APHASIA THERAPY TECHNIQUES

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APHASIA

FLUENCY

NON-FLUENT

FLUENT

COMPREHENSION

Poor

Good

POOR

Good

REPETITION

Poor

Good

Poor

Good

NAMING

Poor

Global

Mixed TCA*

Broca’s

Motor TCA*

Wernicke’s

Sensory TCA*

Conduction

Anomic

LESION LOCALIZATION

Posterior inferior frontal lobe & posterior superior temporal lobe

Sensory and motor transcortical regions

Posterior inferior frontal lobe

Frontal lobe watershed between MCA & ACA territories

Posterior superior temporal lobe

Temporoparietal watershed between MCA & PCA territories

Arcuate fasciculus

Numerous possible locations for lesion

TCA = Transcortical aphasia

*Transcortical aphasias are typically associated with cerebral anoxia (e.g. post-MI, CO poisoning, hypotension)
Figure 11. Algorithm for diagnosis of the eight classical cortical aphasias.
Depending on the focus of management, various techniques can be classified into two categories:

- General Techniques
- Specific Techniques
General Techniques

• Wepman (1953) believed that all aphasic therapists administer “Stimulation therapy”. The stimulation approaches are:
  • Stimulation Facilitation approach
  • Auditory stimulation
Stimulation Facilitation Approach  
(Wepman, 1951)

• This therapy is designed to help in changing behavior and is not confined to therapeutic settings alone, thus it should be tailored to the neurological, linguistic and social needs of the patient. Wepman believed in the following three aspects, which are important in the recovery process. These are:
• What is done to any patient by an external agency (Stimulation)
• What is the impaired nervous system is capable of doing (Facilitation)
• What is the state of the internalized drive of the patient (Motivation)
Auditory Stimulation:

- **Methods to deliver the auditory stimulation:**
  - Live voice
  - Binaural presentation
  - Free field
  - Ear phones can be used, as they will reduce the extraneous noise and helps in focusing the attention
  - Selective left or right ear presentation of the auditory stimuli will improve comprehension
  - Pre-stimulation: Cues presented prior to the picture presentation. It includes first phoneme of the target word, an open ended sentence, three words, one of which can be the target word, semantically related words
  - Uses of cues and prompts: This facilitates patient’s word retrieval or comprehension. Cues can be semantic or phonetic
  - Frequency and meaningfulness: Linguistic stimuli chosen in the language intervention of aphasics should be frequently used in day-to-day life and should be meaningful in nature. Use egocentric type of linguistic stimuli followed by environmental and relationship type of questions
I need to communicate with someone who has aphasia.

**Keep It Simple**
Speak in short, simple sentences.

**Be Patient**
Allow plenty of time for a response. Talk with him/her not for him/her.

**Remove Distractions**
Turn off radios and TVs.

**Be Creative**
Try writing, gesturing, pictures and communication tools like an iPad.

**Confirm**
Repeat back what you think he/she is saying.

**People With Aphasia**
1. Communicate differently, but they are as smart as they were before.
2. Their hearing is fine; speaking loudly does not help.
3. Aphasia is not contagious! To talk to people with aphasia, you’ll just have to communicate differently.

I have aphasia.

**Take Your Time**
Remember it may take a while to get the words out.

**Let People Know What Works Best For You**
Do you want a question asked in multiple ways? Let them know.

**Use Assistive Devices**
Bring photos, diagrams, pen and paper, etc.

**Getting Frustrated Is Okay**
Don’t blame yourself if you get stuck or stumble on your words. Be patient with yourself as you find what works.

If You Get Stuck, You Can
1. Admit you’re struggling.
2. Recap what you have discussed so far.
3. Decide whether to carry on or come back to it later.

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Learn more at StrokeAssociation.org/aphasia and Aphasia.org
• Music Intonation Therapy may have possible benefits in the treatment of nonfluent aphasia
• **Task-specific semantic therapy and task-specific phonological therapy** improves semantic and phonological language activities respectively in aphasia.

• **Cognitive linguistic therapy** with both semantic and phonological elements may improve semantic fluency.
• Phonological and semantic cueing may improve naming accuracy in aphasics with word-finding deficits.
Melodic intonation therapy (MIT)

- Melodic Intonation Therapy (MIT) is a therapeutic process used by speech pathologists to help patients with severe non-fluent aphasia.

- Neurological researchers Sparks, Helm, and Albert developed melodic intonation therapy in 1973 while working with adults in the Aphasia Research Unit at the Boston VA Hospital.

