

How We Made This Decision Aid

This document explains:

- How we gathered and reviewed information for the decision aid
- The sources and quality of evidence we used
- The options we presented
- Our process for creating the decision aid
- Where the traveller stories come from
- The reading level of the content
- How often we plan to update it

Gathering and Reviewing Information

We looked for studies on how often travellers get Japanese encephalitis (JE) and the outcomes of the illness. We also looked at how well the vaccines (Imojev and JEspect) work and their side effects. To do this, we searched large databases (MEDLINE, EMBASE, Scopus) and reviewed guidelines from groups like the Australian Technical Advisory Group on Immunisation (ATAGI) and the U.S. Advisory Committee on Immunization Practices.

To find higher-risk areas for travellers, we reviewed data on JE cases in both residents and visitors to risk areas. We also looked at reports of JE cases from the Australian National Notifiable Diseases Surveillance System (NNDSS) and other global sources like the World Health Organization (WHO).

Our steering group reviewed and agreed on the evidence we used. We published some of our findings in a review article.¹

Sources and Quality of Evidence

We based our decision aid on the best quality and most relevant research we could find.

For the risk map in Step 2, we looked at data from people living in JE-risk areas and travellers who visited those countries. We classified countries by JE risk using a method developed by our colleagues.² We estimated how often people get JE in each country (incidence) based on average annual JE cases reported to WHO up to 2021 and total population from the World Bank for the same year. We categorised the risk of JE as follows:

- Lowest: Less than 0.1 cases per million people per year
- Low: 0.1 to 1 case per million
- Medium: 1 to 2 cases per million
- Highest: more than 2 cases per million

We adjusted these categories based on published cases of JE in travellers¹ and reported cases from Australia's NNDSS from 2012 to 2020. We classified Thailand and Indonesia as "highest" risk for travellers as these are the most common places where travellers get JE.

To find out how well JE vaccines work and what side effects they may have, we looked for reliable studies. We focused on randomised trials where people who received the JE vaccine were compared to those who got a different vaccine (like hepatitis A) or an injection of a harmless substance (placebo). Since JE is rare, there aren't any studies that directly show how well the vaccines prevent the disease. Instead, we looked for studies that measured how many vaccinated people developed enough antibodies to protect them. Because our decision aid is mainly for Australian travellers, we looked for vaccine studies that included people living in Australia or in countries where JE doesn't occur.

We found high-quality studies of JE vaccines in adults living in the USA, Europe, and Australia. However, we didn't find studies of JE vaccines in children living outside of Asia. So

we used studies involving children living in Thailand and the Philippines who had never received the JE vaccine. These studies helped us provide information in our decision aid about how many people are protected by JE vaccines, how long that protection lasts, and what side effects have been reported.

We also searched for studies on how well avoiding mosquito bites prevents Japanese encephalitis (JE). While we didn't find any studies involving travellers, we did find one study from India. This study compared JE infection rates in JE risk areas where people used treated bed nets with rates in areas without bed nets.

The Options Presented

In our decision aid, the options are to "Get the JE vaccine (Imojev or JEspect)" or "Don't get the JE vaccine." We included information about both JE vaccines available in Australia. To make it easier to recognise and identify the vaccines, we used their brand names (Imojev and JEspect), which is common in vaccine information. This helps avoid confusion when there are different vaccines for the same disease. We made sure the information about both vaccine options is clear and balanced, so people can make informed choices without bias. The vaccines are listed in alphabetical order, with no preference for either option. We also provided information on avoiding mosquito bites. This is important for everyone visiting an area with JE risk, no matter what they decide about the vaccine.

Making the Decision Aid

We followed the [International Patient Decision Aid Standards](#) and used a method called co-design. This means that we worked closely with community members and healthcare providers to make the tool helpful and easy to use. First, we held workshops to find out what information people needed. Then, we reviewed the best available research and asked for input on how to present it clearly. We worked with a graphic designer to create a draft (PDF) and shared it with more community members and healthcare providers for feedback. We also had experts check the content for accuracy. We used all this feedback to create the final tool and adapt it for the website.

Traveller Stories

The traveller stories in this decision aid are based on real experiences from people seen at a travel clinic. The travellers gave their consent for us to use their stories, and we changed details like their names and ages to protect their privacy. We chose stories that showed a range of choices, like not getting vaccinated, getting JEspect, or getting Imojev.

Reading Level of the Content

We aimed to make the content easy to read, targeting an 8th-grade reading level. To do this, we carefully reviewed the text and worked with a community member who has experience in science communication. We also tested the text with other community members to make sure it was clear and easy to understand. We used readability tools to check the text and confirm it was close to our target level. We avoided using too many medical terms and included a glossary for any terms that might be confusing.

The table below shows the reading level for each part of the website, measured using the Simple Measure of Gobbledegook (SMOG) formula. A higher number means that a higher reading level is needed to understand the information.

Web page	Reading level
Home page	Grade 8.6
About this decision aid	Grade 10.0
Step 1 – Learn about the disease and vaccines	Grade 8.0
Step 2 – Compare the risks and benefits	Grade 9.7
Step 3 – Consider your situation	Grade 9.1
Step 4 – Next steps	Grade 10.5
Traveller stories	Grade 9.1
FAQs	Grade 9.4

Planned Updates

We plan to review the decision aid each year to keep it current. We will also make updates as needed when new research becomes available.

References

1. McGuinness SL, Muhi S, Britton PN et al. Japanese Encephalitis: Emergence in Australia. *Curr Infect Dis Rep.* 2023; 25:111–122. <https://doi.org/10.1007/s11908-023-00804-w>
2. Lau CL, Mills DJ, Mayfield H et al. A decision support tool for risk–benefit analysis of Japanese encephalitis vaccine in travellers. *J Travel Med.* 2023; 20(7):taad113. <https://doi.org/10.1093/jtm/taad113>