Plagiocephaly/Craniosynostosis

Cincinnati Children's®
changing the outcome together

FAST FACTS

46.6%
estimated incidence of positional plagiocephaly

1 in 2,500
prevalence of craniosynostosis

Plagiocephaly is a common condition in which specific areas of an infant's head develop in an abnormally flattened way, as viewed from above (birds' eye view). The appearance of the forehead, face and ear position may also be affected, depending on severity. Positional/deformational plagiocephaly causes the flattening of one side of the back of the head, and results from the infant consistently lying or sleeping on one side of the head. It can develop quickly over several months. Mild plagiocephaly is present when there is flattening of the occipital portion of the head, which may progress to involve ear position (moderate) and the forehead (severe). Positional plagiocephaly must be distinguished from craniosynostosis, a condition caused by premature closure of one or more cranial sutures.

ASSESSMENT

Perform a standard history and physical exam focused on head circumference, fontanelle patency, and head shape. Assess ear position, observe for asymmetries of the face and orbits. Evaluate infant's ability to turn the head from side to side. Ask about medical history, family history of craniosynostosis, and the child's head position during sleep.

HPE RED FLAGS

Patient Medical History

- Cephalohematoma (may complicate diagnosis)
- Prolonged/complicated labor (birth molding)
- Trauma or brain injury (may impact head growth and shape)
- History of shunt
- Digital abnormalities, ocular findings, midface deformity or other findings suggestive of a genetic syndrome
- Prolonged hospital stay

Family History

- History of craniosynostosis (rare)

MANAGEMENT/TREATMENT

At first contact, consider whether plagiocephaly is caused by positioning or due to cranial sutures fusing. If the cause is positioning, recommend increased tummy time and changing sleeping/feeding positions to decrease pressure on affected side. If the neck shows decreased range of motion, consider referral to physical therapy for suspected torticollis. Most positional plagiocephaly patients experience an excellent outcome through these interventions alone.

WHEN TO REFER

Refer patients whose head shape does not correct with conservative measures and patients with significant skull asymmetries to Cincinnati Children's Plastic Surgery Plagiocephaly Clinic for helmet therapy assessment. Ideally, these patients should be under 6 months of age to maximize helmeting effectiveness.

If you suspect craniosynostosis, refer to Cincinnati Children's Plastic Surgery immediately, as timing of the referral can impact treatment options (minimally invasive versus open surgery). There is no need for imaging before the referral.

If you would like additional copies of this tool, or would like more information, please contact the Physician Outreach and Engagement team at Cincinnati Children's.

If you have clinical questions about patients with plagiocephaly or craniosynostosis, email Plastic_Surgery@cchmc.org.

Tool developed by Cincinnati Children's physician-hospital organization (known as Tri-State Child Health Services, Inc.) and staff in the James M. Anderson Center for Health Systems Excellence. Developed using expert consensus and informed by Best Evidence Statements, Care Practice Guidelines, and other evidence-based documents as available. For Evidence-Based Care Guidelines and references, see www.cincinnatichildrens.org/evidence.

Plagiocephaly/Craniosynostosis

Patient Presents

Standard Workup

- Situational History
- Family History
- Physical Exam

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Family History
- History of craniosynostosis

Physical Exam
- Failed conservative measures
- Family requests treatment
- Suspicion for craniosynostosis

Refer when red flags are present

Patient presents with abnormal head shape

Determine if plagiocephaly is due to position

Yes

Physical Exam

Posiional Plagiocephaly

Less than 4 months of age

Yes

Consider conservative treatment by changing feeding/sleeping positions to decrease pressure on the affected side.

Resolved shape

No

Referral for plagiocephaly

No

Severity Mild?

No

Referral for plagiocephaly

Yes

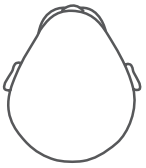
No treatment

No

Physical Exam

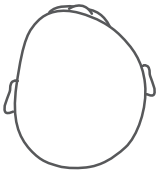
Dolichocephaly

Trigonocephaly



Brachycephaly

Synostotic Plagiocephaly



Refer to Cincinnati Children's Plastic Surgery

For urgent issues, or to speak with the specialist on call 24/7, call the Physician Priority Link at 1-888-636-7997.