

Pneumococcal Meningitis

The Facts

This fact sheet provides information about pneumococcal meningitis and answers some frequently asked questions. This should be used in addition to our 'What is meningitis?' leaflet, which provides more information on signs and symptoms and emergency action to take. You can request a copy by contacting our 24-hour nurse-staffed helpline on **0800 028 18 28**.

Words highlighted in **blue** are explained in a glossary on the back page.

Key points

- Pneumococcal meningitis is a life-threatening infection.
- Most cases occur in babies and young children under 18 months of age.
- A routine vaccine is available to help prevent pneumococcal disease.

What is pneumococcal meningitis?

Pneumococcal meningitis is a life-threatening infectious disease that causes **inflammation** of the layers that surround the brain and spinal cord. These layers are called the **meninges** - they help to protect the brain from injury and infection. Meningitis can strike unexpectedly and the consequences are often severe.

Pneumococcal meningitis is caused by a **bacterium** called the pneumococcus. There are over 90 strains (or serotypes), but only a small minority commonly cause disease. The pneumococcus can also cause other serious infections such as pneumonia, blood poisoning and septic arthritis, and less serious infections such as otitis media, glue ear and sinusitis. Together these are known as pneumococcal disease or pneumococcal infection.

How many cases of pneumococcal meningitis are there each year?

In 2008, there were around 200 reported cases of pneumococcal meningitis in the UK. Approximately 15% of cases will result in death.

Can pneumococcal meningitis be prevented?

A Pneumococcal Conjugate **Vaccine** (PCV) was introduced into the **Childhood Immunisation Programme** in September 2006. It protected against seven different strains of pneumococcal bacteria. From April 2010 the PCV will be replaced and protect against 13 strains. It is still routinely offered at two, four and 13 months of age. The impact of this vaccine is still being closely monitored in all age groups.

A Pneumococcal Polysaccharide Vaccine (PPV) is also available. This protects against 23 strains of pneumococcal bacteria, but only has a limited period of protection, and is not effective in the under 2s. This vaccine is routinely offered to people aged 65 years and over.



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Pneumococcal vaccinations are recommended for adults and children who are at increased risk of pneumococcal disease, for example, those with asthma, chronic heart disease, diabetes mellitus and those with cochlear implants. Anyone who has had pneumococcal disease, including meningitis, should actively seek vaccination.

For more information about pneumococcal vaccines, please visit www.immunisation.nhs.uk.

Who gets pneumococcal meningitis and why?

Pneumococcal meningitis can affect any age group, but those at most risk are babies and young children under 18 months of age. The elderly and people with conditions that affect their immune systems are also at increased risk. Meningitis may occur following head injury and damage to the meninges; on rare occasions this may be recurrent.

The pneumococcal bacteria can be carried harmlessly in the back of the throat by both adults and children. Virtually all children will become carriers at one time or another. Carriage of bacteria helps us to build natural **immunity** to infection. Bacteria are passed from person to person by coughing, sneezing and intimate kissing.

Babies and young children are more at risk because their body's defences are not fully developed. If the pneumococcus invades their body, the immune system cannot provide resistance to fight off the infection.

What happens in the body?

When the pneumococcus invades it can overcome the body's defences and lead to infection. Most of the bacteria are transferred to the meninges via the bloodstream. When the bacteria infect the meninges, the blood vessels in the lining of the brain are damaged. This allows the bacteria to break through and infect the **cerebrospinal fluid (CSF)**. The meninges then become inflamed and pressure around the brain can cause nerve damage. Pressure on the brain can produce the specific symptoms often associated with meningitis:

- Severe headache
- Dislike of bright lights (photophobia)
- Neck stiffness
- Nausea and vomiting
- Confusion and drowsiness
- Loss of consciousness
- Fitting

Many other symptoms can occur with this disease.

How is pneumococcal meningitis treated?

Pneumococcal meningitis requires rapid admission to hospital and urgent treatment with antibiotics. If treated promptly, pneumococcal meningitis is less likely to become life-threatening. In hospital other treatment, procedures and investigations will be carried out depending on the patient's condition. One of the main investigations carried out to test if someone has meningitis is a **lumbar puncture**. This allows the doctor to quickly make a diagnosis of meningitis by analysing the CSF that bathes the meninges. This fluid becomes infected when a patient has meningitis. Sometimes treatment with antibiotics is started because the patient's condition is too serious for a lumbar puncture to be performed. In these cases the lumbar puncture can be done when the patient's condition has improved.

