



Dengue

What is dengue?

Dengue, sometimes called dengue fever or dengue haemorrhagic fever, is a viral infection that can be caught after being bitten by an infected mosquito. It is only transmitted by specific types (or breeds) of mosquitos that are found in more tropical areas of the world, including Asia, the Pacific, Central and Southern America, Africa, and northern parts of Australia.

Dengue can be caused by one of four dengue viruses: dengue virus 1 (DENV-1), 2 (DENV-2), 3 (DENV-3) and 4 (DENV-4).

What are the symptoms?

People with dengue begin to show symptoms between 3 and 14 days (usually 4-7 days) after being bitten by an infected mosquito.

The symptoms of dengue can vary depending on age – young children may have no or very mild symptoms, but older children and adults can develop a range of symptoms, including:

- Sudden onset fever/chills (usually lasting about 6 days)
- Intense headache (especially behind the eyes)
- Swollen glands, muscle and joint pain (especially ankles, knees, and elbows)
- Gastrointestinal symptoms (loss of appetite, diarrhoea, vomiting, abdominal pain, metallic or unusual taste in the mouth)
- Flushed (red) skin on the face and neck (initially) and then a fine red skin rash over the body (usually day 3 or as the fever fades), which may be itchy or cause skin to peel
- Minor bleeding of nose and/or gums, and heavier menstrual periods in women
- Fatigue and lethargy (feeling tired and weak)

A small subset of people with dengue develop additional severe symptoms that can be life-threatening. When this occurs, it is sometimes referred to as dengue haemorrhagic fever or dengue shock syndrome. The progression to severe dengue usually occurs 3-7 days after the first symptoms appear, and usually as the fever starts to decrease. Severe dengue is more common among people who have previously had a dengue infection with a different dengue virus.

People developing any symptoms of severe dengue infection should seek medical attention immediately, as without proper medical care there is a high risk of severe complications (organ impairment/failure, severe bleeding, respiratory distress) and/or death. Symptoms to look out for include:



- Severe abdominal pain
- Persistent vomiting and/or if unable to drink
- Blood in vomit
- Rapid breathing
- Bleeding gums or nose, particularly if bleeding is hard to stop or control
- Unexpected bleeding or bruising
- Confusion, restlessness, or extreme fatigue
- Collapse or signs of shock (pale, cold, clammy/sweaty or blotchy skin, weak pulse)

How is it spread?

The dengue virus can be spread by two species (types) of mosquito: the Dengue mosquito (*Aedes aegypti*) and the Asian Tiger mosquito (*Aedes albopictus*). These mosquitoes become infected when they bite and feed on somebody who has dengue virus in their blood (during their dengue infection). Once the mosquito is infected, the virus multiplies inside the mosquito and it can infect other people when the it bites/feeds again.

Dengue is most common in urban (city/town/residential) areas, as the species of mosquito that spread dengue bite/feed almost exclusively on humans, rest inside buildings, and continue to bite throughout the day (not just at dawn and dusk like other mosquitos).¹

It is not possible to spread dengue directly from one person to another, however dengue could be transmitted through contact with blood that is infected with dengue virus. Spread could occur through needlestick injuries, mucous membrane contact with infected blood, blood transfusions, and tissue or organ transplants. You should avoid donating blood if you have (or think you have) dengue.

Who is at risk?

Anyone can catch dengue. People most at risk are those who travel to dengue affected areas and areas with dengue-transmitting mosquitos (*Aedes aegypti* and *Aedes albopictus*). These mosquitoes live in many tropical countries throughout Asia, the Pacific, Central and Southern America, Africa, and northern parts of Australia. Currently *Aedes aegypti* is found in coastal regions of Queensland north of Gladstone, while *Aedes albopictus* is found in the Torres Strait. Outbreaks occasionally occur in Queensland, particularly around Cairns and Townsville.

People with dengue usually develop long-lasting protection against that particular dengue virus, but they are still susceptible to infection with the other dengue viruses and may be at higher risk of severe symptoms if infected again (with a different dengue virus).



How is it prevented?

The best way to prevent dengue infection is to protect yourself against mosquito bites, especially when in areas where dengue-transmitting mosquitoes are present. Dengue-transmitting mosquitoes aggressively bite during the day (both in full sun and in the shade/indoors), as well as in the evening and into the night.¹ To protect yourself against mosquito bites:

- Cover-up with a loose-fitting long-sleeved shirt and loose-fitting long pants when outside
- Apply (and regularly re-apply) mosquito repellent to exposed skin
- Where possible, stay and sleep in accommodation with screened and air-conditioned rooms. If this is not possible, use a mosquito bed net if the area where you are sleeping is exposed to the outdoors or unscreened. Mosquito nets are most effective when they are treated with a pyrethroid insecticide, such as permethrin. Pre-treated mosquito nets can be purchased, or nets can be treated after purchase
- Before travelling, check the [Smartraveller.gov.au website](https://www.smartraveller.gov.au) or the [HealthMap Dengue website](#) for health information specific to the destinations you are travelling to
- When travelling, avoid known areas of high local dengue (or other mosquito-borne disease) activity or outbreaks.

How is it diagnosed?

If a person has symptoms of dengue after travelling to an area with dengue activity, a doctor may request a blood test. Blood tests can show whether there are antibodies (produced by the immune system) to dengue virus which can indicate the person may have had dengue infection.

Blood samples are usually taken while the person still has symptoms or as soon as possible after their symptoms have stopped. A second test is sometimes done 2-4 weeks later to see if there has been a change in the antibody levels.

How is it treated?

There is no specific treatment for dengue infection. People with dengue should seek medical advice, rest and drink plenty of fluids. Paracetamol can be taken to bring down fever and reduce joint pains. However, aspirin or ibuprofen should not be taken since they can increase the risk of bleeding.

For severe dengue, emergency medical care is required. People developing any symptoms of severe dengue infection should seek medical attention immediately, as without proper medical care there is a high risk of severe complications (organ impairment/failure, severe bleeding, respiratory distress) and/or death.



What is the public health response?

When laboratories confirm dengue infection in an ACT resident, they are required to notify ACT Health. ACT Health investigates each case to determine where the person acquired the infection. This helps to inform travel alerts and other public health messaging, as well as outbreak/mosquito control activities (if the infection was acquired in Australia).

Need more information?

For more information about dengue contact your doctor or call the Health Protection Service, Communicable Disease Control Information Line during business hours on **(02) 5124 9213**.

Communicable Disease Control Section at the Health Protection Service is responsible for the investigation and surveillance of notifiable or infectious conditions in the ACT in order to control or prevent their spread in the community. This includes the promotion of immunisation, education and other strategies that help to limit the spread of diseases.

Dengue is a notifiable disease. Cases notified to ACT Health are investigated by Public Health Officers.

Acknowledgements

1. Webb C, Doggett S, Russell R (2016), *A Guide to Mosquitos of Australia*, Clayton South, Victoria: CSIRO Publishing.

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