

HYDROCEPHALUS



Hydrocephalus is a condition involving an excessive build-up of fluid on the brain. This build-up occurs in the ventricles of the brain, compressing tissue and placing increased pressure on the brain. This results in varying degrees of damage to the tissue of the brain. The fluid is not water (hydrocephalus is often termed 'water on the brain'), but cerebro-spinal fluid (CSF), an important liquid that normally flows freely through the ventricles of the brain, around the brain, down the spinal cord, eventually being absorbed into the bloodstream. Hydrocephalus occurs when the CSF is prevented from draining away. Hydrocephalus can either be congenital (present at birth), or acquired (develop during or at any point after birth).

Over 85% of babies born with spina bifida will also develop hydrocephalus, but this figure only accounts for a very small percentage of the babies, children and adults that are affected by hydrocephalus every year all over the world. As hydrocephalus can occur at any point in life, there are no accurate global prevalence statistics, however it is estimated that there could be up to 375,000 new cases of infant hydrocephalus each year in sub-Saharan Africa alone!

In the USA, most cases of hydrocephalus are as a result of congenital anomaly (such as spina bifida), or related to brain haemorrhage in very premature newborns. In contrast, in developing countries around 60% of cases of hydrocephalus are caused by infection, usually within the first month of life. 79% of the babies born each year with hydrocephalus will be born in the developing world, with limited or no access to life-saving neurosurgical care. Many of these babies will die.

A further form of hydrocephalus occurs only in later life. Normal Pressure hydrocephalus (NPH) differs from other forms of hydrocephalus in that there is little or no build-up of pressure. Symptoms of NPH can be easily confused with what might be regarded as 'normal' symptoms of 'old age' and 'dementia'. As a result, the number of individuals is as yet unknown. Early diagnosis is vital, as early treatment can be very effective in delaying/preventing symptoms from worsening. [For more information about NPH.](#)

Hydrocephalus represents a serious global health concern, and a chronic health and economic burden in the developing world. Despite this, hydrocephalus has never been a public health priority, particularly in the developing world where the burden of illness is greatest. There is no cure, but we do know a lot about risk factors associated with some of the known causes for hydrocephalus, such as NTDs, infection and premature birth.

Other causes of acquired hydrocephalus include; brain injury and trauma, tumours, cancer, subarachnoid haemorrhage (an uncommon type of stroke), which can affect individuals of any age. Other causes of congenital hydrocephalus include; X-linked

hydrocephalus (caused by a mutation of the X chromosome), rare genetic disorders and arachnoid cysts. <https://youtu.be/bHD8zYImKqA>

[For more information, please see out factsheet on hydrocephalus](#)

Diagnosis

Hydrocephalus is diagnosed by ultrasound, CT or MRI scan, or by monitoring pressure. Diagnostic techniques will depend on the age, clinical presentation and patient history. In developing countries such diagnostic techniques are rarely available, and diagnosis will usually be made as a result of clinical presentation of symptoms and rapid, visible enlargement of the head.