

EPIDEMIOLOGY CHIKUNGUNYA FEVER

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OBJECTIVES:

- × What
- × Epidemiology: Agent- Host – Environment
- × Clinical features
- × Diagnosis
- × Treatment
- × Prevention & Control
- × Homoeopathy

WHAT: INTRODUCTION

CHIKUNGUNYA

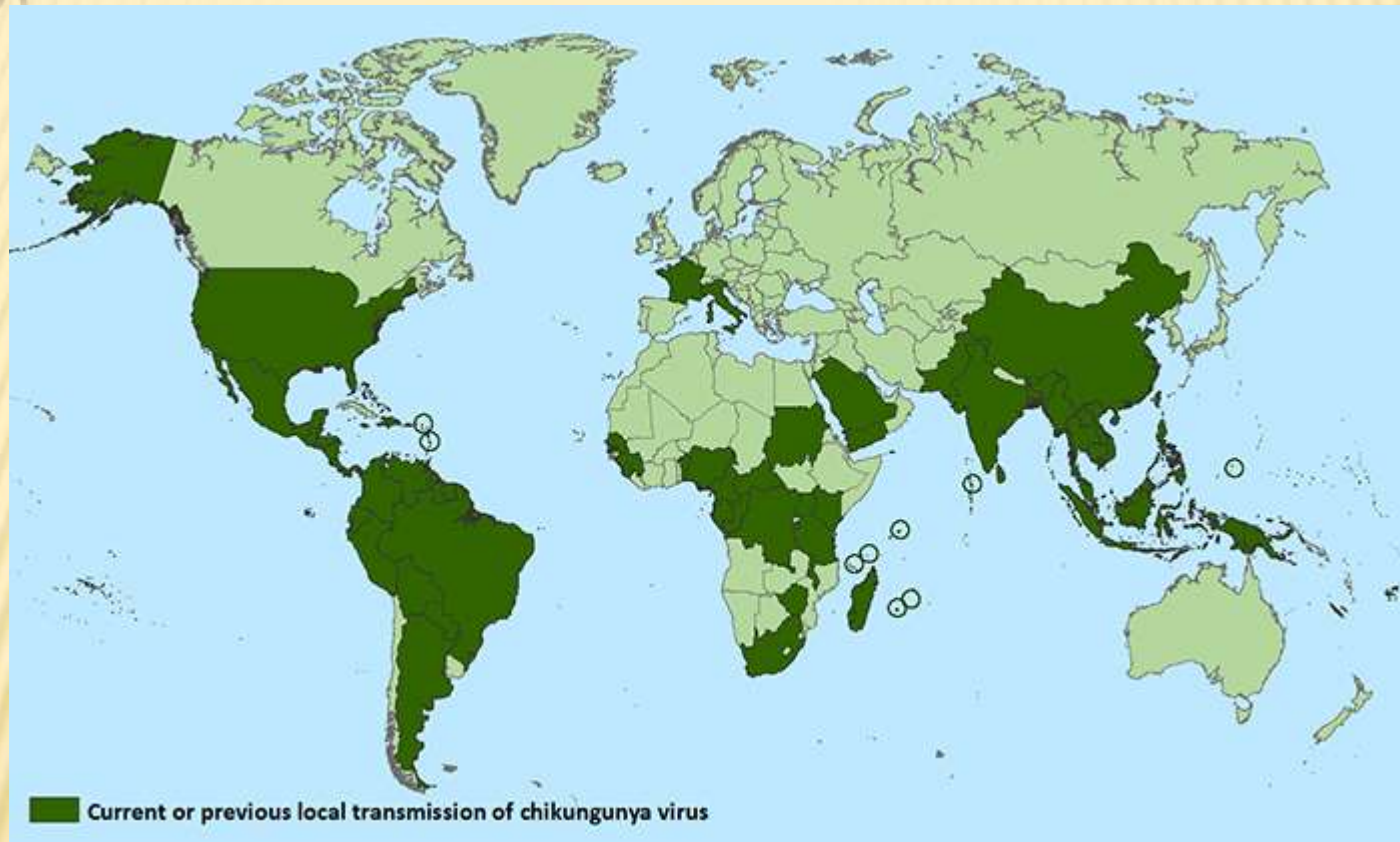


- ✘ Chikungunya is a **viral disease** transmitted to humans by infected mosquitoes. It **causes fever and severe joint pain**. Other symptoms include **muscle pain, headache, nausea, fatigue and rash**.
- ✘ Chikungunya is a **mosquito-borne viral disease** first described during an outbreak in southern Tanzania in **1952**. It is an **RNA virus** that belongs to the **alphavirus** genus of the family **Togaviridae**. The name “**chikungunya**” derives from a word in the Kimakonde language, **meaning “to become contorted”**, and describes the **stooped appearance of sufferers** with joint pain (arthralgia).

