



NATIONWIDE CHILDREN'S
When your child needs a hospital, everything matters.™

Helping Hand™

Health Education for Patients and Families

Positional Plagiocephaly (Flattened Head)

Positional plagiocephaly (play gee o SEF uh lee) is a flat area on the back or on one side of your baby's head due to repeated pressure. A newborn's head bones are naturally soft. This helps them pass through the birth canal and provides room for his or her growing brain. This softness causes a baby's head to be moldable to positional pressure, such as lying on her back in a crib, prolonged labor, or even positioning while in her mother's womb before birth.

Plagiocephaly is common. It is normal for your baby's head to be slightly misshaped for a few weeks. It may take a few days or even weeks for your baby's head to round out.

Some infants continue to have plagiocephaly after birth or develop flatness soon after. Plagiocephaly has increased due to the American Academy of Pediatrics' Safe Sleeping Guidelines of placing an infant on his or her back when sleeping to reduce the risk of sudden infant death syndrome (SIDS). Once plagiocephaly develops, it usually continues to progress since the baby's head will naturally shift to the flat spot instead of the round areas of the head. Even if plagiocephaly develops, it is recommended you continue to place your baby on his or her back for safe sleep.

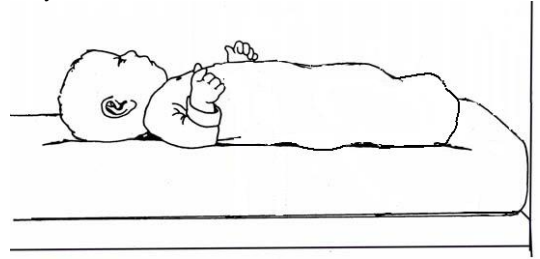
Plagiocephaly does not affect the potential growth and development of your baby. It does not affect future intellectual ability or brain development.

Causes of flat spots

- Baby's position in the womb that puts pressure on the head
- More than one baby in the same pregnancy
- Baby spends too much time lying on the back
- Premature babies have softer skulls and spend more time on their backs because of longer stays in the hospital.

- Prolonged childbirth
- Torticollis (tor ti COL is), a tight muscle on one side of the neck, may cause the head to tilt one way or make it hard for the baby to turn his or her head.

You should ALWAYS put your baby to sleep on his or her back (Picture 1). Putting your baby on the back is one of the best ways to prevent SIDS (Sudden Infant Death Syndrome).



Picture 1 Place baby on the back to sleep.

Diagnosis

Your baby's doctor can usually diagnose the cause of flat spots by examining your child's head shape. The doctor will watch your baby to see whether the shape of the head improves as the child grows or if treatment is needed. Signs of plagiocephaly are:

- Head shape that appears flat on one or both sides of the head
- Facial asymmetry
- Uneven ears
- Torticollis (tight neck muscles)

Your baby may need an imaging scan of the skull to rule out craniosynostosis as the cause of plagiocephaly. This condition occurs when the bones in the skull fuse together earlier than normal. It requires treatment from both a plastic surgeon and a neurosurgeon. This is not very common and your provider will be able to decide whether or not this testing is needed.

What you can do

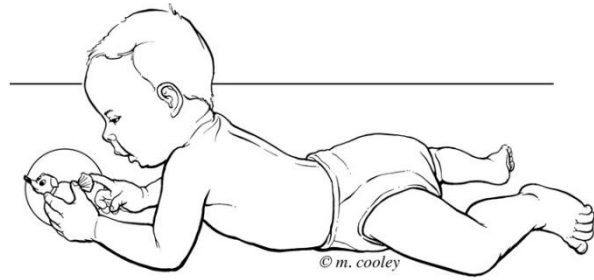
There are several ways to help shape your baby's head. Start positioning activities as soon as possible to help re-shape your baby's head. As the baby gains head control, he or she will be able to look to both the left and right sides. Lying on the side of the head that is not flat will help re-shape the head. Some activities to start are:

- **Tummy Time**

A baby needs time on the tummy each day while awake, with an adult watching. (Picture 2). This helps the baby stretch and strengthen the back, neck and arm muscles (See Helping Hand HH II-173, *Tummy Time*). It also helps keep a round head shape and is important for the development of sitting and crawling skills. Start this slowly for 1 to 2 minutes at a time. Give the

baby something interesting to look at or play with while on his or her tummy to encourage turning the head away from the flat area.

Picture 2 Tummy time with a toy.



- **Sitting up and crawling**

Plagiocephaly improves as a baby's motor skills, such as sitting up and crawling, develop and he or she is spending less time lying on the back. Encouraging frequent and supervised tummy time is key until your child reaches those motor skill milestones. A baby must be awake and supervised by an adult during tummy time.

- **Play time on the floor**

When your baby is awake, limit the time he or she spends in swings or baby carriers. As soon as your child is able to, have him or her sit up. Sitting takes the pressure off the back of your baby's head and builds neck strength. However, infants should not be sitting all the time. They also need supervised play time on the floor to work on reaching, rolling, and pushing up on their tummies.

- **When you hold your baby**

Make sure there is no pressure on the flattened part of the head. Give fun things to look at so your baby turns his or her head side to side. While watching your baby, place a toy or Velcro® a wrist rattle to your child's left or right hand to encourage him or her to look toward the side that is not flat (this is the "non-preferred side") and take pressure off of the flattened side of the head. You can also hold toys at the non-preferred side to encourage the baby to look in that direction.

- **During diaper changes**

Move toys to the baby's non-preferred side to encourage turning to look at the toy. This takes pressure off the flattened side of the head.

- **Change sides**

You can also change the side of your body on which you hold your baby for breast or bottle feedings. For example, if your baby has a flattened area on the left side of the head, hold the baby on your left side so your arm is placing

pressure on the right side of your baby's head. This prevents constant pressure on the flattened side.

Safe sleep

Continue to place your baby on his or her back for safe sleeping. When your child is on the back, gently turn his or her head to the side that is not flat. Changing sides takes pressure off the flat spot. Do not use anything to hold the baby's head in place. This might block the face and make breathing hard. Try turning the head to the non-preferred side when your baby is asleep. Do not do this if it wakes up the baby each time. You do not need to keep waking up through the night to reposition your baby's head.

Exercises

If your baby has torticollis, it is important to treat that to help improve plagiocephaly. This can be done by encouraging your child to turn toward the side he or she does not prefer. Your provider may teach you exercises to stretch your child's neck or may refer you to a physical therapist to learn how to do the exercises. Many babies need daily stretching at home with their parents to improve torticollis. (See Helping Hand HH-II-163, *Exercises: Left Torticollis Stretching and Positioning for Play*, and Helping Hand HH-II-164, *Exercises: Right Torticollis Stretching and Positioning for Play*,).

Helmets or bands

Some infants may need a custom-made helmet or band. Helmets work by applying gentle pressure to certain areas of your baby's head. Your baby's doctor will let you know if this is the right treatment for your baby. If so, we recommend going to a helmet provider who takes careful measurements and follows up often to ensure the right fit and shape of the helmet.

At Nationwide Children's Hospital, the Neurosurgery and Plastic Surgery teams work together to evaluate infants and children with head shape concerns. Your child may be seen by one or both teams.