

**Patient
Information**

Meningitis in infants, children and young people

Introduction

This leaflet gives you information about the diagnosis, treatment and possible after effects of bacterial and viral meningitis. The purpose of this leaflet is to give you a greater understanding of meningitis. If you have any concerns please speak to your GP or visit one of the websites listed at the end of this leaflet for more information.

What is meningitis?

Meningitis means an inflammation of the membrane that covers the brain and the spinal cord (called the meninges). It happens when bacterial or viral organisms travel from the blood into the lining of the brain. These bacteria can be quite common; 10 in 100 of adults and children carry these bacteria at the back of their throats without becoming ill. These are passed from person to person by coughing and sneezing. People of any age can get meningitis but it is more common in young children and babies because they do not have a fully developed immune system. Children and babies are less able to fight germs than adults.

Bacterial meningitis is a rare disease and can be very serious requiring urgent treatment with antibiotics. Viral meningitis is more common but less serious and cannot be treated with antibiotics. Both bacterial and viral meningitis have similar symptoms so hospital tests may be needed to make a diagnosis.

If bacterial meningitis is diagnosed early and treated quickly, most children make a complete recovery.

Viral and bacterial meningitis can lead to lifelong disabilities such as deafness or brain damage. Early diagnosis and treatment will increase the chance of your child making a full recovery.

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Signs and symptoms

The symptoms of meningitis can sometimes be similar to the symptoms of a cold type illness. Not all the symptoms will necessarily show up at once and meningitis can become worse very quickly. Symptoms may also vary depending on whether the individual is an adult or child. The age of a child can also be a factor.

The following table gives a list of symptoms to look out for, rated 'green', 'amber' and 'red' according to the level of seriousness:

Green symptoms – mild	
<ul style="list-style-type: none"> • Fever • Cold hands and feet • Refusing food • Vomiting • Fretful • Dislike being handled • Headache • Aching muscles • Unusual crying or moan • Sore throat • Stomach pain • Diarrhoea 	<p>Call or visit your GP immediately, describe your child's symptoms carefully and ask for advice.</p>
Amber symptoms – moderate	
<ul style="list-style-type: none"> • Drowsy or difficult to wake • Floppy • Pale and blotchy skin • Rash or red-purple spots • Stiff neck • Dislike of bright lights • Confusion or irritability • Rapid breathing or grunting • Bulging fontanelle (soft patch on top of a baby's head) 	<p>Call or visit your GP immediately, describe your child's symptoms carefully and ask for advice.</p> <p>If your GP is not available, call 111 or go to the nearest Accident and Emergency Department.</p>

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Red symptoms – emergency

- Floppy
- Seizures
- Unresponsive
- Convulsions

Call 999 and ask for an ambulance.

One of the most distinctive symptoms of meningitis is a non-blanching rash. Non-blanching means the rash does not fade under pressure (the glass test). If your child has a rash and a fever, take them to their GP immediately. It is important that you do not wait for this rash to worsen.

If you are worried and your child is having other symptoms as listed in the table, take them to see their GP.

Diagnosis

To diagnose meningitis, the doctor will examine your child and ask you about their symptoms. They may also need to take some blood tests and then may talk to you about a lumbar puncture test. A lumbar puncture involves putting a very small needle in between bones in the spine. This allows a very small sample of spinal fluid to be taken from the area around the spinal cord in the lower back. This sample is then sent to the laboratory and tested to see if bacteria is present. If bacteria is identified it allows us to decide which antibiotics are needed to treat your child. Sometimes, if the doctors think that your child has meningitis, we may start treatment before the results of the tests are available.

Treatment

The treatment for meningitis depends upon whether the meningitis is caused by a virus or bacteria. What we often do is treat patients with the medicines for bacterial meningitis until we know for definite that it is or is not bacterial meningitis.

Treatment with antibiotics is usually started immediately after the blood tests and the lumbar puncture is performed.

Treatment is given directly into the vein as this is the quickest way for the antibiotics to work.

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Early treatment with antibiotics is essential. If your child is unable to feed, vomiting, or we think they might be in shock or dehydrated, fluids will be given via a drip (thin tube inserted into a vein in their arm).

Sometimes children will be taken to be cared for in a High Dependency Unit. This allows nurses to closely observe the child. Occasionally, children may need to be transferred to a Paediatric Intensive Care Unit (PICU) for more specialised care.

The antibiotic treatment for bacterial meningitis kills the bacteria causing the illness. We may also give steroids to help reduce inflammation in the brain. This will improve your child's symptoms and reduce the risk of complications. One of the side effects of antibiotics is that they may cause the child to have diarrhoea.

In very mild cases of bacterial meningitis, that are treated early, a child may completely recover over the course of a few weeks.

There is no specific treatment for viral meningitis. Treatment is supportive, meaning that we make sure that the child is drinking enough fluids and taking regular medication to treat fever and other symptoms. Most children with viral meningitis get better within 2 weeks.

Preventive measures

A vaccine against Hib meningitis, meningococcal group C and pneumococcal disease is available in the UK. The vaccines are part of a routine immunisation programme for babies and are proving extremely effective. They do not protect against other forms of meningitis. There is also a vaccine for meningococcal type B, which has recently been developed, which should be included in the infant vaccination programme soon.

Research continues in the UK and abroad to develop vaccines against the most common strains of meningitis and to find better ways of combating the disease.

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Apart from the vaccines described on the previous page, there is no known way to protect against meningitis. Families who have been in contact with a patient who has meningitis may be prescribed an antibiotic called Rifampicin to stop them developing the infection. It is important that this medication is taken as directed by your doctor. Other contacts, such as school friends, are very rarely at high risk and do not normally need special treatment or investigation, but should be made aware of the early symptoms of meningitis.

After discharge

Following discharge, the doctor will see your child in the Children's Outpatients Department. Some children recover without any after effects. The likelihood of getting after effects from meningitis depends on the type and severity of the illness. Observe your child at home and contact your GP with any concerns. One of the most common after effects is hearing loss so a hearing test will be arranged in the next few weeks. Other effects may include: headaches, seizures, clumsiness which is not normal for your child, visual problems and behavioural difficulties. Any after effects will be monitored and treated by your child's paediatrician or GP.

Further information

Meningitis Now

Website: www.meningitisnow.org

Meningitis Research Foundation

Website: www.meningitis.org

Meningitis Trust

Website: <https://meningitis-trust.org.uk>

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