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| Japanese encephalitis (JE) virus vaccination |
| Information for immunisation providers – Version 10 |
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# Vaccination

## Who JE vaccine is recommended for?

**In Victoria, JE vaccine is available free-of-charge and recommended for people most at risk:**

**High-risk local government areas**

People aged 2 months or older who live or routinely work in any of the following local government areas of Campaspe, Gannawarra, Greater Shepparton, Indigo, Loddon, Mildura, Moira, Swan Hill, Wodonga, Towong, Benalla, Wangaratta and Strathbogie **AND**:

* regularly spend time engaging in outdoor activities that place them as risk of mosquito bites, **OR**
* are experiencing homelessness, **OR**
* are living in conditions with limited mosquito protection (e.g. tents, caravans, dwellings with no insect screens), **OR**
* are engaging in outdoor flood recovery (clean-up) efforts, including repeated professional or volunteer deployments.\*

*\* Vaccination can be administered before arrival in flood affected areas to those from other regions deployed for recovery efforts by arrangement.*

The risk of exposure to mosquitoes is low at an elevation of greater than 500 metres. Therefore, JE vaccination is only recommended for individuals who spend significant time outdoors below this elevation in these LGAs.

**No restriction to local government areas**

* People who work at, reside at, or have a planned non-deferable visit to a:
	+ piggery, including but not limited to farm workers and their families (including children aged 2 months and older) living at the piggery, transport workers, veterinarians and others involved in the care of pigs
	+ property that has been confirmed to be infected with JE virus
	+ property suspected to be infected with JE virus
	+ pork abattoir or pork rendering plant.
* Personnel who work directly with mosquitoes through their surveillance (field or laboratory based) or control and management, and indirectly through management of vertebrate mosquito-borne disease surveillance systems (e.g., sentinel animals) such as:
	+ environmental health officers and workers (urban and remote)
	+ entomologists.
* All diagnostic and research laboratory workers who may be exposed to the virus, such as persons working with JE virus cultures or mosquitoes with the potential to transmit JE virus; as per the Australian Immunisation Handbook.

## [Vaccine information](https://immunisationhandbook.health.gov.au/vaccine-preventable-diseases/japanese-encephalitis#accordion-para-8691-184189)

Imojev® vaccine is prioritised in Victoria’s current public health response.

Imojev®, is available for people aged ≥9 months and requires only a single dose. Imojev® is contraindicated in some people because it is a live attenuated viral vaccine (Refer to Table 2). Women should avoid pregnancy for 28 days after vaccination.

Imojev® vaccine contains units of live attenuated recombinant Japanese encephalitis virus, mannitol, lactose, glutamic acid, potassium hydroxide, histidine and human serum albumin. No adjuvants or antibiotics are added. For further information, visit the [Therapeutic Goods Administration website.](https://www.ebs.tga.gov.au/ebs/picmi/picmirepository.nsf/PICMI?OpenForm&t=&q=Imojev)

If a person is eligible for a JE vaccine but cannot receive Imojev®, JEspect® can be used. JEspect® should only be used for people who meet the vaccination eligibility criteria AND are:

* Immunocompromised\*, OR
* aged 2 months to < 9months, OR
* pregnant or breastfeeding OR
* within 6 weeks (preferably 3 months) of receiving immunoglobulins or immunoglobulin- containing products.

\*For the purposes of JE vaccination, immunocompromise refers to people:

* with immune deficiency (including IFNAR1 deficiency)
* on immune suppressing therapies, such as chemotherapy, biological or targeted synthetic disease-modifying anti-rheumatic drugs, or high doses of systemic corticosteroids given for 14 days or more
* with HIV infection with uncontrolled viraemia

JEspect vaccine contains units of purified inactivated Japanese encephalitis virus and aluminium hydroxide. No preservatives or antibiotics are added. For further product information visit the [Therapeutic Goods Administration website.](https://www.ebs.tga.gov.au/ebs/picmi/picmirepository.nsf/PICMI?OpenForm&t=&q=JEspect)

Most people will develop protection within 14 days of receiving Imojev® vaccine and 28 days following a full course of JEspect® vaccine. It is important that people continue to protect themselves from mosquito-borne disease following vaccination.

