



Spinal CSF Leak Awareness Week June 2–8, 2024

WHAT IS SPINAL CSF LEAK?

Spinal CSF leak is an important and under-diagnosed cause of new onset head pain that is treatable. Cerebrospinal fluid (CSF) bathes and supports the brain and spinal cord, and is held in place by a layer of strong connective tissue called the dura mater. When the dura mater has a hole, tear, or other defect, the result is a loss of CSF volume, known as intracranial hypotension, which can cause pain and other neurological symptoms. Because spinal CSF leak is unfamiliar to most physicians, it is often misdiagnosed. Patients can suffer for months, years, or even decades with the wrong diagnosis and the wrong treatments.

WHAT ARE THE SYMPTOMS?

The most common symptom is positional head pain that is worse upright and improved when lying down, but there are many other neurologic signs and symptoms. Head pain severity varies enormously, from mild to severe, and may not correlate well with findings on imaging. Patients may be quite disabled by their inability to be functional while upright.

HOW IS IT DIAGNOSED?

Diagnosis starts with the symptom profile and includes brain and spinal imaging. But due to low awareness, frequent negative testing, and so many causes of head pain and many other symptoms, misdiagnosis and delayed diagnosis remain common.

HOW IS IT TREATED?

Treatments can include conservative measures such as bedrest and fluids; spinal injection procedures, such as epidural blood patching; or surgery. In the case of CSF-venous fistulas, they may be treated by surgery, by glue injection, or by endovascular embolization.

WHAT WILL MAKE A DIFFERENCE?

Greater awareness will help shorten delays to the correct diagnosis and treatment. **More education for health professionals** will increase familiarity with diagnosis & treatment. And **more research** is crucial to improving testing and treatments, and key to better understanding incidence and underlying causes.

WHAT ARE THE CAUSES?

A spinal CSF leak can be **spontaneous** due to:

- pre-existing spinal pathology such as a bone spur
- pre-existing weakness of the dura mater due to heritable disorders of connective tissue
- CSF-venous fistula (an abnormal connection from CSF space to epidural veins)

A spinal CSF leak can be **iatrogenic**, caused by medical procedures, such as:

- Lumbar puncture (spinal tap)
- Epidural injection (spinal injection)
- Spinal or other surgery

And a spinal CSF leak can be **traumatic**:

- caused by an injury

WHAT IS THE PROGNOSIS?

Many patients fare well with appropriate treatment, but others do poorly, due to the limitations of currently available testing and treatments.