

Review Article

## Twenty-two fundamental methods of jaw, lip, and tongue facilitation

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# TWENTY-TWO FUNDAMENTAL METHODS OF JAW, LIP, AND TONGUE FACILITATION

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**ABSTRACT:** Twenty-two fundamental methods of jaw, lip, and tongue facilitation were derived from a set of 84 textbooks, clinical guidebooks, and conference proceedings. 95.24% of publications reviewed contained one or more of these twenty-two methods. A description of each technique with examples is provided.

## INTRODUCTION

The current need for evidence concerning the use of “oral motor” techniques prompted a literature review. A set of 84 textbooks, clinical guidebooks, and conference proceedings were reviewed for their *oral* (jaw, lip, and tongue) *motor* (sensory, motor, and positioning) *techniques*. Publications were selected from the following six treatment areas: articulation, phonology, motor speech, feeding, dysphagia, orofacial myology, and oral motor therapy. Three introductory communication sciences texts, and one speech-language guide for parents, also were included in this set. These publications spanned the years 1912 through 2007 and were written in English. [Please see original article for full list.]

The results of this literature review revealed that *oral* (jaw, lip, and tongue) *motor* (sensory, movement, and positioning) *techniques* have had substantial representation throughout the field of speech-language pathology from 1912 through 2007. These methods were described, discussed or recommended, in part or in whole, in 95.24% of publications reviewed. Detailed analysis, of the techniques discovered in these publications, suggested that there are at least “Twenty-two Fundamental Methods” of jaw, lip, and tongue facilitation that have been described and are in current practice. This article briefly defines and gives two examples of each. [Please see original article for more

detailed explanations and additional examples.]

## TWENTY-TWO FACILITATION METHODS

### 1. Assist Oral Movements

To *assist* is to “help (someone), typically by doing a share of the work” (Jewell & Abate, 2001, p. 96). Speech-language pathologists use their own hands, fingers and other tools to assist clients in their attempts to achieve specific jaw, lip, and tongue movements and positions. Examples:

- To assist tongue back elevation for /r/: “A flat stick or a small rod ... may be put under the tongue to push it back and up” (Scripture, 1912, p. 148).
- To assist tongue tip elevation for lingua-alveolar phonemes: “Sometimes it is helpful to use a tongue depressor or a rounded stick to bring the tongue into the desired position” (Berry & Eisenson, 1956, p. 42).

### 2. Associate Oral Movements

To *associate* is to “connect (something) with something else because they occur together or one produces another” (Jewell & Abate, 2001, p. 97). Speech-language pathologists use the movements and positions of one phoneme to teach the movements and

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positions of another phoneme. Examples:

- Associating lingua-alveolar position for /t/ with lingua-alveolar position for /s/: “Make [t] ... Make [t] with strong aspiration on the release ... Prolong the strongly aspirated release ... Remove the tip of the tongue slowly during the release from the alveolar ridge to make a [ts] cluster ... Prolong the [s] part of the [ts] cluster in words like *oats* ... Practice prolonging the last portion of the [ts] production ... Practice ‘sneaking up quietly’ on the [s] (delete /t/) ... Produce [s]” (Bernthal & Bankson, 2004, p. 302).
- Associating tongue-tip protrusion for /th/ with tongue tongue-tip elevation for /l/: “Instruct the client to say /th/. Then tell the client to lower the jaw and draw the tongue tip backward until it contacts the alveolar ridge behind the upper teeth. While maintaining contact with the alveolar ridge, the client says /l/” (Secord *et al*, 2007, p. 90).

### 3. Contrast Oral Movements

To *contrast* is to “compare in such a way as to emphasize differences” (Jewell & Abate, 2001, p. 373). Speech-language pathologists help clients contrast jaw, lip and tongue positions in order to help them perceive the locations of articulatory contact. Examples:

- Contrasting positions used to teach lip rounding for /w/: “Contrast lip spreading with lip rounding, and a large mouth opening with a small mouth opening” (Hanson, 1983, p. 206).
- Contrasting tongue positions used to eliminate a frontal lisp: “A great way to wake up the tip of the tongue and to get the tip behind the teeth is to have the client say, ‘th-s-th-s-th-s-th-s’ back and forth in one continuous air stream. This practice stimulates the tip of the tongue through tactile means as it rubs forward and back against the upper central incisors” (Marshalla, 2007, p. 104).

