



Treatment for Acquired Apraxia of Speech

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What is Apraxia of Speech (AOS)?

“a disturbed ability to produce purposeful, learned movements despite intact mobility, secondary to brain damage”

(Knollman- Porter, 2008)



5 Primary Clinical Characteristics of Apraxia of Speech (AOS)

1. Slow rate of speech
2. Sound distortions
3. Sound substitutions
4. Errors that are consistent in terms of type, inconsistent in terms of location
5. Abnormal prosody

(Wambaugh et al., 2006b)



Factors that Impact Success of Treatment

- Family support
- Motivation/Self initiation
- Self awareness and insight
- Insight into the future
- Intensity of treatment
- Distributed practice
- Specificity of training (Knollman- Porter, 2008)
- Motor Learning Principle
- Frequency of clinician feedback (Austermann Hula, et al., 2008)



Treatment for AOS

- Articulatory kinematic
- Alternative and augmentative communication device (AAC)
- Rate and/or Rhythm
- Intersystemic facilitation/reorganization
(Wambaugh et al., 2006c)
- Constraint-induced therapy
(Knollman-Porter, 2008)



Articulatory Kinematic

- Auditory, visual, written and tactile cues
- 3 Approaches
 - Modeling/repetition
 - Integral stimulation
 - PROMPT



AAC Device

- Low tech →→ High tech
- Client or family may resist AAC
 - “The AAC device is not just a machine...[it] becomes part of the person’s personality...The grandkids—they thought that the AAC device was Tom’s voice”
(Beukelman et al., 2007)



Rate and Rhythm

- Methods used to pace speech:
 - Metronome
 - Hand tapping
 - Computer display
 - Pacing board



Intersystemic Facilitation/Reorganization

- Uses manual limb gestures to re-access speech production
- Limb gestures:
 - Ameri-Ind (meaningful gesture)
 - Finger tapping (non-meaningful gesture)
 - Hand tapping (non-meaningful gesture)
- Theory = using intact limb system may facilitate use of the impaired speech system.

(Knollman-Porter, 2008)



Intersystemic Facilitation/Reorganization

- 3 Steps:
 - Picture naming
 - Correct → go to the next picture
 - Incorrect → go to step 2
 - Contrast error to target articulation of word
 - Correct → go to the next picture
 - Incorrect → go to step 3
 - Provide mirror for client to view his production

(Knollman-Porter, 2008)



Constraint-Induced Therapy

- Theory = if patient is forced to use the damaged modality, it will improve
- Massed practice
- Only allow verbal output from communication → no gestures!
- Research shows individuals with severe AOS will have significant improvement in speech



Research in AOS Treatment

- In 2006 AOS committee did a review of all studies related to treatment of AOS
- Issues in AOS research:
 - Lack of standardized tests
 - Lack of scientific control
 - Inability to replicate past studies
 - Limited studies for all tx approaches

(Wambaugh, 2006a)



Research (continued)

- In 2006, Academy of Neurologic Communication Disorders and Science (ANCDs) writing committee did literature review of AOS treatment
- Findings:
 - Only 59 publications from 1950 to now
 - Limitations in quality and quantity of research
 - > Half of all research focused on AKA approach



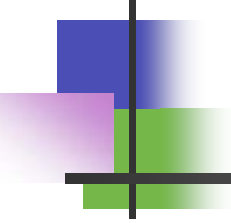
Research from 1950-present

TABLE 6. Summary of study designs* by decade.

Decade	Case Study/Series	Single Subject Design	Group (Nonexperimental)	Group (Experimental)
1950-1959	1	0	0	0
1960-1969	0	0	0	0
1970-1979	10	1	1	0
1980-1989	13	8	0	1
1990-1999	5	8	0	0
2000-present	4	5	0	0

*Only one design counted per study and repeated reports eliminated.

(Wambaugh, 2006b)



“A brain injury damages a brain, not a being, not a spirit, not a person. No, it is not easy to define these terms, but it involves reaching through the twisted limbs, the tears, the humiliation, and the anguish to find common elements of sharing, trust, respect, communication and the other common denominators of living. Thus, if you could learn to use all of the technical procedures that are available in rehabilitation and nothing else, we will have all failed. There are but templates and tools to be used in a much greater challenge.” (Knollman-Porter, p. 491, 2008)



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