

Japanese Encephalitis

What is Japanese Encephalitis?

Japanese encephalitis (JE) is a vaccine preventable disease caused by the JE virus. The disease presents most commonly as an acute encephalitis which is inflammation of the brain tissue.

How is it spread?

The JE virus is spread by the bite of an infected mosquito. It cannot be spread from person to person.

Pigs and wild water birds such as herons and egrets play an important role in the spread of JE virus. The virus multiplies in infected pigs, leading to very high levels in their blood. Mosquitoes feeding on infected pigs or water birds are highly likely to pick up the virus and may then spread it to humans.

Where and when is the virus found?

JE virus is widespread throughout Asia.

In 1995 the first human case of JE in Australia was reported from Badu Island in the Torres Strait., with a few further cases reported since from the Torres Strait and one from the mainland on Cape York.

The first case of JE in the Northern Territory (NT) occurred on the Tiwi Islands in February 2021 and an outbreak of JE was detected in Australia's eastern states in early 2022. JE was declared a Communicable Disease Incidence of National Significance on 4 March 2022 with an undertaking to better understand the extent of JE virus in Australia and to put control measures in place including a vaccination roll out starting with those individuals determined to be most at risk.

The risk to humans is greatest during or just after the wet season when large numbers of the common banded mosquito are present. Humid conditions allow mosquitoes to live longer, which provides more chance for a mosquito to pick up the virus from an animal and live long enough to pass it on to humans. Currently, the risk in the NT is considered high in areas close to wetlands where mosquitoes, water birds and feral pigs are present and there is significant exposure to mosquitoes. In 2022, the JE virus has been found in feral pigs across the Top End of the NT, with the mosquitoes capable of spreading the virus also widespread.

How serious is Japanese Encephalitis?

JE is a potentially fatal disease, however it is estimated that only 1 in 30-300 people bitten by an infected mosquito will become ill. Of people who develop the disease, 10 to 30% will die, up to 50% will recover but have permanent disability and about 25% will recover completely. Disease occurs in all age groups, however JE vaccines offer robust protection.

What are the symptoms?

It usually takes five to 15 days between getting bitten and becoming unwell. Symptoms include; headaches, fever, seizures or fits (especially in young children), neck stiffness, drowsiness, confusion and progression to delirium and coma in severe cases.

What is the treatment?

There is no specific treatment for JE disease.

How can Japanese Encephalitis be prevented?

There are two ways to prevent JE:

1. Vaccination
2. Avoid being bitten by mosquitoes using personal protective measures - protection against mosquito bites is always recommended in the NT to guard against any mosquito borne disease. It is always important to ensure children are protected from mosquito bites.

Vaccination

A JE vaccine is available and is recommended for:

- travellers spending one month or more in rural areas of Papua New Guinea, East Timor or Asia, particularly if travel is during the wet season, and/or there is considerable outdoor activity and/or the standard of accommodation is suboptimal
- travellers spending a year or more in Asia (except Singapore), even if most of the stay is in urban areas
- all residents (over one year of age) of the outer islands in the Torres Strait
- anyone who will be living or working on the outer islands of the Torres Strait for a cumulative total of 30 days or more during the wet season (Nov to April)
- NT residents or visitors according to the risk-based NT JE Vaccination Strategy, targeting those in particular occupational groups or visiting/residing in areas of greatest risk

Read more about [JE vaccines](#) on the Australian Government's health website.

Personal protective measures

- Avoid being outside when mosquitoes are most active, from just before sunset, during the night and early in the morning.
- Avoid areas with numerous mosquitoes in close proximity to wetlands, especially where birds and feral pigs might be present.
- Use protective clothing in outdoor situations including covering feet, legs, and arms. Loose, light-colored clothing is best.
- Use personal repellents containing DEET, picaridin or oil of lemon eucalypt (PMD) on areas of exposed skin in combination with protective clothing.
- Use mosquito coils, or candle heated or gas operated devices using insecticide treated pads for patio and veranda or relatively sheltered or low wind outdoor situations.
- Ensure fly-screens in houses or caravans are in good condition.
- If camping out, either sleep in a mosquito-proof tent or under a mosquito net. Repellents only protect against mosquito bites for up to 4 hours, not all night.

For more information on protection measures see [Protecting yourself against mosquitoes](#)

For more information on mosquitoes and virus ecology contact [Medical Entomology at the Centre for Disease Control](#) on 8922 8901.