

Pneumococcal Disease and CDC Pneumococcal Vaccine Guidance

Pneumococcal Disease

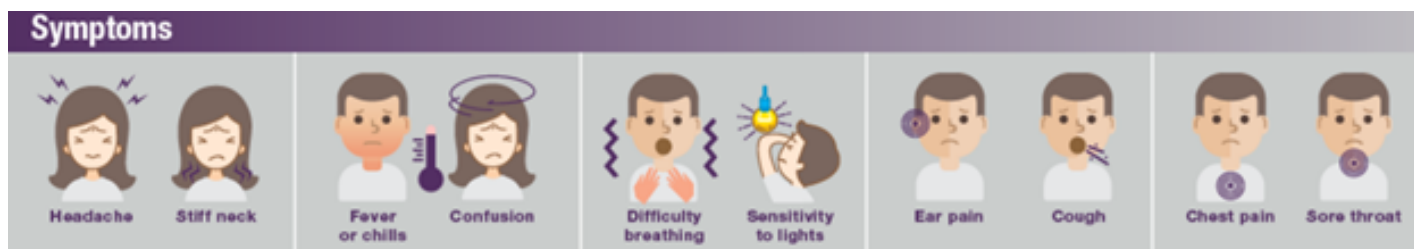
Pneumococcal disease refers to illnesses conferred by the bacteria *Streptococcus pneumoniae* (also known as pneumococcus). *S. pneumoniae* can cause contagious illnesses, including **pneumonia**, **sinusitis** and **otitis media**.

Invasive Pneumococcal Disease (IPD) refers to more severe and invasive pneumococcal infections, such as **bacteremia**, **meningitis**, and **sepsis** (where bacteria can be isolated from normally sterile sites).

Pneumococcal vaccines provide preventative measures against infection from select covered serotypes of *S. pneumoniae* and are particularly focused on preventing **invasive pneumococcal disease (IPD)**.

Infection Presentation

Pneumococcal disease can include many different types of infections (see above). Symptoms depend on the part of the body that is infected. Most pneumococcal infections are mild. However, some can be deadly or result in long-term problems.



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

Complications/Morbidity/Mortality Risk

Pneumonia: Pneumococcal pneumonia kills about 1 in 20 who get it.

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 and are more common than the more severe forms of pneumococcal disease. However, some children develop repeated ear infections and may need ear tubes.

Bacteremia: About 1 in 30 children with pneumococcal bacteremia die of it. Pneumococcal bacteremia kills about 1 in 8 adults who get it. For those who survive, pneumococcal bacteremia can lead to loss of limb(s).

Meningitis: About 1 in 12 children and 1 in 6 older adults who get pneumococcal meningitis dies of the infection. Those who survive may have long-term problems, such as hearing loss or developmental delay.

Sepsis: Complications of sepsis include kidney failure and damage to the brain, lungs, or heart.

Pneumococcal Vaccines

There are currently 4 pneumococcal vaccines available on the US 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

Make sure your patients are up to date with pneumococcal vaccination.

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

Shared clinical decision-making for those who already completed the series with PCV13 and PPSV23

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.

Adults 19–49 years old with specified immunocompromising conditions Complete pneumococcal vaccine schedules

Prior vaccines	Option A	Option B
None*	PCV20 or PCV21	PCV15 $\xrightarrow{\geq 8 \text{ weeks}}$ PPSV23†
PCV15 only at any age	$\xrightarrow{\geq 8 \text{ weeks}}$ 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	$\xrightarrow{\geq 1 \text{ year}}$ 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 1 dose of PPSV23 at any age	$\xrightarrow{\geq 5 \text{ years}}$ PCV20 or PCV21	
PCV13 and 2 doses of PPSV23 at any age	$\xrightarrow{\geq 5 \text{ years}}$ PCV20 or PCV21	No vaccines recommended at this time. Review pneumococcal vaccine recommendations again when your patient turns 50 years old.
Immunocompromising conditions	<ul style="list-style-type: none"> 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

Adults 19–49 years old with a cochlear implant or cerebrospinal fluid leak Complete pneumococcal vaccine schedules

Prior vaccines	Option A	Option B
None*	PCV20 or PCV21	PCV15 $\xrightarrow{\geq 8 \text{ weeks}}$ PPSV23†
PCV15 only at any age	$\xrightarrow{\geq 8 \text{ weeks}}$ 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	$\xrightarrow{\geq 1 \text{ year}}$ 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 1 dose of PPSV23 at any age	$\xrightarrow{\geq 5 \text{ years}}$ 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

Adults 19–49 years old with chronic health conditions Complete pneumococcal vaccine schedules

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	<ul style="list-style-type: none"> 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