Treatment of Childhood Apraxia of Speech Part 2

Julie Hoffmann, M.A., CCC-SLP
Assistant Professor
Saint Louis University
ISHA 2020 Annual Convention
Friday, February 7, 2020
DISCLOSURE STATEMENT

There is a relevant financial relationship to disclose. I am an invited speaker and will receive an honorarium, travel and hotel from ISHA.
MURRAY, MCCABE & BALLARD (2014) RESEARCH REVIEW OF TREATMENT FOR CAS

- looked for evidence of efficacy with CAS treatment
- analyzed motor approaches, linguistic approaches, AAC approaches
- 3 approaches were deemed best for clinical use:
  - Integral Stimulation/DTTC (Stand & Debertine 2000; Edeal & Gildersleeve-Neumann 2011; Maas & Farinella 2012)
  - ReST (Rapid Syllable Transition Treatment) (Ballard et al. 2010)
  - Integrated Phonological Awareness Intervention (Moriarty & Gillon 2006; McNeill et al. 2009)
DYNAMIC TEMPORAL & TACTILE CUEING-DTTC
(Strand & Skinder 1999; Strand 2008)

• uses principles of motor learning to achieve motor learning
• dynamic, cognitive approach
• uses simultaneous verbal productions
• uses visual stimuli (sound hand signals, written cues)
• uses tactile stimulation-- ‘feel’ the movement (kinesthetic cues)
DTTC CONTINUED
(Strand & Skinder 1999; Strand 2008)

• uses imitated utterances increasing in length & complexity
• encourages use of functional vocabulary
• can choose # of stimuli for each client
• recommends minor physical changes in therapy (moving hands, shifting body)
• intensive drill / eye contact important
• high level of success critical
• increases intrinsic motivation
DTTC STEPS
(Gildersleeve-Neumann 2007)

1. client watches & listens & simultaneously produces the stimulus with SLP
2. SLP models; client repeats the stimulus while SLP simultaneously mouths it
3. SLP models & provides cues; client repeats
4. SLP models; client repeats with no cues provided
5. SLP elicits stimulus w/o modeling (i.e. picture cards; ask ?’s; fill-ins)
6. client produces stimulus in less-directed situations (i.e. game; book; role-play)
BODY POSITION CHANGES IN PRACTICE

- increases practice, attention, simultaneous motor movements, challenges jaw & tongue stability, body & head stability
  - walk up & down steps
  - stand/stand with knee on chair
  - sit on therapy-ball, bean bag chair, sensory cushion
  - sit with back against chair or wall
  - feet on floor or on stool
DISTRACTIONS

• benefits of distractions (when? how much?)
• change body positioning (i.e. therapy ball, bean bag chairs, etc.)
• whispered speaking/louder speaking
• purposeful slower vs. faster speaking
• increase complexity of activity itself (i.e. more challenging game; more thinking involved)
ReST (Rapid Syllable Transition Treatment)  
(Ballard et al. 2010)

“Rapid Syllable Transition Treatment (ReST) applies principles of motor learning to maximize long-term maintenance and generalization of speech skills in children with CAS. ReST involves intensive practice in producing multisyllabic, phonotactically permissible pseudo-words to improve accuracy of speech sound production, rapid and fluent transitioning from one sound or syllable to the next, and control of syllable stress within words. *Pseudo-words* are used to allow the development and practice of new speech patterns without interference from existing error speech patterns (Murray, McCabe, & Ballard, 2012).” –ASHA 2016
Integrated Phonological Awareness Intervention (Gillon & McNeill 2007)

“This integrated phonological awareness intervention is designed for the simultaneous facilitation of speech production, phonological awareness and letter-sound knowledge in preschool and young school aged children with speech and language impairment. This intervention is based on activities implemented in the Gillon (2005), Moriarty and Gillon, (2006) and McNeill (2007) intervention studies. The findings from these research investigations indicated that the program was effective in facilitating significant improvement in speech production, early reading and spelling development in preschool children with speech impairment and in children aged 4-7 years diagnosed with childhood apraxia of speech.”
• PROMPT: Prompts for Restructuring Oral Muscular Phonetic Targets
• uses tactile-kinesthetic-proprioceptive (TKP) cues which support and shape movements of the articulators
• Study: 4 clients with CAS—8 weeks treatment
• results indicated that clients made significant gains during trmt with motor speech control and with untreated word probes when cues provided
• inclusion of TKP cues “facilitated greater effect”
Phonological Treatments to Help with CAS
Similarities of CAS and Phonological Disorder Treatment (Bowen 2009)

