



Kids Brain Doc

Dr. Laila Mohammad

Aqueductal Stenosis

Patient Packet



CEREBROSPINAL FLUID (CSF)



Kids Brain Doc
Dr. Laila Mohammad

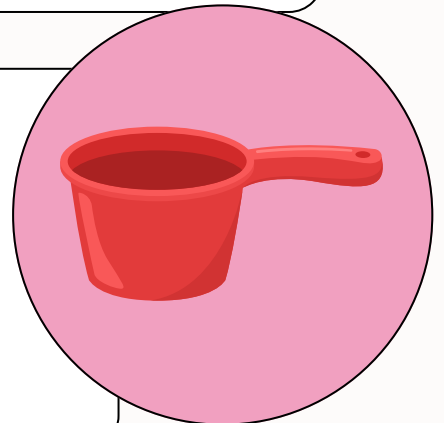
01. WHAT IS IT

A clear liquid that surround the brain and spinal cord. It cushions the brain, protects it from injury, and helps move nutrients and waste in and out.



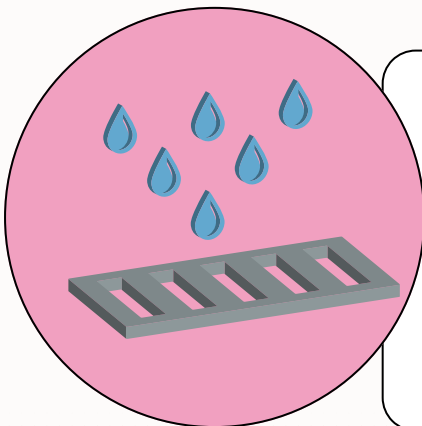
02. HOW MUCH DO WE HAVE

You produce about 15-20 mL (1 Tablespoon) every hour. Over a whole day, that's about 500 mL (or 2 cups). However, at any one time, there's only about 150 mL (or 1/2 cup) around the brain and spinal cord.



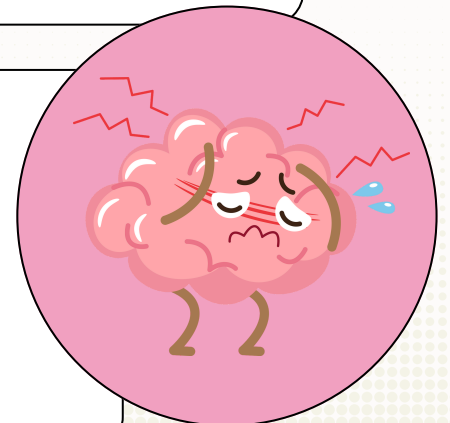
03. WHERE DOES THE EXTRA GO?

Since your body only needs a set amount, the "extra" drains away through the brain's natural gutters (*arachnoid granulations*), which carry the fluid back into the bloodstream to keep everything in balance.

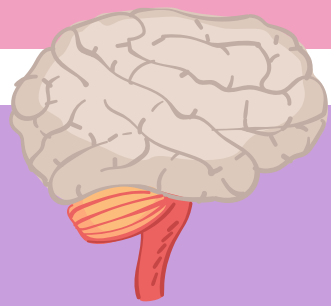


04. WHY IS THIS IMPORANT

If too much CSF builds up or doesn't drain well, it can put pressure on the brain. This might show up as headaches, vomiting, sleepiness, irritability, a bulging soft spot, or a quickly growing head size. This would need treatment.



Diagnosis: Aqueductal Stenosis



What is it?

When the small channel in the brain (*aqueduct of Sylvius*) becomes narrow, it can block fluid from flowing between the fluid filled spaces in the brain (*ventricles*). This blockage may lead to a build-up of fluid and pressure in the brain, known as *hydrocephalus*.

Who does it affect?

You often see it in babies or kids, but sometimes it shows up later, depending on when the symptoms begin.



How did my child get it?

Usually, this condition starts before birth as the brain develops. Sometimes, it might be due to infection, bleeding, or other brain issues after birth. Remember, as a parent, this isn't because of anything you did or didn't do.

Is it Harmful?

Yes, if it's not treated, the fluid can cause brain pressure. This might show up as your child being cranky, getting headaches, feeling sick, or having trouble with their development.



What is the Treatment?

The goal is to reduce fluid buildup in the brain using either an endoscopic third ventriculostomy (ETV) or a ventriculoperitoneal (VP) shunt. With treatment, children generally do great.



