

Patient information from BMJ

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Bacterial meningitis in adults

Bacterial meningitis is a life-threatening infection that happens when bacteria infect the tissues that surround the brain and spinal cord.

Most developed countries have vaccination programmes to help prevent meningitis. But it can still happen, especially in older people and those living in crowded conditions.

What is bacterial meningitis?

Bacterial meningitis is a **medical emergency**.

Meningitis is inflammation (swelling) of the membranes that surround and help protect the brain and spinal cord. These membranes are called the **meninges**.

Meningitis can also be caused by viruses and funguses. But these types are usually less serious.

Bacterial meningitis happens when bacteria infect the meninges, causing them to swell. This puts pressure on the brain, which can cause serious brain damage and sometimes death.

Even in people who survive, there can be **long-term complications**, including:

- hearing loss
- seizures
- memory problems, and
- emotional, behavior, and learning difficulties.

Many countries routinely **vaccinate** children against several infections that can all cause meningitis. For example, in the US, children are vaccinated against:

- meningitis types A, B, C, W and Y
- pneumonia
- Hib (Haemophilus influenzae type B), and
- MMR (measles, mumps, and rubella).

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This information covers bacterial meningitis in **adults**. Adults can get this type of bacterial infection in several ways. For example, ear and sinus infections can lead to meningitis.

In developed countries, adults affected by bacterial meningitis tend to be older. This is because their immunity is reduced as they age.

Like many infectious illnesses, meningitis spreads more easily in crowded living conditions.

People with certain medical conditions are also more likely to be affected. For example, those with **sickle cell anemia** or **HIV** have an increased chance of bacterial meningitis.

What are the symptoms?

If you think that you or someone else has symptoms of meningitis, **get medical help right away**.

Meningitis can develop very quickly, but it can usually be successfully treated if you get help fast.

The **most common symptoms** of meningitis are:

- a headache
- a stiff neck
- a fever
- vomiting
- being sensitive to bright light, and
- being confused and drowsy. In older people, this might be the only symptom at first.

Some people also have a **rash** that doesn't go away when you run a glass over it. This rash is possibly the best-known symptom of meningitis, but it isn't actually the most common. Just because someone doesn't have a rash, it doesn't mean they don't have meningitis.

If you are seen by a doctor who thinks that you might have meningitis, he or she will probably want to do a **blood test** and a **lumbar puncture** or "spinal tap".

A lumbar puncture involves using a needle to draw some fluid from near the spine. This can then be tested for bacteria.

Your doctor might also suggest a **scan** of your head and brain.

What treatments are available?

If you have bacterial meningitis you will need to be treated in the hospital. There are two main treatments.

- **Antibiotics** fight the bacterial infection. These will probably be given by intravenous infusion (a drip into a vein).
- Powerful anti-inflammatories called **corticosteroids** help reduce swelling of the meninges. This helps relieve the pressure on your brain and spinal cord.

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You might also be given fluids into a vein to keep you properly hydrated.

Treatment for close contacts

If you live with other people, your doctor might recommend that they take a course of antibiotic pills, just in case they have been infected with the bacteria that caused your meningitis.

If you live with any young children, your doctor will want to check that they are up to date on vaccinations against infections that can cause meningitis.

After your treatment

Meningitis can cause **long-term problems** in some people. If you have been treated for meningitis, your doctor will want to assess you carefully for any problems before you can go home.

If there are signs of any long-term problems, your doctor will want to start planning any **future treatment** that you might need as soon as possible.

Having meningitis, and having emergency treatment for it, can be a traumatic experience. So your doctor will want to assess your **mental health**, and to check if you need any further treatment or help.

What to expect in the future

Most people recover well, but about 20 in 100 people with bacterial meningitis do not survive.

People are more likely to make a good recovery if they get treatment quickly. But even with good treatment, some people have long-term complications. For example:

- about 30 in 100 people have some degree of hearing loss
- some people have seizures after having meningitis. If you have seizures you will need to take long-term medication to help prevent them
- about one-third of people have some kind of **cognitive impairment**. This can mean problems with memory, learning ability, emotions, or behavior.

If you have **cognitive problems** your doctor should discuss with you the kinds of treatments that might help.

But it can take time for you or your loved ones to notice these problems. If you notice any cognitive problems at any time after having meningitis, talk to your doctor about getting help.

Certain things can affect how well people recover. For example, you are less likely to make a full recovery if you:

- are an older adult
- have long-term health problems or poor general health, or
- had very severe symptoms.

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If you are recovering from meningitis, or dealing with its long-term effects, you might find it useful to get help from a **specialist organisation**.

Your doctor might be able to direct you to a group near you, or you can easily search online.

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