

## ADVISORY : CHIKUNGUNYA

Chikungunya is a viral disease spread by mosquitoes *Aedes aegypti* and *Aedes albopictus*.  
The incubation period : 1-12 days (Average 3-7 days).

**Symptoms** : are similar to those of dengue and Zika disease

|  |                            |                |   |
|--|----------------------------|----------------|---|
| Severe and persistent peripheral joints pain for weeks                 | Body rash, Headache        | joint swelling | Extreme fatigue                               |
| Sudden high biphasic fever 2-4 days after infection and lasts 2-7 days | Nausea, Vomiting, Diarrhea | Conjunctivitis | GBS, Palsies, Neuropathy, Meningoencephalitis |

**Transmission** : From mosquitoes to human and by Vertical transmission.

**Diagnosis** :

- ELISA assay to measure chikungunya – specific IgM antibodies levels in blood serum.

**Prevention** :

Control mosquito populations by limiting their habitat.

Mosquito control focuses on eliminating the standing water where mosquitos lay eggs and develop as larva; if elimination of the standing water is not possible, insecticides or biological control agents.

Insect repellents with substances such as DEET, Icaridin, PMD.

Wear bite-proof long sleeves and trousers and garments can be treated with pyrethroids. Vaporized Pyrethroids in mosquito coils are also insect repellents.

**Treatment** :

- There is no vaccine to prevent or medicine to treat chikungunya virus.
- Take sufficient rest.
- Drink fluids to prevent dehydration.
- Take medicine such as Paracetamol (Acetaminophen) to reduce fever and pain.
- Do not take Aspirin and other non-steroidal anti-inflammatory drugs (NSAIDS until dengue can be ruled out to reduce the risk of bleeding).
- If you are taking medicine for another medical condition, talk to your healthcare provider before taking additional medication.
- If you are suffering from chikungunya, prevent mosquito bites for the first week of illness.
- During the first week of infection, chikungunya virus can be found in the blood and passed from an infected person to a mosquito through mosquito bites.
- An infected mosquito can then spread the virus to other people.

**(Dr. Sunil)**  
**Chief Medical Officer**



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**VECTOR BORNE DISEASES**  
**DENGUE FEVER : ADVISORY**

Dengue fever is a mosquito-borne tropical disease caused by the dengue virus.

**Symptoms and Signs** : Dengue triad: High fever, severe headache, skin rash

1. **Sudden onset high fever** biphasic or saddleback in nature, breaking & returning.
2. **Severe headache behind the eyes**, severe muscular and joint pains.
3. Characteristic **skin rash** similar to measles. In some, it develops into the life-threatening dengue hemorrhagic fever, resulting in bleeding, low levels of platelets and blood plasma leakage or dengue shock syndrome when low blood pressure occurs.
4. **During critical phase** : lymphadenopathy, mouth & nose bleeding, low blood pressure, accumulation of fluid in the chest, accumulation of fluid in abdominal cavity, depletion of fluid, organ dysfunction, gastrointestinal bleeding.
5. **During recovery phase** : altered level of consciousness, seizures, itching, slow heart rate, peeling of the skin, slow heart rate, fatigue .
6. **Dengue shock syndrome.**
7. **Dengue hemorrhagic fever** – usually affects children less than 10 years of age.

The incubation period : 4 to 7 days.

**Diagnosis** : On examination : Lymphadenopathy, Pleural effusion, Ascites.

- Low White Blood Cell Count (WBC), positive tourniquet test or any warning sign.
- The earliest change is a low White Blood Cell Count, low platelets and metabolic acidosis. Elevated level of Aminotransferase (AST and ALT), rising hematocrit and hypoalbuminemia.
- Check for the virus or antibodies to the Virus.

**Treatment** :

- No specific treatment. There is no vaccine to prevent dengue fever.
- Drink plenty of fluids.
- Intravenous fluids with electrolyte replacement to maintain urinary output of 1 ml/kg/hr.
- Acetaminophen can alleviate pain and reduce fever.
- Avoid Aspirin, Ibuprofen and Naproxen Sodium.
- Transfusion with packed red blood cells or whole blood to replace blood loss.
- During recovery phase intravenous fluids are discontinued to prevent a state of fluid overload or else loop diuretic e.g. **Frusemide** if the patient is outside the critical phase.

