

FACTS ABOUT PNEUMOCOCCAL DISEASE

What is pneumococcal disease?

Pneumococcal disease is a leading cause of serious illness in children and adults throughout the world. The disease is caused by a common bacterium, the pneumococcus, which can attack different parts of the body. When bacteria invade the lungs, they cause the most common form of community-acquired bacterial pneumonia; when bacteria invade the bloodstream, they cause bacteremia; and when they invade the covering of the brain, they cause meningitis. Pneumococci may also cause otitis media (middle ear infection) and sinusitis. Currently there are more than 90 known pneumococcal types; the 10 most common types account for approximately 62 percent of invasive disease worldwide.

Who is at risk?

Anyone can get pneumococcal disease, but some groups are at particularly high risk for pneumococcal disease or its complications. These groups include persons aged 65 and older; individuals with weak immune systems due to cancer, leukemia, Hodgkin's disease or human immunodeficiency virus (HIV); persons with sickle cell disease or without a functioning spleen; individuals who have a chronic illness such as lung, heart and kidney disease, diabetes and alcoholism; persons living in special environments or communities, such as Alaskan Natives and certain American Indian populations; and residents of chronic or long-term care facilities.

How significant is pneumococcal disease?

Each year in the United States, there are an estimated 175,000 hospitalized cases of pneumococcal pneumonia; it is a common bacterial complication of influenza. In addition, in terms of invasive disease, there are more than 50,000 cases of bacteremia and 3,000 to 6,000 cases of meningitis annually in the United States. Invasive disease bacteremia and meningitis are responsible for the highest rates of death among the elderly and patients who have underlying medical conditions. According to the Centers for Disease Control and Prevention (CDC), invasive pneumococcal disease causes nearly 40,000 cases and more than 5,100 deaths annually. More than half of these cases involve adults for whom vaccination against pneumococcal disease is recommended.

How is pneumococcal disease treated?

Pneumococcal disease traditionally has been treated primarily with penicillin. In recent years, pneumococcal strains resistant to penicillin and other commonly used antibiotics have emerged. This resistance makes treatment difficult and may result in longer hospitalizations and more expensive alternative therapy. The emergence of resistant strains places further emphasis on the need for preventing pneumococcal disease through vaccination.

Can pneumococcal disease be prevented?

The best way to protect against pneumococcal disease is through vaccination. There are two types of pneumococcal vaccine currently available: a polysaccharide vaccine and a conjugate vaccine. The polysaccharide vaccine is used in adults and the conjugate vaccine is used in children. The polysaccharide has been available in the United States for more than 20 years. Yet in 2002, only 63 percent of those 65 years of age and older reported ever receiving the pneumococcal vaccine, according to the CDC's Behavioral Risk Factor Surveillance System. This falls short of the Healthy People 2010 goal of vaccinating 90 percent of adults 65 years of age and older against pneumococcal disease.

Who should be vaccinated?

Vaccination with pneumococcal polysaccharide vaccine is recommended for:

- Persons who are 65 years of age and older
- Everyone 2 years of age and older with chronic medical conditions such as diabetes, chronic lung (except asthma), heart, kidney or liver disease, or alcoholism (see ACIP recommendations for children 24 to 59 months of age)
- Those whose immune systems have been weakened by such conditions as cancer or HIV infection
- People without a functioning spleen and those with sickle cell disease
- Residents of chronic care or long-term care facilities

Vaccination with the polysaccharide vaccine protects against 23 of the most prevalent or invasive *Streptococcus pneumoniae* strains. The polysaccharide vaccine is not recommended for infants and young children under 2 years of age, as this age group does not respond to polysaccharide vaccines. Children under age 2 fall into the highest general risk group for invasive pneumococcal infections.

The pneumococcal conjugate vaccine is recommended for all children 2 to 23 months of age. Other children at increased risk include those with sickle cell disease, HIV infection and other immunocompromising or chronic medical conditions; these children should receive pneumococcal conjugate vaccine and pneumococcal polysaccharide vaccine. The pneumococcal conjugate vaccine protects against seven strains of the *Streptococcus pneumoniae* bacterium. For additional information about pneumococcal vaccination in infants and young children, visit the CDC Web site at www.cdc.gov.

When is the best time to get vaccinated?

For adults, pneumococcal vaccination with the polysaccharide vaccine, which is reimbursable by Medicare Part B, is appropriate at any time of the year. It can be administered at the same time as the influenza vaccine. For infants aged 2 to 23 months, the conjugate vaccine has been incorporated into the routine childhood immunization schedule.

What has been the experience with pneumococcal vaccines?

Pneumococcal vaccines are considered clinically effective and safe. Pneumococcal vaccination of adults with the polysaccharide vaccine has been shown to be effective in the prevention of invasive pneumococcal disease, offering protection against 23 of the most prevalent pneumococcal types. Serotypes contained in the vaccine account for nearly 90 percent of pneumococcal disease.

In infants and children, studies have shown that the conjugate vaccine reduces the incidence of invasive pneumococcal disease, pneumococcal pneumonia and otitis media.

The vaccine may cause some local reaction or soreness around the site of the injection; however, these reactions are usually minor and subside within a few days. In children, the conjugate vaccine may cause mild fever, fussiness and decreased appetite.

How often is vaccination needed?

In most adults who are vaccinated at age 65 or older, vaccination is needed only once in a lifetime. However, for adults who are vaccinated before age 65, or for those at highest risk for serious disease, revaccination may be necessary.

In infants and children aged 11 months or younger, three or four doses of conjugate vaccine are required, depending upon the age the first dose is given. Children 12 to 23 months of age require two doses. Healthy children 24 to 59 months of age require one dose of conjugate vaccine, and those with certain chronic diseases require two doses.

Who should not be vaccinated?

Individuals who have had a previous allergic reaction (e.g., hives, difficulty breathing) to the pneumococcal vaccine should avoid vaccination. The vaccine should also be avoided during radiation therapy or chemotherapy.

Health care providers can choose to delay vaccination of children with moderate to severe infection until the child has recovered. However, vaccination can proceed during minor illness, with or without fever, particularly among children with mild upper respiratory tract infections or hay fever.

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