

# Your child and hydrocephalus

## What is hydrocephalus?

Inside every brain there is a clear fluid called 'cerebrospinal fluid' (CSF). This fluid is made inside spaces in the brain, called ventricles.

The CSF flows out over the surface of the brain and down the spinal cord before being absorbed into the bloodstream. CSF provides nutrients to the brain and spinal cord and removes waste products. It also acts as a cushion to protect the brain and spinal cord.

Hydrocephalus is when your child has too much CSF in the ventricles in their brain, and the ventricles get bigger and begin to cause problems.

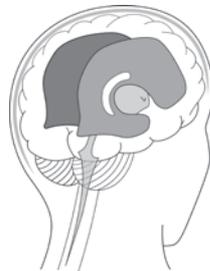
Hydrocephalus is either:

- Non communicating: Fluid cannot drain properly because there is a blockage; or
- Communicating: There is too much CSF (either too much CSF is made or not enough is reabsorbed).

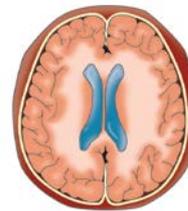
As the fluid is still being made by the brain, the build-up of CSF will cause pressure to rise inside the brain. This can then lead to signs of raised pressure and eventually damage to the brain, if not treated.



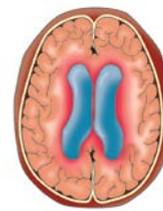
Ventricles:  
normal size



Ventricles:  
enlarged



Normal ventricles(L)



Enlarged ventricles(R)

## What causes hydrocephalus?

Your child may be born with hydrocephalus, known as Congenital Hydrocephalus.

Otherwise, your child may develop hydrocephalus after birth as a result of a syndrome, head injury, bleeding, infection around the brain (meningitis) or brain tumour. This is known as Acquired Hydrocephalus.

## Do children with spina bifida often have hydrocephalus?

Many children with spina bifida have hydrocephalus. Some have it before they are born, while others develop hydrocephalus soon after birth when they have an operation to close the lesion on their back.

## How is hydrocephalus diagnosed?

Hydrocephalus may be found before birth on routine antenatal ultrasounds.

Generally, babies and children that show sign/s of hydrocephalus have the size of the ventricles checked to assist in the diagnosis of hydrocephalus.

Babies may have an ultrasound taken over the top of their fontanelle, or babies and children may have computerised tomography (CT scan) or magnetic resonance imaging (MRI) to diagnose hydrocephalus.

Babies may also have their head circumference regularly measured to monitor for increases.



## What are the signs of hydrocephalus?

Signs of hydrocephalus (may have one or more):

### Signs for Baby

Irritable, unsettled  
More sleepy than usual  
High pitched cry  
Vomiting  
Sunsetting eyes (eyes unable to look up)  
Poor feeding  
Head getting bigger  
Fontanelle (soft spot on top head) full and firm when sitting up and quiet  
Seizures (fits)

### Signs for child

Irritable, confused, disorientated or just not usual self  
More sleepy than usual  
Headache  
Vomiting  
Double or blurred vision  
Photophobia (eyes sensitive to light)  
Unsteady on feet  
Difficulty doing routine tasks  
Seizures (fits)

## How will hydrocephalus affect my child?

Like all babies and children, those with hydrocephalus are individuals and the effects of hydrocephalus will vary.

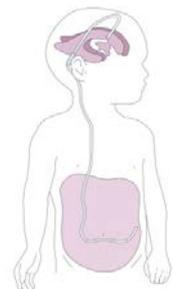
Hydrocephalus is usually a lifelong condition that is controlled, not cured. Treatment will help your child live a full and active life.

Some children may experience delays in learning, and problems with eyesight and/or movement, such as sitting, crawling, walking and coordination. Your child may not experience any of these difficulties. Having hydrocephalus does not mean they can't enjoy life's everyday pleasures. Your Neurosurgeon may be able to give you information more specific to your child.

## How is hydrocephalus treated?

The aim of hydrocephalus treatment is to lower the pressure inside the brain by having an operation to make a new pathway for the CSF to drain.

This is usually done by placing a very fine tube (called a shunt) from inside one of the ventricles in the brain and another tube in a place to dump the CSF, usually the peritoneum (tummy). These two tubes are connected by a valve which sits behind the ear and controls the pressure. Once this pressure is reached, some CSF will be drained from the ventricles to reduce the pressure. This type of shunt is called a ventricular-peritoneal (VP shunt), as shown.



Occasionally other locations for shunts are used. If your child needs another type of shunt your Neurosurgeon can provide you with more specific information.

The other option to treat hydrocephalus is to make a small hole at the bottom of one of the ventricles, called a ventriculostomy, to allow the fluid to drain out. A child having a ventriculostomy doesn't have a tube left in, but this operation is not suitable for babies and many children with hydrocephalus.

Both of these treatments involve an operation.

## Other useful factsheets

- Your child's shunt: General information
- Your child's shunt: Everyday living for my infant/toddler
- Your child's shunt: Everyday living for my child/teen
- Your child's shunt: Frequently Asked Questions

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## For more information

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