

Dengue

Dengue Fever and Dengue Haemorrhagic Fever

GENERAL

Dengue is an acute fever caused by a virus. It occurs in two forms:

1. Dengue Fever
2. Dengue Haemorrhagic Fever

Dengue fever is marked by the onset of sudden high fever, severe headache and pain behind the eyes, muscles and joints.

Dengue Haemorrhagic Fever (DHF) is a more severe form, in which bleeding and sometimes shock occurs - leading to death. It is most serious in children. Symptoms of bleeding usually occur after 3-5 days of fever.

The high fever continues for five to six days (103-105°F or 39-40°C). It subsides on the third or the fourth day but rises again. The patient feels much discomfort and is very weak after the illness.

Dengue spreads rapidly and may affect a large number of people during an epidemic, resulting in reduced productivity, but, most importantly, causing the loss of lives.

RECOGNITION OF DENGUE FEVER

- Sudden onset of high fever

- Severe headache (mostly in the forehead)
- Pain behind the eyes which worsens with eye movement
- Body aches and joint pains
- Nausea or vomiting

RECOGNITION OF DENGUE HAEMORRHAGIC FEVER AND SHOCK

The symptoms are similar to dengue fever plus, any one of the following:

Severe and continuous pain in the abdomen;

Bleeding from the nose, mouth and gums or skin bruising;

Frequent vomiting with or without blood;

Black stools, like coal tar;

Excessive thirst (dry mouth);

Pale, cold skin; and

Restlessness, or sleepiness

TREATMENT

There is no specific medicine for the treatment of the disease. However, proper and early treatment can relieve the symptoms and prevent complications and death.



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Aspirin and Brufen should be avoided in dengue fever, as it is known to increase the bleeding tendency. It also increases stomach pain. Paracetamol can be given on medical advice. If one or more signs of DHF are seen, take the patient to the hospital immediately. Give fluids to drink while transferring the patient to the hospital.

BASIC FACTS ON DENGUE

(a) How does dengue spread?

Dengue is spread by the bite of an infected *Aedes aegypti* mosquito. The mosquito gets the virus by biting infected persons. The first symptoms of the disease occur about 5-7 days after an infected bite.

There is no way to tell if a mosquito is carrying the dengue virus. Therefore, people must protect themselves from all mosquito bites.

(b) Where does the mosquito live?

The mosquito rests indoors, in closets and in other dark places. Outdoors, they rest where it is cool and shady. The female mosquito lays her eggs in water containers in and around homes, schools and other areas in towns or villages. These eggs become adult mosquitoes in about 10 days.

(c) Where does the mosquito breed?

Dengue mosquitoes breed in stored exposed water collections. Favoured breeding places are:

Barrels, drums, jars, pots, buckets, flower vases, plant saucers, tanks, discarded bottles, tins, tyres, water cooler,

etc. and several other places where rain-water collects or is stored.

PREVENTION OF DENGUE

All control efforts should be directed against the mosquitoes. It is important to take measures to eliminate the mosquitoes and their breeding places. However, the efforts should be intensified before the transmission season (during and after the rainy season) and at the time of an epidemic.

PREVENT MOSQUITO BITES

Dengue mosquitoes bite during the daytime. Protect yourself by:

- (1) Wearing full sleeve clothes and long dresses to cover the limbs;
- (2) Using repellants - care should be taken in using repellants on small children and the elderly;
- (3) Using mosquito coils and electric vapour mats during the daytime;
- (4) Using mosquito nets - to protect babies, old people and others, who may rest during the day. The effectiveness of such nets can be improved by treating them with permethrin (pyrethroid insecticide). Curtains (cloth or bamboo) can also be treated with insecticide and hung at windows or doorways, to repel or kill mosquitoes.
- (5) Protecting people sick with dengue - Mosquitoes become infected when they bite people who are sick with dengue. Mosquito nets and coils will effectively prevent mosquitoes from biting sick people and help stop the spread of dengue.



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PREVENTING BREEDING OF MOSQUITOES:

Mosquitoes which spread dengue live and breed in and around houses. To prevent breeding of mosquitoes:

- Drain water from coolers, tanks, barrels, drums, plant saucers and buckets, etc.;
- Do not store water in coolers when not in use;
- Remove water from refrigerator drip pans every other day;
- All stored water containers should be kept covered all the time;
- Discard solid waste and objects where water collects, e.g. bottles, tins, tyres, etc.

