

## UpToDate recommendations\* for the administration of pneumococcal vaccines (PCV13 and PPSV23) in adults in the United States

Risk group	Underlying condition	PCV13¶	PPSV23	
		Recommended	Recommended	Revaccination
Immunocompetent persons	Chronic heart disease <sup>Δ</sup>		X	
	Chronic lung disease <sup>◇</sup>		X	
	Diabetes mellitus		X	
	Cerebrospinal fluid leak	X	X	
	Cochlear implant	X	X	
	Alcoholism		X	
	Chronic liver disease, cirrhosis		X	
	Cigarette smoking		X	
	Age ≥ 65	§	X	¥
Persons with functional or anatomic asplenia	Sickle cell disease/other hemoglobinopathy	X	X	X <sup>‡</sup>
	Congenital or acquired asplenia	X	X	X <sup>‡</sup>
Immunocompromised persons	Congenital or acquired immunodeficiency <sup>†</sup>	X	X	X <sup>**</sup>
	Human immunodeficiency virus infection	X	X	X <sup>**</sup>
	Chronic renal failure	X	X	X <sup>**</sup>
	Nephrotic syndrome	X	X	X <sup>**</sup>
	Leukemia	X	X	X <sup>**</sup>
	Lymphoma	X	X	X <sup>**</sup>
	Hodgkin disease	X	X	X <sup>**</sup>
	Generalized malignancy	X	X	X <sup>**</sup>
	Iatrogenic immunosuppression <sup>¶¶</sup>	X	X	X <sup>**</sup>
	Solid organ transplant	X	X	X <sup>**</sup>
	Multiple myeloma	X	X	X <sup>**</sup>

PCV13: 13-valent pneumococcal conjugate vaccine (Prevnar 13); PPSV23: 23-valent pneumococcal polysaccharide vaccine (Pneumovax 23).

\* For certain recommendations, UpToDate's recommendations differ from those of the United States Advisory Committee on Immunization Practices (ACIP) as outlined in subsequent footnotes.

¶ For those with an indication for PCV13, only one dose is indicated during adulthood.

Δ Including congestive heart failure and cardiomyopathies, excluding hypertension.

◇ Including chronic obstructive pulmonary disease, emphysema, and asthma.

§ UpToDate authors do not recommend PCV13 for healthy individuals  $\geq 65$  years of age but do recommend PCV13 for patients  $\geq 65$  years of age who have one of the conditions for which PPSV23 is indicated before age 65 (cigarette smokers; patients with chronic heart disease, chronic lung disease, diabetes mellitus, alcoholism, or chronic liver disease) as well as for individuals  $\geq 65$  years of age who are planning to travel to a country that does not have a universal immunization program mandating pneumococcal conjugate vaccination for all infants and toddlers. By contrast, the ACIP recommends use of PCV13 in **all** individuals  $\geq 65$  years of age. Refer to the UpToDate topic on pneumococcal vaccination in adults for additional information.

¥ The ACIP recommends that all adults aged  $\geq 65$  years receive a dose of PPSV23 even if they were vaccinated when they were less than 65 years of age; however, a minimum interval of five years between PPSV23 doses should be maintained. UpToDate authors agree with the ACIP's recommendation for revaccination with PPSV23 at or after age 65 years; however, following this dose (and in contrast with the ACIP), UpToDate authors also favor revaccinating with PPSV23 at 10-year intervals because immunologic responses wane in older adult patients. A caveat is that insurance companies may not provide coverage for these subsequent doses. The ACIP recommends that those who are receiving PPSV23 for the first time at or after age 65 should receive only a single dose (and do not require revaccination).

‡ For patients with anatomic or functional asplenia, UpToDate authors recommend revaccination with PPSV23 every five years. By contrast, the ACIP recommends that patients  $< 65$  years of age who have functional or anatomic asplenia be revaccinated one time five years after the initial dose and again at or after age 65 (and at least five years after the previous dose).

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

\*\* Patients  $< 65$  years of age who are immunocompromised should be revaccinated with PPSV23 one time five years after the initial dose and again at or after age 65 (and at least five years after the previous dose). Refer to footnote ¥ above for additional recommendations for individuals  $\geq 65$  years of age.

¶¶ Diseases requiring treatment with immunosuppressive drugs, including long-term systemic glucocorticoids and radiation therapy.

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#### References:

1. Tomczyk S, Bennett NM, Stoecker C, et al. Use of 13-valent pneumococcal conjugate vaccine and 23-valent pneumococcal polysaccharide vaccine among adults aged  $\geq 65$  years: recommendations of the Advisory Committee on Immunization Practices (ACIP). *MMWR Morb Mortal Wkly Rep* 2014; 63:822.
2. Centers for Disease Control and Prevention. Use of 13-valent pneumococcal conjugate vaccine and 23-valent pneumococcal polysaccharide vaccine for adults with immunocompromising conditions: recommendations of the Advisory Committee on Immunization Practices (ACIP). *MMWR Morb Mortal Wkly Rep* 2012; 61:816.
3. Centers for Disease Control and Prevention (CDC), Advisory Committee on Immunization Practices. Updated recommendations for prevention of invasive pneumococcal disease among adults using the 23-valent pneumococcal polysaccharide vaccine (PPSV23). *MMWR Morb Mortal Wkly Rep* 2010; 59:1102.

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