The background of the entire page is a close-up, high-angle photograph of a baby's head. The baby's face is partially visible, with their eyes closed. The hair is dark and curly. The lighting is soft and warm, creating a golden-yellow hue across the entire image. The baby's head is positioned in the upper half of the frame, with the top of the head and forehead visible.

# Positional plagiocephaly

Information for families

Great Ormond Street Hospital  
for Children NHS Trust

This leaflet explains positional plagiocephaly and what to expect when your child comes to Great Ormond Street Hospital for treatment.

## What is positional plagiocephaly?

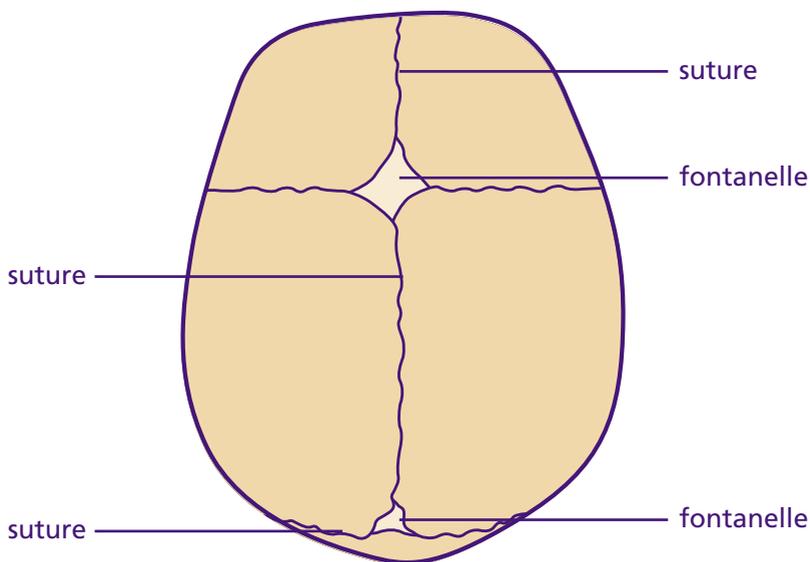
This is a disorder that affects the skull, making the back or side of your baby's head appear flattened. It is sometimes called 'deformational plagiocephaly'.

The skull is made up of several 'plates' of bone which, when we are born, are not tightly joined together. As we grow older, they gradually fuse – or stick – together. When we are young, they are soft enough to be moulded, and this means their shape can be

altered by pressure on it to give part – usually the back – of a baby's head a flattened look.

Although you may hear plagiocephaly referred to as a type of craniosynostosis (a condition where the skull plates **do** fuse too early), the skull plates are not fused, but moulded into a different shape – a condition that does not require the surgical treatment needed for craniosynostosis.

## Looking down on a normal skull of a newborn child



## What causes positional plagiocephaly?

Positional plagiocephaly is produced by pressure from the outside on part of the skull. It can occur while the baby is still developing in the womb but in recent years, flattening occurring after the baby is born has become much more frequent.

## Why is this?

The main cause of pressure is the baby's sleeping position. Since the *Back to sleep* campaign, doctors have recommended that all babies sleep on their backs to reduce the risk of sudden infant death syndrome (SIDS or 'cot death').

A result of this is that babies now spend much of their early lives lying on their backs, while sleeping, while being carried about or while in car seats, for instance, and this is a time when the baby's skull is softest and most easily moulded into a different shape.

The mattresses they lie on are also firmer than before and it is the combination of these factors that has led to an increase in the number of babies with positional plagiocephaly.

**However, doctor still recommend that babies sleep on their backs as the benefit of reducing SIDS far outweighs any dangers due to positional plagiocephaly.**

If your baby lies flat on his or her back, any positional moulding is likely to be evenly spread across the back of the head. Some babies have a tendency to turn their heads in one direction more easily than the other for the first few months of life. If these babies develop positional plagiocephaly it will affect the side of the back of the head that he or she always lies on.

In severe cases, moulding of one side of the back of the head can produce unevenness at the front, although this is usually mild.

