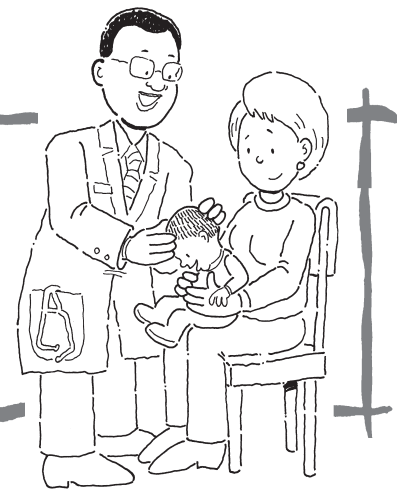


# Your Baby's Head Shape: Information for Parents on Positional Skull Deformities



Many parents wonder if the shape of their newborn's head is normal. Maybe it seems a bit flat in the back or uneven on one side. Most of these slight imperfections happen when infants spend too much time in one position such as in a crib, a car safety seat, or an infant carrier. The good news is that most of the time the shape of the head returns to normal on its own by simply changing your baby's position regularly. This publication was written by the American Academy of Pediatrics to answer questions from parents about their newborn's head shape.

## Q: Is there a name for this condition?

A: Yes. It is called *occipital* (which means back of the head) *plagiocephaly*, or OP. It is pronounced ok-si-pi-tl pley-jee-uh-sef-uh-lee. Because babies now are put to sleep on their backs, OP is seen more and more. It is more likely to affect boys and usually happens in the first few months after the child is born.

## Q: What causes OP?

A: A newborn's skull is soft and can change shape for a variety of reasons. Sometimes the head becomes uneven during birth when it squeezes through the birth canal. Most of the time, however, the head changes shape when an infant spends too much time lying in one position. For example, an infant who spends too much time on her back looking straight up or with her head always turned to the same side may develop a flat spot on the back or side of her head.

## Q: What does OP look like?

A: The flat spot on the back of the head is the most obvious sign of OP. However, infants may also have one side of the head (including the ear, forehead, and cheek) that is pushed forward. This can best be seen when looking at the infant from the top of the head. The infant's head goes from being evenly shaped like a circle that fits in a square (Figure 1) to being misshaped with one ear pushed forward (Figure 2).

## Q: How is OP different from other skull deformities?

A: A different type of skull deformity in infants is called *craniosynostosis* (cra-nio-sy-nos-to-sis). This is when one or more of the skull bones fuse together too early. Like OP, it causes changes in the shape of an infant's head. However, the changes are usually noticeable by doctors at birth and look much different than the changes caused by OP. This condition does not cause OP, but it can affect brain growth and usually requires surgery to treat.

## Q: Does OP cause brain damage?

A: No. OP is more of a cosmetic problem and is not dangerous. It does not affect brain growth or cause brain injury, ear infections, hearing difficulties, jaw or bone problems, or vision problems.

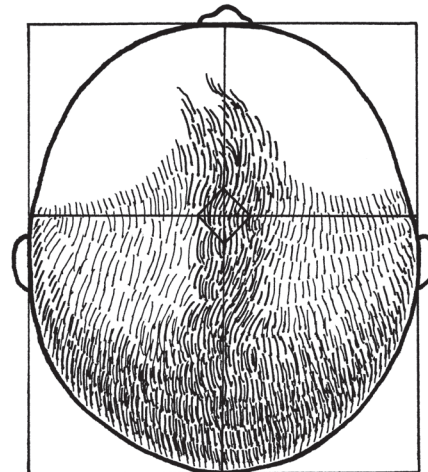


Figure 1. Evenly shaped head

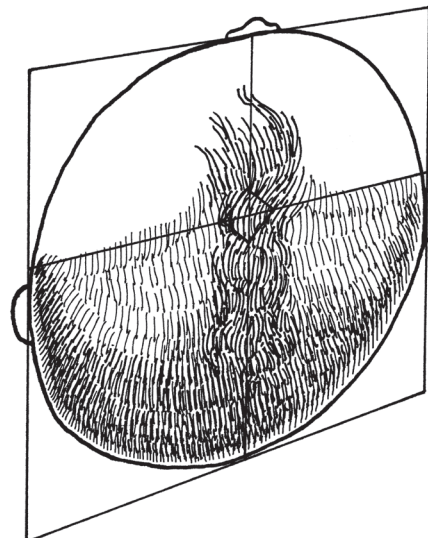


Figure 2. Misshaped head with one ear pushed forward

## Q: Can OP be prevented?

A: The best way to prevent OP is to avoid keeping your infant's head in the same position all the time. This can be done by changing the position of your baby's head. Here are some ways this can be done.

