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## Viral Meningitis

# information

### What is meningitis?

Meningitis is an inflammation of the lining around the brain and spinal cord. Viruses probably account for most cases of meningitis and are an important cause of admission to hospital[1]. Most cases are relatively mild, with symptoms of headache, fever and a general ill feeling and people affected recover without medical treatment. Sometimes the disease progresses with further symptoms: nausea and vomiting, stiff neck, photophobia and altered consciousness.

### What causes viral meningitis?

Many different viruses can cause meningitis. Most people are exposed to some of them during their life without developing meningitis. The most common causes are:

#### Enteroviruses

Coxsackie or Echovirus groups of enteroviruses are the most common cause of viral meningitis. Most infections produce no symptoms, or mild symptoms such as sore throats, colds and flu-like illnesses. Some of them may also cause stomach upsets and diarrhoea. Enteroviruses mostly affect children, who are the main transmitters of these viruses. Enteroviral infections are prevalent in the UK during summer and autumn months. Spread is mainly by hand to mouth transmission.

#### Herpes viruses

Herpes simplex viruses (HSVs) are the second most common cause of viral meningitis in adolescents and adults in developed countries[2]. HSVs can cause meningitis or encephalitis (inflammation of the brain itself, which is much more serious). HSV encephalitis is mainly caused by HSV-1 (which is also the cause of most cold-sores), whereas meningitis is more often caused by HSV-2 (the cause of most genital herpes). HSV viruses have been linked to a recurrent type of meningitis known as Mollaret's meningitis. Mollaret's is characterised by sudden attacks of meningitis symptoms that usually last for 2-7 days and are separated by symptom free intervals lasting for weeks or months.

HSV-1 and -2 infections are very common but most people affected have only minor symptoms or no symptoms at all. Transmission is via contact with an infected area of the skin when the virus is active. HSV-1 is usually acquired orally during childhood and about 6 out of 10 people in the UK carry it. HSV-2 is primarily a sexually transmitted infection and is carried by about 1 in 10 of the UK population[3]. Many people harbour HSV without ever knowing they have it. Since they can transmit the virus without having symptoms, infection can be spread unknowingly to contacts. The timing of transmission is unpredictable, so genital herpes infection can appear even after many years in a monogamous relationship.

Other Herpes viruses are less frequent causes of meningitis compared to HSVs.

## **Mumps and measles**

Before MMR vaccine was available, mumps was the most common cause of viral meningitis in the UK and occurred in 15% of patients with mumps[4]. A recent resurgence in cases in the UK largely affected late teenagers and young adults who did not receive a full course of measles-mumps-rubella (MMR) vaccine[1].

## **Flaviviruses**

These viruses normally affect wild animals such as birds or rodents and are carried by mosquitoes or ticks. Some of these viruses such as West Nile virus, Japanese B encephalitis and tick-borne encephalitis can cause meningitis or encephalitis in humans but this is not a problem in the UK.

**Human immunodeficiency virus (HIV)** can cause meningitis during the early stages of infection, although this a rare causes of viral meningitis.

In cases of viral meningitis it is not always possible to identify the type of virus responsible for the disease.

## **How is viral meningitis treated?**

The doctor may do a lumbar puncture. This is when a sample of cerebrospinal fluid (CSF) is taken from the spinal canal (the passageway through the back bones which contains the spinal cord). The sample of CSF will be examined and then sent for further laboratory testing. A lumbar puncture is important to confirm the diagnosis of meningitis, and to show which germ is causing the illness.

There are no effective therapies for most viruses that cause meningitis (antibiotics are ineffective against viruses), so treatment is normally limited to easing the symptoms of the disease (for example painkillers for headache or anti-emetics to stop vomiting). Most people recover without any medical treatment within 5 days to a fortnight, but for some the recovery period is more prolonged. Acyclovir is sometimes used to treat HSV infection although no studies have been conducted into the effectiveness of this treatment for herpes meningitis. This is why Meningitis Research Foundation are funding a study which will help improve the diagnosis of viral meningitis and generate the data needed to design a future trial on potential treatments.

## **What after effects can viral meningitis cause?**

Most people recover with no noticeable effects, however recent studies have indicated that some patients with viral meningitis may develop persisting cognitive impairment such as short-term memory loss and attention deficits[5-6]. There is also some evidence showing that children who have viral meningitis under 1 year of age, may develop subtle neurological problems later in life[7].

## **Am I at risk of spreading or contracting the disease if I have been in contact with a patient with viral meningitis?**

The risk to contacts is very low. Viral meningitis does not normally require public health measures to be taken because although some of the viruses that cause it are contagious, most people infected have no symptoms, or only very mild ones. A person with viral meningitis may pass on the virus, but this would be very unlikely to cause another person to develop viral meningitis as well. Viral meningitis is a notifiable disease however, so patients may be contacted by their local Health Protection Unit.

## Can viral meningitis be prevented?

Most causes of viral meningitis are not preventable, although a good general precaution against viral meningitis is attention to handwashing since enteroviruses in particular usually enter the body via the hand to mouth route. Active immunisations which prevent against mumps and measles (MMR) are offered to children at 12-13 months and 3 years of age as part of the routine childhood immunisation schedule. Immunisations are also available for some Flaviviruses such as tick-borne encephalitis and Japanese encephalitis, and are recommended for travelers to areas where the risk of these infections is high.

### Support for you

If you have been affected by meningitis or septicaemia, trained staff and nurses on the **Freefone** 24 hour helpline are here to listen, answer your questions and offer support whenever you need us.

**Freefone 24 hour helpline**  
**080 8800 3344 (UK)**

Information is also available through the Foundation's website [www.meningitis.org](http://www.meningitis.org)  
Join us on Facebook or Twitter for current discussions about meningitis and septicaemia or to share experiences with one another <http://www.meningitis.org/helping-you>

## References

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