- This method uses a style of singing called melodic intonation to stimulate activity in the right hemisphere of the brain in order to assist in speech production (Carroll 1996).

- Melodic Intonation Therapy (MIT), a treatment that uses the musical elements of speech (melody and rhythm) to improve expressive language by capitalizing on preserved function (singing) and engaging language-capable regions in the undamaged right hemisphere.
### Elementary Level steps and procedures in MIT

<table>
<thead>
<tr>
<th>Step</th>
<th>Procedure</th>
</tr>
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<tbody>
<tr>
<td>1  <strong>Humming</strong></td>
<td>Therapist introduces the target phrase by showing a visual cue, humming the phrase 1x at a rate of 1 syllable/sec., then intoning (singing) the phrase 2x while tapping the patient’s left hand 1x per syllable.</td>
</tr>
<tr>
<td>2  <strong>Unison intoning</strong></td>
<td>Therapist and patient intone (sing) the target phrase together while the therapist taps the patient’s left hand (1x/syllable).</td>
</tr>
<tr>
<td>3  <strong>Unison intoning with fading</strong></td>
<td>Therapist and patient begin to intone (sing) and tap the target phrase together, but halfway through, the therapist fades out while the patient continues to sing the rest of the phrase accompanied by hand-tapping, but with no further verbal or oral/facial cueing.</td>
</tr>
<tr>
<td>4  <strong>Immediate Repetition</strong></td>
<td>Therapist intones and taps the target phrase while the patient listens. The patient immediately repeats the phrase assisted only by the tapping of the left hand.</td>
</tr>
<tr>
<td>5  <strong>Response to a probe question</strong></td>
<td>Immediately following the patient’s successful repetition of the target phrase (Step 4), the therapist quickly intones a question (e.g., “<em>What did you say?</em>”) and the patient answers by intoning the target phrase. Hand-tapping is the only assistance allowed.</td>
</tr>
</tbody>
</table>
Candidacy for MIT

• Auditory comprehension should be better than verbal expression
• Patient should have fairly good emotional stability and reasonably good attention span
• Form of Melodic Intonation: Based on three elements of spoken prosody
  – The melodic line (variation in pitch)
  – Tempo and rhythm of utterance
  – Pints of stress or emphasis

• To discourage the production perseverative errors, the clinician writes down each perseverated word on a piece of paper, then tears it up in front of the client. While claiming that the program is designed to manipulate factors known to induce perseveration, the tasks used in fact appear similar to those used to reduce other aphasic errors e.g., cueing hierarchy.
Promoting Aphasic’s communicative Effectiveness (PACE)

- One of the best-known pragmatic therapies for aphasia is **PACE**, or therapy for promoting aphasics' communicative effectiveness which was developed by **G. Albyn Davis**.

- PACE is based on the pragmatic rule of **reciprocity**; the therapist and the patient participate in a conversation as equals, each taking turns sending and receiving messages.
According to *Davis* and *Wilcox* (1981), and *Davis* (2000), PACE is based on the following four principles:

1. **The Exchange of New Information**

In PACE conversations, the messages that the therapist and patient send to one another must consist of new information. Usually, cards showing line drawings are used to provide the subjects for messages. Cards are presented face down. The person sending the message draws a card and must somehow explain what appears on it to the other participant. Cards showing everyday objects are typically used during the first phase of therapy. Verb cards are introduced next, followed by story-sequence cards. In other words, the content of messages becomes more abstract as therapy progresses.
• **2. Equal Participation**

• In PACE, the therapist does not overtly direct the interaction. Instead, he/she and the patient participate in dialogues as equals, taking turns as both the senders and receivers of messages. Thus, both are responsible for accurately conveying information and for giving feedback indicating whether or not messages sent by the other person are sufficiently clear.
• **3. Free Choice of Communicative Channels**

• The patient's ability to communicate effectively is stressed in PACE, not the use of a particular communication system. Participants in PACE conversations may convey their messages by speaking, writing, drawing, pointing at object, gesturing, pantomime or any other mode of communication available to them. The existence of so many options improves the chances that the therapist will understand the patient's messages and thus reinforce his/her attempts at communication.
• **4. Functional Feedback**

• The feedback provided by the therapist in PACE conversations is realistic and functional. Rather than telling the client that a response was correct or incorrect, he/she tells him whether the message was understood, as any listener would do in an everyday interaction.
Thematic language stimulation:

- TLS is an organized program of aphasia therapy that uses thematically related vocabulary in multi-modality stimulation to improve language processing and functional communication in adults. Specifically it begins with
  - A group of words related in meaning
  - Places them in a particular linguistic context
- Uses them in tasks that employ both input and output moves and target improvement of underlying language processes to impart conversational success
DE-BLOCKING

- Weigl (1968) described a special kind of stimulation, which uses an intact channel to eliminate a block in understanding or expression via other channels. Response is evoked in an intact channel. Eg., Recognition of printed words first before presenting the same stimulus to a blocked channel.

