Pneumococcal Infection and Vaccine

Pneumococcus is a type of bacteria that can attack different parts of the body and cause many serious infections including

- Meningitis (brain)
- Bacteremia (blood stream)
- Pneumonia (lungs)
- Sinusitis (sinus membranes)
- Otitis media (ears)

These infections can be dangerous to very young children, the elderly, and people with certain high-risk health conditions.

Pneumococcal infection

What is pneumococcal infection?

Pneumococcal bacteria live naturally in humans in the back of the nose. Many people carry the bacteria and never get sick. In fact, being a carrier helps boost one's natural immunity to the disease. Others are not immune and can get very sick from the infections caused by the bacteria.

Pneumococcal infections occur most often during the winter months. They spread from person to person the same way a cold or the flu spreads — by droplets passed through the air from coughing or sneezing, and through direct contact such as touching unwashed hands or kissing. The disease may spread quickly, especially in places where there are a lot of children, like child care centers and preschools.

Very young children do not have fully developed immune systems. This makes them more at risk from bacterial infections like pneumococcus. In addition, pneumococcal infections can be life threatening for people with certain health problems such as

- HIV infection or other immune system disorders
- Sickle-cell disease
- White cell cancers like leukemia or lymphoma
- Chronic lung, heart, or kidney disease
- A removed spleen or one that doesn't work properly
- Bone marrow or organ transplants

Common pneumococcal infections and their symptoms

Bacteremia and meningitis

Pneumococcal bacteremia and *pneumococcal meningitis* occur when pneumococcal bacteria get into the bloodstream and/or the central nervous system. Bacteremia is the presence of bacteria in the blood. Meningitis is an infection of the thin lining and blood vessels that cover the brain and spinal cord. Symptoms of meningitis include

- High fever
- Stiff neck
- Headache
- Vomiting
- Extreme tiredness and/or irritability
- Loss of appetite

Pneumonia

Pneumococcal pneumonia is a chest infection in which the lungs become filled with fluid. Symptoms of pneumonia include

- Cough that may bring up thick yellow-green or bloody mucus
- High fever
- Shortness of breath or chest pain
- Extreme tiredness
- Hard and rapid breathing

Sinusitis

Sinusitis occurs when the membranes lining the air-filled pockets in the bone of the face (sinuses) swell. The sinus cavities may fill with fluid. Symptoms of sinusitis include

- Pressure behind the eyes
- Pain in the face
- Trouble breathing through the nose
- Postnasal drip or prolonged runny nose
- Fever
- Toothache

Otitis media

Otitis media is an infection of the middle ear. Young children commonly develop middle ear infections when they have colds, the flu, or other viral respiratory infections. Symptoms of an ear infection include

- Ear pain (very young children may pull at their ears because of the pain)
- Fever
- Restlessness or irritability
- Crying
- Runny nose

Diagnosis and treatment of pneumococcal infections

Your pediatrician will be able to tell if your child has a pneumococcal infection by your child's symptoms, a physical examination, and looking at your child's medical history. X-rays, blood tests, and sometimes a spinal tap also may be done to confirm pneumococcal infection in your child.

Prompt treatment with antibiotics is usually effective. In addition, your child may need bed rest and a lot of fluids. In some cases, your child may need to be hospitalized.

Unfortunately, some strains of the pneumococcal bacteria are developing resistance to the antibiotics usually used to kill them. This means that other antibiotics must be used. Your pediatrician will let you know which antibiotic is best for your child.

Prevention of pneumococcal infections

- Teach your children to wash their hands regularly with soap and water. This helps prevent the spread of infection.
- Avoid dust, tobacco smoke, and other substances that may interfere with breathing and make children more likely to get sick.

Pneumococcal vaccine

A vaccine now offers infants and young children protection against pneumococcal infections. It is most effective against the major pneumococcal diseases — bacteremia, meningitis, and pneumonia. The vaccine is minimally effective in preventing otitis media and sinusitis. Pneumococcal vaccine is safe and can be given as a separate injection at the same time as other immunizations.

Who should receive the vaccine?

The American Academy of Pediatrics recommends that all children younger than 2 years of age receive the Heptavalent Pneumococcal Conjugate Vaccine (PCV7 or Prevnar). A series of doses may be given at 2, 4, 6, and 12 to 15 months of age. A "catch-up" immunization schedule is available for children who get a late start.

Some children between the ages of 2 and 5 years who have certain health problems also need pneumococcal vaccine because they are at higher risk of getting serious infections. Two types of vaccines may be given to children in that group. Your pediatrician can explain which vaccine is best for your child.

Pneumococcal vaccines may be given to some children 5 years of age and older, although the risk associated with pneumococcal infections is much lower in older children.

Are there side effects to pneumococcal vaccines?

Most children have no side effects with pneumococcal vaccines. Those side effects that do occur are mild and temporary. The possible side effects include

- Soreness, swelling, and redness where the shot was given
- A mild-to-moderate fever
- Fussiness

These symptoms may begin within 24 hours after the shot and usually go away within 48 to 72 hours.

Talk to your pediatrician to see if your child should be vaccinated for pneumococcal infection and about the possible reactions to these immunizations.

From your doctor

American Academy of Pediatrics

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American Academy of Pediatrics
PO Box 747
Elk Grove Village, IL 60009-0747
Web site — http://www.aap.org