

A Teacher's Guide to Hydrocephalus



Harry's Hydrocephalus Awareness
Trust (Harry's HAT)
Registered charity 1183086



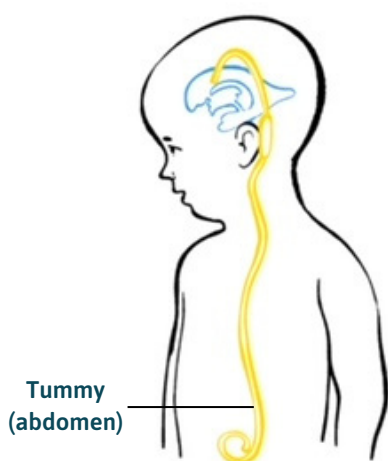
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What is hydrocephalus?

Hydrocephalus is an abnormal build-up of cerebrospinal fluid (CSF) within the ventricles (cavities) of the brain. The excess accumulation of CSF causes the ventricles to enlarge in size, putting pressure on the brain. Without treatment, the increased pressure can affect a child's brain growth and development.

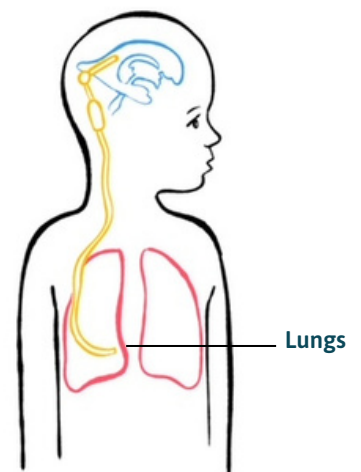
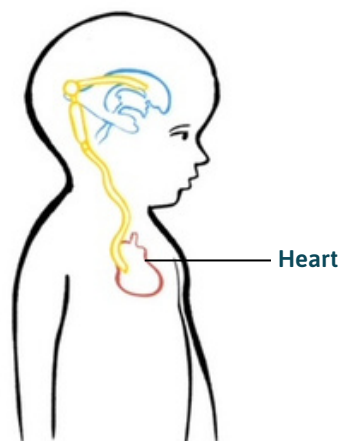
The most common treatment for hydrocephalus is a device called a 'shunt'. A shunt is a thin plastic tube that sits inside the brain, draining the excess fluid to another part of the body, such as the abdomen (tummy), where it can be safely reabsorbed.

A smaller number of children will be treated with a different procedure called an endoscopic third ventriculostomy (or ETV). This involves a surgeon making a small hole in the floor of one of the ventricles. This creates a natural alternative pathway for the excess CSF, allowing it to be reabsorbed, and avoiding the need for a shunt.



Ventriculo-peritoneal
Shunt

Ventriculo-atrial
Shunt



Ventriculo-pleural
Shunt

Treatment complications are common in children with shunts and ETVs.

Shunts can become blocked, broken, disconnected, and infected. ETVs can become blocked and infected.

All staff working with children with hydrocephalus should be aware of the symptoms and signs of a shunt or ETV complication, which can occur suddenly, or develop over time.

All children should have a shunt or ETV emergency card, and have a plan in place should a complication occur.



What are the symptoms and signs of a shunt or ETV complication?

If you suspect a child's shunt or ETV is not working properly, or they have an infection, it is important that you seek **immediate** medical attention.

