Chiari Malformation

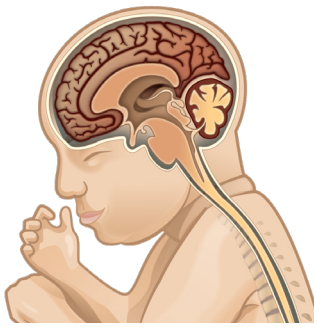
What is Chiari Malformation?

A Chiari Malformation is a condition characterized by crowding of the structures at the base of a baby's brain, near the spinal canal. Structures in this area of the brain include the cerebellum and the brain stem.

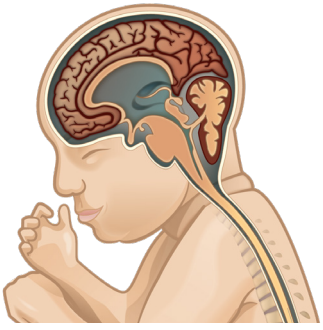
In a Chiari Malformation, these structures extend down and out of the base of the skull. This can cause the obstruction of cerebral spinal fluid flow out of the brain into the spinal canal. The obstruction can lead to fluid build-up and cause increased pressure in the brain and spinal cord.

There are essentially two types of Chiari Malformations seen most often in children. A Chiari I Malformation occurs as the baby's brain is formed, and in most cases will only require treatment if it becomes symptomatic.

Chiari II Malformations are typically associated with Spina Bifida. This type of Chiari Malformation occurs as a result of the spinal cord defect. As the cerebral spinal fluid leaks out of the defect it causes a sinking of the structures in the base of the brain. This can lead to significant obstruction of cerebral spinal fluid, which can cause hydrocephalus, a condition in which cerebral spinal fluid builds up in the brain.



Healthy Baby



Baby with Chiari Malformation

A Cardinal Glennon St. Louis Fetal Care Institute nurse is available 24 hours a day, seven days a week to discuss referrals with physicians and potential families by calling 314-268-4037, option 2.

Phone	**314-268-4037, option 2**
Toll-free	**1-877-SSM-FETL (776-3385)**
Web	**stlouisfetalcare.com**
Email	**fetalcare@ssmhealth.com**
Facebook	**facebook.com/fetaldocs**

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Previously, it was estimated that the condition occurs in about 1 in every 1,000 births; however, the increased use of more comprehensive fetal imaging has shown that Chiari Malformations may be more common.

How is a Type II Chiari Malformation Diagnosed Prenatally?
The prenatal diagnosis of Chiari Malformation is often discovered through ultrasound and further evaluated through a fetal MRI.

How is Type II Chiari Malformation managed during pregnancy?
While your child continues to grow and develop in utero, the Chiari Malformation can be monitored with non-invasie ultrasounds or MRI studies.

If the Chiari is related to Spina Bifida, fetal surgery may be an option. Fetal spina bifida repair has been found to reduce the impact of the Chiari Malformation and in some cases reverse its impact.

How does Chiari Malformation (Type II) affect my baby after delivery?
After delivery, the SSM Health Cardinal Glennon Children's Hospital neurosurgery team and specialists will work with you to determine the effects of the Chiari Malformation.

A combination of imaging studies and clinical exams will assist in determining the course of further treatment, which can vary from no interventions to surgery.

Chiari I malformations require surgical treatment only when they become symptomatic. The symptoms of a Chiari Malformation requiring treatment in infants and children include headaches, difficulty swallowing, difficulty breathing or apnea. Also, when pressure builds up in the spinal cord causing a syrinx, or fluid in the spinal cord, the Chiari Malformation will need to be treated.

If your baby requires treatment of the Chiari Malformation following birth, a decompression surgery can be performed. This requires removal of small pieces of bone in the base of the skull to provide more room for the crowded structures. Most often this occurs in older children, and very few infants require decompression.

As your child develops you may also work with speech therapists, otolaryngologists, and pulmonologists. You will be provided a list of things to watch for related to the Chiari Malformation, and the neurosurgery team will follow your child with both physical exams and new radiographic imaging on a regular basis.

We understand that Chiari Malformation can be a scary diagnosis. That's why we're available to help 24 hours a day, 7 days a week. For more information or to schedule an appointment, call us at 314-268-4037, opt. 2 or toll free at 877-SSM-FETL (877-776-3385).

While we can't change the diagnosis, we can provide you expert care and support, helping your baby get the most out of treatment - and life.