

Conjugate Pneumococcal Vaccine (Prevenar)

Key Points

- Always recommend conjugate pneumococcal vaccine for children in the high-risk groups.
- Consider recommending conjugate pneumococcal vaccine for all children <2 years of age (including your own children).

Background

Each year, there are approximately 70 cases of meningitis, 630 cases of bacteraemia, 1300 cases of hospitalised pneumonia, many thousands of cases of non-hospitalised pneumonia, and >40,000 cases of otitis media due to pneumococcus in non-Aboriginal Australian children aged <5 years. Until recently, there has been no effective vaccine to prevent pneumococcal infections in young children.

A conjugate pneumococcal vaccine became available in Australia a few months ago (Prevenar – Lederle Laboratories). This vaccine contains the 7 serotypes which account for approximately 80% of invasive pneumococcal isolates and almost all the antibiotic resistant strains in Australia.

This vaccine is highly effective in reducing the risk of invasive pneumococcal disease (meningitis, septicaemia), and offers some protection against other illnesses caused by pneumococcus, including pneumonia. It may also prevent a small proportion of cases of otitis media.

Pneumococcal vaccine is now recommended for all babies in the USA. It is given at 2, 4 and 6 months of age in the USA, and the vaccine is provided for free by Government or insurance companies for most of these children.

In Australia, the vaccine is currently not funded for all children, though can be purchased for any individual child. The vaccine is expensive, and up to 3 doses are needed according to age.

The cost to a parent ranges between approximately \$125 and \$150 per dose to purchase the vaccine. Note that the “extras” packages provided by many private health insurance companies may allow partial reimbursement of the costs of this vaccine.

High-risk groups

The Government has funded a National Vaccination Program for children known to be at a significantly higher risk of invasive pneumococcal disease. The ‘high-risk’ groups who are currently eligible for free vaccine include:

1. All Aboriginal and Torres Strait Islander children under the age of 2 years throughout Australia; plus Aboriginal children in Central Australia between 2 and 5 years of age; plus Non-Aboriginal children in Central Australia under 2 years of age.
2. Children with certain medical conditions which predispose them to invasive pneumococcal disease.

Diseases comprising immune response to pneumococcal infection:

- Congenital immune deficiency including symptomatic IgG subclass or isolated IgA deficiency but excluding children where monthly immunoglobulin infusion is required
- Diseases associated with immunosuppressive therapy or radiation therapy (including corticosteroid therapy equivalent to greater than 2mg/kg of prednisone for more than 4 weeks) where there is sufficient immune reconstitution for vaccine response to be expected
- Compromised splenic function due to sickle haemoglobinopathies or congenital or acquired asplenia
- HIV infection
- Renal failure or relapsing or persistent nephrotic syndrome

Anatomical abnormalities associated with higher rates or severity

- Cardiac disease associated with cyanosis or cardiac failure
- Proven or presumptive cerebrospinal fluid leak

Use in other children

ATAGI (The Australian Technical Advisory Group on Immunisation of the Commonwealth Department of Health and Aged Care) has strongly recommended the vaccine for the high-risk groups discussed above. ATAGI has issued the following statement regarding healthy children: *Parents who express an interest in 7vPCV should be encouraged to have their child vaccinated, as long as compliance with the schedule vaccines can be assured.*

We feel that this is a highly effective, safe, additional vaccine that should be offered to all healthy children under 2 years of age, noting that families will have to pay for it at present.

The vaccine is also safe and effective in children over the age of 2 years, though the risk of invasive pneumococcal disease declines in this age group. This vaccine should be viewed as an additional way of preventing serious illness, and should not be given in preference to any of the current immunisations on the Australian Childhood schedule.

Timing

The vaccine can be given at the same time as other childhood vaccines including conjugate meningococcal vaccine and varicella vaccine.

Adverse Reactions

The safety of the vaccine has been assessed in controlled clinical trials involving >20,000 healthy infants, and has been found to be safe.

- Swelling, pain and tenderness at the injection site may occur.
- Rash and urticaria are uncommon.
- Seizures and hypotonic-hyporesponsive episodes are rare.

Catch-Up Schedule for Healthy Children

Age 2-6 months	3 doses 2 months apart – no booster
Age 7-17 months	2 doses 2 months apart – no booster
Age >18 months	1 dose – no booster