- Prior stimulation with intact mode is also called as pre-stimulation. Pre-stimulation is thought to activate the linguistic content, thereby making it easier to process in the more impaired modality.
Semantic feature analysis (SFA)  
(Boyle & Coelho, 1995; Coelho, McHugh & Boyle, 2000)

Name a picture
generate features relating to …..
• GROUP: is an ANIMAL
• USE: is used for protection
• ACTION: does what? Barks
• LOCATION: is found at home
• ASSOCIATION: reminds me of a kennel
“Semantic” tasks as therapy

Word-picture matching

- cat
- dog
- elephant

Word-picture verification

- dog?
- cat?

Widely effective (Howard et al., 1985; Marshall et al., 1989)

Long lasting effects (Pring et al., 1990)

Generally, lasting effects are item specific
A core assumption of deblocking is that the capacity for language performance is not entirely lost in most aphasic patient; that a blocked function can be accessed through a different, more intact channel.

Thus performance within a more preserved function is elicited just before probing with the disturbed function.

If the disturbed function is oral naming, oral reading of this word is used to deblock their purposeful use in a confrontation naming task.
If other steps were added between oral reading and naming this would be chain deblocking. Weigl’s example for chain deblocking: if patient cannot name a picture of a boy repeat this word or write it from dictation the patient could not read the word boy aloud but he understood what it meant.

✓ The chain of deblocking in this case proceeds from oral reading, to repetition, to writing the dictated word, to naming the picture.

✓ Through identification and use of alternating channels or through elimination of factors that are blocking primary channels, the ability to name is, to some extent, restored.
Lexical focus

Lexical focus therapy requires clients to retrieve lexical entries from progressively narrower semantic categories.
• First-order categories are broad superordinate categories containing entries from several subcategories.
• Second-order categories are smaller subsets of first-ordered categories.
• Third-order categories are, in turn, smaller subsets of second-order categories.
During therapy, a client is presented a category and asked to name as many items contained in that category as quickly as possible. When patients experience difficulty retrieving items in a particular category, “search strategies” may be employed. Search strategies are not cues for specific lexical entries, rather they are devices to aid patients in organizing their search for appropriate items. E.g., for the category of fruit and vegetables, a patient may be instructed to think about the produce section in a supermarket.
Damage to the lexical semantic structure itself suggests that tasks which require access to semantic representation, without necessarily requiring retrieval of lexical entries, may facilitate lexical retrieval. Tasks of this nature which might be employed include:

- Auditory word-to-picture matching.
- Printed word-to-picture matching.
- Sorting pictures and printed words by semantic category.
- Identifying semantic features shared by two or more objects
- Making semantic judgments about individual words.
Helm Elicited Program for Syntax Stimulation (HELPSS)

- Helm (1981) developed a program for the agrammatic patients, as it has been suggested that the agrammatic patient may improve in their ability to produce a wide variety of syntax for the purpose of communication. HELPSS is a hierarchically structured approach to therapy that uses a story completion format to elicit 10 sentence types. It has 2 levels.

- Level A: The clinician reads a short story (usually about two sentences in length) that ends with the target sentence. The story is then re-read without the target sentence, which must be supplied by the patient. When level A has been completed for a particular sentence type, using 90% accuracy criteria for success, the second level is introduced.

- Level B: At this level the story does not contain the larger the benefit of having heard the target as the part of the stimuli.
Voluntary control of involuntary utterances (VCIU)

- **Described by Helm and Barresi (1980).** They described this method in which the vocabulary is determined involuntarily by the patient. The one criterion guiding the clinician is that only the patient’s real word utterances are accepted.

- **VCIU is based on the assumption that all aphasic patients have the ability to utter a real word under some circumstances.** The clinician identifies involuntary vocabulary and helps the patient bring it under voluntary control.

