

Pneumococcal Vaccines — CDC answers your questions

Experts from the National Center for Immunization and Respiratory Diseases at the Centers for Disease Control and Prevention answer your questions about pneumococcal polysaccharide (PPSV23) and pneumococcal conjugate (PCV13) vaccines.

How serious is pneumococcal disease?

Pneumococcal disease is a serious disease that causes much sickness and death. In fact, it kills more people in the United States each year than all other vaccine-preventable diseases combined.

It is estimated that in the United States in 2007, more than 40,000 cases and more than 4,000 deaths occurred from invasive pneumococcal diseases (bacteremia and meningitis). More than half of the cases occurred in adults who were recommended to receive pneumococcal vaccine. Children younger than age 5 and adults older than 65 have the highest incidence of serious disease.

Case-fatality rates are highest for pneumococcal meningitis and bacteremia, and the highest mortality occurs among the elderly and patients who have underlying medical conditions. Despite appropriate antimicrobial therapy and intensive medical care, the overall case-fatality rate for pneumococcal bacteremia is about 20% among adults. Among elderly patients, the rate may be as high as 60%.

Who is recommended to receive pneumococcal polysaccharide vaccine (PPSV23)?

PPSV23 is recommended for anyone who meets any of the criteria below:

- Age 65 years and older
- Age 2 through 64 years with any of the following conditions
 1. cigarette smokers age 19 years and older
 2. alcoholism
 3. chronic liver disease, cirrhosis
 4. chronic cardiovascular disease, excluding hypertension (e.g., congestive heart failure, cardiomyopathies)
 5. chronic pulmonary disease (including COPD and emphysema, and for adults age 19 years and older, asthma)
 6. diabetes mellitus
 7. candidate for or recipient of cochlear implant
 8. cerebrospinal fluid (CSF) leak
 9. functional or anatomic asplenia (e.g., sickle cell disease, splenectomy)
 10. immunocompromising conditions (e.g., HIV infection, leukemia, congenital immunodeficiency, Hodgkin's disease, lymphoma, multiple myeloma, generalized malignancy, immunosuppressive therapy)
 11. solid organ transplantation; for bone marrow transplantation, see www.cdc.gov/vaccines/pubs/hemato-cell-transplts.htm
 12. chronic renal failure or nephrotic syndrome

Could you briefly summarize the revaccina-

tion recommendations for PPSV23?

Children and adults younger than age 65 who are at highest risk for serious pneumococcal infection or likely to have a rapid decline in antibody levels (see categories 9 through 12 in previous answer) should get 2 doses of PPSV23 5 years apart, with a third dose after they turn age 65 (if at least 5 years have passed since the last dose). Patients with no risk factors should get 1 dose at age 65. Thus, depending on risk and age at vaccination, a person age 65 or older may have received 1, 2, or 3 doses of PPSV23.

What are the recommendations for routinely administering PCV13 to children?

Give infants a primary series of PCV13 at age 2, 4, and 6 months. Boost at age 12 through 15 months. For catch-up vaccination, give PCV13 to healthy children through age 59 months and give PCV13 to children through age 71 months who have certain underlying medical conditions. For information on underlying medical conditions, see next question and answer.

Which underlying medical conditions indicate that an older child or teen should receive PCV13?

PCV13 vaccination is recommended for unvaccinated children age 2 through 71 months (6 years) who are in categories 4–12 in the numbered list to the left and for PCV13-naïve children age 6 through 18 years who are in categories 7–12.

Which adults are recommended to receive a dose of PCV13 vaccine?

Adults age 19 years and older who have not previously received PCV13 and who have the conditions specified below should receive a PCV13 dose at the next vaccination opportunity.

- Immunocompromising conditions (e.g., congenital or acquired immunodeficiency, HIV, chronic renal failure, nephrotic syndrome, leukemia, lymphoma, Hodgkin's disease, generalized malignancy, iatrogenic immunosuppression, solid organ transplant, and multiple myeloma)
- Functional or anatomic asplenia (e.g., sickle cell disease and other hemoglobinopathies and congenital and acquired asplenia)
- Cerebrospinal fluid (CSF) leak
- Cochlear implants

What dosing intervals should be observed when giving PCV13 and PPSV23 to patients (children and adults) who are recommended to receive both vaccines?

Ideally, give PCV13 first and give PPSV23 8 weeks later. For children, if the child has already received PPSV23, wait 8 weeks before giving

For complete information on CDC's recommendations for the use of pneumococcal vaccines, go to www.immunize.org/acip

PCV13. This recommendation is harmonized with our previous permissive recommendation and is driven by the need to not miss an opportunity to vaccinate with PCV13. For adults, if the person has already received PPSV23, wait 1 year before giving PCV13 to avoid interference between the 2 vaccines. This recommendation is based on a hypothetical concern about interference between PCV13 and PPSV23.

If patients who are in a recommended risk group for PPSV23 or PCV13 aren't sure if they have already received these vaccines, should healthcare providers vaccinate them?

Yes. If patients do not have a documented vaccination history and their records are not readily obtainable, you should administer the recommended doses. Extra doses will not harm the patient.

We just gave PPSV23 to a 66-year-old patient who is newly diagnosed with a medical condition that places him at increased risk for pneumococcal disease and its complications. Should we give him a second dose in 5 years because of his underlying medical condition?

No. People who are first vaccinated with PPSV23 at age 65 years or older should receive only 1 dose, regardless of their underlying medical condition.

When should I vaccinate a child or adult who is planning to have either a cochlear implant or elective splenectomy?

If possible, administer the appropriate vaccine prior to the splenectomy or cochlear implant so that the person planning to have the procedure has antibody to pneumococcus at the time of the surgery. If the procedure is done on an emergency basis, vaccinate as soon as possible according to the routine schedule. Administer a dose of PPSV23 to all patients no sooner than 8 weeks (minimum interval) from the previous dose of PCV13.

If a patient has had laboratory-confirmed pneumococcal pneumonia, does he or she still need to be vaccinated with PCV13 and/or PPSV23?

Yes. More than 90 known serotypes of pneumococcus exist (23 serotypes are in PPSV23 and 13 serotypes are in PCV13). Infection with one serotype does not necessarily produce immunity to other serotypes. As a result, patients who are candidates for vaccination should be vaccinated even if they have had one or more episodes of invasive pneumococcal disease.

For a table view of the recommendations, see "Pneumococcal Vaccination Recommendations for Children and Adults by Age and/or Risk Factor" at www.immunize.org/catg.d/p2019.pdf.