

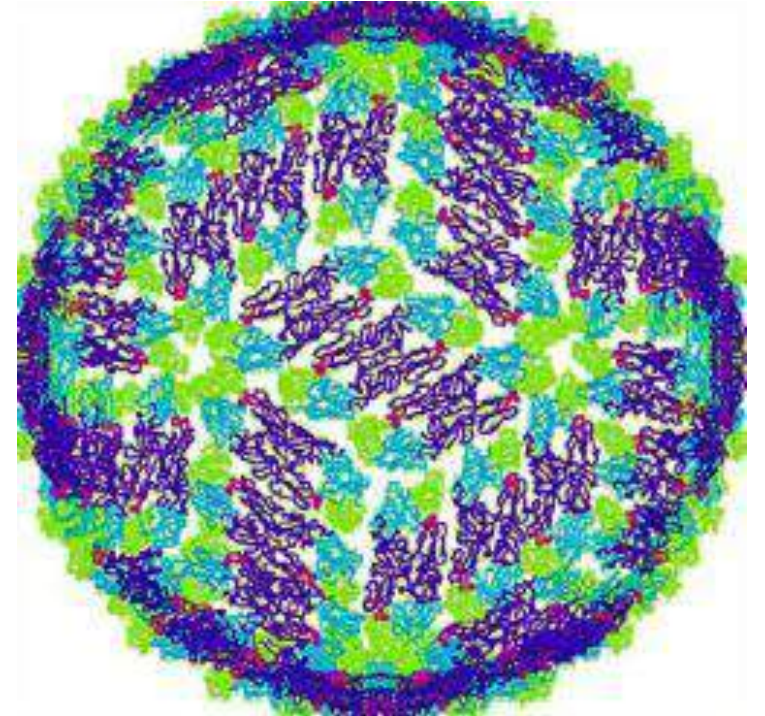
# Dengue Fever



# Where is dengue fever found?

- Dengue fever is an acute, epidemic, febrile disease, provoked by a virus (flavivirus) and transmitted to man by a mosquito - *Aedes aegyptis*.
- Rarely fatal, dengue fever is also known as “break bone fever” because of the severe muscular and joint pains that it provokes.
- There are 4 serotypes of this flavivirus, known as DENV 1, DENV 2, DENV 3 and DENV 4.
- All 4 serotypes can provoke the disease.

Flavivirus



# What is dengue fever?

- An infection with one serotype usually provides lifelong immunity ONLY to that serotype – not to the 3 other serotypes.
- A person who has been infected with one serotype has a greater chance of developing the severe hemorrhagic form of the disease if they are infected with another dengue serotype.



# What is dengue fever?

■ Dengue fever is a hemorrhagic fever from the same family as:

- Ebola fever
- Yellow fever
- Lassa fever
- Japanese encephalitis
- Marburg fever
- Rift Valley fever
- Hantaan virus
- Crimean Congo fever



# Where is dengue fever found?

- Dengue fever is endemic in all tropical regions of the world and found in more than 110 countries.
- It is very common in:
  - Caribbean countries (with the exception of Cuba and the Cayman Islands)
  - Central and South America
  - India and Southeast Asia
  - Pacific including Australia
  - Tropical Africa
  - Some parts of the USA.



# Where is dengue fever found?

- Approximately 100 million people each year around the world are infected by dengue fever.
- Mortality represents less than 1% of the cases.



# Transmission

- The *Aedes* mosquito initially feeds on the blood of a monkey or man, carrier of the dengue virus, and then reinoculates the virus in another victim.
- *Aedes* is the same mosquito that transmits chikungunya and Zika fever.



# Transmission

- Humans are the primary host of the virus but it is also found in nonhuman primates.
- Note that the dengue virus can also be transmitted from one infected human to another by blood transfusions or organ transplants as well as from an infected mother to her fetus.





# Symptoms

- The incubation period for dengue fever varies from 7 to 15 days.
- For some people symptoms are mild and fever is the only symptom.
- For others, onset of the disease is rather abrupt with:
  - fever (40°- 41°C/ 104°-105°F) and chills
  - severe headaches and pain behind the eyes
  - vomiting and diarrhea
  - severe aches and pains in the upper and lower back region
  - unbearable joint and muscular pains
  - insomnia



# Symptoms

- In severe cases bleeding can appear from the:
  - nose or gums
  - stomach with vomited blood
  - intestines with blood in the stools
- This hemorrhagic form of the disease can lead to shock and death.



# Diagnosis

- Dengue fever is often mistaken in its early stages for malaria.
- Since malaria can kill in a few days eliminating malaria is the highest priority.
- A simple blood test can eliminate the diagnosis of deadly malaria, confirm dengue fever and identify the dengue serotype.



# Treatment

- There is no specific treatment for dengue fever outside of purely symptomatic medications:
  - paracetamol against fever (avoid aspirin)
  - medication against vomiting
  - bed rest
  - intra-venous drip to rehydrate and nourish the patient
  - transfusions for severe cases



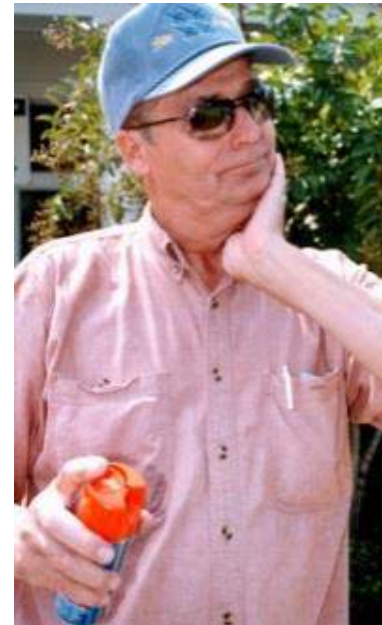
# Prevention

- Contrary to malaria, there is no preventive medication that one can take while traveling or living in an endemic country to protect against dengue fever.
- Contrary to yellow fever and Japanese encephalitis there is no effective vaccination to date.
- Until an effective vaccination against all 4 serotypes is developed, the only protection remains mosquito bite prevention.



# Prevention

- Insect bite prevention against dengue fever and all other insect-borne diseases includes:
  - Outdoors
    - wearing long sleeve shirts, long trousers, socks
    - applying insect repellent containing DEET, picaridin or IR3535 on uncovered parts of the body
  - Indoors
    - placing screens on doors and windows
    - leaving air conditioning “on”
    - using insecticides
    - sleeping under a chemically treated mosquito bed net (Deltamethrine® or Permethrine®)



# Conclusion

- Dengue fever, even though it is rarely fatal, is a very serious and painful disease found in all tropical regions of the world.
- When flu-like symptoms appear and you are in or coming from a tropical region – always think malaria first! – see a doctor and get tested for malaria.
- Once the diagnosis of deadly malaria is eliminated, you may be suffering from dengue fever.
- Dengue fever prevention is based on mosquito-bite prevention.
- There is no specific treatment and an effective vaccination may still be years away.