1. Expand consonant and vowel inventories with accuracy
2. Expand syllable shapes and words with accurate new target sounds, even in challenging contexts
3. Use of appropriate stress
Underlying Principles of Phono Tx (Fey 1992)

1. “groups of sounds with similar patterns of errors are targeted” (not individual sounds!)
2. “phonemic contrasts that were previously neutralized are established” (in hopes of generalizing phonological knowledge to other sounds!)
3. “a naturalistic communicative context is emphasized” (keep it real!)
PREDICTING PHONOLOGICAL CHANGE
(Gierut 2001, 2005)

COMPLEX TARGET----------→ PREDICTED TARGET CHANGE

consonant clusters--------------------------→ single sounds
consonants--------------------------------→ vowels
affricates--------------------------------→ fricatives
late sounds-----------------------------→ early sounds
nonstimulable sounds----------------→ stimulable sounds
voiced stops/fricative/affricates--------→ voiceless stops/fricatives/affricates
liquids----------------------------→ nasals
fricatives----------------------------→ stops
SELECTION FACTORS (WILLIAMS 2003)

TRADITIONAL CHOICES
• stim sounds
• early sounds
• inconsistent in error
• sounds with most knowledge

NON-TRADITIONAL CHOICES
• nonstim sounds
• later developing sounds
• consistent in error
• sounds with least knowledge
Minimal Pair Contrast Therapy

• using word pairs that only differ by one phoneme
• for example: sat vs. pat (fricative vs. stop)
• gives meaning to practice
• often generalization occurs to other sounds if contrasts are targets
• target error sound vs correct sound
Maximal Oppositions Approach (Elbert & Gierut 1986)

• choose two sounds that are very different from one another AND two sounds not in the child’s inventory
• uses word pairs
• want more variations in place, manner and voicing
• Examples: /l/ vs. /k/; /h/ vs. /d/
Multiple Oppositions Approach (Williams 1992)

• used when a child has a collapse of multiple phonemes to one phoneme (child substitutes one sound for several different sounds)

• faster therapy; increase child’s speech intelligibility; good use of time in therapy
Multiple Opposotions Approach (Williams 1992)

• premise is to teach a large number of contrasts which helps increase phonemic oppositions in the child’s system
• want to increase the number of phonemic contrasts
• Example: /d/ contrasted with “g, sh, J, voiced th” (doe—go—show—Joe—though)
CORE VOCABULARY APPROACH

• Core vocabulary are words that are important and used frequently in the child’s daily life. Typically the parents, teachers and SLP create the needed list of words to practice. The child works toward his best production of each word until mastered. These are sometimes considered “power words” for the child.
Cycles Training

• several sound patterns are targeted in one cycle and are often ‘recycled’-typically choose sounds that are stimulable
• move from cycle to cycle increasing complexity as necessary
• approach attempts to relate to phonological development
• emergence or mastery of sounds okay
TREATMENT FOR YOUNG CHILDREN/MINIMALLY VERBAL CHILDREN WITH sCAS OR CAS
HELPING CHILDREN BECOME VERBAL—
GENERAL THOUGHTS

• improve overall imitation
• imitate the child’s vocalizations/reinforce ANY verbalizations
• give meaning to vocalizations (Fish 2015)
• talk about speech movements a lot (i.e. what the lips & tongue are doing; breathing) (Fish 2015)
• teach early developing phonemes
  in simple syllables/words
• target accuracy of vowels
• build on sounds child already has and put into meaningful words
IMITATION HIERARCHY

- imitating movement with objects
- imitating body movements
- facial imitations
- imitation of vocalizations
- modified animal sounds
- play with vowels
IMITATING

MOVEMENTS w/ OBJECTS
• hiding an object
• dropping, throwing, rolling, pushing an object
• throwing away trash
• opening/closing a door
• turning on/off a light
• cleaning up toys
• putting something in a pocket
• washing hands