Persons who require a booster dose following a previous course of JEspect® vaccine and are at risk for JE should speak with their immunisation provider. Booster doses following previous Imojev®-vaccine are not routinely recommended.

### Vaccine dose and route

The primary dose of the JEspect® vaccine depends on the age of the person: Refer to Table 1 and the [Australian Immunisation Handbook Japanese Encephalitis section](https://immunisationhandbook.health.gov.au/vaccine-preventable-diseases/japanese-encephalitis)[[1]](#endnote-2) for age related doses and schedule, precautions and contraindications.

Table 1. JE vaccine primary schedule dose and route

| Age at vaccination | Vaccine | Number of doses | Notes |
| --- | --- | --- | --- |
| ≥2 months to <18 years\* | JEspect®-IM injection | 2 doses (0,28 days) | Each dose of JEspect® in infants and children aged ≥2 months to <3 years is 0.25 mL, 28 days apart\*\*Children aged ≥3 years and adults should receive 2 doses, each of 0.5 mL, 28 days apart\*\* |
| ≥9 months to <18 years | Imojev®-SC injection | 1 dose | Live vaccine. Check contraindications and precautions prior to administration. |
| ≥18 years | Imojev®-SC injection | 1 dose | Live vaccine. Check contraindications and precautions prior to administration. |
| JEspect®-IM injection | 2 doses (0,28 days) | Adults are recommended to receive a primary course of JEspect® ( 2 x 0.5mL doses 0, 28 days)\* |

\* The Australian Product Information for JEspect currently states that this vaccine is for use in people aged ≥18 years. [Therapeutic Goods Administration (TGA)[[2]](#endnote-3).](https://www.tga.gov.au/) The Australian Technical Group on Immunisation (ATAG)I recommends that children and adolescents aged ≥2 months to <18 years can receive this vaccine. Refer to ATAGI [clinical guidance on Japanese encephalitis virus vaccines](https://www.health.gov.au/health-alerts/japanese-encephalitis-virus-jev/clinical-guidance)[[3]](#endnote-4).

\*\* ATAGI recommend the interval between the 2 doses of JEspect for the primary course should be 28 days for adults at lower risk of exposure and for all children (aged 2 months to <18 years)[[4]](#endnote-5). Please note this advice may be subject to change.

### Precautions and contraindications

Always use the [pre immunisation checklist](https://www.health.vic.gov.au/publications/pre-immunisation-checklist)[[5]](#endnote-6) and the [Japanese Encephalitis (JE) vaccination consent form](https://www.health.vic.gov.au/infectious-diseases/information-for-health-professionals-japanese-encephalitis-in-victoria)[[6]](#endnote-7) prior to administering vaccines. Assess each client against the following contraindications and precautions before giving a JE vaccine.

Table 2: Vaccine specific contraindications

|  |  |
| --- | --- |
| Imojev® | JEspect® |
| **Imojev® is contraindicated in people:*** **with immunocompromise\***
* **pregnant women**
	+ women should avoid pregnancy for 28 days after vaccination
* within 6 weeks (preferably 3 months) of receiving **immunoglobulins or immunoglobulin-containing products.**

**Precaution:*** **breastfeeding** women – JEspect is the preferred vaccine\*\*
 | JEspect® is an inactivated vaccine, so it is not expected to cause any safety concerns in people with immunocompromise. **Women who are pregnant or breastfeeding*** JE vaccine is not routinely recommended for pregnant or breastfeeding women. However, pregnant women at risk of acquiring JE are recommended to receive JEspect®.
* **\*\*For breastfeeding women** who are at increased risk of acquiring JE, **JEspect®** **is recommended** in preference to Imojev[[7]](#endnote-8).
 |

**\***For the purposes of JE vaccination, **immunocompromise** refers to people:

* with immune deficiency (including IFNAR1 deficiency)
* on immune suppressing therapies, such as chemotherapy, biological or targeted synthetic disease-modifying anti-rheumatic drugs, or high doses of systemic corticosteroids given for 14 days or more
* with HIV infection with uncontrolled viraemia
* \*\*ATAGI advise Imojev is not contraindicated in breastfeeding [[8]](#endnote-9) Refer any clinical queries to [SAEFVIC](https://www.safevac.org.au/Home/Info/VIC)

