NCIRS National Centre for Immunisation Research and Surveillance

FactSheet

Zoster vaccines: Frequently asked questions

This fact sheet provides responses to common questions about zoster disease and zoster vaccines. More detailed information can be found in the NCIRS fact sheet Zoster vaccine for Australian adults.

Rarely, disseminated varicella-zoster virus (VZV) infection with the vaccine (Oka) strain can occur in patients after receiving Zostavax vaccine. There have been reports of fatal disseminated vaccine-related VZV infection in Australia, including in patients on low-dose immunosuppressive medication. The risk increases with the degree of immunosuppression. Zostavax is contraindicated in people with current or recent severe immunocompromising conditions from either primary or acquired medical condition or medical treatment.

Careful pre-screening and a risk-based assessment is required before administration of any dose of Zostavax. If appropriate, this assessment should include medical specialist consultation and, potentially, screening for pre-existing antibody to VZV. In such cases, vaccination should be deferred until such advice and/or results have been obtained.

Any patient who experiences a disseminated vesicular (chickenpox-like) rash 2 to 4 weeks after vaccine administration, or who feels unwell or has a fever, should seek medical attention immediately and ensure that their treating health professional is aware of their recent zoster vaccination.

Questions about zoster (shingles) disease and zoster vaccines

Other commonly asked questions

Questions about zoster disease and zoster vaccines

1. What is zoster (or shingles)?

Zoster (or shingles) is a reactivation of the varicella-zoster virus in someone who has previously had chickenpox) (or varicella) disease. Shingles commonly presents as a painful, vesicular rash on one side of the face or body in a dermatomal (band of skin) distribution. Other symptoms include headache, malaise, photophobia and itching, tingling or severe pain in the affected dermatome.

2. What are the complications of shingles?

Shingles is usually a self-limiting infection that lasts 10 to 15 days, but in rare cases it can lead to serious illness, including pneumonia, hearing problems, blindness, encephalitis or death. The most common complication of shingles is post-herpetic neuralgia (PHN). PHN is defined as persistent chronic neuropathic pain occurring at the site of the rash. This pain can last for more than 3 months, have a severe effect on the quality of life and can be difficult to treat.

3. Who is at risk of shingles?

Almost all adults are at risk of developing shingles, as more than 95% of the Australian population aged over 30 years has been infected with varicella-zoster virus (as chickenpox). Overall, 20–30% of people will develop shingles in their lifetime, most after the age of 50 years. The risk of developing shingles increases with age and is higher in people who are immunocompromised. The risk of developing PHN after shingles also increases with age and is highest in people over the age of 70 years.

4. Which zoster vaccines are available in Australia?

From June 2021 there are two zoster vaccines registered for use in Australia in people aged ≥50 years to prevent herpes zoster:

- **Shingrix** (GlaxoSmithKline): an adjuvanted recombinant varicella zoster virus glycoprotein E (gE) subunit (non-live) vaccine. Two doses of Shingrix, 2–6 months apart, are needed to ensure adequate protection. This vaccine is available through private prescription only.
- **Zostavax** (Merck): a live-attenuated varicella zoster virus vaccine. Zostavax is funded on the National Immunisation Program (NIP) for people 70 years of age. It requires a single dose. Zostavax is generally contraindicated in people who are immunocompromised.

5. Which zoster vaccine should be given?

Shingrix is the preferred zoster vaccine for the prevention of herpes zoster and associated complications in all older adults. It appears to be more efficacious, particularly in the elderly, and offer longer lasting protection against herpes zoster. However, Shingrix is available on the private market only for all age groups.

In **immunocompetent people**, Zostavax is an effective, readily available alternative to Shingrix for the prevention of herpes zoster and associated complications.

In **people who are immunocompromised**, Zostavax is generally contraindicated and so Shingrix should be used. However, you can consider administering Zostavax to people aged ≥50 years who are mildly immunocompromised if Shingrix is not accessible. The degree of immunocompromise should be carefully assessed using the Live shingles vaccine (Zostavax) screening for contraindications tool. If there is any uncertainty about the level of immunocompromise, Zostavax should not be administered.

