

Dengue Fever

Causative agent

Dengue fever is an acute mosquito-borne infection caused by the dengue viruses. This is found in tropical and sub-tropical regions around the world. For instance, dengue fever is an endemic illness in many countries in South East Asia. The dengue viruses encompass four different serotypes, each of which can lead to dengue fever and severe dengue (also known as 'dengue haemorrhagic fever').



Clinical features

Dengue fever is clinically characterised by high fever, severe headache, pain behind the eyes, muscle and joint pain, nausea, vomiting, swollen lymph nodes and rash. Some infected people may not develop apparent symptoms, and some may only have mild symptoms like fever, e.g. young children may exhibit a milder non-specific febrile illness with rash.

The symptoms of first infection are usually mild. Once recovered, lifelong immunity to that serotype of dengue virus will develop. However, cross-immunity to the other three serotypes after recovery is only partial and temporary. Subsequent infections with other serotypes of dengue virus are more likely to result in severe dengue.

Severe dengue is a severe and potentially fatal complication of dengue fever. Initially, the features include high fever, which lasts 2 – 7 days and can be as high as 40 – 41°C, facial flush and other non-specific constitutional symptoms of dengue fever. Later, there may be warning signs such as severe abdominal pain, persistent vomiting, rapid breathing, fatigue, restlessness and manifestations of bleeding tendency such as skin bruises, nose or gum bleeding, and possibly internal bleeding. In severe cases, it may progress to circulatory failure, shock and death.



Mode of transmission

Dengue fever is transmitted to humans through the bites of infective female *Aedes* mosquitoes. When a patient suffering from dengue fever is bitten by a vector mosquito, the mosquito is infected and it may spread the disease by biting other people. The disease cannot be spread directly from human to human. In Hong Kong, the principal vector *Aedes aegypti* is not found, but *Aedes albopictus*, which can also spread the disease, is a mosquito commonly found in Hong Kong.

Incubation period

The incubation period ranges from 3 – 14 days, commonly 4 – 7 days



Management

There is no specific treatment for dengue fever and severe dengue. Dengue fever is mostly self-limiting. Symptomatic treatment is given to relieve discomfort. Patients with severe dengue should be treated promptly with supportive management. The mainstay of treatment is to maintain the circulating fluid volume. With appropriate and timely treatment, mortality rate is less than 1%.

Prevention

At present, there is no locally registered dengue vaccine available in Hong Kong. The best preventive measure is to eliminate pockets of stagnant water that serve as breeding sites for mosquitoes, and to avoid mosquito bites.

General measures on preventing mosquito-borne diseases

Protect ourselves against mosquito bites

- 1 Wear loose, light-coloured, long-sleeved tops and trousers
- 2 Use DEET-containing insect repellent on exposed parts of the body and clothing
- 3 Take additional preventive measures when engaging in outdoor activities:
 - Avoid using fragrant cosmetics or skin care products
 - Re-apply insect repellents according to instructions
- 4 Special notes when travelling abroad:
 - If going to affected areas or countries, arrange a consultation with doctor at least 6 weeks before the trip, and have extra preventive measures to avoid mosquito bite
 - During the trip, if travelling in endemic rural areas, carry a portable bed net and apply permethrin (an insecticide) on it. Permethrin should NOT be applied to skin. Seek medical attention promptly if feeling unwell
 - Scientific studies have shown that infected persons can transmit the virus to mosquitoes through mosquito bites even if they remain asymptomatic or before their onset of symptoms, leading to further spread of the disease. Hence, travellers who return from affected areas should apply insect repellent for 14 days after arrival in Hong Kong to prevent mosquito bite. If feeling unwell e.g. run a fever, should seek medical advice promptly, and provide travel details to doctor



Help prevent mosquito proliferation

- 1 Prevent accumulation of stagnant water
 - Change the water in vases once a week
 - Avoid using saucers underneath flower pots
 - Cover water containers tightly
 - Ensure air-conditioner drip trays are free of stagnant water
 - Put all used cans and bottles into covered dustbins
- 2 Control vectors and reservoir of the diseases
 - Store food and dispose of garbage properly



Pregnant women and children of 6 months or older can use DEET-containing insect repellent. For children who travel to countries or areas where mosquito-borne diseases are endemic or epidemic and where exposure is likely, children aged 2 months or above can use DEET-containing insect repellents with a concentration of DEET up to 30%.

If you notice any mosquito breeding sites in public places, you may call the Food and Environmental Hygiene Department Hotline at 2868 0000.



Centre for Health Protection Website www.chp.gov.hk
 Health Education Infoline of the Department of Health **2833 0111**