NCIRS National Centre for Immunisation Research and Surveillance

FactSheet

Pneumococcal vaccines – Frequently Asked Questions

This fact sheet provides responses to common questions about pneumococcal vaccines. More detailed information about pneumococcal disease and the available pneumococcal vaccines can be found in the NCIRS fact sheet Pneumococcal vaccines for Australians.

Questions about pneumococcal vaccines and vaccination schedules

Questions about pneumococcal disease

Questions about pneumococcal vaccines and vaccination schedules

Q1. What changes have been made to pneumococcal vaccine recommendations and funded doses under the National Immunisation Program from 1 July 2020?

From 1 July 2020, pneumococcal vaccine recommendations have changed for:

- People with risk conditions for pneumococcal disease:
  - The recommended vaccines and number of doses have changed.
  - The number of recommended lifetime doses of 23-valent pneumococcal polysaccharide vaccine (23vPPV) has changed.
  - The list of risk factors for which pneumococcal vaccines are recommended has changed.
  - Recommended vaccine doses for some but not all risk factors are funded under the National Immunisation Program (NIP). Refer to the NCIRS fact sheet on Pneumococcal vaccines for Australians for the new list of risk factors for which pneumococcal vaccination is recommended and eligibility for NIP-funded doses.
- For older non-Indigenous adults without any risk condition:
  - The recommended vaccine and age for vaccination have changed.
- For Aboriginal and Torres Strait Islander people:
  - The recommended vaccines and number of doses for Aboriginal and Torres Strait Islander children in the Northern Territory (NT), Queensland, South Australia and Western Australia have been updated.
  - The recommended vaccines and number of doses for Aboriginal and Torres Strait Islander adults aged ≥50 years have been updated.

The routine pneumococcal vaccination schedule for all infants remains unchanged.

Recommendations have been changed to make pneumococcal vaccines more readily available to people who are most at risk of disease. They also seek to simplify vaccination advice by making it easier to understand who should get vaccinated and when, and which vaccine they should get. Refer to Q2, Q3 and Q4 for details on specific recommendation changes.

Q2. What is the new recommendation for older non-Indigenous adults without any risk condition? Why has the recommendation changed?

From 1 July 2020 older non-Indigenous adults without any risk condition for pneumococcal disease are recommended to receive a single dose of 13vPCV from 70 years of age. This replaces the previously recommended single dose of 23vPPV from 65 years of age.

The risk of pneumococcal disease, particularly bacteraemic pneumococcal pneumonia, is considerably higher in people aged ≥70 years than in those aged 65–69 years. Because the effectiveness of pneumococcal vaccines wanes over time, vaccination from 70 years of age ensures that there is sufficient protection as these adults move into the older age groups when they would be at a higher risk of pneumococcal disease and associated death.

High-quality evidence is now available that shows 13vPCV provides very good protection among older adults against pneumococcal pneumonia caused by vaccine serotypes. Serotyping shows that in older adults without risk conditions for pneumococcal disease, most disease is caused by 13vPCV types.

Q3. What are the new recommendations for people with risk conditions for pneumococcal disease? Why have the recommendations changed?

From 1 July 2020, people with risk conditions for pneumococcal disease are recommended to receive 1 dose of 13vPCV followed by 2 doses of 23vPPV. The list of risk conditions for

pneumococcal disease has also changed. There is now a single list of risk conditions, replacing the previous 'Category A' and 'Category B' lists. Refer to the NCIRS fact sheet on Pneumococcal vaccines for Australians to see the new list.

The new recommendations are designed to simplify the schedule so there is better compliance with the schedule and to ensure vulnerable groups are adequately protected. The definitions of risk conditions have been revised and specific examples included to facilitate easier recognition of people eligible for pneumococcal vaccination.

Q4. What are the new recommendations for Aboriginal and Torres Strait Islander people?

From 1 July 2020, Aboriginal and Torres Strait Islander children who reside in the NT, Qld, SA and WA are recommended to receive 2 doses of 23vPPV in addition to the extra dose of 13vPCV that they already receive at 6 months of age. This is because a considerable proportion of invasive pneumococcal disease (IPD) in these children is caused by serotypes that are present in 23vPPV but not in 13vPCV.

