

# Cerebral Spinal Fluid (CSF) Leaks and Their Management

**This leaflet explains more about what a cerebrospinal fluid (CSF) leak is and how it is managed, including the clinical evaluation and diagnosis as well as treatment options. If you have any further questions, please speak to a doctor or nurse caring for you.**

## What is a CSF leak?

Cerebral spinal fluid (CSF) is the fluid that surrounds the brain and spinal cord. When there is a hole through the skull base, leakage of this fluid can occur and depending on the location of the skull base defect, the CSF can drain into the ear or the nose.

## What causes a CSF leak?

There are two types of CSF leak: spontaneous and traumatic.

Traumatic leaks are most commonly related to a history of head injury, previous sinus or skull base surgery or skull base tumours.

Spontaneous leaks occur without any known cause. They can be seen in patients with Benign Intracranial Hypertension (where there is increased pressure in the skull without any clear cause).

## What symptoms might I have?

You might experience clear, watery discharge, usually from only one side of the nose or one ear. Drainage of this fluid can be brought on or increased by leaning forward or straining. This fluid, if it drips down the back of the nose into the throat, can taste salty or metallic.

Other symptoms you might experience include headaches, vision changes and hearing loss.

Active CSF leaks can increase the risk of meningitis with symptoms such as photophobia (sensitivity to light), severe headaches, neck pain or stiffness, malaise.

## How is this diagnosed?

Your doctor will perform a history and physical examination. They may ask you to do certain manoeuvres, such as leaning forward for several minutes to see if you can bring on or increase the drainage. You will often be referred to an Ear Nose and Throat surgeon who will examine your nose with a nasoendoscope.

If the drained fluid can be collected, it is sent to the laboratory to assess for the presence of CSF.

Imaging studies such as CT sinuses, MRI sinuses and on occasion cisternogram are very helpful to evaluate for skull base bony defects and to locate the site of the leak.

## What is the treatment for a CSF leak?

Treatment of a CSF leak depends largely on the original cause, the location and volume of the leak (high vs. low volume) and whether it has led to complications such as meningitis.

Treatment can be either medical or surgical.

In cases of spontaneous CSF leaks or head trauma, conservative medical management is usually initially recommended, as many CSF leaks will heal on their own. This usually involves one to two weeks of bed rest and you are encouraged to avoid certain activities including coughing, forceful nose blowing, heavy lifting and exercise or bending your head upside down. Straining is avoided by taking stool softeners.

A lumbar drain may also be placed in the low back to allow CSF to be diverted and hence decrease the pressure on the area of the leak, hopefully to enable it to heal and close spontaneously.

## Surgery

Surgical treatment of CSF leaks is used when conservative treatment fails, or the patient develops complications such as meningitis, or when the skull base defect occurred intra-operatively during sinus surgery or as part of the removal of skull base tumours.

The surgical approach is usually endoscopic through the nose, although on occasion if the defect is very close to the front of the head, an external incision may be required. During surgery, a multi-layered approach is taken in the repair of the CSF leak and various graft materials are used to reinforce the closure. These materials can come from the nose, such as local mucosal flaps, turbinate or septal bone and cartilage. Fat and fascia (a dense layer of tissue above your muscle) may also be harvested from the thigh. On occasion we may also use synthetic material.

Nasal packing is often placed at the end of the case and this is usually removed after a few days, whilst you remain in hospital. During this time your nose will likely feel quite blocked. If after a week following the surgical repair there are no signs of leakage, we will start you on sinus douching to help gently clear the nasal passages of mucous and crusting and to help aid with healing and improve your breathing.

In cases of high volume CSF leaks, a lumbar drain might also be temporarily inserted. This is usually removed after four to five days.

If high pressure hydrocephalus or Benign Intracranial Hypertension (BIH) is causing the CSF leak, the condition may reoccur until shunts are used to help drain the excess fluid.

## Contact us

If you have any question or concerns then please contact the Clinical Nurse Specialist during Working hours of 08.00 to 16.00 Monday to Friday.

- Telephone :020 8725 4468
- Email: [stgh-tr.skullbase@nhs.net](mailto:stgh-tr.skullbase@nhs.net)
- Urgently on Bleep 7171 via switch on 020 8672 1255

You can contact the ward outside of normal working hours if there is anything about which you are concerned.

- Brodie ward: 020 8725 4646/4647
- McKissock ward: 020 8725 4644/4645

Other useful contact numbers:

Neurosurgical Bed Manager: 020 8672 1255 Bleep 7251

Mr Patel and Mr Martin secretary: 020 8725 4172

Miss Little secretary: 020 8725 2052

Mr Stapleton secretary: 020 8725 4508

Mr Minhas secretary: 020 8725 4524

**For more information leaflets on conditions, procedures, treatments and services offered at our hospitals, please visit [www.stgeorges.nhs.uk](http://www.stgeorges.nhs.uk)**

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## Additional services

### Patient Advice and Liaison Service (PALS)

PALS can offer you on-the-spot advice and information when you have comments or concerns about our services or the care you have received. You can visit the PALS office between 9.30am and 4.30pm, Monday to Friday in the main corridor between Grosvenor and Lanesborough wings (near the lift foyer).

**Tel:** 020 8725 2453 **Email:** [pals@stgeorges.nhs.uk](mailto:pals@stgeorges.nhs.uk)

### NHS Choices

NHS Choices provides online information and guidance on all aspects of health and healthcare, to help you make decisions about your health.

**Web:** [www.nhs.uk](http://www.nhs.uk)

### NHS 111

You can call 111 when you need medical help fast but it's not a 999 emergency. NHS 111 is available 24 hours a day, 365 days a year.

Calls are free from landlines and mobile phones.

**Tel:** 111

### AccessAble

You can download accessibility guides for all of our services by searching 'St George's Hospital' on the AccessAble website ([www.accessable.co.uk](http://www.accessable.co.uk)). The guides are designed to ensure everyone – including those with accessibility needs – can access our hospital and community sites with confidence.



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