

Japanese encephalitis

By Alina Ellerington, Encephalitis International and peer-reviewed by Dr Hannah Brindle, Dr Lance Turtle, University of Liverpool, UK and Dr Ava Easton, Encephalitis International, UK. Updated by Dr Tehmina Bharucha, The Francis Crick Institute, Imperial College Healthcare NHS Trust, Imperial College London, UK

What is Japanese encephalitis (JE)?

JE is a type of infectious encephalitis caused by Japanese encephalitis virus (JEV). The virus is found in pigs and birds and is transmitted by Culex mosquitoes which breed in water pools and flooded rice fields which bite mainly during the night or just after sunset. The virus cannot be transmitted directly from person-to-person.

JE occurs mostly in the Asia-Pacific region with nearly three billion people living in at-risk areas and approximately 100,000 estimated cases annually. A vaccination programme is now in place in many affected countries however, it continues to cause a huge health and economic burden.

Symptoms of Japanese encephalitis

Most people who are infected have only mild or no symptoms, with only about 1 in 250 infections causing brain inflammation. The time from infection to developing symptoms is between 4-14 days. The illness can present with fever, chills, headache, muscle pain and spasm, movement disorders, seizures (particularly in children) and a reduction in the level of consciousness.

Diagnosis

The symptoms of Japanese encephalitis are not specific for this illness. People living/travelling in the endemic areas should be suspected and tested for JEV if they present with symptoms of encephalitis (fever, seizures, a change in consciousness level or neurological signs). Diagnosis can be confirmed, usually, by finding specific antibodies in the cerebrospinal fluid (CSF) following a lumbar puncture (LP or spinal tap) or in the blood.

Treatment

There is no specific antiviral treatment for Japanese encephalitis. The treatment is mostly symptomatic and supportive. In the severe cases, the treatment aims to manage seizures and raised intracranial pressure (due to brain inflammation) and support breathing.

Consequences of Japanese encephalitis

JE can be a devastating disease for patients and their families. Estimates of death are very variable ranging from 5-50% and nearly half may be left with neurological, psychosocial, cognitive (intellectual) and/or physical disabilities.

Prevention

People can take precautions such as wearing mosquito repellent, wearing long sleeves and trousers to avoid being bitten and ensuring their homes and communities are free from stagnant water when mosquitoes gather and lay their eggs.

Safe and effective vaccines are available to prevent JE. The WHO recommends that JE vaccination be integrated into national immunization schedules in all areas where JE disease is recognized as a public health issue.

In addition, all travellers to areas where JE is endemic should seek travel health advice including the need for vaccination.

More information on prevention and guidelines for travellers is provided on our website

www.encephalitis.info/encephalitis-guidelines-for-travellers

FS006V6 Japanese encephalitis

Date created: March 2002/Last updated: March 2026/ Review date: March 2029

Disclaimer: We try to ensure that the information is easy to understand, accurate and up to date as possible. If you would like more information on the source material and references the author used to write this document, please contact Encephalitis International. None of the authors of the above document has declared any conflict of interest, which may arise from being named as an author of this document.

Support our information

With our support, no one has to face encephalitis alone. Our advice and information are available free of charge to everyone affected but we are truly grateful when supporters feel able to contribute a little to the cost of these resources. Please donate today by visiting www.encephalitis.info/donate

Thank you!

Encephalitis International, 32 Castlegate, Malton, North Yorkshire, YO17 7DT, UK

Administration: +44 (0) 1653 692583 **Support:** +44 (0) 1653 699599

Email: mail@encephalitis.info **Website:** www.encephalitis.info

Encephalitis International is a registered Charity and Company Limited by Guarantee.

Registered in England and Wales No. 04189027. Registered Charity No. 1087843.

Registered Charity in Scotland: SC048210.

Encephalitis International is a Named Fund member of the Chapel & York US Foundation, Inc. The Chapel & York US Foundation, Inc. is a 501(c)(3) tax-exempt organisation.