

Japanese Encephalitis Virus – Important facts you need to know

What is the Japanese Encephalitis Virus (JEV)?

Japanese Encephalitis (hereafter in this Safety Alert will be referred to as “JEV”) is a rare type of viral brain infection that is spread through mosquito bites.

JEV is a mosquito-borne flavivirus, and belongs to the same genus as dengue, yellow fever and West Nile viruses.

There are approximately 68 000 clinical cases of JEV globally each year, with approximately 13 600 to 20 400 deaths. JEV primarily affects children. Most adults in endemic countries have natural immunity after childhood infection, but individuals of any age may be affected.

Currently, there is a high level of JEV activity in Southeast Queensland, New South Wales, this week in South Australia as a result of the extreme weather event and mass flooding Australia’s Eastern Seaboard is experiencing.

What are the Symptoms?

The majority (about 99%) of JE infections in people cause no symptoms. Some infected people will experience:

- Fever and headache
- For those with a severe infection, they may experience neck stiffness and disorientation
- Tremors
- Coma and paralysis
- Convulsions (especially in children). JEV can cause permanent neurological complications or death.
- Symptoms (if they are to occur), usually develop 5 to 15 days after being bitten by infected mosquitoes.

How is the virus spread?

Mosquitoes can become infected with JEV and then transmit the virus whilst they are feeding on human blood. People with the infection do not transmit the infection to other people but may infect mosquitoes if bitten while they still have the virus in their blood.

Who is at risk?

JEV occurs throughout most of Asia and parts of the Western and South Pacific. Transmission primarily takes place in rural agricultural areas, often associated with rice cultivation and flooding irrigation.

For most travelers, the risk of acquiring JEV is very low. People at the greatest risk of becoming infected are those who are staying longer than a month in rural areas in countries where the disease is endemic or in some of the Torres Strait Islands – most recently in Southeast Queensland.

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People who are in contact with known mosquito habitats and who live in warm, humid climates near bodies of water will be most risk of infection. JEV infections are rare, however not uncommon as this mosquito borne infection in Australia, and infections occurs in many rural areas in NSW. Infections are uncommon (but have been recorded) in major cities and towns. Outbreaks can occur when local conditions of rainfall, flooding, tides and temperature promote mosquito breeding.

How can JEV be prevented?

There currently aren't any vaccines against RRV, however the best method of reducing the risk of diseases mosquitoes transmit:

- A JEV Vaccine is available for people aged 12 months and older and is recommended for any travelers spending one month or more in rural or high-risk areas.
- For more detailed JEV vaccination advice please refer to:
<https://immunisationhandbook.health.gov.au/vaccine-preventable-diseases/japanese=encephalitis>
- <https://www.health.gov.au/health-topics/japanese-encephalitis>
- Wear loose-fitting long-sleeved shirts and long pants when outside near bodies of fresh and / or blackwater
- Liberally apply mosquito repellent to exposed skin
- take special care during peak mosquito biting hours, especially around dawn and dusk
- remove potential mosquito breeding sites from around the home and screen windows and doors
- take extra precautions when travelling or camping in areas with a higher risk of mosquito-borne diseases

In addition to the general protection measures above, overseas travellers should also:

- stay and sleep in rooms with flyscreens or air-conditioning
- use a bed net if the area where you are sleeping is exposed to the outdoors. bed nets are most effective when they are treated with a pyrethroid insecticide, such as permethrin. Pre-treated bed nets can be purchased before travelling, or nets can be treated after purchase.
- avoid known areas of high mosquito-borne disease transmission or outbreaks.

How is it diagnosed?

A laboratory test is required in order to confirm JEV infection and to rule out other causes of encephalitis. Confirmatory laboratory testing for JEV-Specific antibodies in a single sample of cerebrospinal fluid (CSF) or serum and efforts are undertaken to expand laboratory-based surveillance. Case-based surveillance is established in countries that effectively control JEV through vaccination in Australia.

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How is it treated?

There is no antiviral treatment for patients with JEV and treatment is supportive to relieve symptoms and stabilize the patient.

What is the public health response?

Laboratories diagnosing cases of JEV must notify the local public health unit. Public health units follow up each case to determine where the person acquired the infection from. This information is important to assist identifying if transmission is occurring in areas considered to be low-risk and to prevent transmission.

For further information please call your local public health unit on **1300 066 055**.

Further information:

- [Mosquitoes are a Health Hazard fact sheet](https://www.health.nsw.gov.au/Infectious/factsheets/Pages/mosquito.aspx)
<https://www.health.nsw.gov.au/Infectious/factsheets/Pages/mosquito.aspx>
- For more information, please call your local public health unit on **1300 066 055** or your HSEQ Officer on 0477 355 901

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