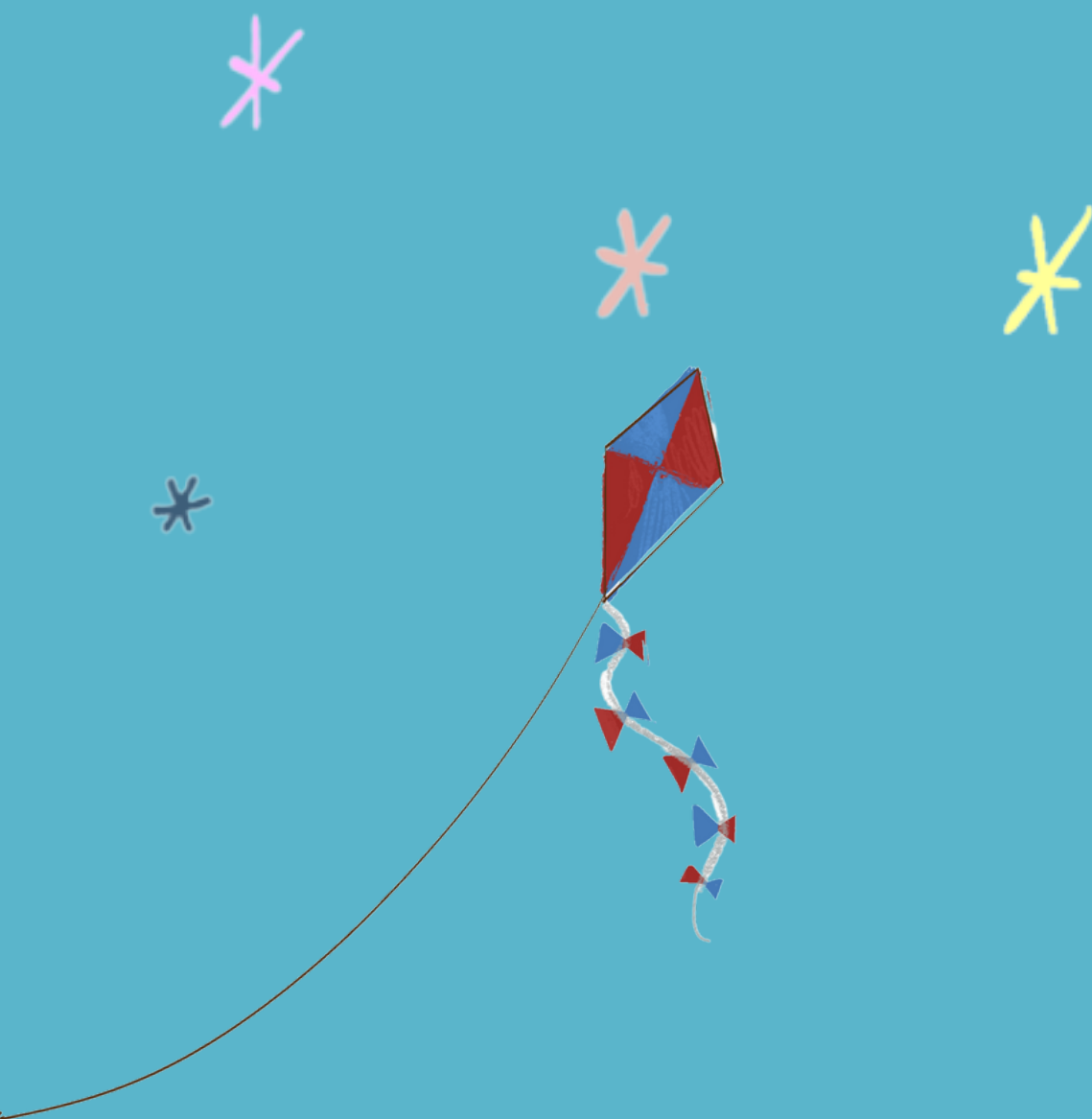
Symptoms and signs of a shunt **malfunction** can include:

- Headache
- Tiredness
- Nausea and vomiting
- Loss of appetite
- Irritability
- Bulging fontanelle (soft spot)
- Large head
- Problems with movement, balance or coordination
- Changes in personality or behaviour
- Decline in nursery or school performance
- Developmental delays
- Changes in vision
- Seizures

If a child has an **infection**, they may have:

- A high temperature (38°C or more)
- Abdominal (tummy) pain, if their shunt drains into the abdomen
- Neck stiffness
- Redness, swelling or tenderness along the length of the shunt (if applicable)
- Redness or swelling of the incision site





Any changes in behaviour, concentration, motivation, and ability to follow instructions, should also be communicated to the school SENCo, and parents.

How can hydrocephalus impact learning ?

Children with hydrocephalus can sometimes present with similar traits to ADHD and Autism.

