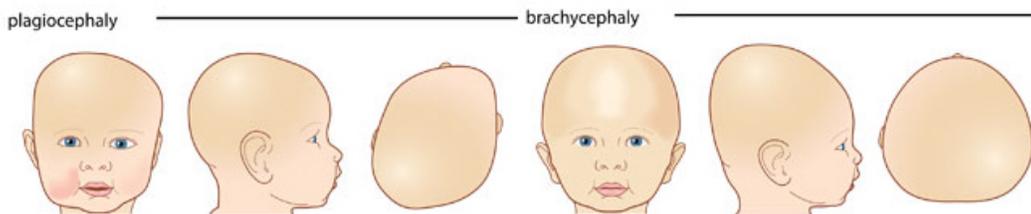




## Plagiocephaly (Flat Head Syndrome)

### **What is positional plagiocephaly (flat head syndrome)?**

Plagiocephaly means misshapened or asymmetrically-shaped head. Typically the skull appears flattened in one area – right or left back of head, but can be both (brachycephaly).



### **What causes plagiocephaly?**

It is caused by excessive or constant pressure on the bones of the skull either before or after birth. Normally, when babies are born, the bones of their skulls have not yet joined together; this is to allow for passage of the head through the birth canal and rapid brain growth in the first few years of life. Because a baby's skull is so soft and moldable in the first 12-18 months of life, it is susceptible to shaping from external forces.

### **Who has an increased chance of developing positional plagiocephaly?**

Several conditions can increase the chance that a baby will develop plagiocephaly. When a mother is pregnant with multiple babies (such as twins or triplets), the babies may be too crowded to move about freely in the womb, therefore receiving constant pressure on their skulls. Babies born to mothers with unusually-shaped wombs or uterine fibroids may also be crowded before birth.

Once born, all babies have some pressure on their skulls from such things as mattresses and baby carriers. However, infants who cannot or do not move from one position to another may develop flattened skulls from this pressure. For example, premature infants can develop plagiocephaly because their skull bones are softer than those of full-term babies, and they cannot move their heads as easily. In addition, babies with medical problems or delayed development may have difficulty moving from one position to another, increasing their chance for plagiocephaly.

Infants with torticollis (a condition causing limited movement of the neck) have a strong preference to look in one direction (head tilt) and may also develop skull asymmetry.

Most health care providers encourage parents to put their babies to sleep on their backs to reduce the risk of SIDS (Sudden Infant Death Syndrome). If, in addition to sleeping on their backs, infants also spend many daytime hours on their backs or in firm baby carriers, they may have pressure on the backs of their heads almost constantly. These babies may develop flattened head shapes.

### **What should you do if your baby has been diagnosed with positional plagiocephaly?**

You should ask your primary care doctor or pediatrician to refer you to a craniofacial specialist. They will need to rule out a condition called "craniosynostosis" in which a baby's skull bones join together too early, which can cause developmental problems. Additionally, your baby will be assessed for other conditions related to plagiocephaly, such as torticollis. The best treatment for your baby starts with a clear understanding of the cause of positional plagiocephaly. Your medical specialists will then work together to plan the best course of treatment.

If your baby is less than six months old, you should reposition his or her head frequently. Keep your baby off the flat area of the head as much as possible. Increase supervised "tummy time" by placing your baby on his or her stomach as much as possible during waking hours. Limit your use of infant carriers, and use front carriers or backpacks instead. You can work on developing core strength by using a Bumbo<sup>®</sup> or Boppy<sup>®</sup> with supervision; starting around 4 months of age (if good neck control). If your baby has torticollis, ask your doctor about exercises you can do with your infant. You may also want to see a physical therapist who can improve your baby's ability to move his or her neck in all directions.

### **What are the treatment options when repositioning does not correct the problem?**

If repositioning alone is not effective, moderate or severe positional plagiocephaly may be treated by using a helmet or band. These devices take advantage of a baby's rapid head growth to improve the shape of the skull. To be most effective, helmet or band use should begin when a baby is between four and seven months old. Some types use light pressure on the head, while others have a space for the flattened portion of the head to gradually grow into. A baby must wear the helmet approximately 23 hours a day for several months. Treatment time varies depending on the severity of the plagiocephaly and the age of the child. Children using helmets or bands need frequent follow-up care during treatment to make sure there is no injury to the skin.

### **What if my child is more than seven months old when the plagiocephaly is diagnosed?**

Typically, the skull bones are more "moldable" before seven months, but helmet or band therapy can be started later. The treatment may just take longer and might have more limited results.

### **Will plagiocephaly damage my child's brain? Will helmet or band treatment?**

No. There is no evidence that positional plagiocephaly, helmet or band treatment will damage your baby's brain.

Here are some examples to help improve your child's neck mobility (if your baby has torticollis) and strategies to alleviate pressure on the back of the head.

- Alternate the end of the crib in which you place your baby to sleep.
- Alternate the end of the changing table in which you place your child's head.
- Place toys on the side of the stroller, swing, crib, or infant seat where neck rotation is most limited or opposite the side that the head is flat.
- Alternate the hip or arm with which you carry your baby. You may notice some fussing and irritability at first because your baby will have to turn in the direction of the neck restriction, but the fussiness will decrease with time.
- Perform neck-stretching exercises at each diaper change, as prescribed by your doctor and physical therapy.
- A cushioned head support may be necessary to support your baby's neck when he or she is in the car seat. Infants tend to scrunch up and turn to the side of least resistance.
- Provide **supervised** "tummy time" daily when your baby is awake. Initially, babies often cry and resist this position. Start with just a minute or two of tummy time and gradually increase it as your baby learns to tolerate it.