Ashford and St. Peter's Hospitals
NHS Foundation Trust

Positional Plagiocephaly and Brachycephaly

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Guideline History		
Date	**Comments**	**Approved By**
	First ratified	Paediatric Guideline Committee

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Positional Plagiocephaly and Brachycephaly

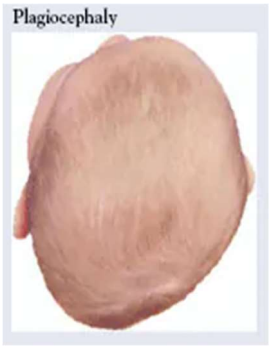
Background

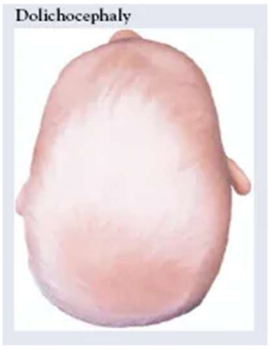
Positional plagiocephaly or Asymmetrical head shape is quite common, affecting about one in five babies. It results from prolonged adoption of a particular head position, particularly sleeping on back. This repetitive sleeping pattern results in the flattening of the back of the infant's head or often preceded by the presence of torticollis at birth. Deformational plagiocephaly is not associated with any other abnormalities and does not affect a child's development.

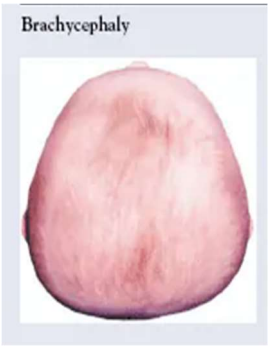
Variations include:

Positional Brachycephaly – shortened anterior posterior dimension with flattened occiput

Positional Dolichocephaly - disproportionately long A-P dimensions, with narrowed facies.







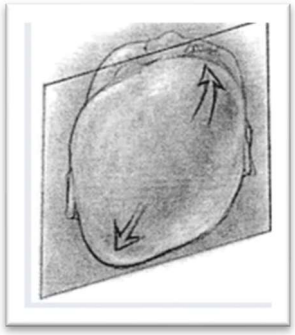
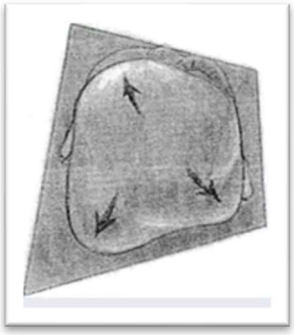
Predisposing factors:

Oligohydramnios, multiple pregnancies, sternocleidomastoid tethering (can cause torticollis), prematurity and babies with neuro-muscular disorders.

Differential diagnosis:

Imperative to differentiate Positional Plagiocephaly from any form of Craniosynostosis – primary or secondary, familial, isolated or with associated syndromes. This occurs in one out of 2,000 – 2,500 live births. Early diagnosis and treatment of craniosynostosis improves outcomes and reduces possible adverse effects on brain development.

Lambdoid craniosynostosis results from premature sutural fusion of the lambdoid suture of the skull –It is very rare with a frequency of around 1 in 10,000 live births.

Feature	Positional plagiocephaly	Lambdoid craniosynostosis
Incidence	Common (1 in 100)	Rare (1 in 100,000)
Palpate skull sutures	Sutural ridge not palpable	Sutural ridge palpable.
Check ear position	Ear pushed forward on the side of occipital flattening.	Ear placed backwards on the side of occipital flattening.
Assess facial symmetry	Forehead is protuberant on the side of the occipital flattening	Forehead is symmetrical
Inspect Aerial view	**Parallelogram**-shaped head 	**Trapezoid** -shaped head 
Assess hair growth pattern	A unilateral bald spot on the side of occipital flattening	Absent
Management	Managed in Primary care	Refer to tertiary care

Examination

Assessment of the baby should include examination of:

- Head position and normal passive neck movements – Limitation suggests torticollis.
- Head shape and sutures , facial asymmetry, eye position, hair pattern, ear placement, head circumference – check for craniosynostosis, hydrocephalus
- Eye movements – consider referral to ophthalmology if torticollis present.
- Back and spine, and movement of upper and lower limbs.
- Hip exam and referral for hip ultrasound - Developmental Dysplasia of the Hip (DDH) is a common association.
- Developmental milestones

Red Flags :

- Early fusion of sutures
- Abnormal head shape at birth
- Uneven facial features or other facial defects
- Static head circumference
- Developmental delay
- Seizures

What to Do:

In most cases, the head shape will spontaneously improve over time. Mild flattening of the head will usually improve in a couple of months using simple positioning measures and any flattening will be barely noticeable by 1- 2 years of age.