PROBLEM STATEMENT:

- ✘ Chikungunya occurs in *Africa, Asia and the Indian subcontinent*. Human infections in Africa have been at relatively low levels for a number of years, but in 1999–2000 there was a large outbreak in the Democratic Republic of the Congo, and in 2007 there was an outbreak in Gabon.
- ✘ Starting in February 2005, a major outbreak of chikungunya occurred in islands of the Indian Ocean. A large number of imported cases in Europe were associated with this outbreak, mostly in 2006 when the Indian Ocean epidemic was at its peak. A large outbreak of chikungunya in India occurred in 2006 and 2007. Several other countries in South-East Asia were also affected. Since 2005, India, Indonesia, Maldives, Myanmar and Thailand have reported over *1.9 million cases*. The *proximity of mosquito breeding sites* to human habitation is a significant risk factor for chikungunya.

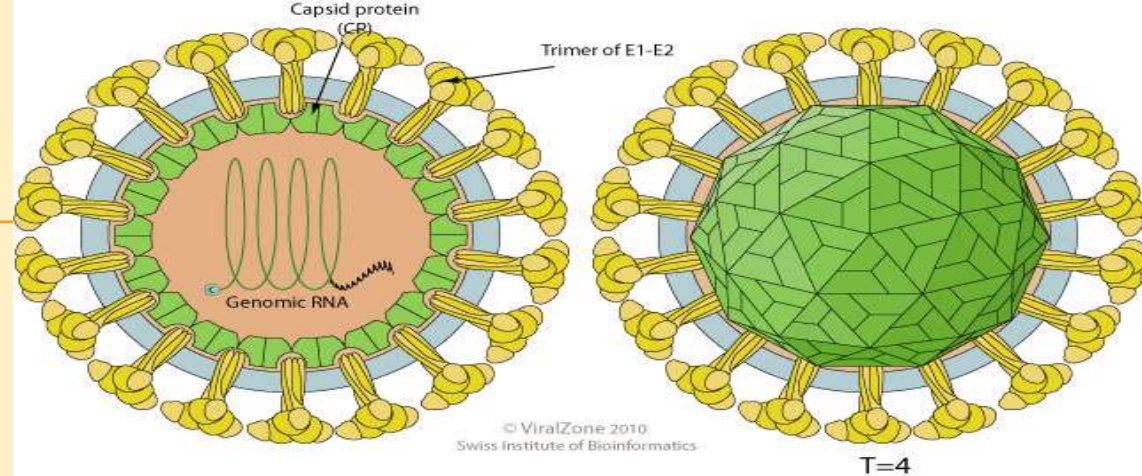
COUNTRIES AND TERRITORIES WHERE CHIKUNGUNYA CASES HAVE BEEN REPORTED* (AS OF APRIL 22, 2016)



1965 outbreak in Chennai city alone 300000 cases were reported.

AGENT FACTOR:

Chik Virus



- ✘ The virus is transmitted from human to human by the **bites** of infected female mosquitoes. Most commonly, the mosquitoes involved are *Aedes aegypti* and *Aedes albopictus*, two species which can also transmit other mosquito-borne viruses, including dengue. These mosquitoes can be found biting **throughout daylight** hours, though there may be peaks of activity in the **early morning and late afternoon**. Both species are found **biting outdoors**, but *Ae. aegypti* will also readily feed indoors.
- ✘ After the bite of an infected mosquito, onset of illness occurs usually between **4 and 8 days** but can range from 2 to 12 days.

At least 84 species of mosquitoes are known to live

The following species are some common carriers of mosquito-borne illnesses in humans.

01



Aedes



Aedes aegypti, or the yellow fever mosquito, breed primarily in and around human habitations and fly short distances, usually only about 200 yards. They can carry dengue, yellow fever, chikungunya and Zika.

