

# Japanese encephalitis

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Japanese encephalitis (JE) is a viral infection of the brain transmitted to humans by mosquitoes in parts of Asia and the Western Pacific. The mosquitoes that transmit JE feed mostly at night, between dusk and dawn and are prolific in rural areas, where rice cultivation and pig farming are common. Although, the mosquitos may also be found in peri urban locations.

The risk for most travellers to Asia is very low, especially for short-term travellers visiting urban areas. The overall incidence of JE among people from non-affected countries travelling to Asia is estimated to be less than one case per 1 million travellers. Risk for the traveller depends on their: destination, duration of travel, season and activities. Risk increases for people who intend to live or travel in risk areas for long periods of time and plan to visit rural areas. Certain activities, even during short trips, where there is significant rural, outdoor or nighttime exposure e.g. fieldwork or camping can increase the traveller's risk.

Most human infections with JE virus are mild or have no symptoms. When symptoms do occur, they include fever, headache and confusion. In symptomatic cases requiring hospitalisation, death rates are high and neurological complications are common.

## Prevention

The risk of acquiring JE can be reduced by insect bite avoidance, particularly between the hours of dusk and dawn, when *Culex* mosquitoes are most active.

## Japanese encephalitis vaccine

A licensed JE vaccine; IXIARO® is available and is recommended for individuals at increased risk of exposure during travel or through their occupation.

### IXIARO® vaccine schedule

Age range	Dose	Primary course	Reinforcing immunisation
Under 2 months of age	Not usually recommended  (no safety or efficacy data)	-	-
Children aged 2 months to under 36 months of age	0.25ml (discard half of the vaccine)*	2 doses: Day 0 and 28  See also accelerated schedule***	For those at ongoing risk** a single first booster dose of IXIARO® 12 months after primary immunisation is

<p>Children aged 3 to 17 years</p>	<p>0.5ml</p>	<p>2 doses: Day 0 and 28  See also accelerated schedule***</p>	<p>recommended.  Others should be offered a first booster dose at 12-24 months following the primary course, prior to re-exposure to JE virus.  Duration of protection, beyond three years after the first booster is uncertain.</p>
<p>Adults 18 to 64 years</p>	<p>0.5ml</p>	<p>2 doses: Day 0 and 28  See also accelerated schedule***</p>	<p>For those at ongoing risk** a single dose of IXIARO® booster 12 months after primary immunisation is recommended.  Others should be offered the first booster dose at 12-24 months following the primary course prior to re-exposure to JE virus.  A 2nd booster (4th dose) should be offered at 10 years for those who remain at risk.</p>
<p>Adults aged 65 years and older</p>	<p>0.5ml</p>	<p>2 doses: Day 0 and 28  See also accelerated schedule***</p>	<p>For those at continued/further risk a single dose of IXIARO® booster at 12 months should be considered.  The duration of protection is uncertain for the primary course.  The length of protection following a booster dose (3rd dose) is not known. Response to the vaccine may be reduced in this age group and immunity</p>

		may wane before 10 years.
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**\*See IXIARO® Summary of Product Characteristics for details on preparing the 0.25 ml dose for children aged 2 months to less than 3 years.**

**\*\*Long-term travellers who expect to reside in endemic areas for appreciable periods of time.**

**\*\*\*See also accelerated schedule below.**

## Accelerated schedule

Adults aged 18-65 years can be vaccinated using a licensed accelerated schedule as follows: first dose at day 0, second dose: 7 days after first dose. With both schedules, the primary immunisation schedule (first and second dose) should be completed at least one week prior to potential exposure to JE. Use of this accelerated schedule can also be considered off-license for travellers 2 months-17 years of age and those over 65 years of age when time is short.

In situations where the primary course (days 0, 28 or days 0, 7) plus the first booster has been interrupted, the schedule should be resumed, and not restarted.

IXIARO® is available in a small number of Asian countries. Therefore, travellers may not be able to complete their vaccination course overseas with this vaccine. It is recommended that vaccinees who received the first dose of IXIARO® complete the primary two-dose vaccination course with IXIARO®.

## Resources

- More detailed information can be found in our [Japanese encephalitis factsheet](#)
- [UKHSA: Immunisation against infectious disease. Japanese encephalitis.](#)
- Further details on the vaccines can be found on the [Summary of Product Characteristics \(SPC\) on the electronic medicines compendium](#)