

*Japanese encephalitis is a mosquito borne viral disease that can cause reproductive losses and encephalitis in susceptible animal species. It is caused by the Japanese encephalitis virus which is a member of the Flavivirus genus.*

### HOW IS JAPANESE ENCEPHALITIS SPREAD?

The Japanese encephalitis virus is primarily spread by mosquitoes feeding on infected animals and does not usually spread directly from animal to animal (i.e. it is not considered contagious). Certain types of mosquitoes, such as *Culex* spp. can become infected with Japanese encephalitis virus. These mosquitoes tend to most active at dawn and dusk.

Infected pigs and wading birds do not transmit the infection to other animals but may infect mosquitoes if bitten while they still have the virus in their blood.

In general, the virus is spread through the movement of infected mosquitoes often over long distances due to wind dispersal. The virus can also be spread through the movement of migratory birds who carry the virus but are not affected by it.

### WHICH ANIMAL SPECIES ARE AFFECTED BY JAPANESE ENCEPHALITIS?

Japanese encephalitis disease occurs most commonly in pigs. Horses can also be infected and rarely other animals.

Pigs and waterbirds such as herons and egrets are an important part of the transmission cycle as they can amplify the virus and provide an ongoing source of Japanese encephalitis virus to infect local mosquito populations.

In 2022, South Australia had a confirmed case of Japanese encephalitis in an alpaca in the Adelaide Plains Local Government Area.

Alpacas, like horses, are considered an “end” host, where they do not develop a blood infection that will reinfect mosquitoes.

### WHAT ARE THE CLINICAL SIGNS OF JAPANESE ENCEPHALITIS VIRUS?

#### Pigs

In pigs the most common clinical signs are mummified and stillborn or weak piglets, some with neurological signs. In a previously uninfected population, litters from sows and gilts would be expected to be equally affected.

Adult sows do not typically show overt signs of disease. Boars, if present on farm, may experience fever, infertility and swollen testicles.

#### Horses

In horses many cases are asymptomatic and most clinical disease is mild, however more severe encephalitis (inflammation of the brain) can occur which may be fatal. Signs include:

- Fever
- lethargy
- anorexia
- neurological signs which vary with severity of the clinical disease.

Neurological signs can include incoordination, difficulty swallowing, impaired vision, and rarely a hyperexcitable form occurs. Disease has also been reported in donkeys.

#### Other species

Reports of disease in other species are rare and affected animals may show non-specific clinical signs such as fever and decreased appetite or neurological signs.

### WHAT DO I DO IF I SUSPECT JAPANESE ENCEPHALITIS IN MY ANIMALS?

Japanese encephalitis is classed as a notifiable disease in Victoria. If you suspect Japanese encephalitis in any animal, especially in pigs or horses showing any clinical signs, immediately contact your local Agriculture Victoria staff or phone the all-hours Emergency Animal Disease Watch Hotline [1800 675 888](tel:1800675888).

### WHAT ARE THE HUMAN SYMPTOMS OF JAPANESE ENCEPHALITIS?

A small number of people infected with JE virus may become seriously ill with encephalitis (inflammation of the brain). Other people may develop an illness with fevers, headaches and aches and pains.

Symptoms of encephalitis may include rapid onset of fever, headache, sensitivity to light, neck stiffness, vomiting, confusion or disorientation and sometimes seizures, progressing to coma. Anyone experiencing symptoms, particularly if they've visited regions near the border of Victoria and New South Wales or been in contact with pigs or with mosquitoes should seek urgent medical attention.

### I THINK I HAVE JAPANESE ENCEPHALITIS – WHAT SHOULD I DO?

Most human cases of Japanese encephalitis will have no symptoms or very mild symptoms, but anyone who develops a sudden onset of fever, headache and vomiting should see their doctor immediately.

Any person who is experiencing any of the symptoms should seek urgent medical attention. Please visit the [Department of Health website for public health advice](#).

### HOW CAN I PROTECT MYSELF FROM JAPANESE ENCEPHALITIS VIRUS?

The best protection is to avoid mosquito bites by:

- using mosquito repellent containing picaridin or DEET on all exposed skin
- wearing long, loose fitting clothing when outside and
- ensuring accommodation, including tents, are properly fitted with mosquito nettings or screens.

People with increased exposure to mosquitoes may be at a higher risk of infection, particularly those in regional areas and who work with or are in contact with pigs, and people camping, working or spending time outdoors in these regions.

### HOW CAN I REDUCE THE RISK OF SPREAD?

Japanese encephalitis virus is primarily spread through mosquitoes, or animal management practices that involve penetrating the skin, e.g. vaccination or blood collection.

Insecticide can be used to reduce mosquito numbers and minimise further spread of the virus.

To minimise the risk of spreading the virus through management practices, avoid sharing needles between animals when injecting, and thoroughly wash and decontaminate other equipment between animals. Reducing mosquito habitats and exposure to mosquitoes is an important part of breaking the transmission cycle.

## WHAT IS THE GOVERNMENT'S RESPONSE TO JAPANESE ENCEPHALITIS VIRUS?

The Victorian Government continues to work to understand the extent of Japanese encephalitis virus infection in domestic animal populations and advise on measures that can reduce spread in order to support public health agencies and minimise economic impacts. Agriculture Victoria is working closely with Department of Health to coordinate ongoing public health response activities.

### MORE INFORMATION

For information related to public health please visit the:

- [Victorian Department of Health website](#)
- [Better Health Channel on Viral encephalitis](#)
- [Beat the Bite](#)

### ACCESSIBILITY

If you would like to receive this publication in an accessible format, please telephone Agriculture Victoria on 136 186.

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