

## Pneumococcal Infection Vaccination

Pneumococcal infection is caused by the bacteria streptococcus pneumoniae (pneumococcus). More than 90 different serotypes of pneumococci are identified thus far, and they can cause various illnesses depending on the site of infection, such as sinusitis, otitis media (infection of middle ear) and pneumonia (infection of chest), or more fatal invasive pneumococcal diseases, including infection of brain membranes (meningitis), infection of blood stream (bacteremia and septicemia). In particular, the consequence of infection for children and elderly could be severe. Pneumococci are common in the nose and throat of healthy individuals, and spread through droplets via coughing and sneezing, close contact with the patients or contact with materials soiled with the bacteria. The incubation period is about 1 to 3 days. Vaccination is one of the most effective means to prevent pneumococcal infection.

### High risk groups

- Children
- Elderly
- Persons with:
  - History of Invasive Pneumococcal Disease (IPD)
  - Weakened immunity, such as asplenic patients, cancer patients, AIDS patients, etc.
  - Chronic illnesses such as diabetes mellitus
  - Cochlear (inner ear) implants

### Clinical features

Clinical presentation depends on the site of infection

- Middle ear infection (otitis media): fever, ear pain and sometimes with discharge
- Chest infection (pneumonia): fever, shortness of breath, chills and productive cough
- Infection of the brain membranes (meningitis): fever, stiff neck and confusion
- Infection of the blood stream (bacteraemia and sepsis): joint pain and chills/ shivering

### Vaccination types and comparison

- 13-valent pneumococcal conjugate vaccine (PCV13)
- 23-valent pneumococcal polysaccharide vaccine (23vPPV)

	<b>PCV 13</b>	<b>23vPPV</b>
Applicability	Adults and children aged more than 6 weeks of age	High risk groups that are aged 2 years or above
Serotypes covered	13 (covers the drug-resistant serotype 6A and 19A)	23 (does not cover serotype 6A)
Method of administration	Intramuscular injection	Intramuscular injection/ subcutaneous injection
	Children aged below 2: 3 doses [recommend to receive pneumococcal conjugate vaccines (PCV) under the Hong Kong Childhood Immunisation Programme (HKCIP). The standard regimen includes a primary series of 2 doses at 2 and 4 months and a booster dose at 12 months.]  Aged 2 or above: 1 dose	1 dose, in most cases  Elderly aged 65 or above are advised by the HKSAR Government to enhance protection with 23vPPV one year after being vaccinated with PCV13 (for more details please refer to the Centre for Health Protection under the Department of Health)

### Frequently Asked Questions

- Q: What is the difference between 23-valent pneumococcal polysaccharide vaccine (23vPPV) and 13-valent pneumococcal conjugate vaccines (PCV13)?

A: PCV13 is effective against both invasive pneumococcal disease and non-invasive pneumococcal pneumonia. On the other hand, while clinical studies indicated that 23vPPV is generally effective in preventing IPD, its efficacy against non-invasive pneumococcal pneumonia is suboptimal. Nevertheless, it is worth noting that 23vPPV covers more serotypes and theoretically offers extra protection.
- Q: What are the side effects associated with pneumococcal conjugate vaccines (PCV)?

A: Pneumococcal conjugate vaccines (PCV) have been demonstrated to be safe. Common side effects include slight swelling and soreness at the injection site shortly following injection but most resolve within two days. Some may experience mild fever, fatigue, headache, chills, or muscle ache. Severe pain or difficulty in moving the arm where the shot was given was very rare.