Table 3. Precautions and contraindications of JE vaccine

|  |  |
| --- | --- |
| Precautions | Contraindications |
| People with an acute febrile illness should not receive JE vaccines.  | JE vaccines are contraindicated in people who have had:* anaphylaxis after a previous dose of any JE vaccine
* anaphylaxis after any component of a JE vaccine
 |

### Co-administration of JE vaccine with other vaccines

Table 4. Co-administration of JE vaccine and other vaccines

|  |  |
| --- | --- |
| Imojev® | JEspect® |
| People can receive Imojev® at the same time as:* yellow fever vaccine6
* MMR (measles-mumps-rubella) vaccine7

Use separate syringes and inject in separate limbs. If a person does not receive Imojev® and yellow fever vaccine (or other live vaccines) at the same time, they should receive them at least 4 weeks apart. | People can receive JEspect® at the same time as:* hepatitis A vaccine
* quadrivalent (ACWY) meningococcal conjugate vaccine
* rabies vaccine

Use separate syringes and inject in separate limbs. |

### Can JE vaccines be co-administered with COVID-19 and influenza vaccines?

ATAGI have made recommendations for healthcare providers administering Japanese encephalitis virus (JEV) vaccines. ATAGI advises that either Imojev or JEspect can be co-administered with other vaccines if required. For more information see the [Australian Immunisation Handbook](https://immunisationhandbook.health.gov.au/vaccine-preventable-diseases/japanese-encephalitis)[[9]](#endnote-10).

### What are the JE vaccine side effects?

Adverse events following vaccination (AEFI) with JE vaccines are generally minor and short-lived, with most symptoms resolving within a few days. Report serious adverse reactions to Surveillance of Adverse Events Following Vaccination In the Community ([(SAEFVIC)](https://www.safevac.org.au/Home/Info/VIC), the vaccine safety surveillance service in Victoria.

Table 5. Common reactions to JE vaccines

|  |  |
| --- | --- |
| Imojev® | JEspect® |
| In adults* injection site pain, headache, fatigue and malaise

In children 12-24 months more commonly occurring:* pain, redness, swelling of injection site
* fever, appetite loss, irritability and abnormal crying
 | In adults* injection site pain, tenderness and redness, headache and myalgia

In children aged 2 months to 17 years, * injection site pain, redness and swelling
* appetite loss, diarrhoea,
* muscle aches and fatigue.

All ages * fever after the first dose, (greater in infants and children)
 |

### When are booster doses of JE vaccine recommended?

Booster doses are recommended if more than 1 year has passed since the last primary course dose for some cohorts, depending on the vaccine brand used for the primary dose/s and **if there is an ongoing risk** of JE infection.

Natural infection with JE virus is believed to confer lifelong immunity. There is no recommendation for JE vaccination following laboratory confirmed JE infection.

Note: JEspect® is also known as Ixario in some other countries (manufactured by Valneva and distributed in Australia by Seqirus/CSL).

**Table 6. Booster dose recommendations**

|  |  |
| --- | --- |
| Imojev® | JEspect® |
| ≥9 months to <18 years: > 1year after primary dose if ongoing risk of JE virus exposure≥18 years: not required  | ≥2 months to <18 years: Not recommended. No data available to inform recommendation. Consider a booster if the child needs sustained protection.≥18 years: 1–2 years after primary dose if ongoing risk of JE virus exposure. |

For further information about JE vaccine booster doses please refer to [the Australian Immunisation Handbook – Japanese encephalitis chapter](https://immunisationhandbook.health.gov.au/vaccine-preventable-diseases/japanese-encephalitis)[[10]](#endnote-11).

# Reporting JE vaccine to AIR

All JE vaccines **must be reported** to the Australian Immunisation Register (AIR).

Reporting JE vaccinations to the AIR means that the register contains a complete and reliable dataset and is able to monitor immunisation coverage and administration. It also means that individuals have a complete record of their vaccinations. Please ensure your report the **correct** JE vaccine brand to AIR, avoid using generic codes where possible.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Vaccine Brand Name** | **Vaccine CODE** | **Antigen Name** | **Antigen Code** | **Comments** |
| **Imojev** | IMOJEV | Japanese encephalitis | JEN | Preferred vaccine for the Victorian JE vaccination program |
| **JEspect** | JESPCT | Japanese encephalitis | JEN | Preferred vaccine for the Victorian JE vaccination program |

# Vaccine transport, storage and handling

JE vaccine is to be stored and transported according to [National vaccine storage guidelines: Strive for 5](https://www.health.gov.au/resources/publications/national-vaccine-storage-guidelines-strive-for-5)[[11]](#endnote-12).