### 4. Cue Oral Movements

A *cue* is “a signal for action ... a piece of information or circumstance that aids the

memory in retrieving details not recalled spontaneously ... a hint or indication about how to behave in particular circumstances” (Jewell & Abate, 2001, p. 415). Speech-language pathologists provide *visual, auditory, tactile, proprioceptive* and *conceptual* cues about oral movement and position in order to help clients learn to produce specific phonemes, and to sequence phonemes. Examples:

- Visual and tactile cue for production of /st/: “The clinician may draw her finger up the child’s bare arm while saying /s/ and tap it lightly as she releases the /t/, thus calling attention to the continuity of /s/ and the quick burst of /t/” (Hodson & Paden, 1983, p. 51).
- Tactile cue for lingua-velar articulation: “Pressure applied well under the child’s chin, upward and toward the base of the tongue, will reinforce back-of-tongue ... productions” (Blakely, 1983, p. 30).

### 5. Describe Oral Movements

To *describe* is to “give an account in words of (someone or something), including all the relevant characteristics, qualities, or events” (Jewell & Abate, 2001, p. 462). Speech-language pathologists frequently describe the movements or positions of the jaw, lips, and tongue in order to help clients achieve target phonemes and feeding skills. Examples:

- To describe lip position for /v/: “[The client] is told to bite his lower lip” (Scripture, 1912, p.124-125).
- To describe tongue tip placement for lingua-alveolar phonemes: “See the tip of my tongue? I am going to make it real small like this. Then I am going to lift it up. See? Then the tip of my tongue is going to touch this part of my mouth. Did you see that? Can you do it?” (Hegde, 1998, p. 155).

### 6. Develop Sensory Awareness and Discrimination for Oral Movements

To be *aware* is to have “knowledge or perception of a situation or fact” (Jewell and Abate, 2001, p. 113). To *discriminate* is to

“recognize a distinction” and to “perceive ... the difference in or between” (Jewell & Abate, 2001, p. 488). Speech-language pathologists utilize hands, food and other objects to help a client become more aware of the different parts of his mouth and to help him learn to discriminate different sensory parameters of oral stimuli. Examples:

- To develop general oral sensory awareness: “Learn to recognize the movement as part of some familiar biological movement such as chewing, swallowing, coughing ... chew in an exaggerated fashion ... practice licking the lips and cleaning the tongue and cheeks with the tongue” (Van Riper, 1954, pp. 216-218).
- To develop general oral sensory awareness and discrimination: “Provide many opportunities for the child to engage in generalized mouthing activities of the hands, simple environmental objects, and toys” (Morris & Klein, 2000, p. 411)

## 7. Direct Oral Movements

To *direct* means to “aim (something) in a particular direction” (Jewell and Abate, 2001, p. 483). Speech-language pathologists direct jaw, lip and tongue movements, as well as phonation and airflow, with their own arms, hands, fingers and other instruments, and with ideas. Examples:

- To direct air stream for /s/: “Have the patient practice emitting expired breath streams thru [the] small hole ... of a hollow, rubber tube” (Borden & Busse, 1929, p. 184).
- To direct tongue elevation for /r/: “Tell the client you are going to pull on an imaginary string attached to the back of his head. As you pull the imaginary string up from the back of the client’s head, instruct the client to lift the back of a tensed tongue and say /er/” (Secord et al, 2007, p. 153).

## 8. Dissociate Oral Movements

To *dissociate* means to “disconnect or separate” (Jewell & Abate, 2001, p. 494).

Speech-language pathologists help clients *dissociate* between movements of the jaw, lips and tongue so that appropriate movements can be made for phoneme production and feeding skills. Examples:

- To dissociate tongue movement from jaw movement for /t/: “The insertion of the broad side of a tongue depressor between the side teeth and holding it steady while repeating *t, t, t*, in rapid succession will assist in securing independent action of the tongue” (Nemoy & Davis, 1937, p. 90).
- To dissociate tongue movement from lip movement for /r/: “The lip retractor is a device designed for use by orthodontists for photographing the teeth. Placed correctly in the mouth, the lip retractor pulls the lips laterally. With the lip retractor in place, most clients will be unable to move the lips at all. This is a great way to help them focus on what their tongues should be doing” (Marshalla, 2004, p. 113).

## 9. Exaggerate Oral Movements

To *exaggerate* is to “represent (something) as being larger, greater, better, or worse than it really is” (Jewell & Abate, 2001, p. 590). Speech-language pathologists often exaggerate jaw, lip and tongue movements to make them salient for the client.