Zostavax is funded for all people aged 70 years through the NIP. A single catch-up dose is also available through the NIP for people aged 71–79 years until 31 October 2023. People in other age groups (i.e. those aged 50–69 years or 80 years and older) can also be vaccinated if they wish to purchase the vaccine. All patients vaccinated with Zostavax must receive a patient alert card detailing important safety information and symptoms they should monitor for.

6. What if Shingrix is not accessible for my patient?

If Shingrix is not accessible (either due to lack of availability or cost), Zostavax remains an effective alternative in those who have been assessed as safe to receive it. In this situation, eligible patients should be encouraged to receive it to protect themselves against herpes zoster and its associated complications. This includes immunocompetent people aged 50 years and some people who have a mild immunocompromise.

All recipients of Zostavax need to be carefully assessed using the Live shingles vaccine (Zostavax) screening for contraindications tool. If there is any uncertainty about the level of immunocompromise, Zostavax should not be administered. For further details refer to the Australian Immunisation Handbook.

7. Who should be vaccinated?

Unless contraindicated, all people aged ≥50 years who are immunocompromised or immunocompetent are recommended to receive vaccination to prevent herpes zoster and its complications. People previously vaccinated with Zostavax can also receive Shingrix if they wish to increase their protection against herpes zoster.

8. What should you consider when deciding when to offer a zoster vaccine?

While both zoster vaccines are registered and can be given from 50 years of age, it is important to consider several factors when deciding when to offer any zoster vaccine:

- age-related risk of herpes zoster and its complications
- the duration of protection offered by the chosen vaccine, and the possibility that a person vaccinated at a younger age, for example, in their 50s or 60s, may have reduced

protection from vaccination as they age, when the risk of zoster is higher. There is currently no recommendation for booster doses of either vaccine.
- immune status. People who are immunocompromised are at higher risk of disease. However, duration of protection from zoster vaccines is less certain in this population. If there is uncertainty about the optimal timing of vaccination, it should be discussed with the patient's specialist.
- an individual's desire to protect themselves.

For more information about deciding the optimal age at which to administer zoster vaccine please refer to the NCIRS fact sheet Zoster vaccines for Australian adults: Information for immunisation providers.

9. Why is a catch-up dose of Zostavax funded for 70–79 year olds? What about other age groups?

People aged 70–79 years have a 25% chance of developing PHN after shingles. This risk is significantly higher than in younger people. Although vaccine efficacy against shingles is lower in this age group, the efficacy against PHN is 66%. This, together with evidence of waning immunity by 5–10 years after vaccination, means that, at a population health level, immunisation is most cost-effective in this age group. The table below is a summary of vaccine efficacy against shingles and PHN by age group.

Registered age groups	**Zostavax vaccine efficacy**		**Likelihood of developing PHN**	**Comments**
	Shingles	PHN		
50–59 years	~70%	*	Low	Individual benefit likely
60–69 years	64%	66%	Moderate	Individual benefit likely
70–79 years	41%	67%	High	NIP funded
≥80 years	18%	†	Very high	Individual benefit still possible

* PHN efficacy not known: insufficient PHN cases to assess.

† PHN efficacy not known: insufficient participants/zoster cases in clinical trials to study efficacy against PHN.

10. Are there other groups who should especially consider zoster vaccination?

People with chronic conditions such as splenectomy, diabetes, rheumatoid arthritis, inflammatory bowel disease, dermatologic conditions (e.g. psoriasis), cardiorespiratory disease or renal disease (e.g. glomerulonephritis or reduced renal function) should be vaccinated as they may have a higher risk of morbidity and mortality due to shingles.

Vaccination may also be considered for people aged 50 years who are household contacts of an unvaccinated person who is immunocompromised, to reduce the risk of transmission of varicella-zoster virus to this person. If a vaccinated person develops a rash, they should cover the rash and avoid contact with the person who is immunocompromised for the duration of the rash.

