



Normal Pressure Hydrocephalus (NPH)

DEFINITION

The term **Hydrocephalus** refers to a condition where the fluid filled spaces (ventricles) in the brain become enlarged due to an abnormal build up of cerebrospinal fluid (CSF). This can be caused by either abnormalities in how the CSF is produced, circulated, or reabsorbed. In Normal Pressure Hydrocephalus (NPH) there is little or no increase in the pressure of the fluid in the brain, even though the ventricles may become enlarged.

Cerebrospinal fluid (CSF) is a clear, water-like fluid, which bathes the brain. The fluid circulates into the space around the brain and spinal cord, where it functions as shock absorber, or as a protective cushion. Under normal conditions, you have about 125ml (a half cup) of CSF. CSF contains dissolved sugar (glucose), proteins, salts, and some white blood cells.

SYMPTOMS

NPH develops slowly, often over weeks to months. Therefore NPH can be difficult to diagnose. Symptoms are sometimes overlooked or attributed to the ageing process (most people with NPH are over the age of 60). Symptoms of NPH include:

- Gait disturbances (difficulty walking)
- Mild dementia (forgetfulness, short term memory loss)
- Urinary incontinence (mild or complete loss of bladder control)

CAUSES

In most cases the cause of NPH is unknown. In some cases, NPH may be the result of head injury, meningitis, encephalitis, hemorrhage, tumor, or cysts.

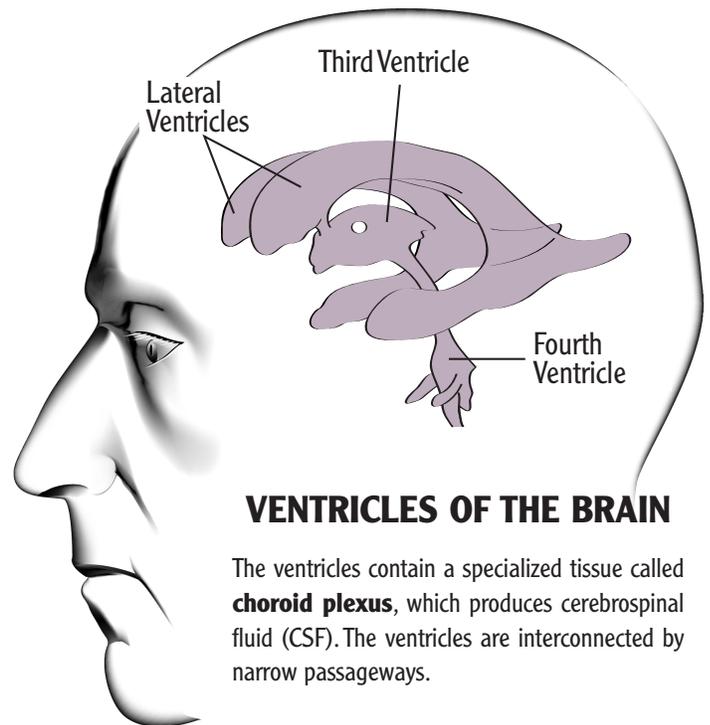
DIAGNOSTIC TESTS

CT Scan, Lumbar Puncture (LP), and Magnetic Resonance Imaging (MRI) are the main diagnostic tests used to find out whether or not you have NPH.

TREATMENT

The placement of a Ventriculoperitoneal (VP) or Lumboperitoneal (LP) shunt is the most common treatment. In a shunt system, a flexible silicon tube is used to drain the excess fluid (CSF) from the brain or the space around the spinal cord to another part of the body (usually the abdominal cavity). The surgery for the placement of a VP shunt is explained in more detail in the patient guide, *VP Shunt for Hydrocephalus*.

After shunt placement, a gradual improvement in symptoms is expected to occur over a period of months.



VENTRICLES OF THE BRAIN

The ventricles contain a specialized tissue called **choroid plexus**, which produces cerebrospinal fluid (CSF). The ventricles are interconnected by narrow passageways.

