

Q&A PNEUMOCOCCUS: WHAT YOU SHOULD KNOW

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While most people do not think about the bacteria called pneumococcus, they are likely familiar with its effects. Parents of young children have probably endured at least one ear infection with their child. Pneumococcus is one of the three most common bacterial causes of ear infections in young children. Likewise, older adults, or their adult children who care for them, may be familiar with a seemingly prolonged respiratory infection that appeared to be getting better only to suddenly worsen or “turn into pneumonia.” The “sudden worsening” is typically attributable to the opportunistic nature of pneumococcal bacteria, which capitalize on weakened immunity following a viral infection, such as influenza, to invade the lungs and cause severe pneumonia. This back-to-back infection scenario is why so many older adults succumb to pneumonia during influenza season and why both influenza and pneumococcal vaccines are important for protecting this high-risk population.

Q. What is pneumococcal disease?

A. Pneumococcal infections are caused by a group of bacteria known as *Streptococcus pneumoniae*. Several types of pneumococcal bacteria exist and many can cause infections in people. Pneumococcus can lead to infections of the ears, sinuses, brain and spinal cord (meningitis), lungs (pneumonia) or bloodstream (sepsis).

Q. What are the symptoms of pneumococcal disease?

A. Symptoms of pneumococcal disease can vary based on the site of infection and may include cough, shortness of breath, chest pain, fever, bloody mucus, ear pain, headache, or stiff neck.

Q. Is pneumococcal disease dangerous?

A. The majority of pneumococcal infections are mild; however, some can be serious, even life-threatening. Sinus and ear infections are among the mildest forms of infection. Meningitis, sepsis, and pneumonia tend to be more serious. Those most likely to experience severe infection include the very young, the elderly, and teens and adults with conditions or situations that increase their risk. See “Who should get the pneumococcal vaccine?” to find out more.



Q. How is the pneumococcal vaccine made?

A. The pneumococcal vaccine is made using the sugar coat (polysaccharide) of pneumococcal bacteria. Two types of pneumococcal vaccine are available: polysaccharide and conjugate vaccines. The vaccines differ in two important ways: the number of types of pneumococcus they protect against and the presence or absence of a “helper” protein.

Pneumococcal polysaccharide vaccine (PPSV)

The pneumococcal polysaccharide vaccine (often referred to as PPSV23) protects against 23 types of pneumococcus. It does not include a “helper” protein. Because children younger than 2 years of age do not generate strong immune responses to polysaccharides, infants are not recommended to routinely receive PPSV23. Although the vaccine works better in adults, only some are recommended to get this version, and in all cases, they will still also be recommended to get a conjugate version.

Pneumococcal conjugate vaccine (PCV)

Pneumococcal conjugate vaccines (PCV) have a “helper” protein attached (conjugated) to the polysaccharide. The original PCV vaccine protected against seven types of pneumococcus, and it was known as PCV7. Later, a 13-valent version (PCV13) replaced PCV7. In 2023, two newer versions became available. They protect against 15 or 20 types of pneumococcus (PCV15 and PCV20), so it is likely that over time PCV13 will go the way of PCV7.

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Q. Who should get the pneumococcal vaccine?

A. Pneumococcal vaccine is recommended for all children under the age of 2 and for adults 65 years or older. In addition, some people between 2 and 64 years of age are recommended to get this vaccine because they have conditions that put them at greater risk of pneumococcal infections, such as those with chronic diseases of the heart, liver or lungs, including asthma; those with diabetes, cancer, HIV or other immune-compromising conditions; and those who smoke or have alcoholism. Because the recommendations are based on age and condition, talk to your doctor about whether you or your child need pneumococcal vaccine and if so, which types, how many doses and when.

Q. Who shouldn't get the pneumococcal vaccine?

A. People with severe allergic reactions to components of the vaccine may be recommended against being vaccinated; however, consult your healthcare provider about the relative risks and benefits of this vaccine.

Q. How often should I get the vaccine?

A. Infants should get four doses of PCV15 or PCV20 vaccine at 2 months, 4 months, 6 months, and between 12 and 15 months. Adults 65 and older who did not previously receive pneumococcal vaccine should get either one dose of PCV15 followed by one dose of PPSV23 a year later, or they can get one dose of PCV20. Adults who were previously vaccinated against pneumococcus should discuss proper dosing with their healthcare provider. Additionally, high-risk children and adults between 2 and 64 years of age should consult their healthcare providers to ensure proper dosing.

Q. Do I need both pneumococcal vaccines?

A. Whether you need both the polysaccharide and conjugate pneumococcal vaccine will depend on your vaccination history and your health status. Talk with your healthcare provider about what vaccine regimen is recommended for your specific situation.

Q. What is the maximum amount of time I can wait between the doses?

A. There is no maximum amount of time between vaccine doses. For adults getting the conjugate and polysaccharide versions, they should be separated by at least one year, except in limited circumstances. Talk to your healthcare provider to determine the best timing and order of doses based on your situation.

Q. If I've already had pneumococcal pneumonia, do I still need to be vaccinated?

A. Yes. Even if you've had pneumococcal pneumonia, it is still recommended to be vaccinated against pneumococcus because of the many types of the bacteria that can cause infection. Illness with one type of pneumococcus does not mean protection against another.

Q. What are the risks and benefits of getting the vaccine?

A. Pneumococcal vaccines can cause redness, pain, and swelling at the site of injection; fever; or muscle aches. Because infections with pneumococcus can result in hospitalization and death, the benefits of vaccination clearly outweigh the risks.



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