When a Baby's Head Is Misshapen: Positional Skull Deformities

When a baby spends a lot of time in one position, it can cause the shape of their head to change. This is called a positional skull deformity.

For about 20% of babies, a positional skull deformity occurs when they are in the womb or in the birth canal. More often, it happens in the first 4 to 12 weeks of life. This is when babies are not able to sit up or move on their own. By 6 months of age, many babies become more mobile and can turn their heads on their own more regularly.

What causes a baby's head shape to change?

A baby's skull has soft, bony plates that haven't yet fused together. The bony plates can move a bit, which helps the baby's head to pass through the birth canal. The plates also allow room for the brain to grow during the first year of life.

There are many things that can cause a positional skull deformity, such as:

- **Preferred head position.** Some babies like sitting or sleeping with their heads turned a certain way.
- **Not enough tummy time.** Tummy time is for babies who are awake and being watched. It helps babies master basic milestones like head lifting, turning over, sitting up, and crawling.
- **Twin or triplet.** Cramped or unusual positions in the womb can lead to changes in head shape.
- **Prematurity.** Lying flat on their backs in the hospital can cause a preemie's head to become misshapen. Preemies also have softer bones that are not as fully formed as the bones of full-term babies.
- **Birth complications.** The baby's position when moving through the birth canal can affect his or her head shape. Some other things that affect a baby's head shape at birth are using forceps, vacuum extraction, or even a difficult labor.
- **Torticollis.** An estimated 85% of babies with torticollis, a condition where the neck muscles are tight or imbalanced, have a positional skull deformity. Infants who have torticollis also will need physical therapy.

Three Common Misshapen Head Types

A baby's head shape change usually is related to the position in which they spend the most time. Your pediatrician can determine whether your baby's head shape is caused by a positional skull deformity or an uncommon but more serious condition called craniosynostosis. Common positional skull deformities do not require surgery.

- **Deformational brachycephaly** is when the head is symmetrically (evenly) flat in the back and wide from side to side. The bone above the ears might seem to stick out. This is often seen in babies who spend a lot of time on their backs and do not get enough tummy time.
- **Deformational plagiocephaly** is when the head is asymmetrically (unevenly) flat in the back on one side. The forehead may be more prominent causing the head to look like a parallelogram. The ear may also shift forward on the flat side. This is often seen in babies who prefer to sleep with their heads turned to one side and those with torticollis.
- **NICUcephaly** is a common condition in preemies who spend their first few months of life in the neonatal intensive care unit (NICU). This positional skull deformity causes preemies to develop long, narrow heads.

Note: A good time to check your baby's head is after bath time when his or her hair is wet.

- The back of your baby's head should be evenly round.
- Your baby's ears should be even.
- The width of your baby's head and forehead should be even and balanced.

If you notice any changes or have any concerns, talk to your pediatrician.

What if my baby has a positional skull deformity?

The best treatment is to prevent a positional skull deformity. And when it is found early, simple changes to your baby's position will help. For example:

- Avoid too much time in a car seat, bouncy seat, baby swing, or other carrier. These positions put pressure on the back of your baby's head.
- Increase tummy time. It is important to put babies on their backs to sleep. But a baby needs supervised time on their tummy to play during the day. This also lets your baby exercise their neck, back, shoulders, arms and hips. Start with short spurts of time. Gradually work up to an hour per day in several short sessions.
- Switch or alternate arms when holding and feeding your baby.
- Alternate which end you of the crib you place your baby down for sleep.

Positional skull deformities do not affect brain growth or intellectual development. They are purely cosmetic, and the majority do not require surgery.

Early Intervention and Therapy

In some cases, your baby's doctor may recommend treatment for positional skull deformity, particularly those with moderate or severe flattening.

Physical therapy. Your pediatrician may refer your baby for early intervention services and an evaluation from a pediatric physical therapist. The therapist will check your baby for delayed motor skills caused by poor head and neck control, and for torticollis. You will also learn stretching and positioning exercises to do with your baby at home. Depending on how severe the positional skull deformity is, your baby may need weekly therapy.

Helmet therapy. If your baby has moderate or severe flattening that does not respond to treatment by 5 or 6 months of age, he or she may need helmet therapy. Molding helmets work by re-shaping the baby's head and are fitted by a specialist.

Surgery should only be considered when all other options have been exhausted, and after consulting with a neurosurgeon or pediatric plastic surgeon who specializes in these types of cases.

Remember

Talk with your pediatrician if you have any questions or concerns about your baby's growth and development.

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