Bacterial encephalitis

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Background

Bacterial encephalitis is inflammation of the brain caused by a bacterial infection. It is much less common than viral forms of encephalitis and often occurs alongside meningitis (inflammation of the membranes surrounding the brain), a combination known as meningoencephalitis.

The bacteria responsible include *Streptococcus pneumoniae*, *Neisseria meningitis*, *Listeria monocytogenes*, and *Mycoplasma pneumoniae*, as well as those causing tuberculosis, Lyme disease, and syphilis.

What are the symptoms?

Symptoms usually appear over hours or a few days, often beginning with:

- Fever
- Headache
- Neck stiffness
- Sometimes a rash that does not fade under pressure

This is followed by:

- Confusion
- Drowsiness
- Changes in behaviour or personality
- Seizures
- Weakness in one side of the body
- Difficulty speaking

How is it diagnosed?

A lumbar puncture (LP) is used to take a sample of cerebrospinal fluid (CSF), which is then examined for inflammatory cells and tested for bacteria using culture and PCR.

Blood tests, brain scans (CT or MRI) and an EEG may also be used.

How is it treated?

- Antibiotics are given intravenously as soon as bacterial encephalitis is suspected, before test results are available.
- Antiviral treatments are often given alongside until a viral cause is excluded.
- Steroids may also be used to reduce inflammation.
- Some people may require intensive care or anti-seizure medications.
- Tuberculosis as a result of bacterial encephalitis requires months of treatment.

What are the outcomes?

If treatment starts early, many people recover well.

Some people are left with lasting difficulties. This includes:

- Fatigue
- Problems with memory and concentration
- Epilepsy
- Hearing loss
- Weakness

Can it be prevented?

Yes. Vaccines protect against several causes including meningococcal and pneumococcal bacteria.

Avoiding tick bites reduces the risk of Lyme disease. If walking in affected wooded or rural areas, it is recommended to wear long trousers/sleeves to cover exposed skin, use an insect repellent that is effective against ticks, and inspect your skin for ticks regularly.

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Thank you!

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