BODY MOVEMENTS
• standing up, sitting down
• clapping
• folding arms
• leaning on palm of hand
• hands behind head
• crossing leg
• stretching arms out
• folding hands
• scratching forehead
• rocking, jumping, crawling, running, walking (add vocalizations)

J. Hoffmann, ISHA 2-7-20
FACIAL IMITATIONS

• sad face with frown & lip movement
• smile face with head movement
• fish face opening & closing mouth
• yucky taste face movement
• surprised face with mouth & eyes wide open
• monster face with opening & closing teeth
• eye blinking

(SEQUENCE TO CHALLENGE)

J. Hoffmann, ISHA 2-7-20
IMITATION OF VOCALIZATIONS

- cough
- yawn
- cry
- snore
- burp
- grunt
- gag
- yell
- humming
- sneeze
- chewing noises
- happy sounds
- laugh
- raspberries
- tongue clicks
- hiccups
VERBAL PLAY

• facial expression / movements play (happy, sad, open mouth, close mouth)
• volume play (soft, whisper, louder voice)
• short & long sound play (lengthen vowels)
• intonation play (low vs. high)
• singing, humming, extending sounds
• tongue clicks / lip pops
SOUND PLAY

MODIFIED ANIMAL SOUNDS
- owl (hoo-hoo)
- dog (wooh-wooh)
- cat (me-ow)
- horse (eee; neigh-neigh)
- cow (moo-moo)
- pig (oy-oy)
- sheep (baa-baa)
- duck (waa-waa)
- chicken (baw-baw)
- monkey (oo-oo-ah-ah)
- donkey (hee-haw)
- wolf (ah—oo)

PLAY WITH VOWELS
- ee—oo (yucky)
- awww (so cute)
- ow! (that hurts!)
- uh-oh!
- oooo
- Oh! (surprise)
- ee-i-ee-i-oh
- ahhh (yawn sound)
- oo-ee-oo-ee
- eye (ah-ee)
- Ahhh! (scared)
KAZOO PLAY BEFORE VERBALS

• use of a kazoo requires voicing

• blows can be short, long, soft, loud

• humming higher or lower

• starting & stopping blows—vary

• helps with lip rounding
NEED FOR SPEECH SOUND ACQUISITION

• What can increase speech sound acquisition in children with CAS?
• Increase the number of stimulable sounds for a child
• Choosing core words, each with at least one unknown phoneme
• Look at place and manner/class as related to the sounds the child does have----how can you expand on phonological/phonetic knowledge base?
CV Syllable Work

- pay  pee/P  pie  pooh/poo  Po  pa  paw
- bay  bee  bye  boo  bow  baa  ba(ll)
- T  tie  two  toe  toy
- day  D  die  do  dough  da
- may  me  my  moo  mow  ma
- way  wee  Y  woo  whoa  wah  wow
- neigh  knee  nigh(t)  new  no  now
- hey/hay  he  hi  hoo  ho(ho)  ha

J. Hoffmann, ISHA 2-7-20
Further CV Syllable Work

• K key coo cow
• guy go goo
• yay you yeah
• see say sew
• she shy show shoe
• lay low
VC Words

- up
- app
- ape
- eight
- ate
- out
- off
- ef (F)
- In
- on

- en (N)
- ache
- uck
- ick
- egg
- arm
- I’m
- aim
- em (M)
- aytch (H)
Important Toddler Vocabulary Words

- no
- yes/yeah
- want
- go
- my/mine
- you
- what
- on/off
- in/out
- here
- that
- more
- some
- help
- all done
2 Syllable Words Ending “ee”

- baby
- mommy
- daddy
- honey
- money
- happy
- Woody
- puppy
- tummy
- sunny
- teddy
- pony
- muddy
- bunny
- yummy
- yucky
- penny
- Barney
- Ernie
- cookie
- kitty
Examples of Other Syllable Practice

• owie
• Elmo
• Nemo
• open
• purple
• horsey
• bubble
• hippo
• paper
• puppet
Carrier Phrases

• I ___
• my ___
• no ___
• bye ___
• hi ___
• go ___
• help ___

• one _____
• two _____
• more _____
• see _____
• I pick ___
• I want ___
• open ___
PIVOT EXAMPLES FOR WORD “BOX”

