

December 2021 ~ Resource #371202

Comparison of Pneumococcal Vaccines

(Modified February 2023)

The chart below compares the available US pneumococcal vaccines including vaccine type, serotypes covered, dosing, immunity, and cost. See the CDC algorithm (<https://www.cdc.gov/vaccines/vpd/pneumo/downloads/pneumo-vaccine-timing.pdf>) for which adults should get which pneumococcal vaccine.

--Information in the chart below is from the product labeling (footnote a), unless otherwise indicated--

Vaccine	<i>Pneumovax 23</i> (PPSV23)	<i>Prevnar 13</i> (PCV13)	<i>Vaxneuvance</i> (PCV15)	<i>Prevnar 20</i> (PCV20)
Type of vaccine ^a	polysaccharide	conjugate ^b	conjugate ^b	conjugate ^b
Additional serotypes covered ^c	2, 8, 9N, 10A, 11A, 12F, 15B, 17F, 20, 22F, 33F	6A	6A, 22F, 33F	6A, 8, 10A, 11A, 12F, 15B, 22F, 33F
Approved age and dose	<ul style="list-style-type: none"> • ≥50 years old • ≥2 years old at increased risk for pneumococcal disease^d <ul style="list-style-type: none"> ○ single 0.5 mL dose (IM or subcutaneous) 	<ul style="list-style-type: none"> • 6 weeks to 5 years old: <ul style="list-style-type: none"> ○ 4-dose series (each dose 0.5 mL IM) • ≥6 years old <ul style="list-style-type: none"> ○ single 0.5 mL IM dose 	<ul style="list-style-type: none"> • 6 weeks to 5 years old: <ul style="list-style-type: none"> ○ 4-dose series (each dose 0.5 mL IM) • ≥18 years old <ul style="list-style-type: none"> ○ single 0.5 mL IM dose 	<ul style="list-style-type: none"> • ≥18 years old^f <ul style="list-style-type: none"> ○ single 0.5 mL IM dose
Comments	<ul style="list-style-type: none"> • ~8% to 15% of invasive disease (depending on age) is caused by serotypes only covered by this vaccine.³ 	<ul style="list-style-type: none"> • Routine vaccination workhorse for kids. • Recommended in adults with certain conditions. • Only covers ~30% of serotypes causing invasive disease.³ 	<ul style="list-style-type: none"> • Covers additional serotypes causing ~15% of invasive disease NOT covered by PCV13 in patients ≥19 years old.³ • Does NOT provide additional coverage compared to PCV20. 	<ul style="list-style-type: none"> • Covers additional serotypes causing ~30% of invasive disease NOT covered by PCV13 in patients ≥19 years old.³
Immunity	<ul style="list-style-type: none"> • Models project linear decline over 15 years.³ 	<ul style="list-style-type: none"> • Models project no decline for 5 years, followed by linear decline over 10 years.³ • Evidence suggests these may have a greater immune response than PPSV23 against most serotypes they have in common.³⁻⁵ 		
Cost per dose ^e	~\$120	~\$215	~\$220	~\$240

a. US product labeling: *Pneumovax 23* (April 2021); *Prevnar 13* (July 2019); *Vaxneuvance* (June 2022); *Prevnar 20* (June 2021).

b. The act of conjugating or linking the polysaccharide vaccine to a carrier protein enhances immunogenicity.¹

c. All available pneumococcal vaccines contain the following serotypes: 1, 3, 4, 5, 6B, 7F, 9V, 14, 18C, 19A, 19F, and 23F.^a

d. Examples of conditions that may increase the risk for pneumococcal disease include: anatomic or functional asplenia, sickle cell disease, human immunodeficiency virus infection, chronic heart or lung disease, cerebrospinal fluid leaks, and diabetes mellitus.²

e. Pricing is based on wholesale acquisition cost (WAC). Medication pricing by Elsevier, accessed November 2021.

f. Approval for use in children anticipated in 2023 (PCV20).³

Users of this resource are cautioned to use their own professional judgment and consult any other necessary or appropriate sources prior to making clinical judgments based on the content of this document. Our editors have researched the information with input from experts, government agencies, and national organizations. Information and internet links in this article were current as of the date of publication.

References

1. CDC. Principles of vaccination. In: Epidemiology and prevention of vaccine-preventable diseases. The Pink Book: Course Textbook. 14th Ed. 2021. <https://www.cdc.gov/vaccines/pubs/pinkbook/downloads/prinvac.pdf>. (Accessed November 4, 2021).
2. Nuroti JP, Whitney CG, Centers for Disease Control and Prevention (CDC). Prevention of pneumococcal disease among infants and children – use of 13-valent pneumococcal conjugate vaccine and 23-valent pneumococcal polysaccharide vaccine – recommendations of the Advisory Committee on Immunization Practices (ACIP). *MMWR Recomm Rep* 2010;59:1-18.
3. CDC. Considerations for age-based and risk-based use of PCV15 and PCV20 among U.S. adults and proposed policy options. October 20, 2021. <https://www.cdc.gov/vaccines/acip/meetings/downloads/slides-2021-10-20-21/02-Pneumococcal-Kobayashi-508.pdf>. (Accessed November 4, 2021).
4. Hurley D, Griffin C, Young Jr M, et al. Safety, tolerability, and immunogenicity of a 20-valent pneumococcal conjugate vaccine (PCV20) in adults 60 to 64 years of age. *Clin Infect Dis* 2021;73:e1489-97.
5. Song JY, Chang CJ, Andrews C, et al. Safety, tolerability, and immunogenicity of V114, a 15-valent pneumococcal conjugate vaccine, followed by sequential PPSV23 vaccination in healthy adults aged ≥50 years: a randomized phase III trial (PNEUPATH). *Vaccine* 2021;39:6422-36.

Cite this document as follows: Clinical Resource, Comparison of Pneumococcal Vaccines. Pharmacist's Letter/Prescriber's Letter. December 2021. [371202]

—To access hundreds more clinical resources like this one, visit trchealthcare.com to log in or subscribe—