

# **ZIKA**

**an Emerging Virus**

## BRIEF HISTORY OF AN EMERGING NEW VIRUS

- In 1946, while scientists began a program to study the yellow fever virus in a dense forest belt situated along the edge of Lake Victoria, east of the Ugandan capital, Kampala, they incidentally discovered a new strain of virus.

○ The isolated viral strain was named "Zika" for the forest from where it was isolated.

○ It was not until 1954 , however, that the first clinical description of a human infection caused by the Zika virus was reported.

○ During the subsequent 20 years, the Zika virus was isolated in East and West Africa and in Malaysia.

○ In 2013, Zika virus emerged in French Polynesia in the South Pacific.

○ In 2014, Zika virus infections were reported

in Japan, France, and Norway.

○ In 2015, the Zika virus infection affected northeastern Brazil.

○ All of these cases emphasize the capacity of the Zika virus to spread to areas where it is not endemic, but where the right mosquito vector might be present. It appears that any area with the right vectors now poses a risk for infection with Zika virus.

○ Nearly 70 years after its first isolation, the future of the Zika virus is anything except predictable.

○ One thing is for certain - The Zika virus appears to have a large capacity to spread (like the Dengue and Chikungunya viruses) and colonize new environments.

○ It has the potential to cause major epidemics at the local, regional, and even global level.

# WHO WARNING - 2016

- On February 1, 2016, the WHO declared that the recent association of Zika infection, with clusters of microcephaly and neurologic disorders like Guillain-Barré syndrome, constituted a public health emergency of international concern.

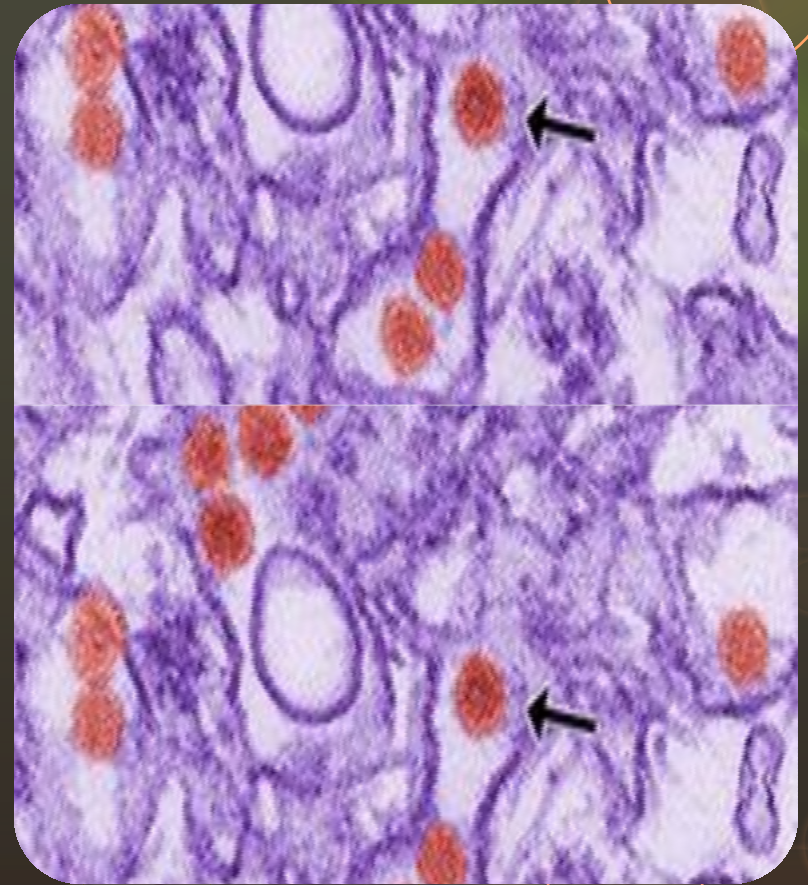
# ZIKA

It is a flavivirus whose genome consists of a single-stranded positive-sense RNA molecule with 10,794 kb.

*Virus particles are 40 nm in diameter, with an outer envelope and an inner dense core.*

*Transmission electron micrograph of the Zika virus, which is a member of the family Flaviviridae. The arrow identifies a single virus particle.*

*Image courtesy of the Centers for Disease Control and Prevention*





## HOW IT SPREADS

Zika virus is transmitted to people primarily through the bite of an infected *Aedes* mosquito— *A aegypti* and *A albopictus* in tropical regions.

These are the same mosquitos that spread

Dengue and Chikungunya.

*Aedes aegypti* mosquitoes in a petri dish at the Fiocruz institute in Recife, Pernambuco state, Brazil.



# OTHER MODES OF SPREAD

## MATERNAL/FETAL

Intrauterine

Perinatal

## SEXUAL TRANSMISSION

*(viral shedding can continue for up to 62 days in semen)*

## Others

Blood transfusion

Laboratory exposure

Organ or tissue transplantation

# SYMPTOMS OF ZIKA

About 1 in 5 people infected with Zika virus will get sick.

Symptoms are typically mild and self-resolving; most people will not realize they have been infected.

