Physical therapy management of congenital muscular torticollis: a 2024 evidence-based clinical practice guideline from the American Physical Therapy Association Academy of Pediatric Physical Therapy.

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Academy of Pediatric Physical Therapy, APTA

Sargent B, Coulter C, Cannoy J, Kaplan SL. Physical therapy management of congenital muscular torticollis: a 2024 evidence-based clinical practice guideline from the American Physical Therapy Association Academy of Pediatric Physical Therapy. Pediatr Phys Ther. 2024 Oct 1;36(4):370-421. [211 references] PubMed

View Original Guideline

Overview

Guideline Objective

To guide physical therapists, families, health care professionals, educators, and researchers to improve clinical outcomes and health services for children with congenital muscular torticollis (CMT), as well as to inform the need for continued research

Patient Population

Infants (birth to 12 months) and toddlers with CMT

Recommendations

Recommendation Statements

Note: Refer to the original guideline for full action statement profiles.

Education, Identification and Referral of Infants with Asymmetries/Congenital Muscular Torticollis (CMT)

Action Statement 1: Educate expectant or new parents/caregivers of newborn infants to prevent asymmetries/CMT. Health care providers (e.g., prenatal educators, physicians, midwives, obstetrical or other nurses, lactation specialists, or physical therapists [PTs]) should educate and document instruction to all expectant or new parents/caregivers of infants before or within the first 2 to 3 days of life on the importance of supervised prone/tummy play 2 or 3 times daily when the infant is awake, full active movement throughout the body, prevention of postural preferences, and the role of pediatric physical therapists in the comprehensive management of postural preference and optimizing motor development if concerns are noted. (**Evidence Quality: V; Recommendation Strength: Best Practice**)

Action Statement 2: Assess newborn infants for asymmetries/CMT. Health care providers (e.g., prenatal educators, physicians, midwives, obstetrical or other nurses, lactation specialists, or PTs) and parents/caregivers must assess and document the presence of neck and/or facial or cranial asymmetry within the first 2 to 3 days of life, using passive cervical range of motion and/or visual observation as their respective training or experience supports. (**Evidence Quality: I; Recommendation Strength: Strong**)

Action Statement 3: Refer infants with asymmetries/CMT to their primary care provider and a physical therapist. Health care providers (e.g., physicians, midwives, obstetrical or other nurses, lactation specialists, or PTs) and parents/caregivers should refer infants identified as having postural preference, reduced cervical range of motion (ROM), a sternocleidomastoid (SCM) mass, and/or craniofacial asymmetry to their primary care providers and a physical therapist with expertise in infants as soon as the asymmetry is noted. (**Evidence Quality: I; Recommendation Strength: Strong**)

Physical Therapy Examination and Evaluation of Infants with Asymmetries/CMT

Action Statement 4: Document infant history. Prior to initial screening, PTs should obtain and document a general medical and developmental history of the infant, including 6 specific health history factors: chronological and corrected age, age of onset of

symptoms, pregnancy and birth history, head posture/preference, other known or suspected medical conditions, and developmental milestones. (**Evidence Quality: II-IV; Recommendation Strength: Moderate**)

Action Statement 5: Screen infants for nonmuscular causes of asymmetry and conditions associated with CMT. When infants present with or without a primary care provider referral, and a professional or parent/caregiver indicates concern about head or neck posture and/or developmental progression, PTs should perform and document a review of the neurological, musculoskeletal, integumentary, and cardiopulmonary systems, including screens of vision, gastrointestinal history, postural preference and the structural and movement symmetry of the neck, face and head, trunk, hips, and upper and lower extremities, consistent with state practice acts. (**Evidence Quality: II-IV; Recommendation Strength: Moderate**)

Action Statement 6: Refer infants from physical therapist to their primary care provider if indicated by systems review. PTs should document consultation with or referral of infants to their primary care providers for additional diagnostic testing when a systems review identifies: nonmuscular causes of asymmetry (e.g., poor visual tracking, spinal conditions, abnormal muscle tone, extramuscular masses, and gastroesophageal reflux disorder [GERD]); associated conditions (e.g., craniofacial asymmetry); asymmetries inconsistent with CMT (e.g., head lateral flexion and rotation to the same side or the side of torticollis changes); changes in the infant's color during screening of neck passive range of motion (PROM); history of acute torticollis; history of late-onset torticollis at 6 months or older; an SCM mass at 6 months or older, or an SCM mass that changes shape and location or increases in size at any age; the infant is older than 12 months and either facial asymmetry and/or 10° to 15° of difference exists in passive or active cervical rotation or lateral flexion ROM. (**Evidence Quality: II; Recommendation Strength: Moderate**)

Action Statement 7. Request images and reports. PTs should request, review, and include in the medical record all images and interpretive reports completed for the diagnostic workup of an infant with suspected or diagnosed CMT to inform prognosis. (**Evidence Quality: II; Recommendation Strength: Moderate**)

Action Statement 8: Examine body structures. PTs should perform and document the initial examination and evaluation of infants with suspected or diagnosed CMT for the following 7 body structures:

