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BABY HEAD DEFORMITY: WHEN DOES NATURE NEED A NUDGE?

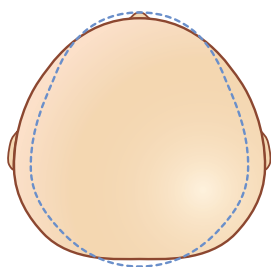


EXPERTISE YOU CAN TRUST.

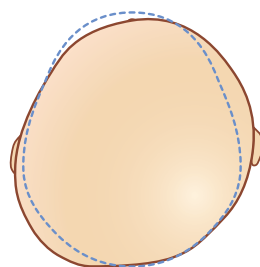
Parents are naturally concerned about unusual flat spots on their baby's head. This brochure provides information on head shape issues seen in babies.

What kinds of head shape deformities do we commonly see?

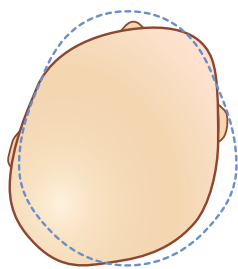
The most prevalent head deformity is deformational plagiocephaly. This is when the baby's head appears misshapen or asymmetrical immediately after birth, or develops this deformation in the first few months of life. Deformational brachycephaly is when the entire back of the baby's head is flat and the head is very wide. Deformational scaphocephaly is when the head is excessively long for its width.



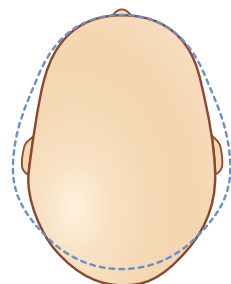
Brachycephaly



Asymmetrical brachycephaly



Plagiocephaly



Scaphocephaly

What is Craniosynostosis?

Craniosynostosis is a premature fusion of the sutures in the baby head and could also cause head shape deformity. This condition is much less common

than deformational plagiocephaly. In the event this is suspected your paediatrician will refer you to a paediatric craniofacial or plastic surgeon. The specialist will examine your baby and may order an X-ray, CT scan or MRI to rule out the possibility of craniosynostosis.

What causes the deformation?

The plasticity and open sutures of the newborn's skull makes it susceptible to external pressures in the womb during the birth process and after birth. Restricted space inside the mother's womb can create excessive contact on certain areas of the baby's head. This may cause deformation in babies positioned in a breech position, multiple fetuses, or in babies who spend excessive time with the head confined in the birth canal. The skulls of premature babies are particularly susceptible to deformation. Usually, the baby's head becomes more symmetrical and better proportioned within six weeks after birth. However, the flattened areas may not resolve if the baby's head continuously rests in the same position. Babies born with symmetric round heads sometimes develop flat spots and asymmetry due to the same reasons related to spending too much time in a single position. Other factors could also aggravate this, including:

- Excessive time in carriers, car seats, strollers
- Tight clothing and covering that prevents spontaneous movement
- Insufficient "tummy-time"
- Torticollis

What is Torticollis?

Torticollis is when the baby has limited neck movement due to a neck muscle weakness or tightness. It is identified by a pronounced head tilt, asymmetrical skin folds or uneven hair loss on one side. Physical therapy and stretching exercises are the best treatments for torticollis in baby's of up to six months of age. After six months, the condition is becomes difficult to treat, and emphasising the importance of early referral to paediatric physical therapy.

Considering the above, one might think that the recommendation to put a baby to sleep on their back may encourage head shape abnormalities. However, this advice is of primary importance to reduce the risk of sudden baby death syndrome (SIDS). Although associated with some risk of skull deformity; healthy young babies should always be placed down for sleep on their backs.

It's a misconception that these deformities resolve on their own, and early education, intervention and treatment is important. These interventions will depend on the baby's age and the severity of the deformity. This would include:

- Diagnosis and assessment of severity
- Early parent education, especially in high risk cases
- Limiting time in carriers and positional devices
- Focusing strictly to repositioning strategies
- Supervised "tummy-time"
- Paediatric physiotherapy at three months or earlier if there is:
 - Cranial deformity
 - Strong positional head/neck preference
 - Torticollis
 - Developmental delay
- Use of a STAR cranial remolding orthotic for severe deformities at four months, and moderate at six month of age

The American Academy of Pediatrics (AAP) suggests physicians evaluate the baby's head at each visit from the top, sides, front and back. This might include other measurements between anatomical points on the head called anthropometric data. The assessment includes not only the flatness of the back of the head, but possible ear or eye shift and cheek and jaw deformity. This data is used to determine the severity of the condition.

All babies benefit from frequent changes in body and head positions incorporated with "tummy-time" whenever the baby is awake and supervised. "Tummy-time" is not only a good way to take pressure off the flattened areas, it also builds strong neck and trunk muscles and will help the baby learn to roll and sit, as they grow.

Use of a STAR cranial remolding orthosis is indicated for moderate deformity that persists past six months, and severe deformity past four months of age. After these ages, repositioning strategies are less effective and harder to accomplish to insure reversal of the deformities.

What is the STAR cranial remolding orthoses?

The STAR cranial remolding orthoses derives its name from their purpose — symmetry through active remolding. The STAR orthosis is a plastic and foam custom molded device designed to gently and safely correct the baby's head shape. The orthotic allows natural growth, steering this growth to improve symmetry, improve proportion and correct deformity.

Cranial deformities become less responsive to orthotic treatment past eight months of age, and though some correction can be gained up to 14 months, the window of opportunity typically closes at 12 months of age. Multiple studies have demonstrated that cranial remolding orthoses are more effective than repositioning in correcting skull deformities. Many babies benefit from concurrent physical therapy and orthotic intervention, particularly if the baby has significant neck/torticollis issues.

What is the STARscanner™ laser data acquisition system?

The STARscanner™ is a US FDA, class one laser scanning system used by leading paediatric healthcare facilities throughout the world, including

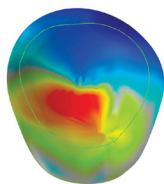
Mediclinic. It accurately scans the baby's head in less than five seconds and is 100% safe and radiation free.

Benefits:

- Provides precise anthropometric data and measurements
- Captures a 3-D scan of the baby's head that can be viewed in multiple planes
- Assessment tool to determine need for treatment
- Accurately compares head shape changes over time enabling outcome review of repositioning, physical therapy or STAR cranial remolding orthotic interventions



Before STARband®
treatment



STARscanner™
scan data



After STARband®
treatment

How long should a STAR cranial remolding orthosis be worn?

Most babies wear a STAR cranial remolding orthosis for about three months if they begin treatment prior to eight months of age. Research indicates that babies treated with cranial remolding orthoses who are older than eight months tend to have less correction in the shape. However there is still improvement compared to the original head shape. The orthotist will document your baby's head shape throughout the treatment program with measurements and scans from STARscanner™. Periodically, the documentation will be compared to the original measurements and scans to ensure improvement is maintained and correction achieved.

Whom do I contact if I have questions or need more information?

For more information on cranial deformities or the STAR cranial remolding and to book appointments for a STARscanner™ assessment please contact Mediclinic Orthotic Services on 04 555 9122 / 056 226 7104 or email mcm.e.oandp@mediclinic.ae or visit www.starbandkids.com.

The information in this handout provides a general overview on this topic and may not apply to everyone. To find out if it applies to you and to get more information on this subject, consult your certified medical practitioner.