**Prevention** :

- Stay away from heavily populated residential areas, if possible.
- Use mosquito repellents, even while indoors.
- When indoors, live in air conditioned room and in well screened houses.
- Make sure windows and door screens are secure and free of holes. If sleeping areas are not screened properly or air conditioned, use mosquito nets.
- To decrease mosquito population, get rid of old automobile tires, cans, flower pots.
- Use insect repellent 10% DEET, Permethrin.
- Generalised spraying of environs with Organophosphate or Pyrethroid Insecticides.
- Overhead water tanks (OHTs)/cemented tanks should have well fitted lids and should be kept locked.
- Water outlet/air bent pipe of OHTs should be covered with metallic/plastic net of sufficient size to prevent entry of mosquitoes.
- Ensure that there is no water logging at roof tops and in the ground areas.
- Water contained in money plant/bamboo plant should be changed at least once a week.



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- **Anti Larval measures :** The coolers which cannot be emptied, one tablespoon of Petrol/Kerosene/Temephos (Larvicidal) granules is added. Larviciding must be repeated in frequent intervals.
- **Space application through application of pesticides dispersion by ground equipment (ultra-low-volume method) in the form of fog or mist.**
- **Use mesh on doors and windows.**
- **Wear full sleeves cloths and trousers which cover arm and legs, if feasible.**

**(Dr. Sunil)  
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**VECTOR BORNE DISEASES**

**MALARIA : ADVISORY**

**Malaria** is a mosquito-borne infectious disease of humans caused by bite of the **female *Anopheles*** mosquito which is parasitic protozoans (*Plasmodium* type). Once an infected mosquito bites a human and transmits the parasites, the parasites multiply in the host's liver and later infects and destroys Red Blood Cells.

**Symptoms and Signs** : typically begin 8–25 days following the infection :

|  |               |                  |          |
|--|---------------|------------------|----------|
| Sudden Coldness followed by shivering and later fever occurring every 2/3 days (Tertian/Quartan Fever) | High Fever    | Profuse Sweating | Headache |
| Nausea   | Vomiting      | Diarrhoea        | Anaemia  |
| Muscular Pain  | Bloody Stools | Convulsions      | Coma     |

**Life-Threatening Complications of Malaria :**

- Swelling of the blood vessels of the Brain or cerebral malaria
- Accumulation of fluid in the lungs which causes breathing problems or pulmonary edema
- Organ failure of the Kidneys, Liver or Spleen
- Anaemia due to the destruction of Red Blood Cells
- Low Blood Sugar

**Diagnosis of Malaria :**

- Clinically enlarged spleen.
- Low Platelet Count, Increased Billirubin level.
- Microscopic Examination of Blood Film or antigen based Rapid Diagnostic Test (RDT).
- Polymerase Chain Reaction (PCR).

**Treatment :**

- Artemisinin Combination Therapy (ACT) : Amodiaquine, Lumefantrine, Mefloquine, Sulfadoxine/Pyrimethamine, Dihydroartemisinin/Piperaquine.
- Treatment of *P. vivax* : Chloroquine or ACT plus primaquine. Tafenoquine prevents relapses.
- If malaria is severe : intravenous Artesunate, monitoring for Low Blood Sugar and Low Blood Potassium.
- During early pregnancy : Quinine plus Clindamycin, ACT in 2<sup>nd</sup> and 3<sup>rd</sup> trimester of pregnancy.

**Preventive measures :**

- Vector control measures: insect repellents e.g. DEET or Picaridin.
- Insecticide-Treated Nets with Pyrethroids which are large enough to cover the entire bed and indoor Residual Spraying with DDT and the Cyfluthrin and Deltamethrin (Pyrethroids).
- Spraying of insecticides on the walls of house.
- Cover stagnant water such as water tanks.

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