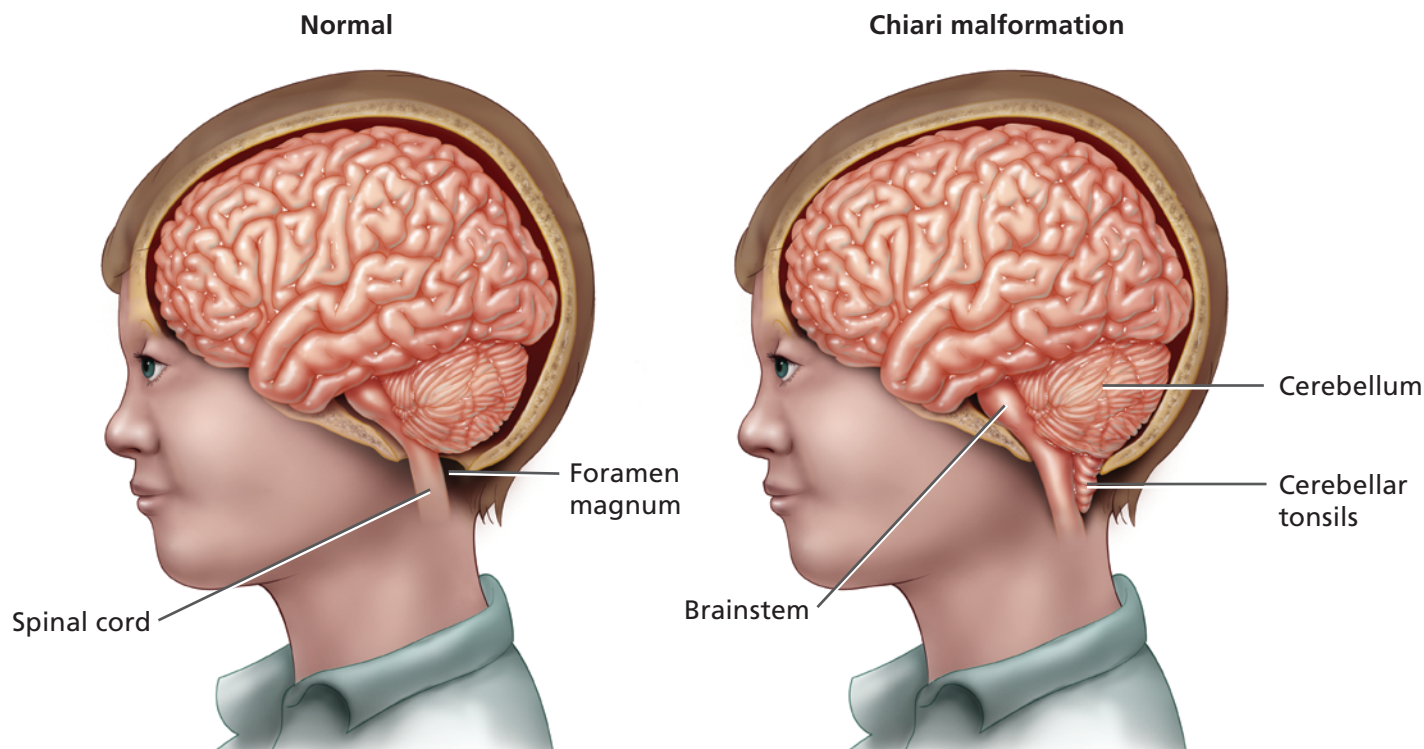


Let's Talk About...

Spina bifida and Chiari malformation



What is Chiari malformation?

In Chiari (kee-ARE-ee) malformation, the brainstem and cerebellum are pushed down because there is less space in the brain. Because the normal flow of fluid is blocked, it builds up and increases pressure on the brain.

There are four types of Chiari malformation. While type I is most common, type II is often associated with spina bifida.

What happens when my child has Chiari malformation?

In a normal skull, the cerebellum (which controls balance) sits just above the spine. When the space for the cerebellum is too small, part of the cerebellum squeezes down the foramen magnum, a hole beneath the skull. Part of the brainstem, which contains many nerves for the head, eyes, and neck, is pushed down as well.

A Chiari malformation can cause:

- The brainstem, spinal cord, and cerebellum to stop working properly
- Cerebrospinal fluid (CSF) to stop flowing, which means less protection for the brain and spine
- Hydrocephalus (a buildup of CSF in the brain)

How do I know if my child has Chiari malformation?

If your child shows some or all of the following symptoms, have them checked for Chiari malformation:

- Headaches
- Difficulty breathing
- Not breathing (apnea)
- High-pitched noisy breathing (stridor)
- Problems swallowing or feeding (in babies)
- Arms that are weak and numb

Chiari malformation symptoms are different at different ages. This table will give you the most common signs of Chiari malformation.

Infants	Poor feeding, not breathing (apnea), or arm weakness
10 years and younger	High-pitched noisy breathing (stridor)
Older than 10	Arm weakness, trouble breathing, and sometimes high pitched noisy breathing (stridor).



If you notice any of these problems, tell your child’s healthcare provider.

How is Chiari malformation diagnosed?

An MRI is the best way to see a Chiari malformation. This test uses a powerful magnet and radio signals to see inside the body. Your child’s neurosurgeon will determine when it is necessary to do this test.

Once your child has an MRI, the neurosurgeon will look at the images to see if your child’s brainstem looks abnormal and CSF is flowing.

If there is a Chiari malformation, fluid pressure can build up causing breathing problems and weakness. Treatment is needed to decrease fluid pressure.

Notes

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