

## Which vaccines protect against pneumococcal disease?

Synflorix®, Prevenar 13® and Pneumovax®23 protect against disease caused by *Streptococcus pneumoniae* bacteria, pneumococcal disease, but they are made differently.

**Synflorix (PCV10) and Prevenar 13 (PCV13)** are conjugate vaccines.

- » Polysaccharide (sugar) molecules from the outside of pneumococcal bacteria have been attached (conjugated) to a protein to make them better at stimulating the immune system.
- » All age groups, including young infants, respond well to this type of vaccine.
  - » Synflorix includes 10 pneumococcal bacteria types, and can indirectly protect against two additional types.
  - » Prevenar 13 includes the same pneumococcal types as Synflorix, plus three additional types.

**Pneumovax23** is a polysaccharide vaccine (23PPV).

- » It is made using only the polysaccharide (sugar) molecules from the outside of pneumococcal bacteria.
- » Polysaccharide vaccines are not very effective in children under 2 years of age as the immune system is too immature to generate a strong protective response to this kind of vaccine.
- » Older children and adults do respond to Pneumovax23, but not as well as they do to the conjugate vaccine.
  - » Pneumovax23 includes 23 pneumococcal bacteria types and can add protection against 11 more pneumococcal types than Prevenar 13.

Conjugate vaccines		Polysaccharide vaccine
Synflorix (PCV10)	Prevenar 13 (PCV13)	Pneumovax23 (23PPV)
» 10-valent protects against 10 pneumococcal serotypes	» 13-valent protects against 13 pneumococcal serotypes	» 23-valent, protects against 23 pneumococcal serotypes
» Conjugate vaccines can be used for all ages, including infants and children under 2 years of age.		» Polysaccharide vaccines can only be used for children aged 2 years or older and adults.
» Protection from the conjugate vaccines lasts longer than that from the polysaccharide vaccine. <ul style="list-style-type: none"> <li>▪ Children aged five years or younger when immunised are likely to have 3–5 years of protection.</li> <li>▪ Older children, adolescents and adults are likely to have at least five years of protection after immunisation.</li> </ul>		» Protection from polysaccharide vaccines is shorter than from conjugate vaccines. <ul style="list-style-type: none"> <li>▪ Children aged five years or younger when immunised are likely to have 2–3 years of protection.</li> <li>▪ Older children, adolescents and adults are likely to have between 3–5 years of protection after immunisation.</li> </ul>
» Conjugate vaccines generate long term memory cells allowing rapid boosting of immunity with booster doses up to many years later.		» Polysaccharide vaccines do not generate long term memory cells, there is nothing to boost when the same vaccine is received again years later. » Repeat polysaccharide vaccine doses generate less circulating antibodies than previous doses.
» Conjugate vaccines are more expensive than polysaccharide vaccines.		» Polysaccharide vaccines are less expensive than conjugate vaccines.

## Who is eligible for funded pneumococcal vaccines?

### Routine Immunisation Schedule

Pneumococcal conjugate vaccine is free for children at the 6 weeks, 3 months, 5 months and 15 months of age immunisation visits, and for age-appropriate catch-up immunisation for children aged under 5 years.

Synflorix will replace Prevenar 13 on the routine Immunisation Schedule in approximately mid-August 2017.

### Special groups

Prevenar 13 and Pneumovax 23 are the funded pneumococcal vaccines funded for children and adults with a medical condition that increases their risk of invasive pneumococcal disease AND is listed on the Pharmaceutical Schedule.

### Children aged 5 years or older, and adults

- » Cochlear implant
- » Complement deficiency (acquired or inherited)
- » Functional asplenia
- » HIV-positive
- » Post-haematopoietic stem cell transplantation
- » Post-chemotherapy
- » Pre- or post-splenectomy
- » Pre- or post-solid organ transplantation
- » Primary immunodeficiency
- » Renal dialysis

### Children aged under 5 years

- » Cardiac disease with cyanosis or failure
- » Cerebrospinal fluid leak
- » Chronic pulmonary disease, including asthma treated with high-dose corticosteroid therapy
- » Cochlear implant
- » Corticosteroid therapy for more than two weeks and who are on an equivalent daily dosage of prednisone of 2 mg/kg per day or greater, or children who weigh more than 10 kg on a total daily dosage of 20 mg or greater
- » Diabetes
- » Down syndrome
- » Functional asplenia
- » HIV-positive
- » Immunosuppressive therapy
- » Intracranial shunt
- » Nephrotic syndrome
- » Pre- or post-splenectomy
- » Pre-term infant born before 28 weeks gestation
- » Primary immune deficiency
- » Post-haematopoietic stem cell transplantation
- » Post-solid organ transplantation
- » Radiation therapy
- » Renal failure

Continued...