Aboriginal and Torres Strait Islander adults ≥50 years of age are now recommended to receive 1 dose of 13vPCV and 2 doses of 23vPPV.

Refer also to the NCIRS fact sheet on Pneumococcal vaccines for Australians and the Australian Immunisation Handbook.

Q5. Why are pneumococcal vaccines recommended for people with some risk conditions funded under the NIP and others not?

The magnitude of increased risk of pneumococcal disease varies widely across different underlying medical and behavioural conditions. Some groups are not eligible to receive funded vaccine doses as their pneumococcal disease risk is not sufficiently high to meet cost-effectiveness thresholds of the Pharmaceutical Benefits Advisory Committee for listing on the NIP.

Q6. How many lifetime doses of 23vPPV are recommended and why is there an upper limit for the number of 23vPPV doses given?

The number of recommended lifetime doses of 23vPPV is now limited to 2 for all people, down from 3. If a person has already received at least 2 doses, as per previous recommendations, no further doses of 23vPPV are to be given. Doses of 23vPPV given during childhood are also counted when determining the number of further doses required.

Immunogenicity data support 1 repeat dose of 23vPPV 3–5 years after the first dose, but there is no substantial benefit of further doses of 23vPPV.[1] Also, repeat doses are associated with higher rates of adverse events, especially injection site reactions.[2-4] It is unclear whether additional doses of 23vPPV may lead to immune hyporesponsiveness. Because of these factors, the Australian Technical Advisory Group on Immunisation (ATAGI) recommends a limit of 2 doses of 23vPPV for lifetime for eligible individuals. Refer also to the Australian Immunisation Handbook.

Q7. Which pneumococcal vaccines are available in Australia and what are the key differences between them?

There are two pneumococcal vaccines available in Australia:

Pneumovax 23® (Seqirus/Merck) – 23-valent pneumococcal polysaccharide vaccine (23vPPV)

Prevenar 13® (Pfizer) – 13-valent pneumococcal conjugate vaccine (13vPCV)

Both these vaccines are different, with 23vPPV being a sugar-based (polysaccharide) vaccine and 13vPCV being a polysaccharide linked to a protein carrier (conjugate) vaccine.[5] 23vPPV generates protective antibodies against pneumococcal disease without involving T-cells that are

required for long-term immune memory. Immunity triggered by 23vPPV is relatively short-lived and the vaccine is less immunogenic in children <2 years of age. 13vPCV generates a higher quality immune response resulting in adequate protection in young children and longer term immune memory.

23vPPV and 13vPCV contain 12 serotypes in common.[6] Refer to the NCIRS fact sheet on Pneumococcal vaccines for Australians for more details.

Q8. Why is it important to give 13vPCV before 23vPPV?

13vPCV provides higher quality immunity with greater persistence of protection against the serotypes covered in the vaccine. The key benefit of 23vPPV is the extension of protection to cover the additional 11 (23v-non13v) serotypes. Also, 13vPCV should be administered first to avoid any potential blunting of immune responsiveness if 23vPPV is given before 13vPCV.[7]

Q9. What is the recommended interval between 13vPCV and 23vPPV doses?

The recommended interval between the doses of 13vPCV and 23vPPV is 12 months. However, when 23vPPV is given after 13vPCV, as in individuals with newly diagnosed risk conditions, a minimum interval of 2 months is acceptable. This is to ensure that vaccination opportunities are not missed and that extended protection provided by 23vPPV against additional serotypes is not delayed.

When 13vPCV is given after 23vPPV, as would occur in people aged ≥65 years or in those with pre-existing risk conditions who have had previous doses of 23vPPV as part of the pre-July 2020 recommendations, it is important to follow an interval of at least 12 months between the 13vPCV dose and the most recent 23vPPV dose. Thereafter if a repeat dose of 23vPPV is indicated, it needs to be given at least 2 months after the 13vPCV dose and 5 years after the previous 23vPPV dose, whichever is later.