- Infant posture and tolerance to positioning in supine, prone, sitting, and standing for body symmetry, with or without support, as appropriate for age. (**Evidence Quality: II; Recommendation Strength: Moderate**)

- Bilateral PROM into cervical rotation and lateral flexion using an arthrodial protractor or goniometry. (**Evidence Quality: II; Recommendation Strength: Moderate**)

- Bilateral active range of motion (AROM) into cervical rotation using an arthrodial protractor or goniometry and cervical lateral flexion functional strength using the Muscle Function Scale. (**Evidence Quality: II; Recommendation Strength: Moderate**)

- PROM and AROM of the trunk and upper and lower extremities, inclusive of screening for possible developmental dysplasia of the hip (DDH). (**Evidence Quality: II; Recommendation Strength: Moderate**)

- Pain or discomfort at rest, and during passive and active movement using a standard scale, such as the Face, Legs, Activity, Crying, and Consolability Scale (FLACC). (**Evidence Quality: III; Recommendation Strength: Weak**)

- Skin integrity, symmetry of neck and hip skin folds, presence and location of an SCM mass, and size, shape, and elasticity of the SCM muscle and other cervical muscles. (**Evidence Quality: II; Recommendation Strength: Moderate**)

- Craniofacial asymmetries and head/skull shape using a quantitative measurement method or standard classification, such as the Argenta Classification Scales. (**Evidence Quality: II; Recommendation Strength: Moderate**)

Action Statement 9: Classify CMT using the CMT Severity Grading Scale. PTs should classify and document CMT severity using the CMT Severity Grading Scale, choosing 1 of 8 grades (see Figure 2, SDC 2, in the Original Guideline) based on infant's age at examination, the presence of an SCM mass, and the difference in cervical rotation PROM between the left and right sides. (**Evidence Quality: II; Recommendation Strength: Moderate**)

Action Statement 10: Examine activity and developmental status. During the initial and subsequent examinations of infants with suspected or diagnosed CMT, PTs should examine and document the types of and tolerance to position changes, and motor development for movement symmetry and milestones, using an age-appropriate, norm-referenced standardized test, such as the Test of Infant Motor Performance (TIMP), Alberta Infant Motor (AIM) Scale, or gross motor subtests of the Peabody Developmental Motor Scales, third edition (PDMS-3). (**Evidence Quality: II; Recommendation Strength: Moderate**)

Action Statement 11. Examine participation status. The physical therapist should obtain and document the parent/caregiver responses regarding:

- Positioning when awake and asleep. (**Evidence Quality: II; Recommendation Strength: Moderate**)
- Infant time spent in prone while awake, consistent with Safe Sleep Recommendations. (**Evidence Quality: II; Recommendation Strength: Moderate**)
- Whether the parent/caregiver alternates sides when holding the infant for breast or bottle. (**Evidence Quality: II; Recommendation Strength: Moderate**)
- Infant time spent in equipment/positioning devices, such as strollers, car seats, or swings. (**Evidence Quality: II; Recommendation Strength: Moderate**)

Action Statement 12: Determine prognosis. PTs should determine and document the prognosis for resolution of CMT and the episode of care after completion of the evaluation and communicate it to the parents/caregivers. Prognoses for the extent of symptom resolution, the episode of care, and/or the need to refer for more invasive interventions are related to: the age of initiation of treatment, CMT Severity Grade (see Figure 2, SDC 2 in the Original Guideline), intensity of intervention, presence of comorbidities, rate of change, and adherence with home programming. (**Evidence Quality: II; Recommendation Strength: Moderate**)

Physical Therapy Intervention for Infants with CMT

Action Statement 13: Provide five components as the first-choice intervention. PTs should provide and document these 5 components as the first-choice intervention for infants with CMT:

- Neck PROM when PROM is limited. (**Evidence Quality: I; Recommendation Strength: Strong**)
- Neck and trunk AROM. (**Evidence Quality: II; Recommendation Strength: Moderate**)
- Symmetrical movement. (**Evidence Quality: II; Recommendation Strength: Moderate**)
- Environmental adaptations. (**Evidence Quality: II; Recommendation Strength: Moderate**)
- Parent/caregiver education. (**Evidence Quality: II; Recommendation Strength: Moderate**)

Action Statement 14. Evaluate evidence-informed supplemental intervention(s) for appropriateness to augment the first-choice intervention. PTs may provide and

document evidence-informed supplemental interventions, after evaluating their appropriateness for managing CMT or postural asymmetries, as adjuncts to the first-choice intervention when the first-choice intervention has not adequately improved range or postural alignment, and/or when access to services is limited, and/or when the infant is unable to tolerate the intensity of the first-choice intervention, and if the physical therapist has the appropriate training to administer the intervention. (**Evidence Quality: I-V; Recommendation Strength: Weak**)