Many children also have:

- 🧠 Difficulties processing language
- 🧠 Challenges with remembering and recalling information
- 🧠 Difficulties with organising themselves and their work
- 🧠 Lack of motivation - especially if not of interest or child finds difficult
- 🧠 Difficulties transitioning between tasks
- 🧠 Challenges navigating social situations and maintaining friendships
- 🧠 Delayed development of fine and gross motor skills
- 🧠 A spiky academic profile



All children are unique and their hydrocephalus can impact them differently. Some children may need lots of extra support, while others may need minimal support. It is important to be aware of the condition, and ensure that everyone works together to help the child achieve their full potential.

Tips to help with Learning

-  **Sit the child where there are minimal distractions**
-  **Multi - sensory approach, including visual aids, physical or practical learning**
-  **Scaffolding / breaking things down into smaller tasks**
-  **Regular checking in with student to ensure understanding and motivation to complete tasks**
-  **Regular movement breaks**
-  **Use child's interests to motivate learning (where possible)**
-  **Repetition and overlearning**
-  **Ensure child is hydrated- this is vital for children with hydrocephalus.**



Head bumps may be more serious for a child with hydrocephalus.

This should be taken into consideration when planning curriculum activities, especially PE.



The importance of staying well hydrated *

Children are more at risk of becoming dehydrated than adults, and may need to be reminded to drink throughout the day. *

This is important for children with hydrocephalus, as the symptoms and signs of dehydration (e.g., headache, tiredness, irritability) can **mimic** the signs of hydrocephalus and/or a shunt complication. *

Parents and carers should therefore encourage children with hydrocephalus to drink plenty of fluids.

How much water?

To stay well hydrated, the NHS recommend that children should drink around 6-8 cups of fluid per day

The amount of fluid *per cup* varies depending on the age of the child:

Children under 5 years: 120-150 ml

Children aged 6+ years: 250-300 ml



Glossary of terms

Hydrocephalus - is a condition where excess fluid builds up inside the skull, putting pressure on the brain.

CSF - cerebrospinal fluid is a colourless fluid that surrounds the brain and spinal cord

Ventricles – There are four interconnected cavities known as ventricles in the brain. In patients with hydrocephalus, the CSF builds up in the ventricles causing them to expand, putting pressure on the brain.

Shunt - a thin plastic tube which takes excess CSF from inside the brain or spine and transports it to somewhere else in the body. There are different types of shunt.

ETV (Endoscopic Third Ventriculostomy) - is where a small hole is placed in the floor of the third ventricle creating an alternative pathway for the fluid which allows it to be reabsorbed.

CT (Computerised Tomography Scan) - a detailed scan using X-Rays.

MRI (Magnetic Resonance Imaging) - a detailed scan using high-powered magnets.

IV (Intravenous Therapy) - A medical technique to deliver fluid, medication and/or nutrition directly into a person's vein.

PICU (Paediatric Intensive Care Unit) – cares for children up to 17

NICU (Neonatal Intensive Care Unit) - cares for newborn babies.

Glossary of terms

Neurosurgeon - A surgeon who specialises in the nervous system. They diagnose, assess and perform surgery to treat disorders of the nervous system. They operate on the central nervous system (brain and spinal cord) and the peripheral nervous system.

CNS (Clinical Nurse Specialist) - A nurse who is specially trained in a particular field.

Paediatrician – A medical doctor specialising in children.

Consultant – A consultant is a senior doctor who has completed all of their specialist training.

Surgeon – A Surgeon is a Doctor who is specially trained to perform surgical operations. In the UK many surgeons use the title Mr or Miss or Mrs.

Anaesthetist – A specialist doctor who is responsible for providing anaesthesia to patients for operations and procedures.

OT (Occupational Therapist) - an allied healthcare professional who provides support and advice to people with everyday activities to help achieve their potential

HV (Health Visitor) - work with families who have children aged 0-5

Play Therapist – help children through play. They can provide distraction support during invasive procedures such as injections, blood tests etc.

Registrar - a senior qualified doctor on route to becoming a consultant in a particular specialty.

Harry's Hydrocephalus Awareness Trust (Harry's HAT) supports children with hydrocephalus, and their families.



We do this by:

-  **Raising awareness**
-  **Funding front-line healthcare professionals to learn more about the condition and so improve patient care**
-  **Connecting affected families to reduce isolation**
-  **Campaigning to raise awareness of the importance of routine head circumference measurement during infancy, to facilitate an early diagnosis.**



Learn more about us at harrys-hat.org

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