Aedes albopictus, or the Asian tiger mosquito, can also carry chikungunya, dengue and Zika.

02



Anopheles



Most Anopheles mosquitoes have a flight range of about 1 mile. *Anopheles Psorophora* have flight ranges of at least 5 miles. *Anopheles quadrimaculatus* are known to carry malaria—an acute chronic disease that can vary from moderately severe to fatal in humans—and

03



Culex



Most members of the *Culex* species drink the blood of birds, but some feed on humans and have been found to carry certain types of encephalitis—an inflammation of the brain—and West Nile virus.

AGENT FACTOR:

- ✘ The *incubation period* for chikungunya fever is typically **between 3-7 days** (range, 2-12 days). Not all individuals infected with the virus develop symptoms. Serosurveys indicate that 3%-25% of persons with antibodies to CHIKV have asymptomatic infections

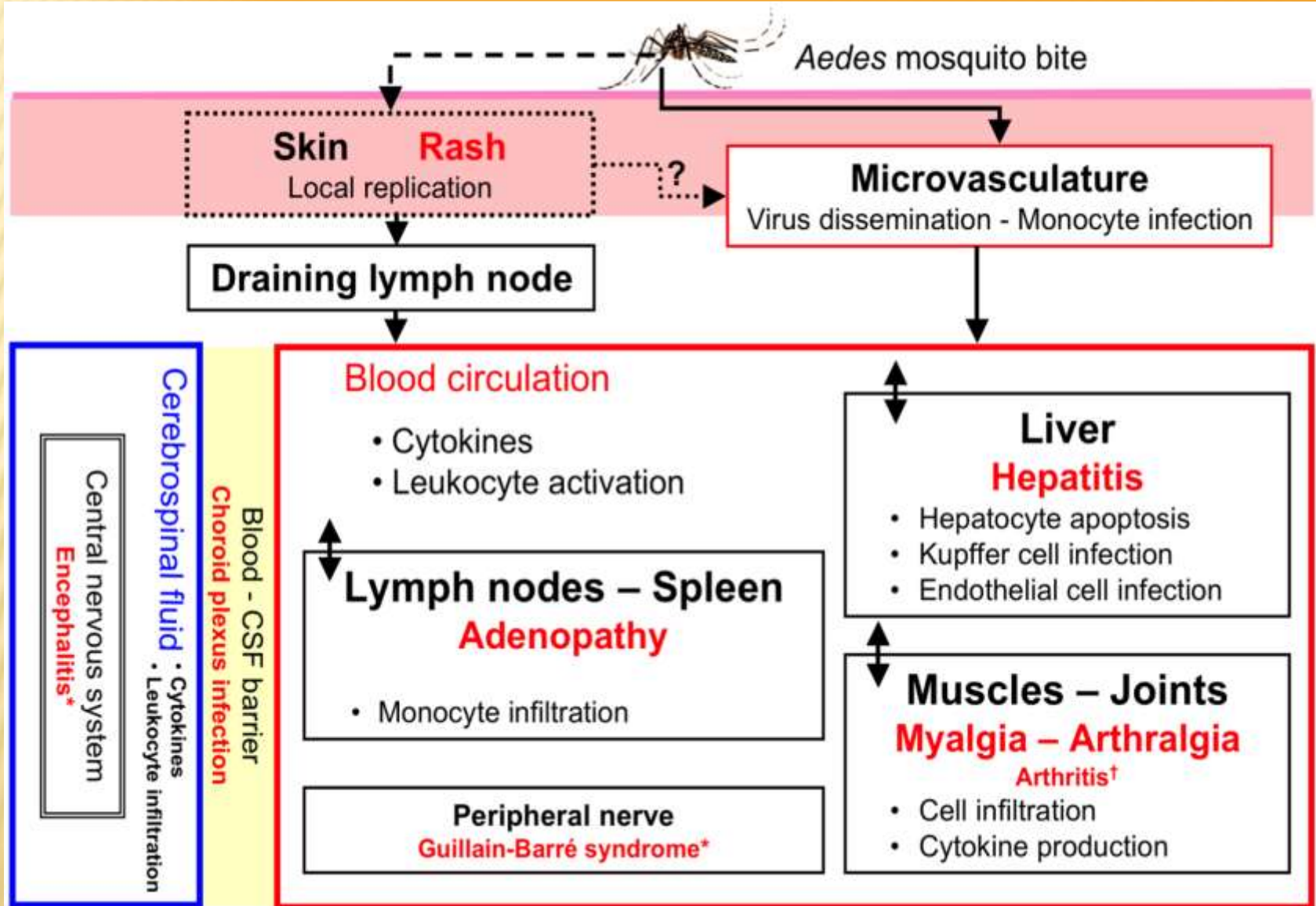
TRANSMISSION:

