



...for Parents and Caregivers



**Immunisation  
Advisory  
Centre**

ARAINGA MATE

UNIVERSITY OF AUCKLAND

[www.immune.org.nz](http://www.immune.org.nz)

## Pneumococcal Disease

### Fact Sheet: Parents and Caregivers

#### What is Pneumococcal Disease?

The bacteria *Streptococcus pneumoniae* causes infections in different parts of the body such as the sinuses (sinusitis) and in the ear (otitis media or middle ear infection). When it attacks other parts of the body it becomes 'invasive' resulting in very serious infections including pneumonia, septicaemia (blood poisoning) and meningitis (inflammation of the brain lining).

#### What are the symptoms of serious pneumococcal disease?

Early stages of invasive pneumococcal infections may look like a case of influenza but can progress very quickly (within hours) resulting in hospitalisation.

- Pneumococcal pneumonia is the most common invasive form. 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 infection 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 lights, 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 abdominal cavity.

#### How do you catch it?

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

#### How serious is it?

Ear infections are painful. Complications can lead to deafness and learning difficulties

The elderly and children under 5 years old have the highest risk of serious invasive disease. These infections can be difficult to treat because some of the bacteria are resistant to some antibiotics. Pneumococcal meningitis is very serious and about half the children affected go on to have long-term disabilities.

#### How common is invasive pneumococcal disease in children?

Around 150 pre-school children get severe 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 even 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 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 catching 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 start to build their own strong antibodies against pneumococcal bacteria until about 2 years old.

#### Which vaccine protects 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 (Pneumovax®23) for those over 65 years of age is also available for purchase in New Zealand. Some children under the age of five with certain medical conditions and adults without a functioning spleen are eligible for free pneumococcal vaccine, either Prevenar® or Pneumovax®23 or a combination. Talk to your nurse or doctor for more information).

## How effective 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 in children. 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 due to reduction in children carrying the organism in their throats. Severe pneumococcal disease and pneumonia dropped significantly for people of all ages a few years after the introduction of the childhood vaccine in the USA.

## Who should have pneumococcal vaccine/s?

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

- For the best protection pneumococcal vaccine is given in 4 doses at the same time as part of the 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 vulnerable to this infection from 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. Adults without a functioning spleen are also 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 allergic reaction (anaphylaxis) to any component of the vaccine should not be vaccinated.

## Is the vaccine safe?

No serious reactions have been associated with pneumococcal vaccines.

## 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 causes fever, sinusitis, ear infections, pneumonia, meningitis, and septicaemia	About 1 in 20 meningitis patients dies	<ul style="list-style-type: none"> <li>• 1 in 4 had redness or swelling where the injection was given</li> <li>• 1 in 3 had fever, and 1 in 50 had high fever</li> <li>• Some children also become fussy or drowsy or lose their appetite for a short time.</li> <li>• So far no serious reaction has been associated with this vaccine.</li> </ul>

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 include 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.