ALWAYS REMEMBER

- Dengue is a serious viral disease transmitted by the bite of the mosquito;
- Dengue infection occurs in two forms: Dengue fever and Dengue Haemorrhagic Fever;
- Dengue fever is a severe flu like illness that affects older children and adults but rarely causes death;
- Dengue Haemorrhagic Fever (DHF) is a more severe form, in which bleeding and occasionally shock occur, leading to death, mostly in children;
- Persons suspected of having dengue fever or DHF must see a doctor immediately. Dengue Haemorrhagic Fever is a deadly disease but early recognition and treatment can save lives. Unless proper treatment is given promptly, the patient may go into shock and die.
- Severe abdominal pains, black stools, bleeding on the skin or from the nose or gums, sweating, or cold skin are danger signs. If any one of them is noticed take the patient to a hospital immediately. Give fluids to drink during transfer to the hospital;
- Give nutritious food and fluids to drink to the patients;
- Dengue mosquitoes bite during the day;
- The patient should be kept under a mosquito net or in a screened room during the period of illness;
- Screen rooms against mosquitoes or use mosquito nets or mosquito repellent;
- Discard objects in which water collects, e.g. tins, cans, coconut shells, etc. Do not allow water to collect in pits around your houses. All stored water containers should be covered all the time. This will prevent breeding of dengue mosquitoes;
- Doctors and health workers treating cases of dengue fever should also notify the health authorities.

EMERGENCE OF DENGUE

- Until the middle of the 20th century the disease was mild and the interval between the epidemics varied between 10-20 years. During the last five decades, however, the disease has become a serious global public health concern because of the geographical spread, increased frequency of epidemics (every 2-4 years), and its extension into the rural areas in endemic countries. There has been a 30-fold increase in the reported cases of dengue during the last three decades (since 1970).
- The disease and its complications are now increasingly affecting adults in the endemic countries and not only children.
- According to current estimates, 100 countries are affected, with about 2.5 billion population 'at risk'. This represents about 40% of the global population.



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- There are an estimated 50 million infections each year, and 400,000 cases of DHF. The estimated deaths from dengue are 25,000 per year.
- The worsening of the problem of dengue is related to increased urbanization, enhanced travel and migration, overcrowding and poor sanitation. The occurrence of epidemics are related to climatic factors. Transmission in and around households is related to the breeding of mosquitoes in relation to water storage and use as well as insanitary conditions created by the collection of water in different containers.

SITUATION IN THE SOUTH-EAST ASIA REGION

- Ecological and climatic factors affect the seasonal prevalence of dengue in countries of the South-East Asia Region.
 - In countries of the Region, dengue is a serious problem with an estimated 70% people 'at risk'. Nine of the 11 countries in South-East Asia Region are affected.
 - The frequency of dengue epidemics has increased in the Region since 1996. After the big epidemic in 1998, in Indonesia, Myanmar and Thailand, outbreaks of dengue have been reported every 2 to 3 years. Reported cases exceeds 100 000 in an epidemic year.
 - Countries in the Region can be divided into four broad groups on the basis of different patterns of the disease.
- (a) In Indonesia, Myanmar, Sri Lanka, Thailand and Timor-Leste, with annual rainfall exceeding 150 cm, dengue is a major public health problem leading to hospitalization of cases and deaths.

Multiple virus serotypes are circulating and the disease is spreading to the rural areas.

- (b) In Bangladesh, India and Maldives, cyclic epidemics of dengue are becoming more frequent, multiple virus serotypes are circulating and there is a geographical expansion of the disease.
- (c) In Bhutan, the first outbreak was reported in 2004 and the endemicity is uncertain. In Nepal, no case of dengue has been reported so far.
- (d) In DPR Korea, the climate is temperate and there is no endemicity.
- The case fatality rate is steadily declining. It was 2.06% in 1986, 1.88% in 1996 and 0.85% in 2005.

SITUATION IN THE WESTERN PACIFIC REGION

- Between 1991 - 2004, there were 1.748 million cases of dengue reported with case fatality rates of 0.51 %. This includes the peak in 1998 when more than 350 000 cases were reported.
- There has been an increasing trend in the reported cases of DE/DHF between 2000-2004. The case fatality rate has varied between 0.36-0.48%.
- The countries reporting maximum cases of DE/DHF in the Region include Vietnam, Malaysia, Philippines, Cambodia, Laos, Singapore, French Polynesia, New Caledonia and China. These countries account for 99.7% of the total cases in the Region.
- In the pacific islands, DE/DHF re-emerged after a gap of about 25 years. The disease is reported from Queensland in Australia.

