

Spinal cerebrospinal fluid (CSF) leak is an important and underdiagnosed cause of new onset headache that is treatable and often curable. CSF bathes and supports the brain and spinal cord. When the connective tissue known as dura that holds CSF in around the spinal cord has a hole or tear, the result is a loss of CSF volume, known as **intracranial hypotension**. This results in a loss of buoyancy of the brain that is much worse when upright. This brain sag causes traction on pain-sensitive structures in the head as well as other neurologic symptoms and signs.

The most common and classic symptom is a positional (orthostatic) headache that is worse when upright and improved when lying down, but there are usually other signs and symptoms. The headache is often located at the back of the head but can be frontal, bi-temporal or all-over (holocephalic). Headache severity varies enormously from mild to severe and may not correlate well with findings on imaging. The positional aspect of headache tends to lessen with time and may not be evident even from the onset. Many patients are quite disabled by their inability to be functional while upright.

Recognition of the headache pattern and other symptoms is important in leading physicians to suspect the diagnosis of intracranial hypotension due to spinal CSF leak.

Common symptoms

positional headache	neck pain or stiffness
nausea and vomiting	change in hearing (muffled, tinnitus)
impaired balance	dizziness
photophobia (sensitivity to light)	phonophobia (sensitivity to sound)
pain between shoulder blades	changes in cognition (brain fog)
arm pain or numbness	

Less common symptoms

visual changes	facial numbness or pain
changes in taste	fatigue
pain or numbness below arm level	galactorrhea (nipple discharge)

Rare complications

quadriplegia (paralysis, weakness)	dementia
Parkinsonism, tremor, other movement disorders	cerebral venous thrombosis
ataxia (unsteady gait)	reversible cerebral vasoconstriction
stupor / coma	death
stroke	

Key points

- not all patients with a positional headache have a spinal CSF leak
- headache may be trivial or absent with other symptoms being more prominent
- the positional aspect of headache often lessens with time or may be absent
- the severity of symptoms and associated disability is often underappreciated