

Hydrocephalus

BIRTH DEFECT RESEARCH FOR CHILDREN



What is Hydrocephalus?

Hydrocephalus is an abnormal build up of cerebrospinal fluid (CSF) in the brain that causes ventricles to enlarge and the pressure inside the head to increase. Hydrocephalus occurs when there is an imbalance in the amount of CSF being produced and absorbed



Hydrocephalus



Symptoms of hydrocephalus include:

- Enlarged head (at birth or shortly after)
- Prominent scalp veins
- “Sunsetting” of eyes (downward look)
- Large or tense fontanel
- Fever, irritability or sleepiness

How many children are born with Hydrocephalus?

Hydrocephalus is one of the most common “birth defects” affecting more than 10,000 babies each year. One out of every 500 newborns has hydrocephalus.

What causes Hydrocephalus?

CSF is produced in the ventricles, circulates through them and is then absorbed into the bloodstream. This cycle functions to maintain a protective environment for the nervous system. Congenital hydrocephalus is thought to be caused by an interaction of environmental and genetic factors. The development of hydrocephalus has also been associated with intercranial bleeding, cysts, head trauma, infections and tumors.

Helping a child with Hydrocephalus

Diagnosis: Depending on the age of the child, various techniques can be used to confirm diagnosis. An ultrasound of the brain is often used during the first 6-12 months of life. After the skull has fused, a better diagnosis can be made with MRI or other brain imaging techniques.

Treatment: Hydrocephalus is most commonly treated with the surgical insertion of a flexible tube called a shunt. The shunt is placed in the ventricular system of the brain to divert the flow of CSF into another region of the body, such as the abdominal cavity, chest cavity, or heart. Shunts usually have a valve system that controls and maintains the CSF at normal pressures. Shunts will often need to be replaced as the child grows or in the case of infection or malfunction of the shunt

Another method for treating hydrocephalus is a procedure called a ventriculostomy. A tiny hole is made in the ventricle to re-establish CSF flow. Only certain types of hydrocephalus can be treated this way, but the procedure is becoming more popular due to better imaging techniques and surgical instruments.

Associated Problems: About 80% of babies with hydrocephalus are born with one or more additional problems including:

- Arachnoid Cysts
- Brain Injury
- Dandy-Walker Syndrome
- Head Trauma - Tumors
- Heart Disease
- Learning Disabilities
- Meningitis
- Porencephaly
- Spina Bifida

Learning disabilities are among the most common complications for children with hydrocephalus. Intelligence levels can range from mild learning impairment to severe mental retardation. While surgery can correct the CSF balance, any associated brain damage is irreversible. Some children may have difficulty with memory retention but they can still be taught by using special learning strategies.

Motor disabilities affect 75% of children with hydrocephalus. While children can participate in some physical activities, they should avoid sports that require the use of a helmet.

Visual impairments, particularly related to depth reception, are present in 25-35% of children with hydrocephalus.



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What is in the future for a child with Hydrocephalus?

The prognosis for most children with hydrocephalus is optimistic. With shunt treatment, 80% of infants will reach five years of age and of those survivors, 80% will have normal intelligence.

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