- my box
- open box
- move box
- want box
- no box
- bye box
OTHER PIVOTS

• blow
  • bubble---horn---harmonica---balloon---candles

• pop---blow---push---squeeze
  • ______ bubble
FUNCTIONAL WORDS

• create a photo book of important words and phrases ---label with print
• have parent/teacher help you with word/phrase choices
• think what words would help this child communicate every single day
• Example: Emma’s Words (age 6; Cerebral Palsy; uses AAC also)
  • Mommy, Daddy, help, night, open, home, no, yeah, you, me, Emma, hi, bye, potty, eat, drink, go, Elmo, Isaac, 1-10, ABC’s
Choosing Functional Vocabulary

• Look at results on the MacArthur-Bates Communicative Development Inventory: Words & Gestures
• Have parents complete a form of “favorites”
• Consider “power, core, functional” words
• Consider using the Functional Communication Parent Questionnaire (Angela Wilson & Christina Gildersleeve-Neumann, Portland State University)
  • Names, activities, places, requests/needs, emotions, toys, food, drink, home items, clothes, question words, yes/no, social language
Functional Words

- mommy
- daddy
- mine/me/my
- no/yeah/yes
- poo/pee/potty
- home
- up/down
- open
- eat/drink
- stop/go
- more
- want
- help
- done
- on/off
- hot
- stop
- play
- hi/bye
- in/out
Common Phrases

- I dunno
- My turn
- All done
- I go home
- I do it
- Help me
- I go potty
- I’m hungry/thirsty
- I love you

- Thank you
- hi ____/ bye ____
- come here
- I’m ____
- I’m mad
- Hurt
- I’m sick
- I’m scared
Build Sentences using “Backward Build-ups”

- ball
- my ball
- Throw my ball

- cheese
- eat
- I eat cheese

- mom
- my mom
- want my mom
- I want my mom
Materials to Help!

• Use of echo effect with a REMO drum

• www.cariebertseminars.com
  • Cari’s Silly Sounds: Set A, B, C

• www.bjoremspeech.com
  • Bjorem Speech Sound Cues
  • Books: Oh No! Pee Pee; Oh No! Poo-Poo
FUNCTIONAL COMMUNICATION

• sometimes the goal of treatment is for communication rather than speech
• some kids may take a long time to acquire intelligible speech
• use AAC / PECS/ SIGNS in combination with speech---immediate means to express wants & needs/ pair with verbals
• decreases frustration
LAMP—Language Acquisition Through Motor Planning (AAC)

• Want the motor movements to produce words to become automatic
• Establish certain motor patterns---not changed
• Helps kids become fluent with AAC
• Motor planning as constant as motor planning necessary for natural speech
• Core words vs fringe words
• Consider Touchchat as another AAC program
Expressive Language Delay

• Many young kids with CAS have expressive language issues.
• Pivots & carrier phrases help them practice speech in increased utterance length.
• Use print/pictures with a variety of carriers for the child to choose from.
• Use delayed imitation as needed.
• Use binary choices.
• **Give an answer and then ask the question**
  
  Clinician: “I hide a spider! What do I hide?”
  
  Child: “A spider.”
ORAL-MOTOR TASKS TO IMPROVE PRODUCTIONS

• lip rounding (use kazoo) spreading, closure
• jaw stability
  • bite blocks (coffee stirrers)
  • tongue-jaw differentiation
ORAL MOTOR IMITATIONS FOR EVERY CLIENT TO KNOW

• “OPEN MOUTH” (pull down chin; use of tongue depressor; ‘ah’)
• “CLOSE TEETH” (use of tongue depressor or coffee stirrer; visual cues; ‘ssss’)
• “ROUND LIPS” (‘oo’, ‘oh’, or ‘w’; use of round tool –kazoo, horn)
• “CLOSE LIPS” (use of tongue depressor; ‘m’)
• “BITE LIP” (use of tongue depressor; ‘f’)

J. Hoffmann, ISHA 2-7-20
ORAL HYPERSENSITIVITY ISSUES

• Need to reduce this overall sensitivity
• Often will not let you work on jaw stability with bite blocks or stimulate tongue
• Typically gag easily
• Have clients hold and use tools themselves
• Try flavor (sweet, sour) candy sprays to use on bite blocks
• Use Dum Dum suckers or popsicles for stimulation
• Use plastic spoon or toothette to hold down tongue and attempt to reduce gag reflex
Tools