- More 'Tummy play time'. Back to Sleep still advised.
- Sleeping pattern: adjust baby's sleeping pattern so that they are encouraged to turn their head the wrong way (toys or mobiles placement). A rolled-up towel under the mattress can help the child sleep with less pressure on the flattest part of the head. Check how they are 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.

- Helmets and bands
    - The use of these remains controversial. They often must be worn for several months and for long hours, can cause skin irritation, need frequent assessments, and if they are to be effective – preferably must be started before six months. There have been very few good quality studies of the efficacy of helmets in comparison to conservative management; and those which have been performed suggest no significant variation in the ultimate normalisation of the head shape. *Hence, it is not possible to receive funding for helmets or bands on the NHS.*

More severe cases will also improve over time, and any flattening which remains, becomes less noticeable with hair growth. There is no evidence that it will cause neurological or developmental deficits.

When to Refer

- Craniosynostosis is suspected.
  Early referral to a paediatric craniofacial centre is essential as it allows all options to be offered. Multiple types of surgical intervention for craniosynostosis exist, must be carried out by 4-6months age. Imaging should not delay referral.
- Head circumference falling outside normal centiles (below the 0.4th/above 99.6th or crossing two centiles)
- Developmental delay
- Severe skull flattening

Referrals - GOSH – craniofacial team

craniofacialadmissions@gosh.nh.uk / (Secretary 02074059200 –extn 8444)

Parent References

http://www.headlines.org.uk/

Plagiocephaly and brachycephaly (flat head syndrome) - NHS (www.nhs.uk)

https://www.gosh.nhs.uk/conditions-and-treatments/conditions-we-treat/positional-plagiocephaly/

Printable leaflets

A0117-Flat-head-syndrome-in-babies.pdf (kingstonhospital.nhs.uk)

https://foi.avon.nhs.uk/Download.aspx?r=1&did=9524&f=Positional%20Plagiocephaly-4.pdf (Bristol Hospital)

Tummy Time References

https://pathways.org/wp-content/uploads/2020/03/TummyTimeBrochure_English_LEGAL_2020.pdf

https://pathways.org/wp-content/uploads/2020/02/ETTM_English_NewDesign.pdf

2. Supporting References

1. Birmingham Outpatient Guidelines https://bwc.nhs.uk/download.cfm?doc=docm93jijm4n3110.pdf&ver=4641)
2. Royal Cornwall Hospital Guidelines https://doclibrary-rcht.cornwall.nhs.uk/DocumentsLibrary/RoyalCornwallHospitalsTrust/Clinical/Paediatrics/PlagiocephalyAndBrachycephalyGuidelineForHealthCareProfessionals.pdf
3. University Hospitals Bristol Guidelines https://foi.avon.nhs.uk/Download.aspx?r=1&did=10822&f=Plagiocephaly%20And%20Odd%20Head%20Shape%20In%20Infancy%20Guidel-2_3.pdf

3. Supporting relevant trust guidelines

Not Applicable

2. Guideline Governance

a. Scope

This guideline is relevant to all staff caring for all children from 0-18 years old across the emergency department, inpatient ward and outpatient department.

b. Purpose

i. This guidelines aims to facilitate a common approach to the management of children. At times deviation from the guideline may be necessary, this should be documented and is the responsibility of the attending consultant.

ii. This guideline is subject to regular review to ensure ongoing evidence based practice.

c. Duties and Responsibilities

All healthcare professionals responsible for the care of all children 0-18years should be aware of practice according to this guideline.

d. Approval and Ratification

This guideline will be approved and ratified by the Paediatric Guidelines Group.

