

Pneumococcal Disease and CDC Pneumococcal Vaccine Guidance

Pneumococcal Disease

Pneumococcal disease refers to illnesses conferred by the bacteria *Streptococcus pneumoniae* (also known as pneumococcus). *S. pneumoniae* can cause contagious illnesses, including pneumonia, sinusitis, and otitis media.

Invasive Pneumococcal Disease (IPD) occurs when *Streptococcus pneumoniae* spreads into normally sterile areas of the body, such as the bloodstream (**bacteremia**) or the tissues surrounding the brain and spinal cord (**meningitis**). IPD can be life-threatening and requires urgent medical attention.

Infection Symptoms

Symptoms of pneumococcal disease vary depending on the part of the body that is infected. Most pneumococcal infections are mild. However, serious infections can result in a life-threatening illness resulting from the body's extreme response to infection (**sepsis**), long-term problems, or death.

Visit the [CDC's Pneumococcal Disease – Symptoms and Complications](#) webpage for more information on the presentation of each distinct type of infection.



Complications

Pneumonia: Can lead to respiratory failure, lung abscesses, or collapsed lungs.

Sinusitis: Complications are rare but include infection of the tissue surrounding the eyes, bone infection, and painful abscesses.

Otitis Media: Ear infections are usually mild. However, some children develop repeated ear infections and may need ear tubes.

Did You Know?

Invasive Pneumococcal Disease (IPD)

Bacteremia: Can lead to sepsis, organ damage, or loss of limbs. Pneumococcal bacteremia kills about 1 in 8 adults and 1 in 30 children who get it.

Meningitis: Can lead to hearing loss, neurologic impairment, or developmental delay. Pneumococcal bacteremia kills about 1 in 6 older adults and 1 in 12 children who get it.

Sepsis: Can lead to kidney failure, cardiovascular complications, or death.

Pneumococcal Vaccines

Pneumococcal vaccination is the most effective way to prevent pneumococcal disease and its potentially serious complications. There are currently 4 pneumococcal vaccines available on the U.S. market, divided into two vaccine types:

- Pneumococcal conjugate vaccines (PCV15, PCV20, PCV21)
- Pneumococcal polysaccharide vaccine (PPSV23)

These vaccines differ by their composition (conjugate vs. polysaccharide) and the number of serotypes they protect against (e.g., PCV15 vs PCV20).

Visit the [CDC's About Pneumococcal Vaccines](#) webpage for information on these types and compositions, immunogenicity, and vaccine efficacy.

The following pages detail the current [CDC Pneumococcal Vaccine Guidance](#), with recommendations on vaccine selection and timing, based on age, qualifying medical conditions, and vaccine history.

Pneumococcal Vaccine Timing for Adults

Use the tables below to determine vaccination needs based on age, risk factors, and previous pneumococcal vaccination history.

Adults ≥ 50 years old Complete pneumococcal vaccine schedules

Prior vaccines	Option A	Option B
None*	PCV20 or PCV21	PCV15 → ≥1 year† → PPSV23‡
PCV15 only at any age	→ ≥1 year† → PPSV23‡	NO OPTION B
PCV15 & PPSV23 OR PCV20 OR PCV21 at any age	No vaccines recommended; schedule is complete.	
PPSV23 only at any age	→ ≥1 year → PCV20 or PCV21	→ ≥1 year → PCV15
PCV13 only at any age	→ ≥1 year → PCV20 or PCV21	NO OPTION B
PCV13 at any age & PPSV23 at <65 yrs	→ ≥5 years → PCV20 or PCV21	

* Also applies to people who received PCV7 at any age and no other pneumococcal vaccines

† If PPSV23 is not available, PCV20 or PCV21 may be used

‡ Consider minimum interval (8 weeks) for adults with an immunocompromising condition, cochlear implant, or cerebrospinal fluid leak (CSF) leak

§ For adults with an immunocompromising condition, cochlear implant, or CSF leak, the minimum interval for PPSV23 is ≥8 weeks since last PCV13 dose and ≥5 years since last PPSV23 dose; for others, the minimum interval for PPSV23 is ≥1 year since last PCV13 dose and ≥5 years since last PPSV23 dose

Did You Know?

Prior vaccines	Shared clinical decision-making option for adults ≥65 years old	
Complete series: PCV13 at any age & PPSV23 at ≥65 yrs	≥5 years → PCV20 or PCV21	Together, with the patient, vaccine providers may choose to administer PCV20 or PCV21 to adults ≥65 years old who have already received PCV13 (but not PCV15, PCV20, or PCV21) at any age and PPSV23 at or after the age of 65 years old.

