McMaster Children's Hospital

Hydrocephalus

Information for parents from the Pediatric Neurosurgery team

What is hydrocephalus?

Hydrocephalus is a build-up of fluid within spaces inside the brain that are called ventricles. There are 4 ventricles, connected by small passageways.

Cerebrospinal fluid (CSF) is a fluid made within the ventricles to nourish and cushion the brain and spinal cord. The CSF moves through the ventricles and out through the fourth ventricle, where it flows over the surfaces of the brain and spinal cord. Eventually, the fluid is absorbed back into the bloodstream.

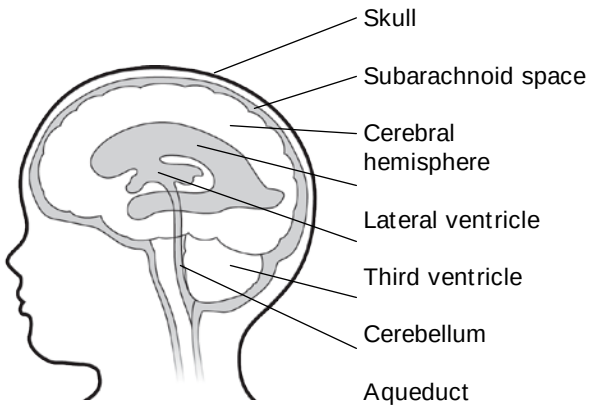
CSF can build up if the flow is blocked or the fluid is not absorbed. As the amount of fluid increases, the ventricles get bigger. This causes symptoms of increased pressure within the brain.

If you have any questions, please ask your health care team

For online information, we recommend:

www.hydroassoc.org/hydrocephalus-education-and-support/learning-about-hydrocephalus/

This picture shows the inside of a child's brain. The gray shaded areas show the path of CSF fluid.



What causes hydrocephalus?

Hydrocephalus may be present at birth (congenital hydrocephalus) or may develop after birth (acquired hydrocephalus) as a result of:

- An injury
- Infection
- Brain tumor
- Brain hemorrhage

What are the signs of hydrocephalus?

For **babies and toddlers**, signs of hydrocephalus may include:

- A large head and head that grows too quickly
- 'Sunsetting eyes', eyes that look downward
- The soft spot, may bulge or feel tight
- A big forehead
- The veins on the head and face may look big and full
- Increased sleepiness
- Vomiting
- Not meeting developmental milestones

For **older children**, signs of hydrocephalus may include:

- Headache
- Drowsiness
- Nausea and/or vomiting
- Clumsy or awkward movements
- Lack of energy
- A change in thinking or concentration
- Poor performance at school
- Not meeting developmental milestones

How is hydrocephalus diagnosed?

The diagnosis of hydrocephalus is made after examining your child and reviewing the results of tests, such as Computerized Tomography (CT scan), Magnetic Resonance Imaging (MRI) or ultrasound.

How is hydrocephalus treated?

Hydrocephalus is treated with a surgical procedure that provides another pathway for CSF to flow.

1. **Ventriculoperitoneal shunt**

   The most common procedure is a shunt. A shunt is a thin, flexible tube tunneled from the brain, under the skin, into the abdomen where the CSF is absorbed.

2. **Third Ventriculostomy**

   Depending on the cause of hydrocephalus, a new passage way for the fluid can be made so that a shunt will not be necessary.

please turn over ➔

A Ventriculoperitoneal shunt