ETV Success Score

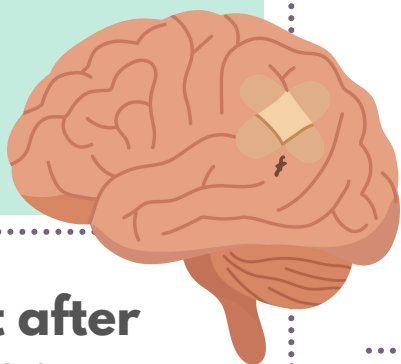
Score = AGE + ETIOLOGY + PREVIOUS SHUNT
 = Percentage Probability of ETV Success

Score	AGE	+	ETIOLOGY	+	PREVIOUS SHUNT
0	<1 Month		Post-Infectious		Previous Shunt
10	1 to <6 months				No Previous Shunt
20			MMC, IVH, Non-tectal brain tumor		
30	6 months to <1 year		Aqueductal stenosis, Tectal tumor, Other		
40	1 year to <10 years				
50	>= 10 years				

Surgery: Endoscopic Third Ventriculostomy (ETV)

1 Goals of Surgery

- Relieve fluid buildup and pressure in brain
- This is done by creating a "detour" or new pathway for the fluid to flow



2 Risks of Surgery

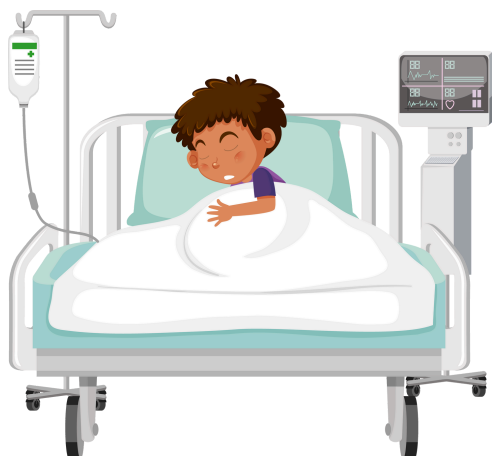
- Infection (give antibiotics before surgery), bleeding, headache, brain fluid leak, damage to brain
- Long-term: the ETV may fail and require a re-do or the need for a VP Shunt (permanent hardware)

3 Alternatives

- Ventriculoperitoneal (VP) Shunt – a straw that drains fluid from the head to the belly
- Observe – only if no signs of pressure

4 Right after Surgery

- Sitting with the head up to help the incision heal
- Pain medications: IV Tylenol, IV Toradol,
- Antibiotics: 24 hours
- Check labs



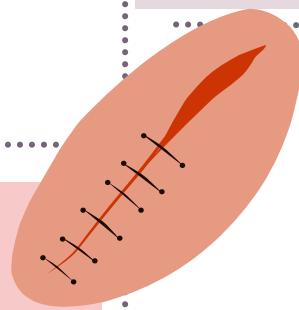
5 Hospital Recovery

- Once your child is taking all their medicine by mouth, eating/drinking, peeing, and moving ok, your child can go home

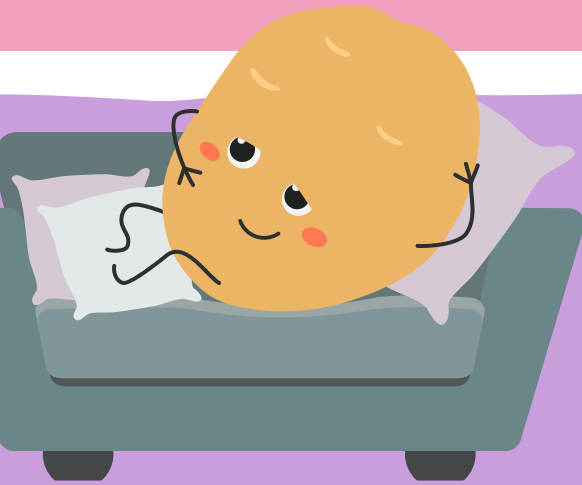


6 Incision Care

- Ok to shower 2 days after surgery. Wash daily
- No bathing or soaking incision in tub for 4 weeks after surgery
- Incision will fall off on it's own in 3-4 weeks
- No need to cover the incision



Recovery & Follow-Up



ACTIVITY RESTRICTIONS

- Week 0-2: Couch potato
- Week 0-4: Light activity
- 1-3 months: Regular activity (keeping two feet on the ground – avoid jumping)
- At 3-months: Clear for all activities

HOME CARE

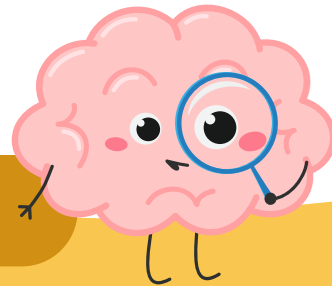
Will see in clinic for incision check at 2 weeks.
Can return to school or daycare after this appointment.

FOLLOW-UP

- 2-week: incision check
- 6-weeks
- 3 months
- Annual check-up



LONG-TERM CARE



- Return to sports: After 3 months, ok to return to non-contact sports
 - At 6 months, ok to return to contact sports
- Annual eye exams to rule out pressure build up in the optic nerve (*papilledema*) that could indicate increased pressure in the brain
- Most children will live normal, active lives once fully healed.