Q10. Can pneumococcal vaccines be coadministered with other vaccines?

Pneumococcal vaccines can be coadministered with other vaccines on the NIP except for Menactra (quadrivalent MenACWY vaccine). Coadministration of 13vPCV with Menactra should be avoided as Menactra may interfere with the immune response against some pneumococcal serotypes. In adults, pneumococcal vaccines can be given at the same time as influenza and/or zoster (Zostavax) vaccines.

Q11. Will getting pneumococcal vaccine protect me against COVID-19 associated pneumonia?

Pneumococcal vaccines do not provide protection against COVID-19 associated pneumonia. Pneumococcal vaccines only protect against disease (including pneumonia) that is caused specifically by pneumococcus bacterium.

Q12. My patient has been in close contact with someone who has been diagnosed with pneumococcal disease. Do they need vaccination?

Pneumococcal vaccination is not recommended for any healthy adolescents and young adults, regardless of whether they have been in contact with someone with pneumococcal disease. However, pneumococcal vaccines should be offered to all eligible infants, older adults and people with risk factors. Refer to the NCIRS fact sheet on Pneumococcal vaccines for Australians and the Australian Immunisation Handbook for vaccination recommendations for these people.

Q13. Are there any contraindications to pneumococcal vaccines?

Pneumococcal vaccines are only contraindicated for anyone who has previously had anaphylaxis to the respective vaccine or its components.

Pregnant women should not routinely receive pneumococcal vaccines. However, inadvertant administration during pregnancy is unlikely to result in serious adverse effects. Vaccination may also be considered for pregnant women who are at high risk of IPD who were not vaccinated before pregnancy.

Q14. Are pneumococcal vaccines safe?

Pneumococcal vaccines are safe and well tolerated. Mild injection site reactions, such as pain/tenderness, redness and swelling, may occur in both children and adults following vaccination with 13vPCV.[8-10]

The frequency of local and systemic reactions, such as mylagia, fatigue and chills, after a primary or repeat dose of 23vPPV varies among different populations.[2,11,12] Around 50% of adults who receive 23vPPV may experience some soreness and 20% may experience swelling and redness after a primary dose.[2] Fever ≥37.5°C can occur in up to 10% of 23vPPV recipients, but high fever is rare.[2]

Questions about pneumococcal disease

Q15. What is pneumococcal disease?

Pneumococcal disease refers to a range of clinical diseases caused by the bacterium S*treptococcus pneumoniae* (also called pneumococcus). Pneumococci get transmitted when a person comes into direct contact with respiratory secretions, particularly droplets, of someone carrying the organism. In most cases, after this acquisition, pneumococci reside in the nasopharynx (mostly in children) without causing symptoms or disease until it is cleared by the immune system. However, in some cases, it can lead to disease. Serious disease conditions arise when pneumococci invade the bloodstream and spread to other parts of the body that are normally sterile such as blood, cerebrospinal fluid and pleural fluid, causing IPD. Refer to the NCIRS fact sheet on Pneumococcal vaccines for Australians for more detail about the disease.

Q16. Why are some people more susceptible to pneumococcal disease than others?

Some people have weaker or compromised immune systems that render them less able to fight pneumococcal infection. This can result from immune immaturity (such as with young infants), disease (such as with people with risk conditions) and medications or medical procedures that impair the functioning of the immune system (immunocompromising).

Q17. How common is pneumococcal disease among Australians?

In 2018 the total number of IPD cases notified to the National Notifiable Disease Surveillance System was 2,032, which translates to an incidence rate of 8 per 100,000 population.[13] Disease rates are the highest among infants, older adults and Aboriginal and Torres Strait Islander people.[14] Refer to the NCIRS fact sheet on Pneumococcal vaccines for Australians for more detail about the disease epidemiology.

Additional resources

- NCIRS Pneumococcal vaccines for Australians fact sheet
  Australian Immunisation Handbook
- Australian Government Department of Health Immunisation website
- National Immunisation Program schedule
- AusVaxSafety website

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