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Pneumococcal immunisation

Pneumococcus can cause diseases such as pneumonia, meningitis and blood infections. Children aged under 2 years should receive the vaccine. You should consider pneumococcal immunisation if you are aged over 65 years or have certain diseases of the lung, heart, kidney, liver and nervous system.

What is the pneumococcus?

Pneumococcus is a germ (bacterium) which can cause pneumonia, meningitis and some other infections. Pneumonia caused by pneumococcus occurs in about 1 in 1,000 adults each year. Pneumococcal infection can affect anybody. However, young children, older people and some other groups of people are at increased risk of developing a pneumococcal infection.

Who should be immunised against the pneumococcus?

Three groups of people should be immunised:

- Children.
- People aged over 65 years.
- Certain other people who are at risk (detailed below).

All children

Immunisation against pneumococcus is part of the routine childhood immunisation programme. For babies born after 1st January 2020, the routine schedule consists of two injections which are normally given at age 12 weeks and 1 year.

Babies born before 1st January 2020 will be offered three injections at age 8 weeks, 16 weeks and 1 year.

All older people

All people aged 65 years or over should be immunised. This consists of a one-off injection.

Other at-risk groups

Any person over the age of 2 months in an at-risk group should be immunised. That is, if you:

- Do not have a spleen or if your spleen does not work properly.
- Have an ongoing (chronic) serious lung disease. Examples include chronic bronchitis, emphysema, cystic fibrosis and severe asthma (needing regular steroid inhalers or steroid tablets).
- Have a chronic heart disease. Examples include congenital heart disease, angina, heart failure, or if you have ever had a heart attack.
- Have a serious chronic kidney disease. Examples include nephrotic syndrome, kidney failure or if you have had a kidney transplant.
- Have a chronic liver disease such as cirrhosis or chronic hepatitis.
- Have diabetes which requires insulin or tablets to control it.
- Have a poor immune system. Examples include if you have been receiving chemotherapy or steroid treatment (for more than a month) or if you have human immunodeficiency virus (HIV)/acquired immune deficiency syndrome (AIDS).
- Have a cochlear implant.
- Have a cerebrospinal fluid (CSF) shunt - this is a shunt to drain the fluid that surrounds the brain.
- Are a welder or are exposed to metal fumes in your job. There is a strong association between welding and the development of pneumococcal disease, particularly pneumonia.

If your immune system is severely affected, you will usually be advised to have a single dose of pneumococcal conjugate vaccine, followed by pneumococcal polysaccharide vaccine - you can find out more about the different types below.

Many people in the at-risk groups above need only a single infection. However, some people (such as people with spleen or kidney problems) may need a booster dose every five years.

Types of vaccine

There are two types of vaccine to protect against pneumococcal infection:

- Pneumococcal conjugate vaccine (PCV).
- Pneumococcal polysaccharide vaccine (PPV).

Both are given by injection. Both vaccines contain several components to protect against several types (strains) of the pneumococcus. They differ in the number of types that they protect against. Also, the PPV does not work very well in children under the age of 2 years. Therefore, the PCV vaccine is given to children under the age of 2 years.

The PCV and PPV vaccines do not contain thiomersal; they do not contain live organisms and so cannot cause any of the diseases against which they protect.

The vaccines stimulate your body to make antibodies against pneumococcal germs (bacteria). These antibodies protect you from illness should you become infected with pneumococcal bacteria. The vaccines protect against many (but not all) types of pneumococcal bacteria.

Routine immunisation schedule for children aged under 2 years

Children born after 1st January 2020 are routinely offered two injections of PCV at age 12 weeks and 1 year. The first is usually given at the same time as the second dose of the 6-in-1 DTaP/IPV(polio)/Hib/HepB injection - this stands for 'diphtheria, tetanus, pertussis (whooping cough)/polio/*Haemophilus influenzae* type b/hepatitis B - (but given in a different part of the body with a separate needle and syringe). The second dose, at about one year, is usually given at the same time as the Hib/MenC vaccine (this stands for *H. influenzae* type b/meningitis C), the MenB (meningitis B) and the MMR vaccine (measles, mumps and rubella).

If a child between the ages of 1 and 5 years has not had any previous dose of PCV, or has only had one previous dose, then a single dose of PCV should be given.

Immunisation schedule for older people and those at risk

People aged 65 years and over and all other people at any age in any of the at-risk groups listed above should be immunised with PPV. PPV is normally given just once. It provides lifelong protection against many types of pneumococcus.

Children who are in an at-risk group and have previously had their routine immunisations with PCV should also have one injection of PPV as soon as possible after their second birthday (but at least two months after the final dose of PCV).

Children who are in an at-risk group under the age of 5 years who have not previously had routine immunisations with PCV will need both PCV and PPV. The dose schedules depend on age and circumstances. Your doctor will advise you about this.

Severely immunocompromised children aged at least 5 years and adults should be given a single dose of PCV vaccine and then the PPV vaccine at least two months later (regardless of any vaccinations in the past).

Notes for some special groups

- If you are about to have your spleen removed, ideally you should be immunised 4-6 weeks before the operation, but at least two weeks before. If this is not possible, you should be immunised two weeks after the operation.
- If you are about to undergo chemotherapy or radiotherapy, ideally you should be immunised 4-6 weeks before commencing treatment.
- Generally, booster doses of vaccine are not required in addition to those described above. However, in people without a working spleen or with certain chronic kidney diseases, the antibody level gradually falls over time. Therefore, these people should have a booster dose every five years.

Are there any side-effects?

Pneumococcal immunisation usually causes no problems. Mild soreness and a lump at the injection site sometimes occur. A mild high temperature (fever) may develop for a day or so. These side-effects are usually minor and soon go away.

Who should not receive the pneumococcal immunisation?

- If you have had a severe reaction to a previous dose of pneumococcal vaccine.
- A dose of vaccine may be delayed if you are ill, or your child is ill, with a high temperature (fever).
- There is no reason to delay a dose of vaccine if you have a minor infection, or your child has a minor infection, such as a cough, cold or snuffles.

The vaccine may be given to pregnant women when the need for protection is required without delay. It is safe to have if you are breastfeeding.

Further reading

- Immunisation against infectious disease - the Green Book (latest edition); UK Health Security Agency.
- NHS complete routine immunisation schedule; GOV.UK
- Immunizations - pneumococcal; NICE CKS, August 2016 (UK access only)

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Originally Published: 19/11/2023	Next review date: 18/02/2020	Document ID: doc_4312