## How common is positional plagiocephaly and whom does it affect?

Positional plagiocephaly is much more common now. Some reports estimate that positional plagiocephaly affects around half of all babies under a year old but to varying degrees. As improvement, even without treatment, is common, it is difficult to get a true estimate.

It does not seem more common in one race than another and affects males and females equally. It seems to affect premature babies more often than those born at term. This is probably because the skull plates become stronger in the last few weeks of pregnancy.

## What are the symptoms of positional plagiocephaly?

There are no symptoms associated with plagiocephaly other than the flattened appearance of the back of the head – either evenly across the back or more on one side. It does not cause any pressure on your baby's brain and development will not be affected by it in later life.

Its importance is entirely cosmetic. Nevertheless, if you are worried about any aspect of your baby's health and are concerned that it might be connected with his or her head shape, you should always check with a doctor that all is well.

## How is positional plagiocephaly diagnosed?

If your baby is not showing any other symptoms, the doctor will probably make the diagnosis by physical examination. The story is often characteristic too – the head shape was normal at birth and the flattening was first noticed at the age of two or three months. If your doctor has any doubts about the diagnosis, your baby may need some other tests, x-rays or scans to rule out other problems.

## What is the outlook for babies with positional plagiocephaly?

For children with positional plagiocephaly, the 'natural' shape of the head is entirely normal – it is the moulding that has pushed it out of shape. This means that as soon as the moulding ceases, the head can start growing back towards its normal, natural shape – when the baby is old enough not to lie in one position for a long time, and to change sleeping position lots of times each night, and any tendency to turn the head more easily in one direction than another has disappeared.

This means that for mild cases, positional plagiocephaly may have corrected itself by the time a child is a year or so old. Even more severe cases improve with time (and of course hair covers the back of the head) but even for them, some slow improvement over months and even years is to be expected, although a degree of flattening usually remains. However, it is very unusual for this to be enough to provoke attention

(teasing, for example) when the child is off to school.

Positional plagiocephaly does not affect how your child's brain develops or cause any brain abnormalities.

### What treatments are available?

In mild cases, babies may not need any active treatment.

There are several ways of encouraging natural improvement in head shape to be more effective:

- **Early recognition of the plagiocephaly** – the younger the child is when it is first recognised, the better the chances of stopping any progression.
- **'Tummy time'** – We are not suggesting that your baby should sleep on his or her tummy while still young (remember the *Back to sleep* campaign), but the more time babies spend on their tummies, the better the chance of stopping the plagiocephaly getting worse – and allowing natural correction to begin. So play with him or her on his or her tummy. Babies like to learn to lift their heads and look around them.
- **Sleeping pattern** – Adjust his or her sleeping pattern so that everything exciting is in the direction that encourages your child to turn his or her head the wrong way by altering the position of any toys or mobiles. A rolled up towel under the mattress may help your child sleep with less pressure on the flattest part of the head. Check how he or she is lying in the car seat or buggy too.
- **Physiotherapy** – for those children with difficulty turning the head in one direction, physiotherapy can be very helpful. The sooner the head turns as easily one way as the other, the sooner natural correction of head shape can begin.

- **Helmets and bands**
  - The use of these remains controversial. If all the actions listed above are taken, does a helmet add anything? The answer is that we do not know for sure. They often have to be worn for several months and for 23 hours out of 24. If they are to be effective, it would seem sensible to start using them when the head is still 'plastic' enough to have the natural correction process encouraged by restricting growth in the 'bulgy' parts of the head while encouraging growth in the flatter areas by leaving them free – preferably before six months.

## Is there a support group?

There is no support group specifically for positional plagiocephaly, but the following group may be able to offer support and advice.

### **Headlines**

44 Helmsdale Road  
Leamington Spa CV32 7DW

Tel: 01926 334629

Email: [info@headlines.org.uk](mailto:info@headlines.org.uk)

Website: [www.headlines.org.uk](http://www.headlines.org.uk)

If you have any questions,  
please call the Department of Craniofacial Surgery  
on 020 7813 8444

## Notes

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[www.goshfamilies.nhs.uk](http://www.goshfamilies.nhs.uk) [www.childrenfirst.nhs.uk](http://www.childrenfirst.nhs.uk)