* Store JE vaccine at +2°C to +8°C.
* Do not freeze.
* Protect from light.

Imojev® **must be reconstituted**. Add the entire contents of the diluent container to the vial and shake until the powder completely dissolves. Use the reconstituted vaccine within 1 hour.

For cold chain breach information and action please visit - [Cold chain breach reporting](https://www.health.vic.gov.au/immunisation/cold-chain-breach-reporting)[[12]](#endnote-13) or email the Immunisation Unit <immunisation@health.vic.gov.au>.

# Vaccine ordering and supply

Due to restricted stock, JE vaccine orders will be limited.

JE vaccine cannot be currently ordered through your [Onelink vaccine account](https://www.onelinkonline.net/)[[13]](#endnote-14).

Please send orders directly to the Immunisation Unit <immunisation@health.vic.gov.au>. Include your health service name, address and Onelink account number in your email.

# JE eLearning module

The Department of Health has developed an online [JE eLearning module](https://vic-immunisation-learning.com/)[[14]](#endnote-15) to educate pharmacist immunisers and nurse immunisers about Japanese encephalitis (JE) immunisation before they can administer the vaccine in Victoria.

This online training supports pharmacist immunisers and nurse immunisers to:

* Identify key facts about JE, including how the virus is spread, the signs and symptoms of infection, and strategies to reduce spread.
* Identify priority cohorts eligible to receive free (government-funded) JE vaccine in Victoria.
* Identify the different JE vaccine brands, dosing schedule and route of administration for JE vaccines.
* Recognise precautions and contraindications for JE vaccines.
* Identify key resources available to support the safe use and delivery of JE vaccines.

A certificate will be issued after successful completion of this training. This certificate must be provided to your employer prior to administering vaccines.

# Pharmacist Immunisers administering JE vaccines

In Victoria, [Pharmacist Immunisers](https://www.health.vic.gov.au/immunisation/pharmacist-immunisers) are authorised to administer JE vaccine subject to the following conditions:

* Successful completion of the [JE eLearning module](https://vic-immunisation-learning.com/immunisation/) is required prior to administration of the JE vaccine.
* Administration of JE vaccine **only** to people aged **five years and older** who are recommended for vaccination, as listed on the Victorian Department of Health’s [Japanese encephalitis virus](https://www.health.vic.gov.au/infectious-diseases/japanese-encephalitis-virus) web page.

# Nurse Immunisers administering JE vaccines

In Victoria, [Nurse Immunisers](https://www.health.vic.gov.au/immunisation/nurse-immunisers) are authorised to administer JE vaccine subject to the following conditions:

* Successful completion of the [JE eLearning module](https://vic-immunisation-learning.com/immunisation/) is required prior to administration of the JE vaccine.
* Administration of JE vaccine to people who are recommended for vaccination, as listed on the Victorian Department of Health’s [Japanese encephalitis virus](https://www.health.vic.gov.au/infectious-diseases/japanese-encephalitis-virus) web page.

# Adverse events following immunisation (AEFI)

SAEFVIC (Surveillance of Adverse Events Following Vaccination In the Community) SAEFVIC is Victoria’s safety partner.

* All unexpected or medically attended AEFI are to be reported to SAEFVIC.
* Contact SAEFVIC for expert clinical advice following vaccine errors.
* Manage the AEFI by your usual clinical pathways
* Immediately notify SAEFVIC via phone 1300 882 924 (Option 1) Mon-Fri 9am to 4.30pm)
* Submit an AEFI report online to <<https://www.safevac.org.au/Home/Info/VIC>