- **Place interesting objects over your infant's crib** (make sure they are out of your child's reach) to encourage him to look around in different directions. Every once in a while, move the crib in your baby's room so he'll turn his head in different directions to see what's going on around him.
- **Alternate on which side you place your infant's head when he is on his back.** For example, turn his head to the left one day, then the right the next day. Put him in the crib with his head at the foot of the bed one day and at the head of the crib the next day.
- **Hold your baby upright when he is awake** to relieve pressure on the back of the head and to give him chances to look at things around him.
- **Don't forget to give your baby plenty of tummy time when he is awake.** This not only helps prevent OP, it also allows your baby to develop the upper body strength he'll need to push up and crawl when the time comes. Whenever your baby is on his tummy, however, you need to be with him at all times and make sure he's on a flat surface and awake.
- **Limit the amount of time your baby spends in a car safety seat, unless he's actually riding in a vehicle.** The same goes for other types of infant seats, such as swings, carriers, or bouncy seats, where the back or side of your baby's head rests against them.

## Q: What if my baby has trouble turning his head to the side?

A: One in 5 infants has trouble turning his head to the side (a condition known as *torticollis* [tor-ti-col-lis]) because of tight or weakened neck muscles. These infants benefit from exercises to stretch and strengthen neck muscles. If your baby is diagnosed with this condition, your baby's doctor or a physical therapist can show you these exercises.

## Q: How is OP diagnosed?

A: Your pediatrician will examine your baby's head at each visit. If any flattening is found, the doctor will determine whether it is caused by lying in the same position or from some other cause. X-rays and computed tomography (CT) scans are usually not necessary to diagnose OP.

## Q: What if my baby's head was flat at birth?

A: In about 1 in 4 infants with OP, the flattening is obvious at the time of the baby's birth. In these cases, the head most likely changed shape in the womb. If the baby turns the head toward the flat side after birth, the flattening may get worse. If your baby had OP at birth, please be reassured that there is nothing you or your doctor could have done to prevent this.

## Why babies need to sleep on their backs

It is very important to remember that infants need to lie on their backs when sleeping. Lying on the side or belly is *not recommended* until after the baby's first birthday.

Placing your baby to sleep on her back greatly reduces the risk of sudden infant death syndrome (SIDS). A little more than a decade ago, researchers found that tummy and side sleeping were linked with SIDS. In response, the American Academy of Pediatrics launched a nationwide Back to Sleep campaign, encouraging parents to put their babies to sleep on their backs. Since that time, SIDS rates in the United States have decreased more than 40%.

## Q: How is OP treated?

A: Most infants with OP are treated by simply changing the position of their heads to avoid lying on the same side all the time. This should be started as soon as OP is found so that the flattening doesn't get worse. Once these changes are made, most flattening improves within 2 to 3 months.

If there is no improvement by 5 to 6 months of age or if the condition gets worse, your pediatrician may refer you to a physician with expertise in pediatric neurosurgery or craniofacial surgery to determine whether more treatment is needed. Such treatment could include a skull-molding helmet.

Skull-molding helmets are designed to help reshape the infant's head. They are custom made and fit snugly in areas that are pushed forward while leaving a small amount of room in areas that are flat. This treatment is expensive—helmets can cost thousands of dollars. Also, they usually need to be worn 23 hours per day for several months. The helmets need to be modified as the infant's head changes shape, requiring follow-up visits with the people who made the helmet. Other than occasional skin irritation, there are no known side effects to helmet treatments.

Surgery is rarely needed to treat OP.

## Q: Do these treatments work?

A: Medical studies show that simply changing an infant's position corrects the shape of the head by about 45% to 50%. It is not clear whether skull-molding helmets are better than position changes. Most studies show them to be equally effective, particularly for children with mild or moderate deformities. It is important to note that neither treatment completely reverses the deformities.

The information contained in this publication should not be used as a substitute for the medical care and advice of your pediatrician. There may be variations in treatment that your pediatrician may recommend based on individual facts and circumstances.

## From your doctor

American Academy  
of Pediatrics



DEDICATED TO THE HEALTH OF ALL CHILDREN™

The American Academy of Pediatrics is an organization of 60,000 primary care pediatricians, pediatric medical subspecialists, and pediatric surgical specialists dedicated to the health, safety, and well-being of infants, children, adolescents, and young adults.

American Academy of Pediatrics  
Web site—[www.aap.org](http://www.aap.org)

Copyright © 2009  
American Academy of Pediatrics  
All rights reserved.