



Patient Information

Cranial Abnormalities

In the first 2 years of a baby's life, new parents observe many changes and milestones. One important development is the shaping of the head as the brain grows. A newborn's skull is soft and pliable with gaps between the plates of bone. The gaps close as the bones grow and the brain reaches its full size. The growing brain continuously pushes against the bones of the skull to expand the head until the connections between the bones begin to fuse around age 18 to 24 months.

The softness of the cranial bones and the flexibility of the gaps during that time allow the infant's head to form. In some cases, the head forms in unusual ways with flattened areas, swelling or portions that stick out unnaturally. A misshapen head shape is called deformational or positional plagiocephaly.

Cranial Abnormalities Increasing

Cases of deformational plagiocephaly in the United States have increased noticeably since 1992, when the American Academy of Pediatrics recommended placing infants on their backs for sleep to reduce the risk of sudden infant death syndrome (SIDS). SIDS rates have decreased more than 40% as a result of this change.

What Causes Cranial Abnormalities?

Many newborns have some degree of head shape irregularity. In most cases, the head resumes a symmetrical shape by 6 weeks of age. Abnormal head shape beyond this period may indicate a condition requiring further observation or treatment.

Keeping an infant's head in one position for long periods is the main cause of skull flattening. Infants who sleep on their backs or in car seats without changing positions are at high risk for this problem. Occasionally, a baby is born with a flattened head because of a tight environment in the womb, such as with twins or a breech birth.

Another possible cause of deformational plagiocephaly is muscular torticollis, a birth defect in which one or more of the neck muscles is extremely tight, causing the head to tilt or turn in one direction.

Premature infants are at higher risk for plagiocephaly because the cranial bones become stronger and harder in the last 10 weeks of pregnancy, and they do not get the benefit of this growth. Also, since many premature infants spend extended periods in neonatal

intensive care (NICU) units on a respirator, their heads are maintained in a fixed position, increasing the risk for this condition.

Treatment Options

Deformational plagiocephaly is diagnosed during a regular physical exam — x-rays or other imaging studies are usually not necessary. Your nurse practitioner will look down at the top of the baby's head, view the position of the ears, and note the position of the cheekbones.

Treatment of deformational plagiocephaly generally includes placing the infant in a different position or cranial remodeling with the assistance of a band or helmet. Some babies do not require any treatment, and the condition may resolve by itself when the infant begins to sit.

Tummy Time

The first recommendation for treatment is frequent rotation of your child's head position during sleeping. In addition, place the baby on his or her tummy periodically throughout the day, to allow for "tummy time."

Periodically change the orientation of the baby to the room. That means turning the baby's body or crib to face the door at a different angle from time to time. This requires the baby to look away from the flattened side to see parents or others in the room.

Cranial Remodeling

Your NP may also recommend a skull molding helmet to achieve cranial remodeling. Start putting a cap or hat on your baby before he or she receives a cranial remodeling orthosis. This will help the baby get used to the feeling of having something on his or her head.

Remolding helmets usually have a hard outer hard shell and a foam inner lining. The helmets apply gentle yet persistent pressure to the infant's head — inhibiting growth in the prominent areas and allowing for growth in the flat regions. As the head grows, helmet adjustments are made frequently.

The average helmet treatment usually lasts 3 to 6 months, depending on the age of the infant and the severity of the condition. Frequent monitoring is required. According to the American Academy of Pediatrics, the most appropriate age for this treatment is between 4 and 12 months. ❖

This handout sponsored by:



STARband
CRANIAL REMOLDING ORTHOSIS
WWW.STARBANDKIDS.COM

Additional Notes:
