Therapy Techniques for Speech Sound Disorders Associated with Repaired Cleft Palate

American Speech-Language-Hearing Association

SPECIAL INTEREST GROUP 5
Craniofacial and Velopharyngeal Disorders

Abstract

ASHA Special Interest Group 5, Craniofacial and Velopharyngeal Disorders, Coordinating and Professional Development Committees offer this poster as a practical guide for therapeutic management of school-aged children with speech disorders associated with repaired cleft palate and/or velopharyngeal dysfunction (VPD). Appropriate referral to a craniofacial team, updated terminology, and evidence-based treatment techniques are emphasized.

Treatment Approaches

Motor-Phonetic Approach	Combined Approaches	Linguistic-Phonological Approach
Focuses on refining movements for speech sounds and correcting placement	Implements elements from both	Targets mental representations of speech sounds using linguistic rules
Ex. "Traditional" Articulation Approach	Ex. Enhanced Milieu Teaching with Phonological Emphasis	Ex. Metaphon, Minimal Pairs, Cycles Approach

General Goals

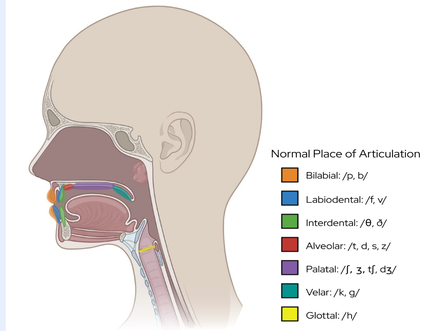
1. Establish correct oral articulatory placement and/or airflow direction using articulation (motor-phonetic), and/or phonological (linguistic-phonological) approaches.
2. Teach place, manner, voicing, and nasal vs oral airflow/resonance during speech sound production.
3. Teach new motor speech patterns to replace compensatory articulation errors.

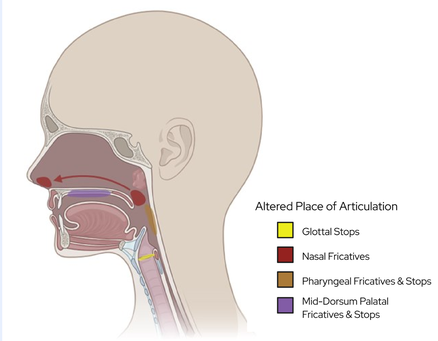
For the purpose of this poster, the following definitions will be applicable

Compensatory articulation errors (Active errors):
Learned misarticulations that some children with cleft palate or velopharyngeal dysfunction may use to bypass the velopharyngeal port. These require speech therapy to correct and typically persist after VPI surgery.

Obligatory errors (Passive errors):
Speech sound distortions caused by a velopharyngeal or oral structural difference. The articulator placement is intact, but the structure causes weakening or distortion of the sound. Surgical or prosthetic management is required, speech therapy alone will not change these.

Velopharyngeal Dysfunction (VPD):
An umbrella term used to encompass velopharyngeal insufficiency, incompetence, and mislearning; all situations in which the velopharynx does not fully separate the nose from the mouth for non-nasal speech sounds.





General Therapy Guidelines

1. Non-speech oral motor exercises (NSOMEs) are NOT effective for this population.
2. Target more visible phonemes and more easily cued phonemes first.
3. Rename the target sound, if necessary, to facilitate new motor learning.
4. Obtain target phoneme in isolation with 100% mastery before advancing to higher levels of the hierarchy.
5. Use phonetic placement with multisensory cues to provide auditory, visual, and tactile feedback.
6. If VPD is present, use nasal occlusion to teach oral airflow or prevent nasal escape. Fade from nasal occlusion as oral placement for target phoneme emerges.
7. Possible biofeedback tools include a small mirror placed under the nose, a tissue in front of the mouth, See-scape, or a listening tube/straw between the nose and ear.
8. Speech therapy is appropriate if compensatory articulation errors are present, even if the child has an insufficient velopharyngeal mechanism. Therapy may begin before surgical intervention.
9. Compensatory articulation and obligatory errors MAY co-occur, requiring a combination of surgical management and speech therapy to address.

Compensatory Articulation Error	Place of Articulation	Facilitative Techniques
Glottal Stops	Vocal folds/glottis	• Use /m/ + nasal occlusion to facilitate /b/, /n/ + nasal occlusion to facilitate /d/, and /ŋ/ + nasal occlusion to facilitate /g/. Add a long, stretched /a/ to facilitate CV, VC, VCV syllables. Whisper to achieve voiceless cognates. • Produce /s/ and "stop" the airstream to facilitate /t, d/. Be aware of glottal co-productions.
Pharyngeal Stops	Tongue base makes contact with posterior pharyngeal wall	• Utilize nasal consonants + nasal occlusion (e.g., /ŋ/ + nasal occlusion to facilitate /g/) • Teach from excessively anterior place of articulation, such as interdental /t, d/, and then push tongue position back as needed • Attempt VC with high vowel such as /i/ paired with velar
Pharyngeal Fricatives	Tongue base approximates posterior pharyngeal wall	• Protrude tongue for /θ/ and retract for /s/ • Provide opportunities for tactile feedback, such as placing child's hand in front of their mouth to feel oral airflow during /f/
Nasal Fricatives	Nasopharynx or nasal passages, which may be accompanied by bilabial, tip-alveolar or back-velar tongue placement	• Use Long-T technique (t-t-t-tss) to produce /s/ • Protrude tongue for /θ/ and retract for /s/ • Utilize nasal occlusion until motor pattern is stable in syllable imitation, then wean

Articulatory or Phonological Difference	Place of Articulation	Facilitative Techniques
Mid-dorsum palatal stops & fricatives	Dorsum of tongue stops or constricts airstream at mid-palate, often replace lingua-alveolar stops and fricatives	If other lingua-alveolars are placed correctly, facilitate from those consonants: e.g. /n/ with the nose plugged for /d/, then whisper for /t/. Facilitate /s,z/ by prolonging /t,d/
Lateral distortions	May be similar to mid-dorsum palatal fricative; /s, z, ʃ, ʒ, ʤ, ʧ /may be affected	Facilitate from /t,d,n/ once those are placed appropriately
Ingressive airflow	Can occur with any place of articulation, issue is airflow direction. Ingressive nasal fricatives are possible	Teach discrimination of ingressive vs egressive airflow, facilitate target with normal flow, enable practice using motor learning principles
Lip pops	May replace bilabial stops	Teach discrimination of pop vs. target; facilitate target as you would normally.
Tongue clicks	Ingressive movement/suction between two articulators, may replace oral stops.	Teach discrimination of click vs target. Facilitate from nasal cognate: i.e. /n/ to teach /d,t/; /ŋ/ to teach /g,k/. Can facilitate place with tactile stimulation.
Phonological processes	Can also occur in conjunction with place/manner/voicing errors	Treat as you would for a child without a cleft or VPD, but enable production of target motor pattern first.

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