

## Who Needs a Pneumonia Shot?

Pneumonia is an infection of the lungs that can be caused by bacteria, viruses, fungi, or parasites. It is the eighth leading cause of death in the United States and the number one cause of death from infectious disease. Community acquired pneumonia (CAP) refers to pneumonia that develops outside of a hospital or long-term care facility. Inside such institutions, the infecting agents are often very different and, therefore, treated differently. Community acquired pneumonia is most often caused by inhaling an infecting bacteria into the lungs.

Common symptoms of pneumonia are muscle pain, fatigue, headache, fever, increased perspiration, chest discomfort, or cough. Certain chronic health problems increase the risk of developing pneumonia. These include chronic obstructive pulmonary disease, diabetes mellitus, kidney failure, liver disease, and congestive heart failure. Another risk factor for developing pneumonia is recent influenza infection (flu).

The leading cause of community acquired pneumonia is the bacterium *Streptococcus pneumoniae*, which can also cause other serious infections such as bacteremia (infection of the blood) or meningitis (infection of the covering of the brain). In young children, *Streptococcus pneumoniae* is also a leading cause of middle ear infections. The group of infections caused by *Streptococcus pneumoniae* is also known as pneumococcal disease. Children less than 2 years old and adults older than 65 suffer from the highest rates of pneumococcal disease. In the past, drugs such as penicillin were very effective treatment for

these infections. Treating these diseases over the years has become more difficult because of the bacteria's development of antibiotic resistance. Fortunately, vaccines are available that help protect against pneumonia and other pneumococcal infections. Even though vaccines are available, hospitalizations due to pneumonia have increased during the last 15 years, especially for individuals 64 to 84 years old. The administration of the vaccine to recommended populations should help decrease hospitalizations and complications due to pneumococcal disease.

The two types of vaccines available are the pneumococcal polysaccharide vaccine (PPV) (Pneumovax 23, Pnu-Imune 23) and the pneumococcal conjugate vaccine (Prevnar). The PPV is not as effective in young children, so it is used only in individuals over the age of 2 years. The pneumococcal conjugate vaccine is effective in most children under the age of 2 years. It is recommended that children younger than 2 receive four doses of the conjugate vaccine. These doses are usually given at ages 2 months, 4 months, 6 months, and at 12 to 15 months. Some children between the ages of 2 and 5 who have certain health conditions such as sickle cell disease, diabetes, or cancer should also receive the conjugate vaccine. Parents should consult their healthcare providers for details on the vaccine schedule for their children.

The pneumococcal polysaccharide vaccine is recommended for all adults 65 years of age and older and for anyone over the age of 2 with chronic health conditions such as heart disease, lung disease, or diabetes. The vaccine is also recommended for people over the age of 2 years who have weakened immune

systems due to certain conditions such as leukemia, kidney disease, or HIV/AIDS. Usually only one dose of this vaccine is needed. However, a second dose is now recommended for some people who are over the age of 65 who had their first vaccine when they were under 65 and who had their first dose 5 years earlier. A second dose is also recommended for people with certain chronic health conditions. See tables 1 and 2 for a summary of the recommendations for the pneumococcal vaccines.

Pneumonia and other pneumococcal diseases cause significant illness, particularly in older adults and young children. Fortunately, the two vaccines available can reduce the risk of developing pneumococcal disease. One study estimated that if all of the elderly people in the United States who were not vaccinated with the pneumococcal vaccine were vaccinated, they would gain 78,000 years of healthy life and \$194 million dollars could be saved in healthcare costs. The pneumococcal vaccine is estimated to be 60 to 70 percent effective for preventing pneumococcal disease, and approximately 80 percent of healthy individuals who receive the vaccine will develop immune protection against *Streptococcus pneumoniae*.

Pneumococcal disease is a common illness that can lead to severe complications and even death. The pneumococcal vaccines are currently the best way to prevent this infection. Individuals should contact their healthcare providers to determine if they would benefit from receiving the vaccine.

Table 1. Centers for Disease Control and Prevention Recommendations for the Pneumococcal Vaccines

Vaccine	Who should get it?	Dosing Schedule
Pneumococcal Conjugate Vaccine (Prevnar)	<ul style="list-style-type: none"> <li>• Most children under 2 years of age</li> <li>• Children between 2 and 5 years who have not already gotten the vaccine and who are at high risk for serious pneumococcal disease</li> </ul>	Under 2 years of age (total of 4 doses): <ul style="list-style-type: none"> <li>• 2 months</li> <li>• 4 months</li> <li>• 6 months</li> <li>• 12 to 15 months</li> </ul>
Pneumococcal Polysaccharide Vaccine (Pneumovax 23, Pnu-Imune 23)	<ul style="list-style-type: none"> <li>• All adults 65 years of age and older</li> <li>• Anyone over 2 years of age with long-term health problems</li> <li>• Anyone over 2 years of age who has a disease or condition that lowers the body's resistance to infection</li> </ul>	<ul style="list-style-type: none"> <li>• 1 dose for people over 65 years of age</li> <li>• If 1 dose was given before age 65, a second dose is recommended after the age of 65 if it has been 5 years since the first dose</li> <li>• A second dose is recommended for individuals with conditions that lower the body's resistance to infection               <ul style="list-style-type: none"> <li>○ Children 10 years old and younger should get the second dose 3 years after the first dose</li> <li>○ Individuals older than 10 years of age should get the second dose 5 years after the first dose</li> </ul> </li> </ul>

Table 2. Chronic conditions for Which a Second Dose of the Pneumococcal Polysaccharide Vaccine is Recommended

- Damaged spleen or no spleen
- Sickle cell disease
- HIV or AIDS
- Cancer, leukemia, lymphoma, multiple myeloma
- Kidney failure
- Nephrotic syndrome
- Organ or bone marrow transplant
- Chemotherapy or long-term steroids

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