Exaggeration of oral movement also is required of the client himself in order to help him understand his own oral movements, and to make his or her oral movements more precise. Examples:

- To exaggerate as a general articulation method: “When the correct sound has been produced ... the [client] should hold it, increasing its intensity, repeating it, whispering it, exaggerating it, and varying it in as many ways as possible without losing its identity. He should focus his attention on the ‘feel’ of the position in terms of tongue, palate, jaws, lips, and throat” (Van Riper, 1954, p. 239).
- To exaggerate in order to understand incorrect movements: “Encouraging exaggeration of the undesirable movement will make it more obvious to

the child" (McDonald & Chance, 1964, p. 124).

#### **10. Increase or Decrease Muscle Tone for Oral Movements**

Muscular tone is "the degree of stiffness" in the musculature "to stabilize or move the skeleton" against gravity (Boehme, 1990, p. 210). Speech-language pathologists use techniques to increase or decrease muscle tone in order to encourage more mature jaw, lip, and tongue movement patterns for speech and feeding. Examples:

- To decrease muscle tone in the tongue for production of lingua phonemes: "Request the patient to protrude the tongue so that it can be grasped gently. Next, pull it forward as completely as possible ... Once fully withdrawn the tongue is slowly pulled to the right corner of the mouth, held there for an out-loud count of 10 seconds, and then smoothly moved across the midline to the left corner of another count of 10 seconds to complete the trial. Although the degree of hypertonicity present will probably produce resistance to these adjustments, maintaining the lateral pulling force along the way usually proves fruitful after 10 or 15 trials with most patients" (Dworkin, 1991, p. 197).
- To decrease muscle tone in the facial muscles: "Use facial molding ... begin with a general massage of the child's body and face ... gently mold or massage the face toward a closed mouth/closed lip position" (Morris & Klein, 2000, p. 415).

#### **11. Increase Range of Motion for Oral Movements**

Range is "the area of variation between upper and lower limits on a particular scale" (Jewell & Abate, 2001, p. 1409). Speech-language pathologists utilize techniques to help clients increase range of jaw, lip, and tongue movement so that appropriately graded oral movements can be achieved over time. Examples:

- To increase range of face, lip and jaw movements in speech warm-up

activities: "Imitate the faces of clowns by retracting the lips, protruding the lips, and by dropping the jaw as far down as possible while producing [vowels]" (Berry & Eisenson, 1956, p. 139).

- To increase range of motion of the tongue for eating and swallowing: "The patient should be asked to open his or her mouth as wide as possible, hold it there for 1 second, and release it. Then the patient should elevate the back of the tongue as far as possible, hold it there for 1 second, and release it. This procedure should continue with the patient stretching the tongue to each side as far as possible, extending the tongue out of his or her mouth as far as possible, and pulling it back as far as possible, holding it for 1 second in each direction" (Logemann, 1983, p. 133).

#### **12. Inhibit Oral Movements**

To *inhibit* means to "slow down or prevent (a process, reaction, or function)" (Jewell & Abate, 2001, p. 873). Speech-language pathologists use inhibition techniques to prevent habitual, reflexive, tone-based, or undifferentiated movement patterns from overriding a client's attempts at new movement. Examples:

- To inhibit tongue humping or bunching in order to encourage more tongue movement: "Treatment approaches ... often include downward bouncing or patting on the tongue ... The tongue can be stroked to obtain a central grooving or a lateral upward movement ... Brushing the center of the tongue can facilitate flattening and a more central groove" (Morris & Klein, 2000, p. 607).
- To inhibit tip elevation during production of /k/: "Using a tongue depressor, hold the tongue tip down behind the lower teeth to hinder the elevation of the tongue tip" (Secord et al, 2007, p. 30).

#### **13. Maintain Oral Positions**

To *maintain* is to "cause or enable (a condition or state of affairs) to continue" (Jewell & Abate, 2001, p. 1030). Speech-

language pathologists encourage clients to maintain oral positions in order to increase awareness, voluntary control, strength and skill of positions. Examples:

- To maintain lip-to-lip articulation for swallowing: "Once the patient is able to obtain lip closure, but has not habituated it, a graduated increase in the time required to maintain closure should be used. The patient may be asked to hold lip closure for 1 minute. This should be repeated 10 times per day" (Logemann, 1983, pp. 145-146).
- To maintain tongue tip elevation to the alveolar ridge: "Hold tip of tongue to the spot for at least 5 seconds, or as long as possible. Increase time to 30 seconds, continuing to press tip into the spot" (Gangale, 1993, p. 103).

