

pneumococcal polysaccharide vaccine should then be given at 2 years of age, at least 2 months after the last dose of 13-valent pneumococcal polysaccharide conjugate vaccine (adsorbed).

Children under 2 years who are severely immunocompromised or those with asplenia, splenic dysfunction, or complement disorders, should have an additional dose of the 13-valent pneumococcal polysaccharide conjugate vaccine (adsorbed), given at least 2 months after the routine dose due on their first birthday. A single dose of the 23-valent pneumococcal polysaccharide vaccine should then be given at 2 years of age, at least 2 months after the last dose of 13-valent pneumococcal polysaccharide conjugate vaccine (adsorbed).

Children diagnosed with at-risk conditions from 2 years to under 10 years of age

Children diagnosed or first presenting with an at-risk condition aged 2 years to under 10 years of age who have completed their routine immunisation schedule should receive a single dose of the 23-valent pneumococcal polysaccharide vaccine, at least 2 months after the last dose of 13-valent pneumococcal polysaccharide conjugate vaccine (adsorbed).

Children previously unvaccinated or partially vaccinated with the 13-valent pneumococcal polysaccharide conjugate vaccine (adsorbed) should receive a single dose of the 13-valent pneumococcal polysaccharide conjugate vaccine (adsorbed), followed by a single dose of the 23-valent pneumococcal polysaccharide vaccine at least 2 months later.

Severely immunocompromised children may have a sub-optimal immunological response to the vaccine and should be given an additional dose of the 13-valent pneumococcal polysaccharide conjugate vaccine (adsorbed), even if they are fully vaccinated. This should be followed by a single dose of the 23-valent pneumococcal polysaccharide vaccine, at least 2 months after the last dose of 13-valent pneumococcal polysaccharide conjugate vaccine (adsorbed). If the 23-valent pneumococcal polysaccharide vaccine has already been given, the 13-valent pneumococcal polysaccharide conjugate vaccine (adsorbed) should be given at least 6 months after.

Children diagnosed with at-risk conditions aged 10 years and over

Children diagnosed or first presenting with an at-risk condition should be given a single dose of the 23-valent pneumococcal polysaccharide vaccine. No additional 23-valent pneumococcal polysaccharide vaccine is required at 65 years of age.

Severely immunocompromised individuals should be given a single dose of the 13-valent pneumococcal polysaccharide conjugate vaccine (adsorbed) followed by the 23-valent pneumococcal polysaccharide vaccine at least 2 months later, irrespective of their previous pneumococcal vaccinations. If the 23-valent pneumococcal polysaccharide vaccine has already been given, the 13-valent pneumococcal polysaccharide conjugate vaccine (adsorbed) should be given at least 6 months after.

For further information on vaccination in patients with asplenia, see Vaccination, general principles p. 800.

Revaccination

In children with higher concentrations of antibodies to pneumococcal polysaccharides, revaccination with the 23-valent pneumococcal polysaccharide vaccine more commonly produces side effects (e.g. chills, asthenia, and myalgia). Revaccination is therefore not recommended, except for children in whom the antibody concentration is likely to decline rapidly (e.g. asplenia, splenic dysfunction and chronic renal disease), where revaccination is recommended every 5 years.

Management of cases

For the management of cases, contacts and outbreaks, refer to Chapter 25, Pneumococcal, in *Immunisation against infectious disease* – 'The Green Book'.

Useful Resources

Recommendations reflect Chapter 25, Pneumococcal, in *Immunisation against infectious disease* – 'The Green Book'. Public Health England, January 2018.

www.gov.uk/government/publications/pneumococcal-the-green-book-chapter-25

Poliomyelitis vaccine

Overview

Two types of poliomyelitis vaccines (containing strains of poliovirus types 1, 2, and 3) are available, inactivated poliomyelitis vaccines (for injection) and live (oral) poliomyelitis vaccines. **Inactivated** poliomyelitis vaccines, only available in combined preparation, is recommended for routine immunisation; it is given by injection and contains inactivated strains of human poliovirus types 1, 2 and 3.

A course of primary immunisation consists of 3 doses of a combined preparation containing inactivated poliomyelitis vaccines starting at 2 months of age with intervals of 1 month between doses (see Immunisation schedule). A course of 3 doses should also be given to all unimmunised children; no child should remain unimmunised against poliomyelitis.

Two booster doses of a preparation containing inactivated poliomyelitis vaccines are recommended, the first before school entry and the second before leaving school (see Immunisation schedule). Further booster doses should be given every 10 years only to individuals at special risk.

Live (oral) poliomyelitis vaccines is no longer available for routine use; its use may be considered during large outbreaks, but advice should be sought from Public Health England. The live (oral) vaccine poses a very rare risk of vaccine-associated paralytic polio because the attenuated strain of the virus can revert to a virulent form. For this reason the live (oral) vaccine must **not** be used for immunosuppressed individuals or their household contacts. The use of inactivated poliomyelitis vaccines removes the risk of vaccine-associated paralytic polio altogether.

Travel

Unimmunised travellers to areas with a high incidence of poliomyelitis should receive a full 3-dose course of a preparation containing inactivated poliomyelitis vaccines. Those who have not been vaccinated in the last 10 years should receive a booster dose of **adsorbed diphtheria [low dose], tetanus and poliomyelitis (inactivated) vaccine**. Information about countries with a high incidence of poliomyelitis can be obtained from www.travax.nhs.uk/ or from the National Travel Health Network and Centre, (www.nathnac.org/).

Useful Resources

Advice reflects that in the handbook *Immunisation against Infectious Disease* (2013), which in turn reflects the guidance of the Joint Committee on Vaccination and Immunisation (JCVI). The advice also incorporates changes announced by the Chief Medical Officer and Health Department Updates. Chapters from the handbook (including updates since 2013) are available at:

www.gov.uk/government/collections/immunisation-against-infectious-disease-the-green-book