## Who is eligible for funded pneumococcal vaccines?

### Special groups continued

Funded pneumococcal vaccines for children and adults with an eligible condition listed on the previous page are:

- » Prevenar 13
  - » Replaces Synflorix doses on the routine Immunisation Schedule once the high-risk condition has been identified, **OR**
  - » One dose if aged 18 months to under 18 years, and have previously received four doses of Synflorix, **OR**
  - » Up to an additional four doses for (re-)immunisation.
    - » The number of doses are determined by age at first presentation for (re-)immunisation.
- » Pneumovax23
  - » The number of doses are determined by age at first presentation for immunisation.
    - » Up to two doses if aged 2 years to under 18 years, **OR**
    - » Up to three doses if aged 18 years or older.

### Why are both PCV13 and 23PPV recommended for those with a high-risk of pneumococcal disease?

Administration of Prevenar 13 (PCV13) 8 weeks before administration of Pneumovax23 (23PPV) is recommended because the immune response to Prevenar 13 is better and expected to last longer against the 12 serotypes covered by both vaccines.

Administration of Pneumovax23 (23PPV) 8 weeks after Prevenar 13 (PCV13) is recommended to broaden protection against an additional 11 pneumococcal serotypes covered by 23PPV that are not covered by PCV13.

### Why should PCV13 be given before 23PPV?

Immunisation with a pneumococcal polysaccharide vaccine (23PPV) can decrease an individual's immune response to subsequent pneumococcal immunisations. Giving Prevenar 13 eight weeks before Pneumovax23 allows the individual to maximise their response to the pneumococcal conjugate vaccine (PCV13) before broadening their protection.

### What if an individual has already had 23PPV but no PCV13?

Individuals who have previously received 23PPV can safely receive PCV13. When 23PPV has been administered to an individual aged 2 years or older before PCV13, wait at least 1 year before administering the PCV13 dose so they have protection for longer.

### Non-funded pneumococcal vaccine recommendations

Doctors may recommend Prevenar 13 and/or Pneumovax23 for people with a medical condition that is not listed on the Pharmaceutical Schedule, but the vaccines will not be free. Prevenar 13 and Pneumovax23 can be purchased from Healthcare Logistics for individuals who are not eligible to receive funded vaccine.

## How many PCV10 (Synflorix) or PCV13 (Prevenar 13) doses do we give?

First dose	Doses of PCV10 (Synflorix) or PCV13 (Prevenar 13)
Aged 6 weeks to under 7 months	<ul style="list-style-type: none"> <li>» Three doses PCV10 or PCV13 before their first birthday.</li> <li>» One booster dose PCV10 or PCV13 from 12 months old.</li> </ul>
Aged 7 months to under 12 months	<ul style="list-style-type: none"> <li>» Two doses PCV10 or PCV13 before their first birthday.</li> <li>» One booster dose PCV10 or PCV13 from 12 months old.</li> </ul>
Aged 12 months to under 24 months	<ul style="list-style-type: none"> <li>» Two doses PCV10 or PCV13 a minimum of eight weeks apart.</li> </ul>
Aged 24 months to under 5 years	<ul style="list-style-type: none"> <li>» Two doses PCV10 a minimum of eight weeks apart <b>OR</b></li> <li>» One dose PCV13.</li> </ul> <p><b>NOTE:</b> Two doses of PCV10 are required for a child aged 2 years to under 5 years. This is different to the number of PCV13 catch-up doses for this age group.</p>
Children aged 5 years or older and adults with a high-risk of pneumococcal disease	<ul style="list-style-type: none"> <li>» One dose PCV13.</li> </ul>
Healthy adults aged 65 years or older	<ul style="list-style-type: none"> <li>» One dose PCV13.</li> </ul>

## How many 23PPV (Pneumovax23) doses do we give?

First dose	Doses of 23PPV (Pneumovax 23)
Special groups children aged 2 years to under 18 years	<ul style="list-style-type: none"> <li>» One dose 23PPV, give a minimum of 8 weeks after PCV13.</li> <li>» Schedule a precall for the second/final 23PPV dose in 5 years, administer if they continue to be at high-risk of pneumococcal disease.</li> </ul>
Special groups adults aged 18 years to under 60 years	<ul style="list-style-type: none"> <li>» One dose 23PPV, give a minimum of 8 weeks after PCV13.</li> <li>» Schedule a precall for the second 23PPV dose in 5 years.</li> <li>» Schedule a precall for the third/final 23PPV dose 5 years after second dose or at age 65 years, whichever is later.                             <ul style="list-style-type: none"> <li>▪ A maximum of three 23PPV doses is recommended in a lifetime.</li> </ul> </li> </ul>
Special groups adults aged 60 years or older	<ul style="list-style-type: none"> <li>» One dose 23PPV, give a minimum of 8 weeks after PCV13.</li> <li>» Schedule a precall for the second/final 23PPV dose in 5 years.</li> </ul>
Healthy adults aged 65 years or older	<ul style="list-style-type: none"> <li>» One dose 23PPV, give a minimum of 8 weeks after PCV13.</li> <li>» Revaccination with 23PPV following the first dose is not routinely recommended.</li> </ul>