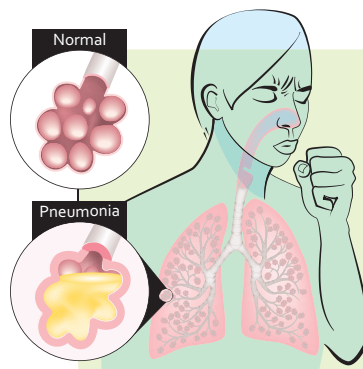


## PATIENT EDUCATION | INFORMATION SERIES

# Pneumococcal Vaccines

Pneumococcal bacteria are a group of bacteria that can cause serious infections including blood and brain infections and pneumonia. Pneumococcal pneumonia is a bacterial infection that causes the air sacs of the lungs to fill with fluid or pus. Pneumococcal infections can be life-threatening especially to infants, children, people over 65 years of age, and people with weak immune systems (ability to fight infection). Pneumococcal vaccines help protect you from severe infection from pneumococcal bacteria.



## What are the pneumococcal vaccines?

The pneumococcal vaccines provide protection against severe pneumococcal disease.

The Centers for Disease Control and Prevention (CDC) advises that all children get immunized with vaccines against pneumococcal bacteria. Other people who are at high-risk of severe pneumococcal infections may also need to get booster (extra) doses of pneumococcal vaccines even if they got their childhood vaccines.

## What are the types of pneumococcal vaccines?

There are two different types of pneumococcal vaccines. Both types are given as a shot, usually in the muscle of the arm or leg (thigh).



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- PCV (polysaccharide conjugate vaccine) is given to all young children, people at high-risk for severe pneumococcal infections and adults over age 65. There are different PCV vaccines available that vary in the number of types of pneumococcal bacteria that are covered (PCV13, 15, and 20 valent).
- PPSV (pneumococcal polysaccharide vaccine) is given to children and adults who are at high-risk for severe pneumococcal infections and adults over age 65. PPSV is a 23 valent vaccine.

## Why is it important to get vaccinated?

Pneumococcal bacterial infection is a serious disease. More than 31,000 cases and more than 3,500 deaths from invasive pneumococcal disease, including blood infections (bacteremia) and brain and spinal fluid infections (meningitis) are estimated to have occurred in the United States in 2017. The pneumococcal vaccines help protect everyone against serious pneumococcal disease.

## Who should receive the pneumococcal vaccine?

Talk with your healthcare provider about whether you need a pneumococcal shot, which one is best for you, and when you should receive it. See page 7 for details about which pneumococcal vaccines are recommended based upon age, health, and prior vaccinations.

## Do I need a booster (extra) dose of pneumococcal vaccine?

The body's immune response can slowly decrease over time. Adults and some high-risk children who have gotten pneumococcal vaccines in the past may need a booster vaccine. Your healthcare provider can help you decide if you need another vaccine.

## What are the risks of the pneumococcal vaccines?

- The most common adverse reactions are redness, pain

or swelling at the injection site. You may also experience fever, chills, loss of appetite or a headache. These typically last only a day or two.

- The most serious adverse reaction is a severe allergic reaction. While this can be life threatening, it is very rare and occurs approximately one in every million doses given.

#### Who should not receive the pneumococcal vaccines?

- Anyone who has had a life-threatening allergic reaction to the vaccine or to earlier versions of the vaccine or those with a severe allergy to any component of the vaccines should not get it before consulting with their healthcare provider.
- Anyone feeling ill should wait until feeling better to receive the vaccine.

#### How effective are the pneumococcal vaccines?

- In short—very effective! Several large research studies have shown that the vaccines are very effective at reducing the chance of getting serious infection from *Streptococcus pneumoniae* and the complications associated with it. When all children started to get the PCV vaccine, the rate of severe pneumococcal infection in the US dropped by 88%.
- Pneumococcal vaccines are 60%-80% effective when they are given to those with weak immune systems (ability to fight infection), people 65 years and older, and people at high-risk for pneumonia. Although the vaccine is less effective in those with weakened immune systems, the vaccine can significantly lower the risk of serious pneumococcal infection and its complications in most people.

#### Can I get other vaccines with a pneumococcal vaccine?

Yes, it is safe to get other vaccines (including influenza or COVID-19) with the pneumococcal vaccine.

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## R<sub>x</sub> Action Steps

- ✓ Have your child get all recommended doses of the pneumococcal vaccine on schedule.
- ✓ Check with your healthcare provider to see if you need a pneumococcal vaccine
- ✓ Get yearly influenza (flu) vaccine to protect against these infections.
- ✓ Use good hand hygiene and follow your healthcare provider's advice to manage chronic illness to help avoid pneumonia.
- ✓ If you think you have pneumonia, seek medical help promptly.

**Healthcare Provider's Contact Number:**

## Resources

#### American Thoracic Society

- [www.thoracic.org/patients](http://www.thoracic.org/patients)
  - Influenza
  - Pneumonia

#### Centers for Disease Control and Prevention (CDC)

- <https://www.cdc.gov/vaccines/vpd/pneumo/index.html>

#### American Academy of Pediatrics – Healthy Children

- <https://www.healthychildren.org/English/safety-prevention/immunizations/Pages/Pneumococcal-Conjugate-Vaccine-What-You-Need-to-Know.aspx>

#### Immunization Action Coalition

- <https://www.immunize.org/pneumococcal-pcv/>

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## Pneumococcal Vaccination Recommendations by Group (Adults)

There are two different types of pneumococcal vaccines:

PCV (polysaccharide conjugate vaccine) and PPSV (pneumococcal polysaccharide vaccine).