- Bite blocks (TalkTools for jaw grading)
- Lip rounding tools (kazoo, toothettes, horn, dum dum sucker)
- TalkTools shapes and tubes
- Coffee stirrers
- Cake pop sticks
- Tongue depressors
VOWEL GESTURES (Turtles)  
(Strode & Chamberlain 1994)

- “ee” & “eh” – point arms straight out from sides of body
- “oh” & “ah” – join rounded arms/hands above head
- “I” & “ih” – raise right arm straight up above head with pointer finger pointing up
- “oo” & “uh” – place both arms in front of body with open hands
- “ay” & short “a” – place both arms in front of body with open hands
- no gestures for ‘ow, oy’ or “ou” (should)
CONSONANT HAND CUES
(modified Strode & Chamberlain 1994)

- **p—b** (pop hand near lips)
- **t—d** (tap above top lip)
- **k—g** (touch back of throat area)
- **m** (close thumb to fingers near mouth and slide to the right)
- **n** (touch right side of nose)
- **w** (make circle motion around your puckered lips)
- **h** (move open hand back & forth in front of lips with palm facing lips)
- **s—z** (two open hands with palms facing out up near chin moving back and forth in short motions)
- **f—v** (place four fingers on top of thumb near side of mouth)
- **sh—zh** (place pointer finger near lips like when you say “shhh”)
- **ch—j** (closed fist facing out near side of mouth with one pushing motion)
- **l** (pointer finger flipping up and out near upper lip)
- **y** (open thumb and pointer finger placed right below chin with other fingers curled under)
Names for Teaching Sounds—Lindamood-Bell
Lips Phonemic Sequencing Program

- lip poppers (p, b)
- tip tappers (t, d)
- lip coolers (f, v)
- nose sounds (m, n, ng)
- wind sounds (w, h)
- tongue scrapers (k, g)

- lifters (l-front, r-back)
- skinny air sounds (s, z)
- fat air sounds (sh, zh)
- fat pushed air sounds (ch, j)
- tongue coolers (th’s)
- teach voicing with hands over ears for vibration
FURTHER TREATMENT FOR CAS
CONSIDER WHEN CHOOSING TARGET SOUNDS/SYLLABLES

- speech development
- consistency of errors; stimulability
- number of errors needing treatment
- frequency of sounds within the English language
- sounds used in child’s daily interactions—high value sounds
- target sound impact on intelligibility
Selecting Speech Target Words

- use real words
- use power & functional words
- use nouns, verbs, descriptors
- # of words per client?
- length & phonetic context in words?
- be careful of neighboring sounds
- increase varied movement gestures
PAUSE BETWEEN SOUNDS--THEN SYNTHESIS OF SOUNDS!!

• Want **movement sequence** with apraxia so limit use of this technique if possible....try to achieve synthesis quickly!
• use to eliminate incorrect consonant
• pause between sounds—then get synthesis quickly—try to achieve in one session!
• use head and hand movements to cue
• variations with pausing for blends
• avoid use of invasive schwa
EXAMPLES

• “k---eeey” “k-eeey” “keey” “key”
• “s—poon” “s-poon” “spoon”
• “bi—ke” “bi-ke” “bike”
EFFECTIVE CUES

• backward buildups and forward chaining
• visual (your mouth; mirror; pictures; words; written, oral posturing cues without voice and with voice; holding cards up near your mouth)
• auditory (explanation; imitation; discrimination)
• tactile (stimulate for placement; manipulating lips and jaw; touch cues)
• practice words silently with motor movements only (first with speech, second without)
EFFECTIVE CUES

• teach new sounds in words in various contexts (i.e. singing, reading, phrases in games, unison talking, rote speaking, character play, etc.)
• help the client to be correct the first time (by the amount of cuing you provide)
• client sits up in chair to improve posture for speech
• teach placement for sounds/sound modifications
CUE CARD REMINDERS

• label index cards with key reminder words/pics
• lay card(s) on table in front of client
• allows for direct yet indirect reminders to the client---during practice (especially reading & conversation)---point to card or tap on card
• I use “FIX IT” often (draw a few tools—hammer, screwdriver—on the card as a reminder)
• what matters most are accurate productions rather than the number of times practiced
• move from words, phrases, sentences as each level becomes mastered—avoid spending too much time at one level
• Imitation vs. spontaneous trials matter
• shoot for 100 correct trials in 30 minutes
ORTHOGRAPHIC CUES

