



...for Parents and Caregivers



**Immunisation
Advisory
Centre**

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Pneumococcal Disease

Fact Sheet: Parents and Caregivers

What is Pneumococcal Disease?

The bacteria *Streptococcus pneumoniae* can cause infections in different parts of the body such as the sinuses (sinusitis) and in the ear (otitis media or middle ear infection). Sometimes it can result in very serious illness including pneumonia, septicaemia (blood poisoning) and meningitis (inflammation of the brain lining).

What are the symptoms of serious pneumococcal disease?

Early stages of serious pneumococcal infections may appear like influenza but can progress very quickly (within hours) and they always result in hospitalisation.

- Pneumococcal pneumonia is the most common form of serious pneumococcal disease. Pneumonia starts with a sudden fever with shaking chills, chest pain, productive cough, shortness of breath and rapid breathing. As the infection worsens the heart rate increases and hypoxia (lack of oxygen) may be present. This can be life threatening.
- Pneumococcal meningitis and septicaemia are also very serious outcomes. The signs of pneumococcal meningitis and septicaemia are the same as meningitis and septicaemia (blood poisoning) caused by other bacteria and need immediate medical attention. A baby or child may have a fever, be crying or unsettled, refuse drinks or feeds, vomit, be sleepy, floppy or difficult to wake, dislike bright light, have a rash or spots. Pneumococcal septicaemia (blood poisoning) often accompanies pneumonia or meningitis in infants under 2 years of age.
- The bacteria can also occasionally infect the heart muscle and very rarely affect other sites in the body such as joints and the abdomen.

How do you catch it?

The pneumococcal bacteria are carried in the nose and throat and are easily passed from person to person by coughing, sneezing and close contact.

How serious is it?

The elderly and children under 5 years old have the highest risk of serious disease. *Streptococcus pneumoniae* is the leading cause of bacterial pneumonia. Ear infections are painful and complications can lead to deafness and learning difficulties. Pneumococcal meningitis is very serious and about half the children affected go on to have long-term disabilities. These infections can be difficult to treat because some of the bacteria are resistant to antibiotics.

How common is severe pneumococcal disease in children?

Around 150 pre-school children get severe invasive pneumococcal disease each year and many more are hospitalised with pneumonia. Auckland studies found nearly 2 from every 1,000 children under 2 years old are hospitalised with invasive pneumococcal disease. For Maori and Pacific children the rate is slightly higher with nearly 3 out of 1,000 Pacific children under 2 years old hospitalised.

Who is most at risk?

The risk of serious disease is highest in infants and the elderly, and those with predisposing conditions. All healthy children under the age of 5 years are at risk from pneumococcal disease, particularly those attending early childhood services or living in overcrowded conditions. Infection is more frequent in autumn and winter.

How do you prevent infection?

It is extremely difficult to avoid coming into contact with such a common bacteria but good hygiene practices - covering coughs and sneezes, hand washing and avoiding smoking and overcrowded living conditions may help. Most infants are born with some maternal protection (antibodies) against the bacteria. However, by 6 weeks of age it is likely that half the maternal antibodies have decayed. Babies do not develop effective protection against pneumococcal bacteria until about 2 years old.

Which vaccines protect against pneumococcal disease in infants?

Pneumococcal conjugate vaccine (Prevenar®) has been added to the National Immunisation Schedule from 01 June 2008. It is now free for all infants born from 01 January 2008.

(A different pneumococcal vaccine for those over 65 years of age is also available in New Zealand but it must be purchased. Talk to your nurse or doctor for more information)

How protective is the vaccine?

No Vaccine is 100% effective.

- Large studies show that the pneumococcal conjugate vaccine (Prevenar®) prevents 97% of serious infections caused by the 7 most common strains of pneumococcal bacteria. It can prevent some ear infections but ear infections have many causes and this vaccine is only effective against a very small percentage of them.

- Pneumococcal immunisation programmes also have a strong protective effect for the rest of the community. Severe pneumococcal disease and pneumonia dropped significantly for people of all ages after the introduction of the childhood vaccine in the USA.

Who should have pneumococcal vaccine?

From 01 June 2008 all new babies are offered the vaccine. In addition all babies born from 01 January 2008 are eligible to receive catch-up immunisation.

- For the best protection in infants pneumococcal vaccine is given in 4 doses alongside scheduled vaccines at 6 weeks, 3 months, 5 months and 15 months of age. It is important to start the doses on time because babies are particularly vulnerable to this infection at a very early age.

- Some individuals have underlying medical conditions such as severe asthma or compromised immune systems that place them at particular risk from severe pneumococcal disease.

They may also be eligible for free pneumococcal vaccine if under 5 years of age. Some adults, for example those who have had their spleen removed, are eligible for free pneumococcal vaccine. More information on this can be found on the at-risk pneumococcal immunisation programme.

How much does it cost?

The vaccine is available free from your nurse or doctor at general practice from 01 June 2008 for all babies born from 01 January 2008.

Who should not have the vaccine?

Anyone with severe allergy (anaphylaxis) to any component of the vaccine should not be vaccinated.

How safe is the Vaccine?

The risk of pneumococcal vaccine causing serious harm is extremely small (refer to the table below for side effects). Pneumococcal vaccine is far safer than getting pneumococcal disease.

Who else uses the vaccine?

Pneumococcal conjugate vaccine has been included on the immunisation schedules of over 14 countries, including the United States, United Kingdom, Canada and Australia.

Introduction of the vaccine to the United States infant immunisation schedule has resulted in a decline in severe pneumococcal disease incidence in young children.

Comparison of effects of conjugate pneumococcal vaccine versus pneumococcal disease

| Pneumococcal disease | Effects of Disease | Side Effects of Vaccination |
|---|--|--|
| Pneumococcal infections – bacteria spread by droplets | <ul style="list-style-type: none"> • Causes fever, sinusitis, ear infections, pneumonia, meningitis, and septicaemia. • About 1 in 20 meningitis patients dies. • Half of meningitis patients are left with disabilities. | <ul style="list-style-type: none"> • 1 in 4 have redness or swelling where the injection is given • 1 in 3 have fever, and 1 in 50 have high fever • Some children also become fussy or drowsy or lose their appetite for a short time. • So far no serious reaction has been associated with this vaccine. • Anaphylaxis (rare). |

Vaccines are prescription medicines. Talk to your doctor, nurse or midwife about the benefits and any risks.

*Prevenar® is a Prescription Medicine used for active immunisation of children from six weeks to nine years of age against invasive disease, pneumonia, and otitis media caused by the bacteria Streptococcus pneumoniae. As with all vaccines 100% protection against the above diseases cannot be guaranteed. Do not use if your child has had an allergic reaction to pneumococcal or diphtheria vaccines. Possible injection site side effects are pain, rash, redness, swelling or a lump. Other possible side effects included fever, irritability, drowsiness, restless sleep, decreased appetite, vomiting and diarrhoea. Prevenar® is free for all children born from January 1 2008. If you have any concerns regarding side effects, speak to your doctor or nurse immediately. Each 0.5ml dose of Prevenar® contains 16 micrograms of bacterial saccharides, 20 micrograms of CRM 197 protein, aluminium phosphate, sodium chloride and water.