Prior vaccines	Option A	Option B
None*	PCV20 or PCV21	PCV15 → ≥8 weeks → PPSV23[¶]
PCV15 only at any age	≥8 weeks → PPSV23[¶]	NO OPTION B
PCV15 & PPSV23 OR PCV20 OR PCV21 at any age	No vaccines recommended at this time. Review pneumococcal vaccine recommendations again when your patient turns 50 years old.	
PPSV23 only at any age	≥1 year → PCV20 or PCV21	≥1 year → PCV15
PCV13 only at any age	≥1 year → PCV20 or PCV21	NO OPTION B
PCV13 and 1 dose of PPSV23 at any age	≥5 years → PCV20 or PCV21	
PCV13 and 2 doses of PPSV23 at any age	≥5 years → PCV20 or PCV21	No vaccines recommended at this time. Review pneumococcal vaccine recommendations again when your patient turns 50 years old.
Immunocompromising conditions	- Chronic renal failure - Congenital or acquired asplenia - Congenital or acquired immunodeficiency[§] - Generalized malignancy	- HIV infection - Hodgkin disease - Iatrogenic immunosuppression[¶] - Leukemia - Lymphoma
		- Multiple myeloma - Nephrotic syndrome - Sickle cell disease/other hemoglobinopathies - Solid organ transplant

* Also applies to people who received PCV7 at any age and no other pneumococcal vaccines

¶ If PPSV23 is not available, PCV20 or PCV21 may be used

§ Includes B- (humoral) or T-lymphocyte deficiency, complement deficiencies (particularly C1, C2, C3, and C4 deficiencies), and phagocytic disorders (excluding chronic granulomatous disease)

¶ Includes diseases requiring treatment with immunosuppressive drugs, including long-term systemic corticosteroids and radiation therapy

Prior vaccines	Option A	Option B
None*	PCV20 or PCV21	PCV15 → ≥8 weeks → PPSV23[¶]
PCV15 only at any age	≥8 weeks → PPSV23[¶]	NO OPTION B
PCV15 & PPSV23 OR PCV20 OR PCV21 at any age	No vaccines recommended at this time. Review pneumococcal vaccine recommendations again when your patient turns 50 years old.	
PPSV23 only at any age	≥1 year → PCV20 or PCV21	≥1 year → PCV15
PCV13 only at any age	≥1 year → PCV20 or PCV21	NO OPTION B
PCV13 and 1 dose of PPSV23 at any age	≥5 years → PCV20 or PCV21	No vaccines recommended at this time. Review pneumococcal vaccine recommendations again when your patient turns 50 years old.

* Also applies to people who received PCV7 at any age and no other pneumococcal vaccines

¶ If PPSV23 is not available, PCV20 or PCV21 may be used

Did You Know?

Prior vaccines	Option A	Option B
None*	PCV20 or PCV21	PCV15 $\xrightarrow{\geq 1 \text{ year}}$ PPSV23†
PCV15 only at any age	$\xrightarrow{\geq 1 \text{ year}}$ PPSV23†	NO OPTION B
PCV15 & PPSV23 OR PCV20 OR PCV21 at any age	No vaccines recommended at this time. Review pneumococcal vaccine recommendations again when your patient turns 50 years old.	
PPSV23 only at any age	$\xrightarrow{\geq 1 \text{ year}}$ PCV20 or PCV21	$\xrightarrow{\geq 1 \text{ year}}$ PCV15
PCV13† only at any age	$\xrightarrow{\geq 1 \text{ year}}$ PCV20 or PCV21	NO OPTION B
PCV13† and PPSV23 at any age	No vaccines are recommended at this time. Review pneumococcal vaccine recommendations again when your patient turns 50 years old.	
Chronic health conditions	- Alcoholism - Chronic heart disease, including congestive heart failure and cardiomyopathies - Chronic liver disease - Chronic lung disease, including chronic obstructive pulmonary disease, emphysema, and asthma - Cigarette smoking - Diabetes mellitus	

* Also applies to people who received PCV7 at any age and no other pneumococcal vaccines

¶ If PPSV23 is not available, PCV20 or PCV21 may be used

† Adults with chronic medical conditions were previously not recommended to receive PCV13

This resource is abridged and for informational purposes only. Clinical decisions should be made in consultation with the prescriber and current CDC or AAFP Guidance. PharMerica is not affiliated, connected, or associated with any of the following entities: CDC, AAFP.

References

- Centers for Disease Control and Prevention. (2026). About Pneumococcal Disease. Retrieved from: <https://www.cdc.gov/pneumococcal/about/index.html>
- Centers for Disease Control and Prevention. (2026). Pneumococcal Disease Symptoms and Complications. Retrieved from: <https://www.cdc.gov/pneumococcal/signs-symptoms/index.html>
- Centers for Disease Control and Prevention. (2026). Pneumococcal Vaccination. Retrieved from: <https://www.cdc.gov/pneumococcal/vaccines/index.html>
- Centers for Disease Control and Prevention. (2022). Pneumococcal Vaccination: Information for Health Care Providers. Retrieved from: <https://www.cdc.gov/vaccines/hcp/by-disease/pneumo.html>
- Centers for Disease Control and Prevention. (2025). Pneumococcal Vaccine Timing for Adults. Retrieved from: <https://www.cdc.gov/pneumococcal/downloads/vaccine-timing-adults-jobaid.pdf>