11. Are there any side effects of zoster vaccination?

Injection site reactions, such as pain, swelling and redness, are common after vaccination with either zoster vaccine. These reactions occur in about 50% of Zostavax recipients and up to 82% of Shingrix recipients. Rarely (0.1%), Zostavax recipients may also develop a varicella-like rash locally at the injection site. This does not occur with Shingrix.

Systemic reactions, such as fever, headache and fatigue, are not commonly associated with Zostavax (about 6% of recipients), but are more common after vaccination with Shingrix (fatigue and myalgia in up to 46% recipients, headache in up to 39%, shivering in up to 28%, fever in up to 22% and gastrointestinal symptoms in up to 18%).

These reactions are typically mild and resolve in a few days. A small proportion (about 10%) of Shingrix recipients may experience reactions that are severe enough to disrupt normal daily activities, but these are generally short-lived (1-3 days) and can be treated symptomatically.

Rarely, Zostavax recipients may develop a non-localised vesicular rash about 2–4 weeks after vaccination. This can be due to disseminated infection from the Oka vaccine strain, most often in people who are immunocompromised. Individuals who develop this rash should contact their doctor for prompt review, rash test and treatment.

12. Who should *not* receive zoster vaccine?

Zostavax is **contraindicated** in people with current or recent significant immunocompromise. Use of Zostavax in people who are immunocompromised can result in disseminated disease from the Oka vaccine strain and has been associated with several deaths in Australia. These people should receive Shingrix. Zostavax **MUST NOT** be administered to people with severe immunocompromise. These include:

People with primary or acquired immunodeficiency

- haematological neoplasms: leukaemias, lymphomas, myelodysplastic syndromes
- post-transplant: solid organ (on immunosuppressive therapy), haematopoietic stem cell transplant (within 24 months)
- immunocompromise due to primary or acquired (HIV/AIDS) immunodeficiency
- other significantly immunocompromising conditions.

People on immunosuppressive therapy (current or recent)

- chemotherapy or radiotherapy
- high-dose corticosteroids (≥20 mg of prednisone per day, or equivalent) for ≥14 days
- most biologic and disease-modifying anti-rheumatic drugs (DMARDs)

Zoster vaccines should not be administered to people with a history of anaphylaxis to any component of that individual vaccine. For Zostavax, this includes anaphylaxis following a previous dose of varicella vaccine.

Zostavax is contraindicated in pregnant women. However, there are currently no data on the use of Shingrix in pregnant women (Category B2).

13. How do I assess which person with immunocompromise can safely receive Zostavax?

Zostavax can only be given to people who have a mild immunocompromise after careful assessment if Shingrix is not accessible. Assess each person individually, using the Live shingles vaccine (Zostavax) screening for contraindications tool. Medical specialist consultation may be appropriate to help assess the level of immunocompromise. If there is any uncertainty, DO NOT administer Zostavax and seek appropriate specialist advice.

Serological testing (for VZV IgG) before vaccination is recommended if it is unclear whether a person with mild to moderate immunocompromise can safely receive Zostavax. This includes eligible HIV patients and may include people on low-dose immunosuppressive medications. In someone with a mild level of immunocompromise, pre-existing immunity provides additional reassurance that use of the vaccine will act as a booster to protect against reactivation of latent infection. If a person who is immunocompromised has a negative VZV IgG (i.e. there is no evidence of previous VZV natural infection), it is possible they may have very severe outcomes after receiving Zostavax and so they should not be vaccinated.

People who have received Zostavax should be advised to seek immediate medical attention if they develop a VZV-like rash and inform their medical practitioner that they have recently received Zostavax.

Consider giving Shingrix to people with immunocompromise instead, which can be administered at all levels of immunocompromise and does not carry the risk of disseminated VZV infection.