- ✘ Rarely, from mother to child
- ✘ Chikungunya virus is transmitted rarely from mother to newborn around the time of birth.
- ✘ To date, no infants have been found to be infected with chikungunya virus through breastfeeding. Because of the benefits of breastfeeding, mothers are encouraged to breastfeed even in areas where chikungunya virus is circulating.
- ✘ Rarely, through infected blood
- ✘ In theory, the virus could be spread through a blood transfusion. To date, there are no known reports of this happening.

HOST FACTORS:

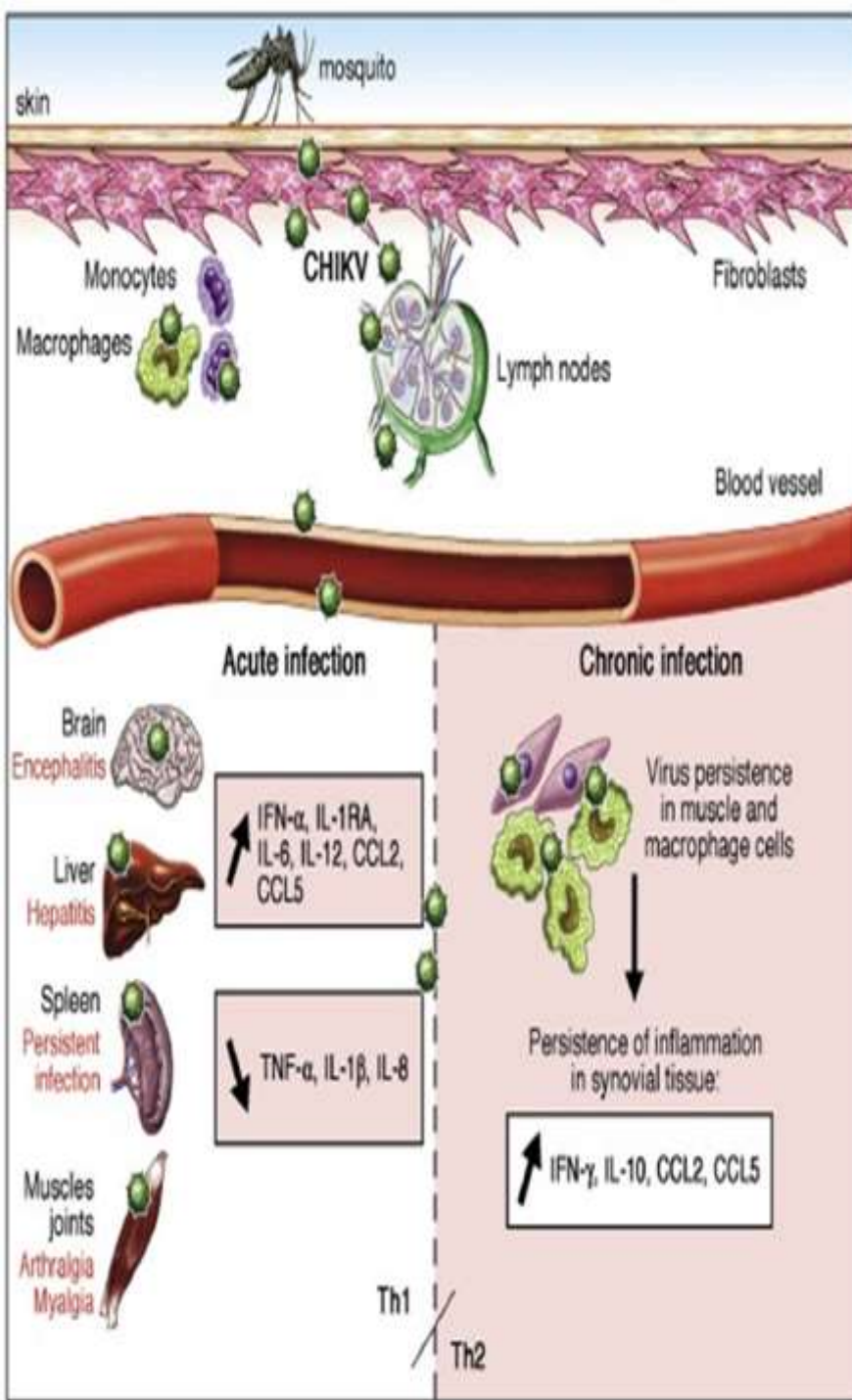
- × **Age:** occur at all age groups. But more common at adults who are more outdoor activity.
- × **Sex:** more in male
- × **Immunity:** cell mediated immunity plays main role. Weak people suffers more with complications.