#### 14. Mark the Target of Oral Movements

To *mark the target* of oral movement means to indicate, through tactile means, the place where articulation should be made. Speech-language pathologists often use fingers or other tools to touch the place where articulation should occur. Examples:

- To mark the "spot" for tip-to-alveolar contact for correct oral rest posture: "At times we press against the spot with the end of a tongue depressor, then ask the patient to do the same. The parent watches closely, and may be asked to touch the child's 'spot' with a tongue depressor" (Hanson & Barrett, 1988, p. 275).
- To mark the soft palate for production of /k/: "Rub a moist cotton swab on a flavored food, such as a Lifesaver ... Then touch the soft palate near the second molars with the swab and ask the client to raise the back of the tongue to the roof of the mouth to form a seal" (Secord et al, 2007, pp. 30-31).

#### 15. Model Oral Movements

A *model* is "a system or thing used as an example to follow or imitate" (Jewell & Abate, 2001, p. 1096). Speech-language

pathologists model jaw, lip and tongue movements and positions for phoneme production and feeding skills. Live models are made with the therapist's mouth. The hands also can be used to model movement and position. Examples:

- To model oral positions with apraxic patients: "Ordinarily, therapy is best conducted with the clinician and patient seated in front of a large mirror so the patient can watch both the clinician's face as he speaks and his own face as he imitates the clinician's model" (Darley, Aronson & Brown, 1975, p. 282).
- To model tongue tip to the alveolar ridge for /t/: "Use hand gestures to demonstrate how to tap the tongue against the alveolar ridge" (Secord et al, 2007, p. 23).

#### 16. Normalize Oral Tactile Sensitivity for Oral Movements

To *normalize* is to "bring or return to a normal condition or state" (Jewell & Abate, 2001, p. 1167). *Tactile* refers to the sensation of touch perceived through nerve endings in cutaneous tissue (skin). To *normalize oral tactile sensitivity* means to help a client accept, perceive and discriminate oral-tactile experiences in, on and around the mouth. Speech-language pathologists provide techniques to normalize oral-tactile sensitivity so that bi-labial, labio-dental, lingua-dental, lingua-alveolar, lingua-palatal and lingua-velar contact can be explored, utilized and habituated in phoneme production and feeding skills. Examples:

- To normalize the hyper functional gag reflex that interferes with articulatory movement: "To lessen such sensitivity in these patients ... the technique of maintained touch or pressure may be helpful" (Dworkin, 1991, p. 104).
- To normalize oral tactile hypersensitivity for overall oral movement in speech and feeding: "If the child demonstrates atypical oral motor patterns, such as a hyper responsive

gag reflex or tonic bite reaction, massage can be used to bring about an improved response" (Bahr, 2001, p. 115).

### 17. Practice Oral Movements

To *practice* is to "perform (an activity) or exercise (a skill) repeatedly or regularly in order to improve or maintain one's proficiency" (Jewell & Abate, 2001, p. 1339). Speech-language pathologists use practice to: (1) habituate oral movements, (2) improve muscular strength and endurance for performance of an oral movement, (3) improve motor memory of a performed oral movement, (4) increase volitional control over oral movements, and (5) to make new oral movements automatic. Examples:

- To practice tongue tip elevation for //: "Give tongue-lifting and tongue-lowering exercises, first in silence, then while blowing, then while whispering *ah*, then while saying *ah*. Gradually lift the tongue [tip] higher and higher until it finally makes contact at the right place" (Van Riper, 1954, p. 242).
- To practice tongue tip elevation for lingua-alveolar phonemes: "Set the metronome to 30 [beats per minute], and instruct [the client] that the task is to raise and lower the tongue-tip alternately to the respective alveolar ridges according to the beat" (Dworkin, 1991, p. 223).

### 18. Resist Oral Movements

To *resist* is to "withstand the action or effect of" (Jewell & Abate, 2001, p.1449). Speech-language pathologists resist jaw, lip and tongue movements in order to develop new movements and to facilitate improved movement of these parts. Examples:

- Use of resistance to facilitate lateral tongue elevation for /s/: "If the elevation is difficult, have him work on lifting the sides of the tongue against resistance. This resistance can be supplied by a pair of swab sticks pushing downward on the sides of the tongue" (Hanson, 1983, p. 228).

