


Centers for Disease Control and Prevention
National Center for Immunization and Respiratory Diseases



Zoster

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Chapter 22

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Herpes Zoster (Shingles)

- **Reactivation of varicella zoster virus**
- **Generally occurs unilaterally in the distribution of a sensory nerve**
 - Most often the trunk or 5th cranial nerve
- **Associated with:**
 - Aging
 - Immunosuppression
 - Intrauterine exposure
 - Varicella disease younger than 18 months of age

Complications of Herpes Zoster

- **Dissemination with generalized skin eruptions and involvement of the central nervous system, lungs, liver, and pancreas**
- **Postherpetic neuralgia (PHN)**
- **Ophthalmic zoster**



Zoster involving the ophthalmic division of the trigeminal nerve

Herpes Zoster

- 500,000 to 1 million episodes occur annually in the United States
- Lifetime risk of zoster estimated to be 32%
- 50% of persons living until age 85 will develop zoster

Zoster Vaccines

Product	FDA Age Indications	ACIP Abbreviation
Zostavax	50 years and older* <small>(Note: ACIP recommended at 60 years and older)</small>	ZVL
Shingrix	50 years and older	RZV

*Zostavax is FDA-approved for persons 50 years of age and older

Live Zoster Vaccine (ZVL) Efficacy

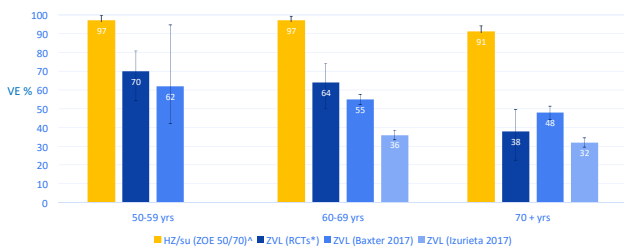
- Vaccine recipients 60 to 80 years of age had 51% fewer episodes of zoster
 - Efficacy declines with increasing age
 - Significantly reduces the risk of postherpetic neuralgia
 - Reduces the risk of zoster 69.8% in persons 50 through 59 years of age

RZV Vaccine Efficacy

- Efficacy for the prevention of zoster:
 - 96.6% in adults age 50 to 59 years
 - 97.4% in adults age 60 to 69 years
 - 91.3% in adults age 70 years and older
- The efficacy for the prevention of postherpetic neuralgia (PHN) was:
 - 91.2% in adults age 50 years and older
 - 88.8% in adults age 70 years and older

CDC Shingrix Information for Healthcare Professionals <https://www.cdc.gov/vaccines/yod/shingles/hcp/shingrix/about-vaccine.html> accessed 8/12/2018

Vaccine Efficacy and Effectiveness against HZ for HZ/su and ZVL, by Age Group, During the First 4⁺ Years Following Vaccination



^a Median follow-up may be less than 3 yrs: Schmadt 2012^c 1.3 yrs
^b ZOE 50/70: 50-59 and 60-69yr: Lai 2015, 70+yr: Cunningham 2016
^c RCTs: 50-59 yrs: Schmadt 2012, 60-69 and 70+ yrs: Oman 2005.

Acceptable Evidence of Varicella Immunity

- Written documentation of age-appropriate vaccination
- Laboratory evidence of immunity or laboratory confirmation of varicella disease
- U.S.-born before 1980*
- Health care provider diagnosis or verification of varicella disease
- History of herpes zoster based on health care provider diagnosis

* Birth year immunity criterion does not apply to health care personnel or pregnant women
MMWR 2007;56(RR-4):16-17

ACIP Zoster Immunization Recommendations

- **Administer 2 doses of Shingrix to immunocompetent persons 50 years of age and older**
 - Regardless of previous history of:
 - Vaccination with varicella-containing vaccines—Varivax or Zostavax
 - Zoster disease
- **Shingrix is preferred to Zostavax for persons 60 years and older**
 - Separate varicella-containing vaccines and Shingrix by at least 8 weeks