• use print to help client pronounce words (i.e. “EE—OO” for “you”)

• show print for backward buildups; examples: important names of family members & client’s own name

  “Etienne” -- A—D---N
  “Kenya”—“yuh”—“N-yuh”—“k” --- “k—N—yuh”
TAKING THE LISTENER INTO ACCOUNT

• have client ask, “Does the listener understand me?”
• teach client how to watch facial expressions of others when he is speaking
• teach client what to do if someone doesn’t understand what he is saying
CLIENT CAN’T ACHIEVE SOUND

• attempt to achieve the sound during every session using:
  – try same & new techniques
  – vary neighboring sounds
  – experiment with variations of jaw, tongue, lip posturing and movements
VOWELS
STRATEGIES FOR TEACHING VOWELS

--identify error patterns--tongue height, tongue advancement, lip rounding, tense/lax

--want accurate vowels--not approximations

--important to practice vowels with consonants as tongue movements vary for isolated vowels (initially this may not be possible!)

--use unison speaking!

--choose best facilitating contexts to achieve vowels (i.e. high front consonants with high front vowel)
VOWEL WORK

• audio record for immediate feedback
• use contrasts (minimal pairs) with words with target sound and substituted sound (i.e. hot vs. hat; bet vs. bit)
• use orthographic cues to help identify correct vowel productions (i.e. pine, pin)
• Extend vowels—hold to help for future sequence
VOWEL WORK—TACTILE CUES

- use tools or squeeze cheeks to help with rounded vowels
- use of bite block (coffee stirrer) when teaching to stabilize jaw
- visual cues for mouth posturing (i.e. mirror)
- tactile cues (PROMPT, Pam Marshalla, vowel turtles, etc.)
- phonetic placement with tactile/visual cues
  - slightly squeeze ends of lips to round
  - press down on chin to open jaw
  - use mirror for mouth positioning
  - provide silent posturing cues
Vowel Track Levels (Marshalla, 2017)

• First Level: ee, oo, ah, oh, uh

• Second Level: eye, ow, oy, yoo, ay

• Third Level: ih, eh, ou, aw, short a
LAX VOWELS /ʊ, ɪ, ɛ, ʌ /

• produce /ʊ, ɪ, ɛ, ʌ/ in a short manner
• compare jaw grading of /ɪ, ɛ/
LOW BACK VOWEL /ɑ/

- open mouth (wide if necessary)
- yawn loudly with “ah”-like sound
- CV or CVC: pair with a closed mouth sound, such as “m” or “p” for distinct difference in place (i.e. “mah” or “mop”)
- VC: start with “ah” and add consonant with closed mouth posture (ah-m)
- use emotion (i.e. screaming “ahhh” when scared)
- stabilize tongue & jaw by having child place tongue tip behind bottom teeth when saying “ah”
- for child with very closed mouth posture, you may need to place tongue depressor sideways to help keep mouth open (or another type of tool)
LOW FRONT VOWEL /æ/

• Almost treat as diphthong with onglide and offglide

• Open mouth with tongue down with /æ/-like sounds, then close jaw slightly with /ʌ/
ROUNDED BACK VOWELS /u, ʊ, ɔ/  

- round lips (use tools to get rounding—kazoo end, horn end, toothette, dum-dum sucker/ remove item when child begins voicing)  
- gently squeeze child’s cheeks to get lips to pucker for sound  
- try “woo” or “whoa” (rounded “w” may help)  
- for “aw”, have child slightly drop jaw with lip rounding—assist if necessary  
- try “aw” with meaning for “awww”
HIGH TENSE VOWEL /i/

• try in isolation or open syllable CV
• lengthen; use visual hand cue to encourage
• retract lips; slight smile; teeth closed
• use a coffee stirrer between molars to provide jaw stability
• pair with consonants that can have retracted lips (i.e. /zi, ri, si/)
• pair with alveolar sounds /t, d, s, z, l, n/ or ‘sh’ (front, high sounds)
• pair with velars /ki/ or /gi/ (back to front)
DIPHTHONG VOWEL /ɔɪ/