- **Can be used with severely non-fluent aphasic patients - whose speech is limited to the stereotypic production of few real words.**
VCIU incorporates a progression through oral reading, confrontation naming and conversation involving production of stereotypic words and phrases. It begins with presenting each patient with printed words or phrases, which he has been, heard to utter during his formal education. If the patient is immediately able to read the word or phrase correctly, then this card can be used for self-monitoring the overt responses of the patient.

If instead of reading the words as printed, he utters a different real word, then the original word is discarded and the patient’s real word utterance is offered.

Oral reading of the growing lists then gives way to more volitional propositional use of the target words through responsive naming and confrontation tasks and finally in the conversation. Example:
Clinician: How are you?
- Aphasic: amma..
2. Clinician: Where
- Aphasic: amma..
3. Clinician: Are you in the hospital?
- Aphasic: amma..
4. Clinician: (present a printed picture of the word amma) Ask what is this?
- Aphasic: amma..
5. Clinician: That is right, good say it once again.
- Aphasic: amma.
Response Elaboration Training (RET):

- **Objective:** It is a program that was developed to increase the length and information content of verbal responses of non fluent aphasics.
The basic RET sequence entails:

- Eliciting spontaneous responses to minimally contextual picture stimuli.
- Modeling and reinforcing initial responses.
- Providing ‘wh’ cues to prompt clients to elaborate on their responses.
- Reinforcing attempted elaboration and then modeling sentences that combine initial and all subsequent responses to a given stimulus picture.
- Providing a second model of sentences that combine previous responses and then requesting a repetition of the sentences.
- Reinforcing repetition of combined sentences and providing a final model of the sentences.
Intensity of Aphasia Therapy, Impact on Recovery
Sanjit K. Bhogal, Robert Teasell and Mark Speechley (2003)

- Intense therapy over a short amount of time can improve outcomes of speech and language therapy for stroke patients with aphasia.
• Language therapy is most effective in treating aphasia when provided intensely; less intensive therapy given over a longer period of time does not provide a statistically significant benefit, although clinical benefits can be achieved.
Case presentation

Introduction
• Mr. X came to the clinic with the complaint of not able to speak clearly. The history reveals that the individual had sudden right side weakness and speech loss. Comprehension and Expression of all the languages (Hindi and English) is intact. The individual can read and write Hindi and English.

Medical History
• The medical history reveals the individual was admitted to Sri Ganga Ram Hospital. The patient had complaint of discharge in left ear, altered sensorium and loss of consciousness. The clinical summary reveals that Mr. Rajan has infarct in left middle cerebral artery. The MRI brain reveals senile cerebral atrophy. There is diminished movement in right side of the body.

Impression
• Broca’s Aphasia
Case Presentation

• Mr. X has been attending therapy in our clinic for past three months and the areas covered in the speech and language therapy were-
• Reduce drooling.
• To work upon word retrieval.
• To work upon improving fluency.
• To work upon repetition and auditory word comprehension.
• To work upon Glottal sounds, fricatives and affricates as they are affected
WAB (Western Aphasia Battery Test) results-

<table>
<thead>
<tr>
<th>SUB PARTS</th>
<th>MAXIMUM SCORE</th>
<th>PATIENT SCORE</th>
<th>PREVIOUS SCORE (19.05.16)</th>
<th>PRESENT SCORE (08.09.16)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Spontaneous Speech</td>
<td>20</td>
<td>5</td>
<td></td>
<td>16</td>
</tr>
<tr>
<td>Repetition</td>
<td>10</td>
<td>2.5</td>
<td></td>
<td>10</td>
</tr>
<tr>
<td>Comprehension</td>
<td>10</td>
<td>6.9</td>
<td></td>
<td>10</td>
</tr>
<tr>
<td>Naming</td>
<td>10</td>
<td>4.5</td>
<td></td>
<td>10</td>
</tr>
</tbody>
</table>
## MMSE (Mini Mental State Examination) result

<table>
<thead>
<tr>
<th>Previous test result</th>
<th>18/30 (Mild cognitive impairment)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Present test result</td>
<td>28/30 (No cognitive impairment)</td>
</tr>
</tbody>
</table>
• Mr. X is attending physiotherapy for the weakness is right limbs.

• The articulation for fricatives, affricates and glottal sounds has improved at isolation, word and sentence level. Generalization needs to be acquired at sentence level. Mr. X needs verbal cues at sentence level.

• Improvement in information content and fluency is noticed.

• Improvement in auditory comprehension is noticed.

• Considerable reduction is drooling.