MMWR 2018;67(3):103-108

**Zoster Vaccination:
Patients Who Do Not Report A Prior Episode of Varicella**

- **When vaccinating adults 50 years of age and older, there is no need to:**
 - Screen for a history of varicella (chickenpox) infection OR
 - Conduct laboratory testing for serologic evidence of prior varicella infection
- **More than 99% of adults age 50 years and older worldwide have been exposed to varicella zoster virus**
- **ACIP considers people born in the United States prior to 1980 immune to varicella**

MMWR 2018;67(3):103-108

Zoster Vaccine and Serology

- **If tested and varicella-negative:**
 - Administer 2 doses of single-antigen varicella vaccine (Varivax) separated by at least 4 weeks
 - Followed by 2 doses of RZV, separated by 2–6 months
 - Separate the 2nd (last) dose of varicella and 1st dose of RZV by at least 8 weeks

MMWR 2008;17(RR-5)

Zoster Vaccine Administration

- **Preparation**
 - Zoster vaccine: Reconstitute just prior to administration
 - Use the diluent supplied by the vaccine's manufacturer
- **Zostavax**
 - Route: Subcut injection
 - Site: Upper outer triceps of the arm or the thigh may be used if necessary
 - Needle gauge: 23–25 gauge
 - Needle length: 5/8 inch
- **Shingrix**
 - Route: IM injection
 - Site: Deltoid or the thigh may be used if necessary
 - Needle gauge: 22–25 gauge
 - Needle length: Varies by age/weight

Zostavax Vaccine Contraindications

- **Severe allergic reaction to a vaccine component or following a prior dose**
- **Pregnancy or planned pregnancy within 4 weeks***
- **Immunosuppression including those with HIV infection**

*ACIP off-label recommendation

Zostavax (ZVL) Vaccine Precautions

- **Moderate or severe acute illness**
- **Current treatment with an antiviral drug active against herpes viruses**
 - Discontinue at least 24 hours before administration of zoster vaccine
 - Should not be taken for at least 14 days after vaccination
- **Recent receipt of a blood product is NOT a precaution**

MMWR 2008;57(RR-9)

RZV Contraindications and Precautions

- **History of severe allergic reaction, such as anaphylaxis, to any component of a vaccine or after a previous dose of Shingrix**
- **Moderate to severe illness, including an acute episode of herpes zoster**
 - Shingrix is not a treatment for herpes zoster or postherpetic neuralgia (PHN)
- **Shingrix has not been studied in pregnant women or women who are breastfeeding. Providers should consider delaying Shingrix vaccination for these women**

CDC Shingrix Recommendations www.cdc.gov/vaccines/imz/downloads/shingrix/shingrix-recommendations.html, accessed 8/12/2018

RZV and Immunosuppressive Therapy

- **Administer RZV to persons:**
 - Taking low-dose immunosuppressive therapy (e.g., <20 mg/day of prednisone or equivalent or using inhaled or topical steroids)
 - Anticipating immunosuppression
 - Who have recovered from an immunocompromising illness
- **ACIP has not yet made recommendations regarding use RZV in these patients**
 - Persons on moderate to high doses of immunosuppressive therapy were excluded from RZV efficacy studies

MMWR 2018;67(3):103-108

Zostavax (ZVL) Adverse Reactions

- Local reactions—34% (pain, erythema)
- No increased risk of fever
- No serious adverse reactions identified

MMWR 2008;57(RR-9)

RZV (Shingrix) Adverse Reactions

Local reactions	49%
Local reactions—Grade 3	9.4%
Systemic reactions (headache, malaise, fatigue)	45–78%
Systemic reactions (headache, malaise, fatigue)—Grade 3	11%

MMWR 2018;67(3):103–108

Adverse Reactions after Shingrix

- Educate patients regarding:
 - Potential adverse reactions, including injection site and systemic reactions
 - The need for a second dose—even if s/he has an adverse reaction
- Offer comfort measures and strategies



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PLEASE PLACE QUESTIONS IN THE BASKET