CHIKUNGUNYA PATHO-PHYSIOLOGY:



CLINICAL FEATURES:

- ✘ Symptoms of CHIKV infection start **abruptly with fever** (temperature, usually **>38.9°C**). The fevers typically last from several **days up to 2 weeks** and can be **biphasic in nature**.
- ✘ Shortly after the onset of fever, the majority of infected persons develop severe, often **debilitating polyarthralgias**. The joint pains are usually **symmetric** and occur most commonly in **wrists, elbows, fingers, knees, and ankles** but can also affect more-proximal joints.
- ✘ **Arthritis with joint swelling** can also occur. The lower extremity arthralgias can be severely disabling, resulting in a **slow, broad-based, halting gait**, which can persist for months.



Chikungunya

Chikungunya is transmitted through the bite of the *Aedes Aegypti* and the *Aedes Albopictus* Mosquito. The second is only found in Izabal

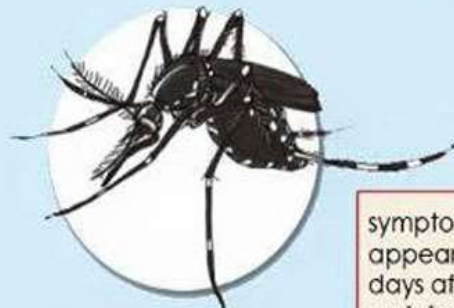
- fever
- headaches
- tiredness
- depression

Symptoms

- just like dengue: body aches, but more intense in joints and tendons. can become chronic and cause blindness

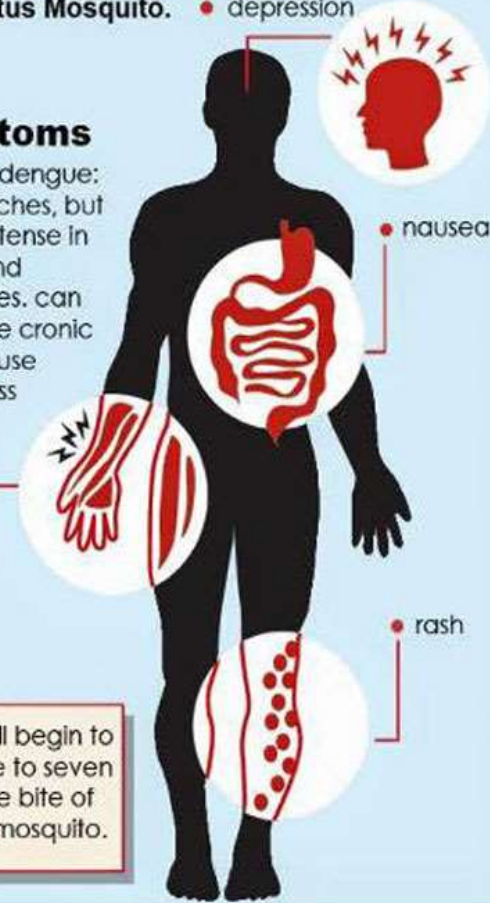


Aedes Aegypti



Aedes Albopictus

symptoms will begin to appear three to seven days after the bite of an infected mosquito.



