

## Abnormal head shape in babies

### What are plagiocephaly and brachycephaly?

- Plagiocephaly means one side of the head is flat. This can lead to an uneven appearance to the head. In more severe cases, the right and left sides of a baby's face may look different.
- Brachycephaly is when both sides of the back of the head are flat.

### What causes plagiocephaly and brachycephaly?

A baby's skull is very soft. Most babies get an abnormal head shape by lying in one position too often.

### Some babies are at higher risk for plagiocephaly and brachycephaly.

#### These include babies who:

- are premature. They spend more time on their backs at an early age compared to a baby born full term.
- have torticollis. They turn their heads to one side from tight neck muscles.
- stay in the hospital for a long time.
- are twins, triplets, or multiples. These babies have less room to move around in the uterus and are in the same position for long periods of time.

### Can plagiocephaly or brachycephaly cause problems with the brain?

- We do not believe these conditions cause harm to the brain.
- Babies with developmental delays are at higher risk for having plagiocephaly and brachycephaly because they spend more time on their backs.
- Babies with moderate or severe plagiocephaly should be screened for developmental delays and start physical therapy if needed.

### Will the head improve without treatment?

All babies' head shapes improve over time. Babies will spend less time on their backs as they grow and learn to roll over. This helps with head shape. Most babies will not have any major problems by 3 to 5 years of age. In severe cases of plagiocephaly, long term outcomes are hard to predict.

## How is this treated?

### 1. Conservative treatment

Parents can do some things at home to avoid putting pressure on the back of baby's head. This is called conservative treatment and can include:

- Move baby's head during sleep (from left to right, right to left).
- Watch your baby during tummy time throughout the day.
- Lessen the time baby spends lying flat while awake.
- Get physical therapy if baby has torticollis.

### 2. Helmet therapy

Some babies may need helmet therapy. Providers at Children's Hospital of Wisconsin recommend helmet therapy for babies with:

- Severe cases of plagiocephaly.
- Moderate cases of plagiocephaly which do not improve with conservative treatment.
- Babies with developmental delays who do not learn to roll and sit up at the expected times.

## What is helmet therapy?

- Babies wear a custom fitted helmet to prevent pressure being placed on the flat sides of their heads. The helmet is made by an orthotist.
- The helmet must be worn 23 hours per day for 4 to 6 months.
- Helmets are most effective in younger babies and are less effective after 1 year of age.

## What are the downsides to helmet therapy?

- Expense. Helmets cost \$1500 to \$4000. Health insurance may cover some or all of the expense. A second helmet may be needed due to rapid growth of the head during the first year of life.
- Time commitment. Frequent visits to the orthotist will be required to adjust helmet size
- Risk of skin irritation. Because helmets are worn most of the day, care must be taken to avoid skin problems. The helmet should be removed if a baby has a fever so that they do not overheat.

## Does helmet therapy work better than conservative treatment?

- There is no proof that helmet therapy is better than conservative treatment in the long-term.
- One well-done study has been done. In this study, some babies with plagiocephaly wore helmets and some had conservative treatment. By the time the children were two years old there was no difference between groups.
- Helmet therapy has not been proven to improve brachycephaly over time.

## Frequently Asked Questions

### Can plagiocephaly cause dental or jaw problems?

- Some children have poor alignment of their teeth. This does not usually cause major problems.
- There is no proof that helmet therapy or conservative therapy can help dental or jaw alignment.

### Can brachycephaly cause sleep apnea?

- Brachycephaly in older children and adults can be related to sleep apnea.
- Helmet therapy does not improve sleep apnea.

### Other teaching sheets that may be helpful

- Infant head shape [#1220](#) or Spanish [#1220SP](#)
- [KidsHealth](#) or [Spanish KidsHealth](#)

**ALERT:** Call your child's doctor, nurse, or clinic if you have any questions or concerns or if your child has special health care needs that were not covered by this information.

**This sheet was created to help you care for your child or family member. It does not take the place of medical care. Talk with your healthcare provider for diagnosis, treatment and follow-up.**