



Techniques for improving articulation in CP

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- Acc. To Gray and Wise 1993, articulation is one of the process by which speech is produced. The organs of articulation acts as valves for interruption of the breath stream for complete stoppage or by constriction of its passage.
- The major goals of articulation techniques are to increase the range, accuracy and speed of movements of the mandible, lips, tongue and to coordinate those movements with breathing- voicing mechanism. Hence In speech therapy with the CP child, training in respiration, phonation and articulation is usually carried out simultaneously.

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- Mysak has described series of procedures based on Bobath approach to cerebral palsy.
 - Thus in short, Mysak proposed to work on coordinated movements of sucking, swallowing and chewing as it directly helps co-ordination of lips, mandible, elevation of velar and different movements of the tongue.
 - To encourage lip reflex , tapping near the angle of mouth cause involuntary movements of the lips leading to lip closure in preparation for sucking.
 - To encourage suckling reflex he suggest placing the finger in the mouth and gently stroking the lips, front of tongue, gums or hard palate in order to elicit response
 - For children with cerebral palsy who does not have efficient reflex patterns of sucking and swallowing , these reflexes need to be facilitated in order to encourage normal feeding pattern.

- However, if infantile oral reflex patterns are retained beyond the time, they will interfere with the development of the higher forms of neuromotor activity such as articulation.
- Mysak has indicated that 'conditions of abnormal release or retention of the primitive reflexes may interfere directly or indirectly with the articulatory behavior'.
- He points out that, when attempted, articulatory movements also elicit infantile reflexes which causes involuntary jaw deviation, lip movement, mouth opening and tongue protrusion. These extraneous movements may make adequate articulation more difficult.

- But it has been noticed that - Stimulate infantile reflexes so that it can be worked on to develop the matured responses.

- Eg.- Jaw jerk may be broken by stroking the TM joint or by giving food through the side of the mouth.
 - biting reflex may be broken by giving circular motion strokes at tm joint.
 - rooting reflex by light stroking of the cheeks.

- Many other experts like Meader (1940), palmer (1947) supported Mysak's view as they also believe that improvement of early eating movements like sucking, chewing, and swallowing contribute to the development of articulatory movements.

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- Causal therapy for speech movements and their coordination includes work in moving a body part in isolation from other body parts, in performing specific movements, and in performing speeded movements.
 - The first goal here is for the child to be able to move one articulator in isolation from other articulators and from all other body parts.
 - It is done through a technique called “isolation maneuver”.
 - First, the speech pathologist holds or stabilizes all body parts. Progress is measured by reduction in the amount of stabilization imposed by the SLP and by an increase in the amount of voluntary movement shown by the child.
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- The sequence in the differentiation process is as follows: head from trunk; larynx from head; mandible from the head; lips from head; and finally mandible, lips, and tongue from each other.
- The ability to move specific articulators is improved through stimulating- feedback and movement – facilitation maneuvers. Stimulating feedback maneuvers impose particular articulatory patterns on the child's mechanism, with the expectation that imposed feedback will encourage the target to develop.
- Therapeutic feedback is provided by bringing the child's articulators through the movements and points of contact associated with production of bilabial, labiodental, linguadental, lingua- alveolar, linguavelar articulatory patterns.

- Many children with cerebral palsy have a pronounced tongue thrust, mostly seen in athetoids where it is retained for many years. Various procedures have been designed to reduce or eliminate the tongue thrust, thus improving the articulatory skills.
- Young has described moto- kinesthetic for improving articulation in children with CP. Acc. to him there is always a certain location to be found for functioning of each process involved in speech.
- A definite part of the muscles of the speech mechanism must be brought into use as a certain sound is made.

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- In the use of the moto- kinesthetic method the speech clinician may set the pattern for the child to follow by using her own fingers to move the lip upward to the desired position.
 - The moto- kinesthetic process includes the location of the muscular movements, the direction of movement for the part indicated, and correct pressure and timing.
 - As each process is completed, the clinician moves the mouth from the last movement of one unit process directly into the first movement of the next process

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- McDonald has described a procedure of sensory motor approach to articulation therapy.
 - He identifies three types of movements on the basis of the relationship between the action of the agonist and the antagonistic muscle groups i.e. fixed movements , controlled movements and ballistic movements.
 - In a fixed movements the contraction of opposed muscle groups are in balance and the structure is held in a fixed position.

- Controlled movements are achieved when the opposed muscle groups are in a state of contraction, with one group contracting slightly more strongly than the other.

- Ballistic movements begin with a quick contraction of the agonist muscle group. After the movement has been initiated, there follows a period when no muscles are contracting, but the structure continues to move as a result of its momentum. The movement is stopped by contraction of antagonistic muscles.

