Patient information from BMJ

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Pneumococcal vaccine in babies and children

This vaccine is designed to protect against infection by a type of bacteria called *Streptococcus pneumoniae*.

As the name suggests, this infection can cause pneumonia. But it also causes other serious, and sometimes fatal infections, including meningitis and sepsis.

What are pneumococcal infections?

Pneumococcal infections are caused by a type of bacteria called *Streptococcus pneumoniae*. The most common infection that it causes is a type of **pneumonia** called pneumococcal pneumonia.

People of any age can get pneumonia. Severe pneumonia can cause death. In most people, pneumonia causes the symptoms of a severe **chest infection**, such as:

- fever
- coughing
- chest pain, and
- breathing problems.

Pneumococcal infections can also cause other serious illnesses, including **meningitis** and **sepsis**.

Meningitis is inflammation (swelling) of the tissues that protect the brain and spinal cord. These tissues are called the meninges.

This type of infection is not always caused by bacteria. Meningitis can also be caused by infection with a virus or, rarely, a fungus. But these types of infection are usually less serious.

Meningitis can sometimes be fatal. And people who recover are often affected for the rest of their lives. Long-term problems caused by meningitis can include:

- severe brain damage

- hearing or vision problems
- epilepsy
- problems with memory and concentration
- problems with movement and balance, and
- needing to have limbs amputated.

Sepsis is when the body has an extreme reaction to an infection. It can be fatal if not treated quickly.

Who needs the pneumococcal vaccination?

In many countries, the pneumococcal vaccine is first offered to people as babies. For example, in the UK, babies are given **two doses** of the vaccine. The first is given at **12 weeks** old and the second at **12 months** of age.

But the vaccine can benefit other people at different ages. These include:

- people with serious heart, kidney, or liver problems
- people with diabetes, and
- people aged over 65 years.

The vaccine given to babies is slightly different from the one given to older children and adults.

This is because the vaccines that give the best protection for babies often don’t work well for other people. So some vaccines are 'tweaked' to give the best protection for certain age groups.

For more information on vaccination in older children and adults, see our leaflet *Pneumonia: do I need a vaccine?*

Is there anyone who shouldn't have the vaccine?

You should tell your doctor if your baby has had an **allergic reaction** to any other vaccine. If this is the case, your baby might not be able to have the vaccine.

You should also tell your doctor about any **allergies** that your baby has.

If your baby has a **fever** on the day of the vaccination appointment, you will probably be advised to delay the vaccination and to make another appointment when your baby feels better.

Is it safe?

Like all vaccines, the pneumococcal vaccine can cause side effects in some babies.

The most serious is a **severe allergic reaction**. This is extremely rare, and the medical staff giving the vaccine will have been trained in how to deal with it.

Another serious but rare side effect is a high fever that can lead to **convulsions** (fits).

Other side effects are usually mild and short lived. They include:

- a slight fever
- a reduced appetite
- your baby being irritable for a while after the vaccination
- redness and swelling where the injection was given (called the injection site)
- your baby being more sleepy than usual, or having disturbed sleep.

How is the vaccination given?

The vaccine is given as an injection into the upper arm or thigh.

How well does the vaccine work?

Like most vaccines, the pneumococcal vaccine is not 100 percent effective in everyone, all of the time. This means that some vaccinated children might still get a pneumococcal infection.

But in countries with good vaccination programmes it has helped to hugely reduce the number of these serious and potentially fatal infections. For example, meningitis is now extremely rare in developed countries.

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