

Dengue Fever

Overview:

- It is a mosquito-borne viral infection transmitted through female *Aedes aegypti* mosquitos.
- The *Aedes aegypti* is not the main cause of the disease, but only a vector for transmission.
- The disease manifests in very severe flu-like symptoms.
- There is no cure for dengue fever, but getting the appropriate medical care reduces mortality rates.
- The best way for prevention is to avoid mosquito bites.

Introduction:

Dengue fever is a viral infection transmitted through mosquito bites. It is most common in tropical and subtropical regions, particularly in poor urban, suburban and rural areas.

Other Names:

Dengue - Dengue Fever - Abu Al-Rukab - Breakbone Fever - Aden Fever.

Causes:

There are four different serotypes of the dengue virus: (DEN-1, DEN-2, DEN-3 and DEN-4). Getting infected with any of these types through a female *Aedes aegypti* mosquito causes dengue fever. The virus may also be transmitted through the *Aedes albopictus* (*Stegomyia albopicta*) mosquito in rare cases.

Modes of Transmission:

Dengue fever is transmitted from one person to another through the bite of an *Aedes aegypti* mosquito. A healthy mosquito becomes infected when feeding on the blood of a person infected with the virus, to then transmit it to healthy people when it moves to feed on their blood. Infected people can transmit the

disease to others through mosquitos for 4-5 days (up to 7 days) since the onset of infection.

Aedes Aegypti Mosquito:

- It is a dark mosquito with white bracelet-like markings on its legs and white spots on its body.
- The mosquito is not the main cause of the disease, but only a vector that carries the virus from one person to another.
- The incubation period ranges from 8 to 12 days, during which the virus multiplies in the mosquito's gut and settles in its salivary glands. The mosquito then start transmitting the disease for the rest of its life.
- Early morning and before sunset are two peak hours for mosquito bites.
- Each time a female mosquito needs food, it bites several people.

Incubation Period:

Symptoms begin to manifest 4-10 days after being bitten by an infective mosquito.

Symptoms:

The disease manifests in severe flu-like symptoms and is suspected when the temperature rises (above 40° C) accompanied by two of the following symptoms:

- Severe headache.
 - Pain behind the eyeball.
 - Painful muscles and joints.
 - Nausea.
 - Vomiting.
 - Rashes.
- Symptoms often last from 2 to 7days.

When to see a doctor?

Medical attention should be sought in case of developing emergency symptoms after returning from an area where the disease is endemic. Such symptoms include:

- Severe abdominal pain.
- Persistent vomiting.
- Bleeding gums and nose.
- Blood in the urine, stool or vomit.
- Bruise-like subcutaneous bleeding.
- Difficult or rapid breathing.
- Pallor and cold skin.
- Exhaustion.

Diagnosis:

- The disease is difficult to diagnose by its symptoms and signs, given their similarity to several other diseases, such as malaria. However, the doctor will ask the patient in detail about their medical history and the regions and countries to which they have been recently.
- Laboratory Tests: The disease can be diagnosed by blood tests that confirm it and specify the type of the virus. However, the results take time and therefore have no place in making the therapeutic decision.

Risk Factors:

- Living in or travelling to tropical regions.
- The risk of developing dengue hemorrhagic fever increases when the disease recurs with another type of the virus.

Complications:

The disease may develop into severe dengue fever, in which blood vessels get damaged and start leaking fluids, the number of platelets decreases leading to

severe bleeding, blood pressure suddenly drops or one of the body systems fails to then end up with death.

Treatment:

There is no specific drugs to treat people with dengue fever, therefore prevention is the most important action to be taken. When infected, patients are recommended to:

- Get enough rest.
 - Drink enough fluids.
 - Take analgesics.
 - Avoid blood thinners, such as: Aspirin.
 - Avoid exposure to mosquito bites to prevent the spread of the disease.
- In case of severe dengue fever, medical care and fluid compensation may help prevent the further development of the disease and preserve the patient's life.

Prevention:

- The vaccine has been approved in some countries for people between 9- and 45-years old living in areas where the disease is endemic.
- Prevention of dengue fever is highly dependent on the control of the *Aedes aegypti* mosquitos.
- The best way of prevention is to avoid mosquito bites by:
 - Eliminating mosquito breeding sites, such as: indoor and outdoor water basins.
 - Covering, replacing and cleaning all water tanks and deposits on a weekly basis, including household vase water.
 - Using insect repellent skin creams indoor and outdoor.
 - Covering the body with long sleeve clothes.
 - Making sure window screens are intact and free of holes that allow insects in.

- Using pesticides when the disease spreads.
- Infected people should be protected from exposure to mosquitoes, so that the virus does not transmit to mosquitoes and then to other people. If someone at home has dengue fever, more precautions should be taken to prevent the spread of infection. The patient should be advised to sleep inside a mosquito net, eliminate mosquitoes and use insect repellent creams.
- After recovery from dengue fever, the patient acquires lifelong immunity against the type of virus that has infected them, but only partial or temporary immunity against the other types. Recurrent infection with other types increase the chance of progression to dengue hemorrhagic fever.

Frequently Asked Questions:

- **Have any cases been reported in Saudi Arabia? Is the rate high?**
Answer: Yes, cases have been reported in Saudi Arabia. The disease began to emerge in 1994 and new annual cases keeps being reported but not at a high rate, thankfully.
- **Do all mosquitoes transmit the dengue virus?**
Answer: No, there is only one species in Saudi Arabi (Aedes aegypti) that transmits the infection.

Misconceptions:

- **Infected people can infect others through direct contact.**
Fact: Infection is not transmitted through direct person-to-person contact, but only through the bites of infected mosquitoes.