- Use of resistance to improve lip function using a quarter-sized button: "Loop the string through two buttonholes and tie a knot at the end. After instructing the patient to close the teeth, position the button against the teeth behind the midline of the lips ... In a tug-of-war fashion, pull on the string with moderate force as the patient is required to resist this effort to dislodge the button by vigorously contracting the circumoral musculature" (Dworkin, 1991, p. 213).

### 19. Speed Up or Slow Down Oral Movements

*Speed* refers to the "rapidity of movement or action" (Jewell & Abate, 2001, p. 1639). Speed of oral movement is addressed in therapy with clients who lose precision of movement as they approach the normal articulatory rate involved in connected speech. Examples:

- To increase speed of oral movement: "Chew in an exaggerated fashion ... Do this to a simple rhythm tapped out by the teacher, very slowly at first, then increasing speed" (Van Riper, 1954, p. 217).
- To improve rate and rhythm of chewing: "Increase the timing and coordination of the chewing pattern ... Encourage rhythmic activities during chewing ... Many children will stomp their feet spontaneously or kick rhythmically as they are chewing" (Morris & Klein, 2000, p. 481).

### 20. Stabilize Oral Movements

To *stabilize* is "to make or become stable" (Jewell & Abate, 2001, p. 1656) or "not likely to change" (p. 1656). Speech-language pathologists utilize techniques to stabilize one part of the oral mechanism in order to encourage more mobility in other parts. Examples:

- To stabilize the lips and facial muscles with low muscle tone: "Play patty-cake, peek-a-boo, and other children's games that incorporate patting, tapping, stroking, and other types of tactile and

proprioceptive stimulation of the cheeks and lips. Tapping can be done directly around the temporomandibular joint to provide better jaw stability for lip and cheek mobility” (Morris & Klein, 2000, p. 445).

- To stabilize the back of the tongue for eliminating a frontal lisp: “We can help our clients keep the tongue inside the mouth by developing [the tongue’s] back lateral stability” (Marshalla, 2007, p. 115). Techniques include: “draw a picture,” “stroke the zones,” “smile,” “bite gently on the zones,” “establish the butterfly position,” “hold the butterfly position,” and “spread the back of the tongue” (p. 115-116).

## 21. Stimulate Reflexive Oral Movements

A *reflexive action* is “a response of some peripheral organ to stimulation of the sensory branch of a reflex arc, the action occurring immediately, without the aid of the will or without even entering consciousness” (Osol, 1973, p. 669). Speech-language pathologists use reflex stimulation to facilitate jaw, lip and tongue movement for phoneme production and feeding skill development. Examples:

- To stimulate tongue cupping: “The purpose of this exercise is to stimulate the involuntary reflex, similar to the grasp reflex, that depresses the middle portion of the tongue in response to a stimulus. ... Tap the middle of the tongue with a tongue depressor ... Continue tapping long enough to demonstrate the proper procedure, then have the patient do so. This is to be continued during each of the three

practices each day for one minute” (Hanson & Barrett, 1988, pp. 278-279).

- To stimulate elevation of the tongue’s lateral margins: “Touching or stroking a baby’s tongue elicits a spoon-shaped lingual configuration, characterized by an upraised ridge around its outer border ... a similar posture could be elicited in adulthood by repeatedly touching, lightly stroking, or directing a stream of air across the tongue” (Fletcher, 1992, pp. 10-11).

## 22. Vivify Gross Oral Movements

To *vivify* is to “enlighten or animate” (Jewell & Abate, 2001, p. 1889). Speech-language pathologists use hands, fingers and other objects to *vivify* jaw, lip and tongue movement for feeding and speech.

Examples:

- To facilitate gross movement of the tongue: “Chew gum, rolling it to the side, ‘plaster’ it against the palate, slowly move the gum back over the palate, etc. Attempt to feel the tongue position with each movement” (Berry & Eisenson, 1956, p. 139).

- To vivify gross oral movement for speech rehabilitation: “In instances of severe involvement ... movement may be so limited that differentiation of the various vowels and consonants is next to impossible. One can try in such a case to help the patient concentrate his energy first on activities preliminary to speech production ... The intent is to help the patient regain some concept of where his articulators are and where he must put them” (Darley, Aronson & Brown, 1975, p. 273-274).

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