PCV vaccines are given to young children, as well as to people at high-risk for severe pneumococcal infections, and adults who are 65 years and older. Vaccination of children with PCV has been very successful with a major drop in severe invasive pneumococcal disease in children. This has also been a benefit to adults by decreasing the overall amount of pneumococcal disease spread in the population.

PPSV vaccine is given to some children and adults who are at high-risk of serious infection due to certain chronic medical conditions as well as adults who are 65 years and older.

Recent advances in technology producing both vaccine classes have resulted in increasing number of pneumococcal pneumoniae strains contained within each vaccine. Therefore, recommendations for their use depend on whether previous versions containing fewer strains have already been received (usually shows as a valent number such as PCV15 valent).

**Age 65 years or older who have:**

- Not previously received a dose of PCV13, PCV15, or PCV20 or whose previous vaccination history is unknown:
  - 1 dose PCV15 OR 1 dose PCV20. If PCV15 is used, this should be followed by a dose of PPSV23 given at least 1 year after the PCV15 dose. A minimum interval of 8 weeks between PCV15 and PPSV23 can be considered for adults with an immunocompromising condition,\* cochlear implant, or cerebrospinal fluid leak to minimize the risk of invasive pneumococcal disease caused by serotypes unique to PPSV23 in these vulnerable groups.
- Previously received only PCV7:
  - Follow the recommendation above.
- Previously received only PCV13:
  - 1 dose PCV20 at least 1 year after the PCV13 dose OR complete the recommended PPSV23 series as described here: <http://www.cdc.gov/vaccines/vpd/pneumo/downloads/pneumo-vaccine-timing.pdf>
- Previously received only PPSV23:
  - 1 dose PCV15 OR 1 dose PCV20 at least 1 year after the PPSV23 dose. If PCV15 is used, it need not be followed by another dose of PPSV23.
- Previously received both PCV13 and PPSV23 but NO PPSV23 was received at age 65 years or older:
  - 1 dose PCV20 at least 5 years after their last pneumococcal vaccine dose OR complete the recommended PPSV23 series as described here: [www.cdc.gov/vaccines/vpd/pneumo/downloads/pneumo-vaccine-timing.pdf](http://www.cdc.gov/vaccines/vpd/pneumo/downloads/pneumo-vaccine-timing.pdf)
- Previously received both PCV13 and PPSV23, AND PPSV23 was received at age 65 years or older: Based on shared clinical decision-making, 1 dose of PCV20 at least 5 years after the last pneumococcal vaccine dose.

**Age 19–64 years with certain underlying medical conditions or other risk factors\*\* who have**

- Not previously received a PCV13, PCV15, or PCV20 or whose previous vaccination history is unknown:
  - 1 dose PCV15 OR 1 dose PCV20. If PCV15 is used, this should be followed by a dose of PPSV23 given at least 1 year after the PCV15 dose. A minimum interval of 8 weeks between PCV15 and PPSV23 can be considered for adults with an immunocompromising condition,\* cochlear implant, or cerebrospinal fluid leak
- Previously received only PCV7: follow the recommendation above
- Previously received only PCV13:
  - 1 dose PCV20 at least 1 year after the PCV13 dose OR complete the recommended PPSV23 series as described here: [www.cdc.gov/vaccines/vpd/pneumo/downloads/pneumo-vaccine-timing.pdf](http://www.cdc.gov/vaccines/vpd/pneumo/downloads/pneumo-vaccine-timing.pdf)
- Previously received only PPSV23: 1 dose PCV15 OR 1 dose PCV20 at least 1 year after the PPSV23 dose. If PCV15 is used, it need not be followed by another dose of PPSV23
- Previously received both PCV13 and PPSV23 but have not completed the recommended series: 1 dose PCV20 at least 5 years after their last pneumococcal vaccine dose OR complete the recommended PPSV23 series as described here: [www.cdc.gov/vaccines/vpd/pneumo/downloads/pneumo-vaccine-timing.pdf](http://www.cdc.gov/vaccines/vpd/pneumo/downloads/pneumo-vaccine-timing.pdf)

For guidance on determining which pneumococcal vaccines a patient needs and when, please refer to the mobile app which can be downloaded here: [www.cdc.gov/vaccines/vpd/pneumo/hcp/pneumoapp.html](http://www.cdc.gov/vaccines/vpd/pneumo/hcp/pneumoapp.html)

\*Note: Immunocompromising conditions include chronic renal failure, nephrotic syndrome, immunodeficiency, iatrogenic immunosuppression, generalized malignancy, human immunodeficiency virus, Hodgkin disease, leukemia, lymphoma, multiple myeloma, solid organ transplants, congenital or acquired asplenia, sickle cell disease, or other hemoglobinopathies.

\*\*Note: Underlying medical conditions or other risk factors include alcoholism, chronic heart/liver/lung disease, chronic renal failure, cigarette smoking, cochlear implant, congenital or acquired asplenia, CSF leak, diabetes mellitus, generalized malignancy, HIV, Hodgkin disease, immunodeficiency, iatrogenic immunosuppression, leukemia, lymphoma, multiple myeloma, nephrotic syndrome, solid organ transplants, or sickle cell disease, or other hemoglobinopathies.

Source: Centers for Disease Control and Prevention.  
<https://www.cdc.gov/vaccines/hcp/acip-recs/vacc-specific/pneumo.html>  
 For pediatric recommendations, see <https://www.cdc.gov/vaccines/vpd/pneumo/hcp/recommendations.html>