**Effects of Verb Network Strengthening Treatment (VNeST) and Melodic Intonation Therapy (MIT) on conversational speech in individuals with Aphasia**

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**Introduction**

- The ability to participate in conversational speech originates in the left hemisphere in Broca’s area. Strokes that damage this area cause aphasia, which prevents access to this language pathway.
- VNeST is a semantic therapy which seeks to improve lexical retrieval of content words in sentences of varying complexity by encouraging systematic retrieval of verbs (Edmonds et al., 2009).
- MIT is a sequential treatment which combines words with melody to facilitate speech output in those with nonfluent aphasia (Conklyn et al., 2012).

**Purpose**

- The purpose of this research project was to:
  - Determine if Melodic Intonation Therapy (MIT) results in significantly improved conversational speech, as measured by words per minute, for people with aphasia as compared with Verb Network Strengthening Treatment (VNeST).

**Case Scenario**

Graduate clinician has a 42 year old client with Broca’s aphasia. This semester, her language goals related to conversational speech will be addressed. However, with various approaches to address this goal, it is challenging to decide which to use. There is limited time left in the semester to provide therapy, so the clinician is seeking the most efficient and effective treatment.

**Methods**

- **Search Terms:** aphasia, VNeST, MIT, conversational speech.
- **Databases:** PubMed and ASHA.
- **Rating System:** Critical Appraisal of Treatment Evidence (CATE) form was used to appraise validity and clinical significance with interrater reliability; 14 point rating scale; 10 articles appraised.
- **Articles:** Six articles were chosen to assist in EBP decision. Each study had interrater reliability of at least 93%.

**Discussion**

- **VNeST** is successful in generating to spontaneous speech (Edmonds et al., 2009), while MIT is more appropriate for motor speech treatment (Zumbansen, Peretz, & Herbert, 2014).
- **MIT** does not enhance auditory comprehension (Wallace & Canter, 1985), nor improve right hemisphere connections (Van de Sandt-Koenderman et al., 2010).
- Hand-tapping engages the sensorimotor network leading to more coordinated orofacial and articulatory movements, resulting in an increase in correct productions, as opposed to MIT facilitating increased expressive language (Shluger et al., 2008).
- Client concerns included daily communication with others and verb use.
- Clinician feels comfortable administering both treatments.
- VNeST was chosen as the most appropriate therapy for clients with Broca’s Aphasia to increase conversational speech as measured by words per minute.

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**References**


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**Authors & Design**

**Participants (diagnosis, gender, & age)**

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<td>Edmonds &amp; Babb (2011)</td>
<td>Multiple baseline across participants</td>
<td>2: 4, female, left MCA stroke 49 months before study</td>
<td>Rating: 10/14 Suggestive (71%) Reliability: 100%</td>
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| Edmond, Nadeau, & Kiran (2009) | Single subject | 2 had moderate transcortical aphasia and 3 had moderate conductive aphasia according to WAB | Rating: 9/14 Suggestive (64%) Reliability: 93% | Accuracy on generalization tasks naming, picture description, connected speech sample | Generalization tasks Behavioral Exams spontaneous speech measures: conversational interview & picture description Behavioral | Behavioral: Both interventions resulted in significant improvement post-treatment in propositional speech that generalized to unpracticed words and phrases, but p levels and effect sizes were not provided.
| Schlag, Marchina, & Norton (2008) | Single subject | Both severe non-fluent aphasia, left MCA stroke, classified as Broca’s, and both received more than a year of traditional speech therapy prior to study | Rating: 8/13 Suggestive (62%) Reliability: 93% | Neural Exam MRI imaging used with biobidirectional list in 5 conditions: spoken/sung, repetition, delayed rep. with humming and phonation. Neural | Neural: R hemisensorimotor network is engaged which may coordinate orofacial and articulatory movements.
| Van de Sandt-Koenderman, Smits, Van der Meulen, Vlach-Brik, Van der Lugt, & Ribbers (2010) | Single subject | 1 weeks post-stroke, female, 25 y.o., right handed, severe Broca’s & right-sided hemiplegia. | Rating: 9/14 Suggestive (64%) Reliability: 100% | Behavioral Exam Language performance on story recall Correct Information Units (CIUs) per min | Behavioral: Spontaneous speech, repetition, naming, and CIUs/min all improved at p < 0.001. Effect sizes were not provided.
| Wallace & Carter (1985) | Multiple baseline across participants | 6 patients with aphasia and left CVA and 2 controls, and all between 52 to 74 yrs old | Rating: 10/13 Suggestive (77%) Reliability: 100% | Picture identification where stimuli presented in 3 conditions: Neutral Melodic Intonation Strong affect | Picture Identification No significant difference in L hemi damaged auditory comprehension in the 3 conditions of stimuli. Effect sizes were not provided.
| Zumbansen, Peretz, & Herbert (2014) | Systematic review | 14 studies reviewed Patients with L hemi CVA resulting in aphasia (usually Broca’s or global) receiving MIT or a similar alternative. | CASM: score: 4/6 Emerging evidence with strong importance. | Language Performance: Connected speech analyses Sentence recall Inteligibility WH-questions Propositional language tests | This was a systematic review, therefore p values and effect sizes were not reported. This review found that MIT should be researched as an approach to help apraxia more than aphasia in the future.