14. Can patients receiving disease-modifying anti-rheumatic drugs (DMARDs) receive Zostavax?

Zostavax is usually contraindicated in patients who may take corticosteroids and/or DMARDs regularly, such as patients with rheumatoid arthritis, inflammatory bowel disease, dermatologic conditions, renal disease and other autoimmune or rare inflammatory conditions. These people can remain contraindicated for up to 12 months after ceasing the treatment because of ongoing immune suppression.

However, some patients taking low doses of specific DMARDs can be safely vaccinated on a case-by-case basis. Before considering vaccination, immunisation providers should obtain a detailed medication history of the patient and complete the assessment using the Live shingles vaccine (Zostavax) screening for contraindications tool. If there is uncertainty about the level of immunocompromise, Zostavax should **not** be given. Seek expert advice from the treating physician or an immunisation specialist.

Refer to the Australian Immunisation Handbook for details regarding the use of Zostavax in people receiving specific DMARDs.

15. Can patients receiving low-dose corticosteroids (<20 mg prednisone/day), in combination with non-biologic immune modulating therapy, receive Zostavax?

Potentially yes, if the patient has been thoroughly assessed using the Live shingles vaccine (Zostavax) screening for contraindications tool. Every drug is not a contraindication to vaccination (e.g. low doses of azathioprine, 6-mercaptopurine or methotrexate). It is generally safe for individuals taking sulfasalazine alone to receive Zostavax where there are no other contraindications. Refer to the Australian Immunisation Handbook for details.

16. Can I vaccinate my HIV-positive patient with Zostavax?

People with asymptomatic HIV infection who are on antiretroviral therapy and who have a very low or undetectable viral load and $CD4^+$ count ≥350 per µL can be vaccinated with Zostavax after being carefully assessed using the Live shingles vaccine (Zostavax) screening for contraindications tool. Where there is a strong indication to vaccinate, some experts suggest a $CD4^+$ count of >200 per µL is safe. Seek expert opinion from the treating physician and/or an immunisation specialist. Serological confirmation of previous varicella-zoster virus infection must be obtained before vaccination.

17. Can people anticipating future significant immunocompromise receive Zostavax?

Immunocompetent people who anticipate alteration of their immunity (e.g. because of an existing illness or future immunosuppressive therapy) can be given Zostavax at least 1 month before becoming immunocompromised, on a case-by-case basis after seeking appropriate specialist advice.

18. How long do I have to wait after Zostavax vaccination before starting immune modulating therapy?

Ideally, vaccination should occur at least 1 month before biologic or non-biologic immune modulating therapy is initiated.

19. How long do I wait after immunoglobulin or blood product administration before administering Zostavax?

Zostavax can be given at any time before or after administration of immunoglobulin or any antibody-containing blood product, where there is no other contraindication.

20. How long should I wait after chemotherapy or radiotherapy before vaccinating a patient?

At least 6 months after the end of treatment and after patients are demonstrated to be in remission.

21. What if Zostavax has been inadvertently given to a patient who is immunocompromised?

Seek immediate specialist advice to determine if the patient is severely immunocompromised. It is important to monitor for a disseminated (non-localised) varicella-zoster virus–like rash.

Where vesicular lesions do arise, it is important to sample fluid by deroofing a lesion and swabbing the base with a viral swab. The sample should be sent to a reference laboratory for varicella-zoster virus PCR testing to differentiate the vaccine (Oka) strain from wild-type virus. The patient will require empirical use of antiviral therapy, which may need to be given intravenously. Advice should be sought from the patient's treating specialist about stopping immunosuppressive therapy, if relevant.

The relevant state or territory health authority, and the Therapeutic Goods Administration (TGA), should also be notified.

