

Dengue Fever

What It Is

Dengue is the most important mosquito-borne viral disease of humans and the most important tropical disease in Latin America and Asia. It affects 70–500 million people per year and is endemic in more than 120 countries across the world.

Dengue mosquitoes bite during the day (unlike malaria mosquitoes). Dengue Fever is a virus transmitted by several species of the *Aedes* mosquito, usually the *A. aegypti*, a silent, daytime mosquito. The adult mosquitoes live roughly 1 month but can live for up to 6 months. Once an adult female gets Dengue virus, it can transmit it through biting humans for the rest of its life.



Aedes aegypti mosquito. Note the leg bands and the body spots. These are most pronounced in the juvenile and fade somewhat in the adult.

The virus has five different types; infection with one type usually gives lifelong immunity to that type, but only short-term immunity (3-4 months) to the others. Subsequent infection with a different type increases the risk of severe complications. Prior Dengue infections almost universally interfere with our subsequent immune responses to new Dengue infections, with each new subsequent infection producing more severe symptoms.

Incidence

Dengue Fever is common and is endemic in the Buena Vista / Los Barriles area. There are 2000 reported cases of Dengue Fever in Baja Sur annually, 700 in La Paz, as this only represents those with severe symptoms (5%), the true incidence is much higher.

Symptoms

Typically, people infected with dengue virus are asymptomatic (80%) or only have mild symptoms such as an uncomplicated fever. Others have more severe illness (5%), and in a small proportion it is life-threatening.

In the 5% with more severe symptoms, the characteristic symptoms of dengue are sudden-onset fever, headache (typically located behind the eyes), muscle and joint pains, and a rash. The course of infection is divided into three phases: febrile, critical, and recovery. After an incubation period of 3 to 15 days, fever, chills, headache, retro-orbital pain with eye movement, lumbar backache, and severe prostration begin abruptly. Extreme aching in the legs and joints occurs during the first hours, accounting for the traditional name of break-bone fever. The temperature rises rapidly to up to 40° C, with a relatively slow heart rate. The febrile phase involves high fever, potentially over 40 °C (104 °F), and is associated with generalized pain and a headache; this usually lasts two to seven days. Nausea and vomiting may also occur. A rash occurs in 50–80% of those with symptoms in the first or second day of symptoms as flushed skin or later in the course of illness (days 4–7), as a measles-like rash. Some small red spots that do not

disappear when the skin is pressed can appear, and some mild bleeding from the mucous membranes of the mouth and nose. Cervical, epitrochlear, and inguinal lymph nodes are often enlarged. Usually the fever breaks after 3-4 days, and recovery ensues, but can leave prolonged lethargy and tiredness. If the condition deteriorates further, medical admission for fluid replacement is necessary.

A probable diagnosis is based on the findings of fever plus two of the following: nausea and vomiting, rash, generalized pains, low white blood cell count, positive tourniquet test, in someone who lives in an endemic area.

The time between exposure and onset of symptoms ranges from 3–14 days, but most often it is 4–7 days. Children often experience symptoms similar to those of the common cold; some can progress to develop vomiting and diarrhea and have a greater risk of severe complication though initial symptoms are generally mild but include high fever.



Photograph of a person's back with the skin exhibiting the characteristic rash of Dengue fever.

Treatment

Treatment is symptomatic. Acetaminophen can be used, but NSAIDs, (Advil, Motrin etc) including aspirin, should be avoided because bleeding is a risk. Aspirin increases the risk of Reye's syndrome in children and should be avoided for that reason.

Fluid replacement; with GI symptoms, avoid fiber; rest; and avoid exposure to mosquitoes as they will carry the disease to family and friends!

Severely-ill patients require intensive care, including intravenous fluids and blood or plasma transfusions.

Prevention

As there is no commercially available vaccine, prevention is sought by reducing the habitat and the number of mosquitoes and limiting exposure to bite.

The Dengue-carrying mosquitoes *Aedes aegypti* need only a teaspoon of water that doesn't evaporate for one week to convert eggs to free-flying adults. They prefer clean water residues, like rain water in tinacos, flower pots, rubbish piles, old tires, old pipes, junk, rain water in unattended swimming pools, sink & floor drains, etc.