

Let's Talk About...

Hydrocephalus treatment: Endoscopic third ventriculostomy (ETV)

An endoscopic third ventriculostomy (ETV) is a surgical procedure to treat hydrocephalus (high-dro-SEFF-ah-luss) by creating an opening in the floor of the third ventricle. This opening allows the cerebrospinal (ser-EE-bro-SPINE-all) fluid, or CSF, to drain from your child's brain.

Why does my child need an ETV?

An ETV is a treatment for hydrocephalus. Hydrocephalus is a brain condition that happens when CSF (the clear, watery fluid that surrounds and cushions the brain and spinal cord) can't drain from the brain. It then pools, causing a buildup of fluid in the skull.

Hydrocephalus (also called "water on the brain") can make babies' and young children's heads swell to make room for the excess fluid. Older kids, whose skull bones have matured and fused together, have painful headaches from the increased pressure in the head.

An ETV lets the CSF go around the blockage and reduces the pressure in the brain.

What happens during an ETV?

During an ETV the surgeon creates a small hole in the skull and then into the bottom of the third ventricle, a chamber that holds CSF inside the brain. This hole lets the CSF flow out of the blocked ventricle and into an area around the brain called the subarachnoid space (see figure 1). The fluid can then move normally and is absorbed into the blood stream.

What happens after ETV surgery?

Your child is usually admitted to the neuroscience trauma unit (NTU). They may also go to the pediatric intensive care unit (PICU) after surgery. Nurses will watch your child closely while they recover.

Your child may have an external ventricular drain (EVD) after surgery. This is temporary, and a member of the neurosurgical team will remove it at your child's bedside. If there is pressure in the brain after surgery, the EVD can be opened to relieve the pressure.

Once your child's brain shows no signs of increased pressure, the EVD will be removed. Healthcare providers may observe your child for 24 hours after the EVD is removed. Your child may have an x-ray (MRI or CT scan) to check the size of the ventricle in the brain after the procedure.



Are there any possible complications after surgery?

Possible complications include:

- **Bleeding:** If there is damage to the ventricle wall or arteries, there can be bleeding when the surgeon makes a hole in the ventricle floor. Bleeding can cause problems with body temperature, sleep, and appetite. Extensive bleeding from blood vessel injury can lead to death, but is extremely rare.

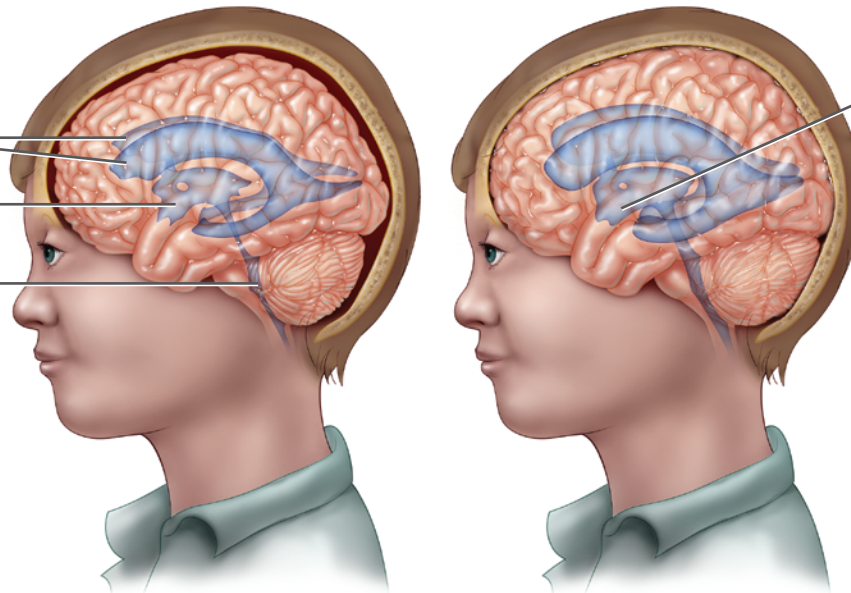
Figure 1

Normal

Hydrocephalus

Lateral ventricles
Third ventricle
Fourth ventricle

Area where ETV hole is made



- **Short-term memory loss:** Areas that control memory may be damaged, which may lead to short-term memory loss. This is usually temporary.
- **Hormonal functions:** The third ventricle where the surgeon makes the hole is responsible for hormonal function. Because of this, there is a chance of diabetes insipidus (DI), a problem with fluid control in the body. This is usually temporary.
- **Reoccurrence:** Your child may have increased intracranial pressure later in life. An ETV treats hydrocephalus but does not cure it. The hole made by the doctor can close up again. If the hole closes, increased pressure will come back. After 6 months, the risk of the ETV closing is very low.

- Infants may have a swollen, raised soft spot. They may be fussy, irritable, have a high-pitched cry, and have feeding problems.

If your child has the above symptoms or if you have concerns, call your child’s healthcare provider or go to the nearest emergency room.

What if I have questions or concerns?

If you have questions about an ETV, talk to your child’s healthcare providers. After your child’s surgery, you can call the phone numbers on your child’s discharge instructions.

Protect your child by getting a medic alert card for your child. This ensures your child will have quick medical attention in an emergency. Call the Hydrocephalus Association at 415.732.7040 for a free card.

Notes

How do I know if the ETV hole has closed up?

Watch your child for signs that the ETV hole has closed up. They may have the following symptoms:

- Headache
- Sleepiness
- Loss of coordination or balance
- Vomiting
- Vision problems
- Irritability

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