Craniosynostosis

An abnormal head shape in infants can be caused by two main problems: *positional molding* or *craniosynostosis*.

Typical Head Growth
- The fibrous tissues between an infant’s skull bones are called “sutures”.
- As a baby’s brain grows, sutures allow the skull to expand.
- Normally, at about 2 years old, the head stops growing.
- When head growth stops, the sutures close and bone develops at the suture site.

What causes *Positional Molding* (also called “positional plagiocephaly”)
- Infants may have an abnormal head shape from sleeping in the same position for a long time.
- This problem is now more common since babies are always placed on their backs to sleep.
- Positional molding often corrects itself with a change in sleeping position such as turning the infant’s head to the other side or *supervised* tummy time.
- **Surgery is not needed to correct this problem.** These children have normal brain development.

What causes *Craniosynostosis*?
- This happens when one or more of the sutures close too early and bone forms over the suture.
- The brain is still growing but the brain cannot make the new bone change its shape.
- So the brain growth pushes out the bones on the open sutures.
- When this happens, brain growth leads to an abnormal shape of the head.
Types of Craniosynostosis

- The shape of the skull will depend on the type of suture that closes too early.
- There are six main sutures that may close early and cause this problem.
  - If the Metopic Suture closes early, the forehead becomes pointed like a triangle.
  - If one of the two Coronal Sutures closes early, the forehead is flat on the affected side.
  - If one of the two Lamboidal Sutures closes early, the back of the head is flat on the affected side.
  - If the Sagittal Suture closes early, the head is long and thin.

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<th>Medical Term for Head Shape</th>
<th>Fused Suture(s)</th>
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<td>Trigoncephaly</td>
<td>Normocephaly</td>
<td>Metopic and/or Coronal Sutures</td>
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Surgery for Craniosynostosis
The type of surgery depends on which sutures are involved. Your surgeons will explain the treatment for your child. The brain surgeon work and the plastic surgeon work together to fix this problem.

There are two options for surgery:

1. **Open Repair.** Any infant can have an open repair. In an open repair, the surgeons shave the least bit of hair needed. Then they make a zigzag cut from ear to ear over the top of the head. The scalp is peeled back so they can see the skull. With the use of plates, wires and stitches the skull is changed to a more normal shape. The head will not reach its final shape for months. Surgery takes 4-6 hours, and when the treatment is done, the scalp is stitched closed.

2. **Endoscopic.** Only young infants can have the endoscopic surgery. In this surgery, a small camera, called an “endoscope,” is used to look at the skull through two small cuts on the scalp. The skull is then shaped in much the same way as the treatment discussed above. After surgery, the baby will wear a helmet for many weeks. The helmet will need frequent adjustments by our orthotics experts.

**Before Surgery**
- You will need a physical exam, health review, and lab tests.
- Please stop aspirin and ibuprofen for two weeks before surgery. It is alright to use acetaminophen (Tylenol®) if needed.
- You will wash with Sage clothes as instructed.
- You will receive a phone call the day before surgery telling you when to stop eating and drinking.
- Do not wear make-up, jewelry, or nail polish to surgery.

**After Surgery**
After surgery, your child will go to the Pediatric Intensive Care unit (PICU) for at least one night. At first, your child will receive a stronger pain medicine. After a few days, he may only need something like Tylenol® or Motrin® for pain.

Your child will have a thick gauze bandage on his head. This dressing will be changed in 1-3 days. It may be removed completely before going home. Also, your child’s face will be swollen, eyes may swell shut, and the face may be bruised.

When your child is eating and drinking without feeling sick, he will be able to go home. This often occurs in 5 days. Your child should be seen in the neurosurgery clinic 7-10 days after surgery. The incision should be kept clean and dry until that visit.

**When to Call**
Please call if you have any questions or notice any of these symptoms:
- Fever greater than 101.5° F
- Drainage from the incision
- Redness or swelling at the incision site
Phone Numbers
After hours, weekends and holidays, call the paging operator (608) 262-0486. Ask for the neurosurgeon on call. Give your name and phone number with the area code. The doctor will call you back.

To schedule an appointment or to speak with the nurses, call (608) 263-6420.

If you live out of the area, call 1-800-323-8942.