Other commonly asked questions

22. Can I give zoster vaccine on the same day as other vaccines?

Both Shingrix and Zostavax can be given with most other live and inactivated vaccines, at different injection sites. However, be aware of the following precautions:

- There is limited evidence on the concomitant use of Zostavax and Shingrix with COVID-19 vaccines. Co-administration can occur if required, but providers should balance the opportunistic need for co-administration with giving the vaccines on separate visits. There is a potential for an increase in mild to moderate adverse events when more than one vaccine is given at the same time. Please refer to the ATAGI clinical guidance on COVID-19 vaccine in Australia for the most up-to-date information regarding COVID-19 vaccines.
- Zostavax may be administered with other live vaccines. However, if it is **not** given on the same day as other live viral vaccines (e.g. measles-mumps-rubella, yellow fever) separate administration by 4 weeks.
- It is acceptable to co-administer Shingrix and Fluad Quad on the same day if necessary. However, given the lack of co-administration data for these two adjuvanted vaccines, it is preferred to separate their administration by a few days, and ensure that any adverse events following immunisation with the first vaccine have resolved before administration of the other vaccine.

23. Can I vaccinate someone who has had shingles?

Yes, vaccination appears safe in people who have had shingles. As the optimal time for administration following an episode of shingles is uncertain, it is suggested to wait at least 1 year following an episode of shingles, since the episode itself boosts immunity. If Shingrix is used, two doses are still required.

24. Does vaccination prevent shingles recurrences?

Shingles recurrence is rare and is seen in approximately 5% of cases, so prevention has not been specifically studied yet. However, vaccination after a shingles episode appears safe (as per above).

25. Can patients who have previously received Zostavax receive Shingrix?

Yes, if they wish to increase their protection against herpes zoster. Although evidence in this population is limited, no safety concerns have been identified. An interval of at least 12 months between receipt of Zostavax and Shingrix is currently recommended based on expert opinion. Two doses of Shingrix are still required.

26. Can people receive a booster dose of the same zoster vaccine?

Currently there is no recommendation for booster doses with either Shingrix or Zostavax. The requirement for booster doses in the future is unknown and recommendations may change.

27. What should I do if my vaccinated patient still gets shingles?

Manage the shingles episode as is usually recommended with laboratory confirmation (noting vaccine history) and administration of antivirals and analgesics, as appropriate.

If a **non-localised** varicella-zoster virus (VZV)-like rash occurs about 2–4 weeks after receipt of Zostavax, consider the possibility of disseminated infection, especially in vaccine recipients who are immunocompromised. This type of rash may be due to the Oka vaccine strain.

If disseminated VZV infection is suspected, healthcare providers should undertake appropriate diagnostic testing, initiate empirical antiviral treatment, consult an infectious diseases specialist and, where relevant, stop immunosuppressing medication. The relevant state or territory health authority, and the Therapeutic Goods Administration (TGA) should also be notified.

People who have received Zostavax should receive a patient alert card which details important safety information. They should be advised to seek immediate medical attention if they develop a VZV-like rash and inform their medical practitioner that they have recently received Zostavax.

28. Do I need to check varicella-zoster virus serology before vaccination?

In immunocompetent people, it is not required to check varicella-zoster virus serology before administration of either zoster vaccine.

However, serological testing is recommended before Zostavax vaccination in special circumstances (e.g. in patients with HIV, pre-transplant) or when pre-vaccination screening has identified an uncertain level of immunocompromise and a potential risk for adverse events. People who are immunocompromised and do not have antibodies for varicella-zoster virus **should not** be given Zostavax.

In an immunocompetent adult who is eligible for zoster vaccine but is known to not have antibodies for varicella-zoster virus, a 2-dose course of varicella vaccine is the recommended alternative.

29. Can a patient who is currently taking antivirals receive Zostavax?

Systemic (but not topical) antiviral agents may decrease the effectiveness of Zostavax. When possible, antivirals (e.g. acyclovir) should be stopped at least 48 hours before vaccination and withheld for at least 14 days.

Additional resources for primary medical care/vaccination providers

- NCIRS fact sheet: Zoster vaccine for Australian adults: information for immunisation providers
- ATAGI statement on the clinical use of zoster vaccine in older adults in Australia
- Australian Immunisation Handbook
- Live shingles vaccine (Zostavax) screening for contraindications tool
- Therapeutic Goods Administration Product Information: Shingrix
- Immunise Australia