Congenital muscular torticollis (CMT) is postural asymmetry in the neck caused by a muscle imbalance, characterized by head tilting to one side and cervical rotation to the other. Plagiocephaly is a flattening on the side of the posterior skull caused by external forces. CMT and plagiocephaly are time-sensitive diagnoses, where outcomes are improved by early referral to physical therapy. Plagiocephaly may resolve with positioning therapy without additional intervention (i.e., helmeting).

**ASSESSMENT**
Perform a standard health history and physical exam, with special attention to:
- Postural asymmetry in neck/trunk
- Limited cervical range of motion (compare left/right sides)
- Craniofacial asymmetry
- Difficulty nursing or feeding on one side
- Hand preference (reaching with/placing one hand in mouth more frequently)
- Mass or tight muscle fibers in the SCM, scalenes, or upper trapezius musculature

Note: Flattening of the skull NOT corresponding to infant’s postural preference is a red flag for craniosynostosis (see also Craniosynostosis/Plagiocephaly practice tool).

**HPE (HISTORY AND PHYSICAL EXAM) RED FLAGS**

**Situational History**
- Birth trauma, including instrument delivery
- Primiparity
- Birth body length >51.3 cm (20.2 in)
- Multiple birth
- Breech positioning
- History of neonatal abstinence syndrome (NAS) requiring medication
- Difficulty nursing or feeding from one side

**Physical Exam**
- Cervical range of motion limitation (rotation or lateral flexion)
- Presence of SCM mass
- Persistent head tilt
- Preference to look to one side more than the other
- Facial or skull asymmetry

Note: Flattening of the skull NOT corresponding to infant's postural preference is a red flag for craniosynostosis (see also Craniosynostosis/Plagiocephaly practice tool).

**MANAGEMENT/TREATMENT**
Early intervention is key for successful outcomes for CMT and plagiocephaly. It is NOT advisable to “wait and see” if an infant will outgrow postural preference or asymmetry.

Manage CMT conservatively with PT; focus is on stretching, strengthening, positioning, environmental adaptations, and caregiver education and support.

Manage plagiocephaly conservatively with PT; focus is on positioning techniques, environmental modifications, and early caregiver education (skull is most deformable during first 2–4 weeks of life).

If conservative treatment for plagiocephaly is not sufficient, refer the patient to Cincinnati Children’s Plastic Surgery. An orthotist may recommend a cranial molding device—these devices are not recommended to patients <4 months of age or over 9 months. Younger infants lack sufficient head control to manage a helmet. Beyond 9 months of age, helmets are ineffective in improving head shape.

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 questions about a patient of any age with CMT and/or plagiocephaly, email OTPT@cchmc.org, or call the Physician Priority Link® at 513-636-7997.
Torticollis/Plagiocephaly

**Patient Presents**

**Standard Workup/Red Flags**

**Personal/Family History**
- Birth trauma
- First born
- Birth length > 51.3cm
- Multiple birth
- Breech positioning
- Difficulty with breast feeding to one side
- History of NAS requiring medication

**Physical Exam**
- Flattening on one side of the head
- Cervical range of motion limited
- Presence of sternocleidomastoid mass
- Persistent head tilt to one side
- Preference to look to one side more than the other

**Any Red Flags?**

**Evaluate for Torticollis and Plagiocephaly as follows**

**Neck exam (completed with infant resting in supine):**
- Assess for head tilt or rotation preference
- Assess for asymmetry in neck creases (i.e., number, depth, redness)

**Head tilt, rotation preference or asymmetrical neck crease noted?**

**Physical exam for neck movement**
- Assess cervical rotation to left and to right: Hold infant’s shoulder flat against the exam table and rotate their head to the opposite side (i.e., nose over opposite shoulder)
- Assess cervical lateral flexion bilaterally: Stabilize the infant’s shoulder and place your hand on top of the infant’s head. Keeping their face forward, laterally flex the infant’s neck in the opposite direction (i.e. stabilize right shoulder while tilting left ear toward left shoulder, stabilize left shoulder while tilting right ear toward right shoulder)

**Is cervical rotation or lateral flexion asymmetrical?**

**Physical exam for head shape**
- (completed with infant held in supported sit):
  - Observe from above the infant’s head, as well as from behind, at each side, and from the front for any flattening
  - Assess symmetry of facial features

**Flatness or asymmetries noted?**

**Ages 0–2 months:**
- Refer to Physical Therapy

**Ages 3–9 months:**
- Refer to Physical Therapy AND Division of Plastic Surgery

**Ages 10+ months:**
- Refer to Physical Therapy

**All ages: Refer to Physical Therapy immediately**

For urgent issues, or to speak with the specialist on call 24/7, call the Physician Priority Link® at 1-888-987-7997.