

Pneumococcal Disease

The Disease

The *Streptococcus pneumoniae* bacteria kills more people in the United States each year than all other vaccine-preventable diseases combined. It is commonly thought of as a disease of the elderly, but it also takes its toll among our children. Each year the pneumococcal bacteria causes invasive disease (mostly blood infection, or "bacteremia") in about 16,500 children under 5 years old, including more than 700 cases of meningitis (inflammation of the brain and spinal cord coverings). It is the leading cause of bacterial meningitis in the country, hitting children under one year old the hardest. About 200 children die from invasive pneumococcal disease each year.

In addition, pneumococcal disease causes 25% - 40% of all middle ear infections in children. Middle ear infections are responsible for more visits to a pediatrician than any other complaint, and they are the number one reason for prescribing antibiotics to children.

All children are susceptible to pneumococcal disease, but some groups have higher rates of the disease, including African Americans, American Indians, Alaska Natives, and children with certain medical conditions such as sickle cell disease or HIV infection, or who don't have a functioning spleen.

The pneumococcal bacteria are spread from person to person, mainly through the air. The disease can be spread by anyone who is infected, even if they don't have symptoms. Pneumococcal infections are more common during the winter and early spring.

Treating pneumococcal infections with penicillin and other antibiotics used to be effective, but the disease is becoming more and more resistant to antibiotic treatment, making immunization increasingly important.

Pneumococcal Fact: There are 90 known strains (serotypes) of the pneumococcal bacterium, but most severe illness is caused by 10 of them.

Pneumococcal Immunization

Pneumococcal conjugate vaccine is the second part of our one-two punch against bacterial meningitis (Hib vaccine is the first). Until very recently, pneumococcal vaccine

was recommended mostly for adults over 65 years old, and was not licensed at all for children under 2. This is because the only type of vaccine that was available (pneumococcal "polysaccharide" vaccine) doesn't work very well for young children. Now a different type of vaccine (pneumococcal "conjugate" vaccine) has been licensed that works for children under 2, and it is finally possible to prevent pneumococcal disease in that vulnerable age group.

Pneumococcal conjugate vaccine is an inactivated (killed) vaccine. It gives immunity against the 7 strains of the pneumococcal bacterium that cause most of the serious infections in children. This vaccine should prevent most meningitis and bacteremia caused by pneumococcal bacteria. However, there are other causes of bacteremia and meningitis, and this vaccine will not prevent them. It will also not prevent all ear infections. Some ear infections are caused by pneumococcal disease, but many are caused by other germs too, and the vaccine will not prevent these.

Children should routinely get 4 doses of the vaccine, one dose each at 2, 4, 6, and 12-15 months of age. Children who begin the series later may not need as many doses. Check with your doctor or clinic for the recommended schedule if your child starts late. Children over 5 years old will generally not get the pneumococcal conjugate vaccine. Older children who need protection from pneumococcal disease (those with certain chronic diseases or damaged immune systems) can get the polysaccharide vaccine, or may get a series that includes both vaccines. Your doctor or clinic staff will tell you if your older children need protection from pneumococcal disease.

Pneumococcal vaccine may be given at the same time as other childhood vaccines.

Side Effects from Pneumococcal Immunization

Since the pneumococcal conjugate vaccine is new, the only safety data come from clinical trials. The side effects that have been seen are mainly mild local reactions (redness or tenderness where the shot was given) or a mild fever. The frequency of these reactions vary from study to study, with the highest rates being about 40% of recipients. Moderately serious reactions, such as prolonged crying and febrile seizures (seizures caused by fever) were seen only rarely in these studies, and may not have been caused by the vaccine.

Like any vaccine, or medicine, pneumococcal vaccine could theoretically trigger a serious reaction in someone who is allergic to one of its components. But severe allergic reactions to childhood vaccines are very rare (estimated at around one per million doses), and no child is ever known to have died from an allergic reaction to a vaccine.

Precautions

There are several reasons a doctor might want to delay giving a child a pneumococcal vaccination or not give it at all:

- A child who has had a life-threatening **allergic reaction** after a dose of pneumococcal vaccine should not get another dose.
- A child who has a **moderate or severe illness** on the day a pneumococcal (or any) vaccination is scheduled should probably delay the vaccination until he or she has recovered.

After Getting Pneumococcal Vaccine . . .

If the child has **any** serious or unusual problem after getting pneumococcal vaccine, or any other vaccine, call a doctor or get the child to a doctor right away.