Symptoms typically begin 2 -7 days after being bitten by an infected mosquito.

Severe disease requiring hospitalization is uncommon and fatalities are rare.

# COMMON SYMPTOMS OF ZIKA

- Fever
- Rash (typically maculopapular)
- Body/joint pain
- Conjunctivitis (non-purulent)

# INFECTIVITY

Zika virus usually remains in the blood of an infected person for about a week, but it can be found longer in some people.

It appears that the infection itself lasts from 3 to 7 days, but viral shedding can continue for up to 15 days in urine and 62 days in semen.

## COMPLICATIONS LIKED TO ZIKA

The virus has been associated with Guillain-Barré syndrome,

(pronounced /ˌgiː.ɔ̃ˈbæ.ɾeɪ/ or

/gee-yaan baa ray/), a neurologic disorder that

can cause respiratory paralysis and be fatal.

There have been multiple reports of microcephaly and other poor pregnancy outcomes in babies of infected mothers.

# TREATMENT

- No specific antiviral treatment is available for Zika virus disease.
- Treatment is generally supportive and includes rest, fluids, and use of analgesics and antipyretics.

# PREVENTION

Similar to prevention of Chikungunya and Dengue, the best way to prevent Zika is to prevent the spread of its vector – the Aedes mosquito.





# DOS AND DON'TS

Remove water from coolers and other small containers at least once in a week



Use mosquito repellents especially during day time.



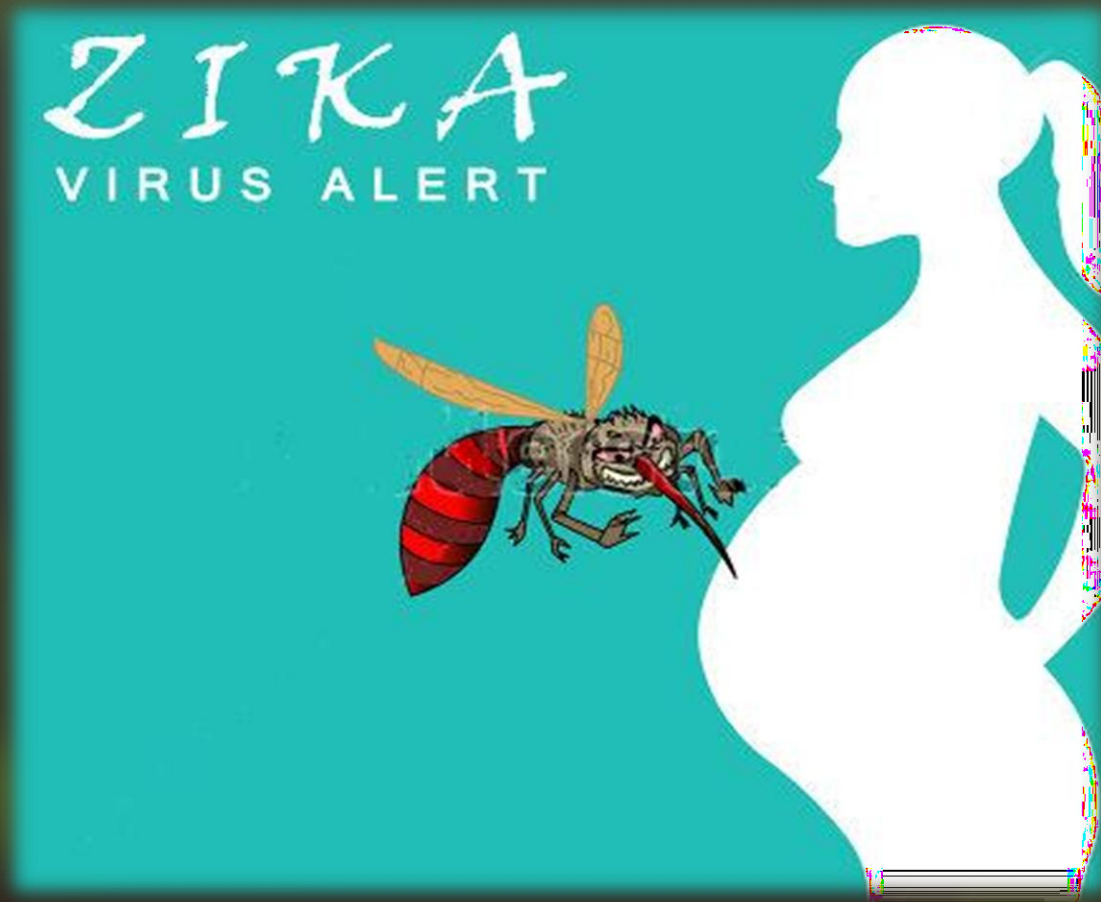
Do not wear clothes that  
expose arms and legs.



Sleep under a mosquito bed net if temperature-controlled or screened rooms are not available or if sleeping outdoors.



Counsel pregnant women to consider postponing travel to any area where Zika virus transmission is ongoing.



# PREVENTION OF MOSQUITO BREEDING IS THE ONLY WAY



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