Prevention



do not store water in open containers so that they do not become breeding sites for mosquitoes



cut your grass regularly to destroy potential breeding or resting sites



cover tanks or containers for water for domestic use



use mesh or screens on your windows and doors



do not accumulate trash, dispose of trash in your yard



use repellent or long sleeves to avoid getting bitten

CLINICAL FEATURES:



- ✘ **Rash:** When it occurs, the rash appears after fever onset and is typically maculopapular **Mobiliform rash** involving the trunk and extremities but can also involve palms, soles, and the face. Other skin lesions recognized during recent outbreaks include vesiculobullous lesions with desquamation, aphthous-like ulcers, and vasculitic lesions.
- ✘ Other symptoms include headache, fatigue, nausea, vomiting, and conjunctivitis; myalgias.
- ✘ **Blood test abnormalities**, such as **leukopenia**, **thrombocytopenia**, **hypocalcemia**, and a mild to moderate **increase in liver function test** results, are seen with acute infection but are not specific and do not occur frequently enough to be diagnostic.
- ✘ The disease shares some clinical signs with dengue and zika, and can be misdiagnosed in areas where they are common.

COMPLICATIONS:

- ✘ During early epidemics, rare but serious complications of the disease were noted, including **myocarditis, meningoencephalitis, and mild hemorrhage.**
- ✘ From recent epidemics, further neuroinvasive complications have been recognized, including **Guillan-Barré Syndrome, acute flaccid paralysis,** and palsies. new complications, such as **uveitis and retinitis** reported.

CHRONIC PHASE CHIKUNGUNYA:

- ✘ Following the acute phase of the illness, some patients develop prolonged symptoms, lasting several weeks to months, including **fatigue, incapacitating joint pain, and tenosynovitis or edematous polyarthrititis** of their digits.
- ✘ up to 64% of patients with chikungunya fever reported **joint stiffness and/or pain >1 year** after the initial infection, and 12% still reported symptoms 3-5 years later.
- ✘ Most patients recover fully, but in some cases joint pain may persist for several months, or even years.

DIAGNOSIS:

- ✘ Infections with CHIKV are confirmed by the **detection of the virus, viral RNA, or CHIKV-specific antibodies** in patient samples. The type of testing performed is typically dictated by the timing and volume of samples available. Historically, infections were diagnosed on the basis of serology, but with the advent of numerous molecular techniques, viral RNA can be easily detected by **reverse transcriptase-polymerase chain reaction (RT-PCR)** in serum specimens obtained during the acute phase of infection.
- ✘ CHIKV infections cause high levels of **viremia** (up to $1 \times 10^{6.8}$ plaque-forming units per mL), which typically **last for 4-6 days** but can persist for up to 12 days after the onset of illness

TREATMENT:

- ✘ There is **no specific antiviral drug treatment** for chikungunya. Treatment is directed primarily at relieving the symptoms, including the joint pain using anti-pyretics, optimal analgesics and fluids. There is no commercial chikungunya vaccine.
- ✘ **Prevention and control:**
- ✘ The proximity of mosquito vector breeding sites to human habitation is a significant risk factor for chikungunya as well as for other diseases that these species transmit. Prevention and control relies heavily on **reducing the number of natural and artificial water-filled container habitats** that support breeding of the mosquitoes. This requires mobilization of affected communities. During outbreaks, **insecticides** may be sprayed to kill flying mosquitoes, applied to surfaces in and around containers where the mosquitoes land, and used to treat water in containers to kill the immature larvae.

PREVENTION AND CONTROL:

- ✘ For protection during outbreaks of chikungunya, **clothing** which minimizes skin exposure to the day-biting vectors is advised. **Repellents** can be applied to exposed skin or to clothing in strict accordance with product label instructions. **Repellents should contain DEET** (N, N-diethyl-3-methylbenzamide), IR3535 (3-[N-acetyl-N-butyl]-aminopropionic acid ethyl ester) or icaridin (1-piperidinecarboxylic acid, 2-(2-hydroxyethyl)-1-methylpropylester). For those who sleep during the daytime, particularly young children, or sick or older people, **insecticide-treated mosquito nets** afford good protection. **Mosquito coils or other insecticide vaporizers** may also reduce indoor biting.
- ✘ Basic precautions should be taken by people travelling to risk areas and these include use of repellents, wearing long sleeves and pants and ensuring rooms are fitted with screens to prevent mosquitoes from entering.

HOMOEOPATHY: THE ONLY HOPE 4 CHIKUNGUNYA

- × Eupatorium-perf, Pyrogenum, Rhus-tox, Cedron, Influenzinum, China, Arnica, Belladonna, Bryonia, Arsenic-album, Occimum sanc., etc
- × Genus Epidemicus
- × TOS/Similimum.

THANK YOU!!!