Action Statement 15: Initiate consultation when the infant is not progressing as anticipated. PTs who are managing infants with CMT or postural asymmetries should initiate consultation with the infant's primary care provider and/or specialists about other interventions when the infant is not progressing as anticipated. These conditions might include when asymmetries of the head, neck, and trunk are not starting to resolve after 4 to weeks of comprehensive intervention or after 6 months of intervention with a plateau in resolution. (**Evidence Quality: II; Recommendation Strength: Moderate**)

Physical Therapy Discontinuation, Reassessment, and Discharge of Infants with CMT

Action Statement 16: Discontinue direct services when these 5 criteria are achieved. PTs should discontinue direct physical therapy services and document outcomes when these 5 criteria are met: cervical PROM within 5° of the non-affected side, symmetrical active movement patterns, age-appropriate motor development, no visible head tilt, and the parents/caregivers understand what to monitor as the child grows. (**Evidence Quality: II-III; Recommendation Strength: Moderate**)

Action Statement 17: Reassess infants 3 to 12 months after discontinuation of direct services, then discharge if appropriate. PTs should complete a full evaluation to assess for reoccurrence of CMT and evidence of atypical development if the parent/caregiver or primary care provider observes asymmetrical posture OR 3 to 12 months following discontinuation from direct physical therapy intervention OR when the child initiates walking. (**Evidence Quality: II-III; Recommendation Strength: Moderate**)

Evidence Rating Scheme

Levels of Evidence

Level	Criteria
I	Evidence obtained from high-quality diagnostic studies, prognostic or prospective studies, cohort studies or randomized controlled trials, meta-analyses, or systematic reviews (critical appraisal score greater than 50% of criteria)
II	Evidence obtained from lesser-quality diagnostic studies, prognostic or prospective studies, cohort studies or randomized controlled trials, meta-analyses, or systematic reviews (e.g., weaker diagnostic criteria and reference standards, improper randomization, no blinding, and <80% follow-up) (critical appraisal score less than 50% of criteria)
III	Case-controlled studies or retrospective studies
IV	Case studies and case series
V	Expert opinion

Recommendation Rating Scheme

Recommendation Grades for Action Statements

Grade	Recommendation	Quality of Evidence
A	Strong	A preponderance of level I studies, but at least 1 level I study directly on the topic supports the recommendation
B	Moderate	A preponderance of level II studies but at least 1 level II study directly on topic supports the recommendation
C	Weak	A single level II study at less than 25% critical appraisal score or a preponderance of level III

Grade	Recommendation	Quality of Evidence
		and IV studies, including consensus statements by content experts support the recommendation
D	Theoretical/Foundational	A preponderance of evidence from animal or cadaver studies, conceptual/theoretical models/principles, basic science/bench research, or published expert opinion in peer-reviewed journals supports the recommendation
P	Best Practice	Recommended practice based on current clinical practice norms, exceptional situations where validating studies have not or cannot be performed and there is a clear benefit, harm, or cost, and/or the clinical experience of the guideline development group
R	Research	There is an absence of research on the topic, or higher-quality studies conducted on the topic disagree with respect to their conclusions. The recommendation is based on these conflicting or absent studies

Related Content

Supporting Documents

- Supplemental Digital Content; 2024.
- Informing the Physical Therapy Management of Congenital Muscular Torticollis Clinical Practice Guideline: A Systematic Review; 2023 Apr.
    - Supplemental Digital Content 1. Search Strategies by Database.
    - Supplemental Digital Content 2. Excluded Studies.

    - Risk of Bias (Greve 2022, et al.).
    - Risk of Bias (Cui 2019, et al.).
    - Risk of Bias (Chen 2020, et al.).
- APTA Clinical Practice Guidelines Development Manual.

Implementation Tools

- Available for download:
    - CMT PT Handout; 2024 Nov.
    - CMT Referring Provider Handout; 2024 Nov.
- The Original Guideline includes the following:
    - Figure 1. Referral Flow Diagram (p. 383)
    - Figure 2. 2024 Classification of Severity and Management of CMT (p. 394)

Patient Education

- Available for download:
    - 5 Tips for Positioning and Play; 2024 Nov.
    - CMT Caregiver Handout; 2024 Nov.
    - CMT Caregiver Screener Handout; 2024 Nov.

Note: This patient information is intended to help patients better understand their health and their diagnosed disorders. Patients and their representatives should still consult with a licensed health care professional for evaluation of treatment options as well as answers to their personal medical questions.

Disclaimer

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TRUST Scorecard

Composition of Guideline Development Group (GDG)

Multidisciplinary GDG Members	**Yes**
Methodologist Involvement	**Yes**
Incorporation of Patient and Public Perspective	★★★★★

Systematic Review of Evidence

Literature Search	★★★★★
Study Selection	★★★★★
Evidence Synthesis	★★★★★

Foundations for Recommendations

Strength of Evidence Grade	★★★★☆
Description of Benefits and Harms of Recommendations	★★★★★
Summary of Evidence Supporting Recommendations	★★★★★
Strength of Recommendations Rating	★★★★☆
Clear Articulation of Recommendations	★★★★★

Funding Source — **No**

Disclosure and Management of Financial Conflicts of Interests — ★★★★★

External Review — ★★★★★

Updating — ★★★★★

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