# Further information

* [Australian Immunisation Handbook – Japanese encephalitis Section](https://immunisationhandbook.health.gov.au/vaccine-preventable-diseases/japanese-encephalitis) <https://immunisationhandbook.health.gov.au/vaccine-preventable-diseases/japanese-encephalitis>
* [Australian Technical Advisory Group on immunisaiton (ATAGI) clinical guidance on Japanese encephalitis virus vaccines](https://www.health.gov.au/health-alerts/japanese-encephalitis-virus-jev/clinical-guidance) <https://www.health.gov.au/health-alerts/japanese-encephalitis-virus-jev/clinical-guidance>
* [Australian Government Department of Health, Therapeutic Goods Administration - Australian Public Assessment Report for Japanese encephalitis vaccine (live, attenuated).](https://www.tga.gov.au/auspar/auspar-japanese-encephalitis-vaccine-live-attenuated) <https://www.tga.gov.au/auspar/auspar-japanese-encephalitis-vaccine-live-attenuated>
* [Communicable Diseases Network Australia (CDNA) advice regarding vaccination against Japanese encephalitis virus](https://www.health.gov.au/resources/publications/cdna-advice-regarding-vaccination-against-japanese-encephalitis-virus) <https://www.health.gov.au/resources/publications/cdna-advice-regarding-vaccination-against-japanese-encephalitis-virus>
* [SAEFVIC](https://www.safevac.org.au/Home/Info/VIC) <<https://www.safevac.org.au/Home/Info/VIC>>
* [Japanese encephalitis resources](https://www.health.gov.au/resources/collections/japanese-encephalitis-jev-resources) <<https://www.health.gov.au/resources/collections/japanese-encephalitis-jev-resources>>
* [Japanese encephalitis resources for Aboriginal and Torres Strait Islander people](https://www.health.gov.au/resources/collections/japanese-encephalitis-jev-resources-for-aboriginal-and-torres-strait-islander-people)<https://www.health.gov.au/resources/collections/japanese-encephalitis-jev-resources-for-aboriginal-and-torres-strait-islander-people>

# Contact information

For JE vaccine specific queries please contact the Immunisation Unit via email <immunisation@health.vic.gov.au>

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| To receive this document in another format, email the Immunisation Unit <immunisation@health.vic.gov.au>.Authorised and published by the Victorian Government, 1 Treasury Place, Melbourne.© State of Victoria, Australia, Department of Health, January 2023Available at [Japanese encephalitis virus](https://www.health.vic.gov.au/infectious-diseases/japanese-encephalitis-virus) <https://www.health.vic.gov.au/infectious-diseases/japanese-encephalitis-virus> |

1. <https://immunisationhandbook.health.gov.au/contents/vaccine-preventable-diseases/japanese-encephalitis> [↑](#endnote-ref-2)
2. <https://www.tga.gov.au/> [↑](#endnote-ref-3)
3. <https://www.health.gov.au/health-alerts/japanese-encephalitis-virus-jev/clinical-guidance> [↑](#endnote-ref-4)
4. <https://www.health.gov.au/health-alerts/japanese-encephalitis-virus-jev/atagi-clinical-guidance-on-japanese-encephalitis-virus-vaccines> [↑](#endnote-ref-5)
5. <https://www.health.vic.gov.au/publications/pre-immunisation-checklist> [↑](#endnote-ref-6)
6. https://www.health.vic.gov.au/infectious-diseases/information-for-health-professionals-japanese-encephalitis-in-victoria [↑](#endnote-ref-7)
7. <https://www.health.gov.au/health-alerts/japanese-encephalitis-virus-jev/atagi-clinical-guidance-on-japanese-encephalitis-virus-vaccines> [↑](#endnote-ref-8)
8. <https://www.health.gov.au/health-alerts/japanese-encephalitis-virus-jev/atagi-clinical-guidance-on-japanese-encephalitis-virus-vaccines> [↑](#endnote-ref-9)
9. <https://immunisationhandbook.health.gov.au/contents/vaccine-preventable-diseases/japanese-encephalitis> [↑](#endnote-ref-10)
10. <https://immunisationhandbook.health.gov.au/contents/vaccine-preventable-diseases/japanese-encephalitis> [↑](#endnote-ref-11)
11. <https://www.health.gov.au/resources/publications/national-vaccine-storage-guidelines-strive-for-5> [↑](#endnote-ref-12)
12. <https://www.health.vic.gov.au/immunisation/cold-chain-breach-reporting> [↑](#endnote-ref-13)
13. <https://www.onelinkonline.net/> [↑](#endnote-ref-14)
14. <https://www.health.vic.gov.au/publications/pre-immunisation-checklist>

 <https://vic-immunisation-learning.com/> [↑](#endnote-ref-15)