

## Japanese Encephalitis

Japanese encephalitis is a mosquito-borne disease in humans, horses, swine, birds and other domestic animals. About 90% of all cases are without symptoms. The case-fatality rate of persons infected is between 20-50% in cases of apparent disease and there is a high rate of neurologic aftermath which may include mental retardation, personality changes, and motor and speech disorders. There have been large outbreaks in Japan (especially Okinawa), Korea, China and Taiwan. Infection was an important cause of encephalitis and fever of unknown origin in American troops in World War II, Korea and Viet Nam. It should be considered as a possible cause of fever of unknown origin in Americans recently returned from Asian travel. The incubation period is from 4 to 14 days.

Japanese B encephalitis has been recognized in southern Nepal and northern India and is known to be endemic in areas of southern India. Additionally, it has undergone a resurgence recently on the Korean peninsula. The disease is prevalent in all Chinese provinces except Xinjiang, Chenghai, and Tibet. China reports over 10,000 cases of the disease annually. Additionally, there are reports of increased incidence in Thailand, especially in the northern and northeastern regions. The geographical regions of risk also include Bangladesh, Burma, Domestic Kampuchea, Indonesia, Laos, Malaysia, the Philippines, Singapore, Sri Lanka. Taiwan, eastern areas of the Union of Soviet Socialist Republics and Viet Nam.

**The symptoms of Japanese encephalitis** may appear abruptly, or more slowly over a period of a week or more. The beginning symptoms are flu-like and include headache, tiredness, sore throat, nausea, lack of appetite, chills, vomiting, aching or weakness in the extremities. Fever is rarely high, varying from 101<sup>0</sup> to 102<sup>0</sup>F. In severe infections, the conditions progresses to a state of stupor followed by coma and convulsions or paralysis. The disease can be fatal.

**The overall risk to American travelers** is generally perceived to be quite low, especially for short-term urban visits. High risk situations involve individuals traveling to rural areas especially where rice cultivation and pig farming are prevalent and for persons staying for periods longer than three weeks during periods of disease activity. In temperate zones such as China, Korea and Japan, this generally involves only the summer months (although cases of transmission have been reported in February and March). In tropical and sub-tropical climates in India and Southeast Asia, the endemic period is throughout the year. All travelers to endemic zones should utilize personal protective measures against mosquitoes.

<b>PROTECTIVE MEASURES</b>
<ul style="list-style-type: none"> <li>• sleep in screened quarters or under mosquito netting</li> <li>• wear clothing that leaves very little exposed skin</li> <li>• use insect repellents, <i>preferably repellents that contain 30% active ingredient of N, N-di-ethyl-meta-toluamide (DEET)</i></li> <li>• also effective is permethrin, sold as Permanone in the United States (<i>the chemical applied to clothing and netting</i>)</li> </ul>
<b>VACCINE INDICATION</b>
<ul style="list-style-type: none"> <li>• Vaccination should be considered by persons traveling to areas currently listed as high risk.</li> </ul>
<b>RISK IS LOW</b> for travelers who
<ul style="list-style-type: none"> <li>• confine travel to mosquito free urban areas</li> <li>• plan short-term visits of less than three weeks</li> </ul>
<b>RISK IS GREATER</b> for persons who will be living in
<ul style="list-style-type: none"> <li>• endemic or epidemic areas for more than three weeks</li> <li>• urban areas where mosquitoes can breed</li> <li>• rural areas, particularly where rice culture and pig farming are common</li> </ul>

Japanese Encephalitis vaccine is locally available, and should be administered 6 - 8 weeks before departure abroad. The Japanese B encephalitis vaccine is an alcohol precipitated and inactivated mouse brain vaccine which is used in millions of northern Asian residents and shown to have an efficacy of about 80%. Manufacturer's recommendations vary from 2 to 3 doses. Recent limited study in the United States suggests a 3-dose primary series may be preferable. Because of the possibility of significant side effects for several days after receiving the vaccine, do not travel for 10 days. Remain in areas where there is quick access to medical care.

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*The Center for Disease Control information about the vaccine may be obtained in our International Travel Care Clinic.*