If someone becomes seriously ill, they will require specialist care and treatment in an intensive care unit. Here doctors and nurses can monitor their condition closely, respond to emergencies and provide immediate support when it is needed. Appropriate hospital care and treatment are essential if the patient is to make a good recovery.

What happens when there is a case?

Pneumococcal meningitis is reportable to public health, but is not considered to be contagious. Therefore, close contact with someone who has the illness poses no increased risk of infection. There is little chance of a second related case occurring.

What happens after pneumococcal meningitis?

Most people who get pneumococcal meningitis will make a good recovery, but around 25% will be left with severe and often permanent after-effects. However, the exact number of people who experience after-effects is not known.

The after-effects of meningitis usually happen because of damage to various areas of the brain, including the nerves responsible for hearing and sight. The serious and disabling after-effects are well recognised and include hearing loss or deafness, loss of vision or blindness, epilepsy, severe brain damage, speech problems, learning difficulties and behaviour problems.

After-effects are often complicated and can require ongoing support (for life) from a wide range of health professionals and organisations. In many instances the after-effects will be helped by various kinds of therapy, for example, physiotherapy and occupational therapy.

Other people may experience a wide range of less debilitating, but serious, after-effects. These can be temporary or permanent and include memory loss, anxiety, depression and headaches. Whatever the after-effect, mild or severe, meningitis can change a person's life forever.

Tragically, some patients will die despite receiving the best possible treatment and care. The death of a loved one following meningitis is always painful and traumatic. If you have lost a loved one, our trained helpline staff are available 24 hours a day, and can explain how we may be able to offer you support.

More detailed information about the after-effects of meningitis is available in our 'After meningitis' booklet. You can request a copy by contacting our helpline on **0800 028 18 28**.

Find out more

- **Meningitis Trust**
www.meningitis-trust.org
Information about meningitis and the work of the Meningitis Trust.
www.meningitis-learning.org
Learn more about meningitis by playing online quizzes and touring the virtual body invasion.
- **NHS Immunisation information**
www.immunisation.nhs.uk
Information about vaccination published by the Department of Health.
- **Meningitis a Guide for Families (1997)**
J Simon Kroll, Andrew J Pollard, Parviz Habibi – Publisher, Publishing Solutions Ltd (UK).
A recommended read for parents. This book provides excellent information and uses case studies to explain meningitis and meningococcal disease.
- **Need to know meningitis (2004)**
Kristina Routh – Publisher, Heinemann Library. This comprehensive and easy to understand book traces the history, incidence and consequences of meningitis.

Glossary

Bacteria/bacterium

Single-celled micro-organisms, of which there are many types. Some types can cause disease in humans. One organism is called a bacterium, whilst more than one are called bacteria.

Cerebrospinal Fluid (CSF)

A protective fluid that flows around the brain and spinal cord, helping to maintain healthy cells.

Childhood Immunisation Programme

A planned programme of vaccines available to all children, which protects them from a range of infectious diseases. For more information see www.immunisation.nhs.uk.

Immunity / immune response

The body's ability to recognise and resist specific infectious diseases. The immune system responds to infection by producing antibodies.

Inflammation

A response of the body tissues to injury or irritation. The response is characterised by redness, swelling, heat and pain.

Lumbar puncture

A procedure to remove CSF from around the spinal cord.

Meninges

The protective membranes that surround the brain. These are called the dura mater, arachnoid mater and pia mater.

Vaccine / vaccination

An injection given to encourage the body to produce antibodies which help to fight infectious disease. The injection contains small particles of the disease-causing organism.

The Meningitis Trust

We, the Meningitis Trust, are a registered charity set up in 1986 by families who had been affected by meningitis. We are committed to increasing understanding of the disease and providing specialised professional services to anyone who has been affected. These services offer emotional, practical and financial support to help people rebuild their lives.

Here are some of the ways we do this.

24-hour helpline – a Freephone service, staffed by nurses, providing information and support seven days a week

Home visits – trained staff offer information and support in people's homes

Art therapy – allows children and young adults to use art to help them express how they are feeling in safe and confidential surroundings

Professional counselling – confidential counselling for people who have had meningitis and their families

Financial support grants – to help fund specialist training, equipment, activities, respite care (to give carers a break from caring) and funeral costs

One-to-one contacts – putting people affected by meningitis in touch with volunteers who have also experienced the disease

This is only made possible by donations from people like you, as we rely almost entirely on voluntary support to fund our work.

If you have any questions or wish to discuss anything in this fact sheet in more detail, please phone our helpline.



helpline staffed by nurses

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www.meningitis-trust.org

Calls from BT landlines are free. Other service providers and mobile rates may vary.



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