness, persisting for about two months. IgG antibodies usually appear 2 weeks after onset of symptoms and remain positive indefinitely. PCR testing for both viruses can be referred to reference laboratories if the patient presents in the first 7 days of illness. Zika virus serology is available upon request at the reference laboratory (QHSS).

## How is Chikungunya different from Dengue virus?

It is important to distinguish Chikungunya and Zika from dengue although the two diseases can occur together in the same patient. With Chikungunya the pain is more intense and localised to the joints and tendons; onset of fever is more acute and is also shorter in duration. Shock or severe haemorrhage is rarely observed in Chikungunya or Zika virus.

## What is the treatment?

There is no specific treatment for Chikungunya or Zika fever; care is based on symptoms. Symptoms typically resolve within 7-10 days. The joint pain and stiffness may last longer, even up to months later, particularly in Chikungunya.

## How is transmission prevented?

Steps to prevent infection with Chikungunya and Zika virus are the same as those for all mosquito-borne illness, and include use of insect repellent, protective clothing, and mosquito screening.