e. Dissemination and Implementation

i. This guideline will be uploaded to the trust intranet 'Paediatric Guidelines' page and thus available for common use.
ii. This guideline will be shared as part of ongoing education within the Paediatric Department for both medical and nursing staff.
iii. All members of staff are invited to attend and give comments on the guideline as part of the ratification process.

f. Review and Revision Arrangements

a. This policy will be reviewed on a 3 yearly basis by the appropriate persons.
b. If new information comes to light prior to the review date, an earlier review will be prompted.
c. Amendments to the document shall be clearly marked on the document control sheet and the updated version uploaded to the intranet. Minor amendments will be ratified through the Paediatric Guidelines Group. A minor amendment would consist of no major change in process, and includes but is not limited to, amendments to documents within the appendices.

g. Equality Impact Assessment

Background • Who was involved in the Equality Impact Assessment
Dr Asma Azmatullah and Dr Alison Groves
Methodology • A brief account of how the likely effects of the policy was assessed (to include race and ethnic origin, disability, gender, culture, religion or belief, sexual orientation, age) • The data sources and any other information used • The consultation that was carried out (who, why and how?)
All groups of staff and patients were taken into consideration and there is no bias towards or against any particular group.
Key Findings • Describe the results of the assessment • Identify if there is adverse or a potentially adverse impacts for any equalities groups
There is no evidence of discrimination.
Conclusion • Provide a summary of the overall conclusions
There is no evidence of discrimination.
Recommendations • State recommended changes to the proposed policy as a result of the impact assessment • Where it has not been possible to amend the policy, provide the detail of any actions that have been identified • Describe the plans for reviewing the assessment
This guideline is appropriate for use.

h. Document Checklist

To be completed (electronically) and attached to any document which guides practice when submitted to the appropriate committee for approval or ratification.

Title of the document: Positional Plagiocephaly and Brachycephaly

Policy (document) Author: Dr Asma Azmatullah

Executive Director: N/A

		Yes/No/ Unsure/NA	Comments
1.	**Title**		
	Is the title clear and unambiguous?	**Y**	
	Is it clear whether the document is a guideline, policy, protocol or standard?	**Y**	
2.	**Scope/Purpose**		
	Is the target population clear and unambiguous?	**Y**	
	Is the purpose of the document clear?	**Y**	
	Are the intended outcomes described?	**Y**	
	Are the statements clear and unambiguous?	**Y**	
3.	**Development Process**		
	Is there evidence of engagement with stakeholders and users?	**NA**	
	Who was engaged in a review of the document (list committees/ individuals)?		Paediatric Guidelines Committee Dr Tracy Lawson
	Has the policy template been followed (i.e. is the format correct)?	**Y**	
4.	**Evidence Base**		
	Is the type of evidence to support the document identified explicitly?	**Y**	

		Yes/No/ Unsure/NA	Comments
	Are local/organisational supporting documents referenced?	**Y**	
5.	**Approval**		
	Does the document identify which committee/group will approve/ratify it?	**Y**	
	If appropriate, have the joint human resources/staff side committee (or equivalent) approved the document?	**N/A**	
6.	**Dissemination and Implementation**		
	Is there an outline/plan to identify how this will be done?	**Y**	
	Does the plan include the necessary training/support to ensure compliance?	**Y**	
7.	**Process for Monitoring Compliance**		
	Are there measurable standards or KPIs to support monitoring compliance of the document?	**N/A**	
8.	**Review Date**		
	Is the review date identified and is this acceptable?	**Y**	
9.	**Overall Responsibility for the Document**		
	Is it clear who will be responsible for coordinating the dissemination, implementation and review of the documentation?	**Y**	
10.	**Equality Impact Assessment (EIA)**		
	Has a suitable EIA been completed?	**Y**	

Committee Approval (Paediatric Guidelines Group)			
If the committee is happy to approve this document, please complete the section below, date it and return it to the Policy (document) Owner			
Name of Chair	**Dr Claire Mitchell**	**Date**	**11/02/2022**
Ratification by Management Executive (if appropriate)			
If the Management Executive is happy to ratify this document, please complete the date of ratification below and advise the Policy (document) Owner			
Date: n/a			