- The movements of speech mechanism are extremely rapid, precise and integrated activities in spontaneous speech. Hence improving the DDK action of the structures of the speech mechanism as a necessary step in the articulation training program.
- The movements of articulation are however rapid and overlapping . To develop the ability to produce overlapping movements of articulation, the child should be given practice with syllables containing phonetic context which will elicit desired overlapping patterns of movements .

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- McDonald describes the techniques of sensory motor training for articulation as follows:
 - In the first words that a child uses and in most of the jargon , consonants are usually preceded and followed by a vowel.

 - As soon as the child begins making 2 word sentences , intersyllabic consonantal adjacencies occur. Later , consonantal adjacencies[called compound consonants or blends] occur within a syllable.

- Drill only with consonant vowel combinations such as 'mama', 'dada', 'baby' does not develop the complex overlapping movements which occur in the production of compound consonants.
- Speech therapy should include practice with bisyllables containing compound consonants/blends requiring overlapping movements of the lips and tongue, and later with blends requiring overlapping movements within the tongue.

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- We looked at the various approaches to articulation therapy, but in general we can say that assessment should at least be able to produce an initial indication of groups of articulatory errors that seems to be the result of the manner in which the speaker has come to use the speech producing system in the presence of the limitations of the speech producing mechanisms.

 - After the vowels and consonants have been selected for remediation at any particular stage in the management program, such type of speech sample must be used with which the client showed the best ability to produce the targeted sounds in the assessment procedures.

- For example, if those consonants and vowels can be spoken more precisely in CV syllables than in words, use of CV syllables will be indicated.
- This may initially draw speaker's attention to production of the specific articulations that are desired. However drill on the targeted consonants should be undertaken in words and phrases.
- It will be extremely difficult to device speech samples of words and meaningful phrases for articulation work in which client shows good potential for early improvement.
- Nevertheless, use of functional oral language as a routine component of articulation drills will
 1. provide the opportunity to attend to appropriate use of the respiratory system and any other speech producing behaviors that are subject to remediation and such as establishing the most desirable speech rate.

2. provide a vehicle for attention to prosodic characteristics of the speech signal.
 3. enhance the chance that the speaker will be learning to produce speech will be learning to produce speech skills that he or she will be using outside the clinical situations.
- With respect to the attention the speaker needs to give to monitoring the auditory signal of his speech accurately, then therapeutic regimen should include activities designed to maintain and improve that monitoring.
 - Also a review of the methods used to initiate articulatory movements and contacts that are not within client's current speech producing patterns should be provided.

- A contingency system for rewarding appropriate articulatory performance is probably more applicable to articulation remediation than to other aspects of the therapeutic process. Those programs should be used for any set of speech producing behaviors where possible.
- Care should also be taken in using any form of instructions in which CP child's attention is drawn specifically to the structures that are to be moved or positioned in specific ways, as some of them seem to have more difficulty accomplishing movements of the oral structures when they are concentrating on observing themselves in the mirror.

Post vocalic consonants:

- Consonants that are misarticulated in some way in the post vocalic position, but which are usually articulated well in the pre vocalic position, may be the easiest for the speaker to learn to produce correctly.
- In stimulating the production of post vocalic consonants, the clinician should avoid exaggerating the productions; such as aspiration of post vocalic voiceless stops. This should be avoided even in drills.
- The inclination to omit post vocalic consonants in order to maintain a somewhat normal rate of speech upon one expiration as possible, or to conserve the general physiological effort needed to produce speech may make it difficult for the speaker to overcome this articulatory pattern.

Articulatory distortions:

- The tongue not reaching the appropriate vowel target position results in distortions of sounds.
- These group of articulatory errors is likely to have shown good potential for remediation during assessment procedures because the articulators at least move in the appropriate direction towards the target position.
- There are number of articulatory distortions wherein remediation becomes difficult because the production of these sounds require precise positioning of the tongue.

Omissions and substitutions

- Omissions of consonants represent a greater degree of physiological restrictions to the desired articulatory movement than in the case with distortions.
- Substitution errors may be due to the result of inappropriate learning or may be a direct result of a physiological limitation to the appropriate articulation.
- Remediation is likely to be difficult in omission and substitution that result due to physiological limitation.

Compensatory articulation

- Some articulatory errors that are manifestation of compensation for physiological problems are termed as “compensatory articulation”.
- There have been arguments that compensation should not be permitted to develop or persist even when the compensatory articulation is acoustically acceptable.
- Compensatory movements may interfere with other needed gestures of the articulatory structures and may preclude the possibility of ever developing normal articulation.
- However, the goal of normal speech is frequently unrealistic and a more pragmatic philosophy toward compensatory speech production behaviors may be that they should be allowed to develop , persist and actually encourage if they contribute more to the intelligibility.