

### Herpes Zoster Vaccinations: Zostavax and Shingrix

Herpes zoster, or shingles, is a localized, usually painful, maculopapular rash that is caused by the reactivation of latent varicella-zoster virus (VZV). In the United States, approximately 1 out of 3 people will develop shingles during their lifetime, resulting in 500,000 to 1 million people affected every year.<sup>1</sup> The most common complication of shingles is postherpetic neuralgia (PHN), causing persistent pain for at least 90 days in the area where the rash once occurred. About 10 to 15% of people with shingles experience PHN, and the risk increases with age.<sup>2</sup> Other complications include ocular nerve and other organ involvement, often with severe sequelae.<sup>1</sup>

In 2006, the FDA approved Zostavax, a live attenuated single-dose vaccine for herpes zoster prevention.<sup>3</sup> In 2017, the FDA also approved Shingrix, a recombinant two-dose vaccine containing adjuvant AS01B, to enhance immune response. Overall, both vaccines are well-tolerated, but some adverse effects may include redness, soreness, and swelling at the injection site.<sup>3,4</sup>

In separate clinical trials, Shingrix showed greater risk reduction rates of developing herpes zoster and postherpetic neuralgia for all age categories compared to Zostavax. As a result, the Advisory Committee on Immunization Practices (ACIP) made the following recommendations in October 2017 for Shingrix:<sup>5</sup>

- 1) Recommended for immunocompetent adults **aged 50 years and older**
- 2) Recommended for immunocompetent adults **who were previously vaccinated with Zostavax**
- 3) **Preferred over Zostavax**

**Table 1. Comparison of the two FDA-approved shingles vaccines<sup>3-5</sup>**

FDA-approved age	Zostavax			Shingrix		
	≥ 50 years*			≥ 50 years		
Prevention efficacy	Age	Shingles	PHN	Age	Shingles	PHN
	60-69*	64%	66%	50-69	97%	91%
	≥70%	41%	67%	≥70%	91%	89%
Duration efficacy	< 35% after 6 years			≥ 85% after 4 years		
Administration	One subcutaneous dose			Two intramuscular doses 2-6 months apart†		
Special populations	Pregnancy	Avoid pregnancy for ≥ 3 months after Zostavax		History of herpes zoster	Recommended	
				Chronic conditions	Recommended	
	Breastfeeding	No data		Immunocompromised	No recommendations‡	
				Pregnancy or breastfeeding	No data	
Administration w/ other vaccines	> 4 weeks apart from Pneumovax 23			> 8 weeks after Zostavax		
Contraindications	Severe allergic reactions to gelatin, neomycin, or components of Zostavax			Severe allergic reaction to components of Shingrix		
	Immunosuppressed/immunodeficient					
	Pregnancy					

\* No recommendation for routine use for 50-59 years old

† If > 6 months since 1<sup>st</sup> dose: give 2<sup>nd</sup> dose (no need to restart series). If interval < 4 weeks between doses: repeat 2<sup>nd</sup> dose.

‡ May be given to persons on low-dose immunosuppressive therapy (e.g. prednisone < 20 mg/day, inhaled steroids)

#### References

1. CDC. Epidemiology and Prevention of Vaccine-Preventable Diseases. 13th ed. 2015. Reviewed 11/2016. <https://www.cdc.gov/vaccines/pubs/pinkbook/varicella.html>. Accessed 3/7/2018.
2. Centers for Disease Control and Prevention. Shingles Surveillance. Reviewed 1/2018. <https://www.cdc.gov/shingles/surveillance.html>. Accessed 3/5/2018.
3. Zostavax [package insert]. Whitehouse Station, New Jersey. Merck & Co., Inc.; 2006.
4. Shingrix [package insert]. Research Triangle Park, North Carolina. GlaxoSmithKline Biologicals; 2017
5. Dooling, Kathleen, Guo, Angela, et al. Recommendations of the Advisory Committee on Immunization Practices for the Use of Herpes Zoster Vaccines. MMWR. January 26, 2018. 67(3);103-108. <https://www.cdc.gov/mmwr/volumes/67/wr/mm6703a5.htm>. Accessed 3/13/2018.

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