• try “aw” + “ee” OR “oh” + “ee”
• provide help with lip rounding if needed
• try with dropped rounded lips--move immediately to retracted lips
• no success if child does not have “ee”
DIPHTHONG VOWELS /ɑɪ/ & /ɑʊ/

• /ɑɪ/:  
  • Try as “ah” + /i/

• /ɑʊ/:  
  • try open mouth “ah” + rounded lips “oo” (or /w/)  
  • help with lip rounding using tool or by squeezing cheeks  
  • add meaning by pretending to get hurt with “ow!”
DIPHTHONG VOWEL /eɪ/

• try “ay--ee” extended to 2 vowel sounds (open /eɪ/---close /i/)
• make sure child follows through on entire vowel without cutting it short
• Not successful if no /i/ present
• try in open syllables CV, then in CVC (make sure child doesn’t shorten the vowel)
MULTISYLLABIC WORDS
THERAPY: MULTISYLLABIC WORDS

• practice most commonly used multisyllabic words
• materials/internet for targeting multisyllabic words
• most common multisyllabic words (Google)
• consider client interests (i.e. sports teams, cars, movie names)
• Word lists in Fish book
• pronunciation issue not reading issue
MULTISYLLABIC WORDS

• use notebook to write out word & break down word (chunk) (send home for ongoing practice)
• give loads of orthographic cues! (dry erase, boogie board)
• backward buildups (i.e. tion, cation, vacation) & forward chaining (i.e. va, vaca, vacation)
• break down words meaningfully
• slow down productions
SEGMENTING EXAMPLES

• “ELLA --- MEN --- TREE” (ELEMENTARY)
• ”FUH --- TAH --- GRUH --- FEE” (PHOTOGRAPHY)
• “JIM --- NA --- STICKS” (GYMNASTICS)
• “BASS --- KIT --- BALL” (BASKETBALL)
• “M --- T” (EMPTY)
• “HA --- SPIT --- AL” (HOSPITAL)
• “SEH --- CRUH --- TARE --- EE” (SECRETARY)
THERAPY: SUPRASEGMENTALS

- use bongo drums / clicker to identify stress
- use of stretch boards to decrease rate
- role-playing / character play to work on intonation, pausing
- unison work to match appropriate stress, intonation, loudness, tempo
- unison reading (play with volume, tempo)
- use ‘dialogue’ or ‘character’ based readings
- use short plays with small groups of kids
THERAPY: SUPRASEGMENTALS

- use print to ‘see’ the stress (i.e. CAN-dle; photOgraphy); try all syllables for fun to ‘hear’ the differences (i.e. ANTeater; antEATer; anteatER)
- use print to show phrase & sentence stress (i.e. I did it!; i DID it!; I did IT!)
  - guessing game to identify stress in words (move from more exaggerated to more natural)
  - work on rising/falling intonation in asking & answering ?’s
RESOURCES
Apps

- www.nacd.org/products/speech-therapy-for-apraxia-app/(speech therapy for apraxia for syllables, words, 2 syllable words) ($16.99 4 programs)
- Speech Tutor Pro ($39.99)
- Apraxia-ville
- Articulate it! Pro
- Articulation Station
- Lingui-System Apraxia Cards
- Bla Bla Bla
- Toca Hair Salons/Pet Doctor
- Octagon Studio with 4D flash cards/app
- Hat Monkey
MY FAVORITE CAS & SPEECH RESOURCES

• HERE’S HOW TO TREAT CAS-2nd EDITION (FISH, 2015)
• WWW.APRAXIA-KIDS.ORG
• MGMT OF MOTOR SPEECH DISORDERS IN CHILDREN & ADULTS (YORKSTON ET AL. 2010)
• EASY DOES IT FOR APRAXIA-PRESCHOOL (STRODE & CHAMBERLAIN, 1994)
• SYLLABLE FLIP BOOK (GRANGER, 2005)
• WWW.LESSON PIX.COM
• WEBBER’S JUMBO ARTICULATION DRILL BOOK (WEBBER & WEBBER)
MY FAVORITE CAS / SPEECH RESOURCES

• **ACHIEV FOR PHONOLOGY** (STRODE & CHAMBERLAIN, 1994)
• **40,000 SELECTED WORDS** (BLOCKCOLSKY ET AL. 1987)
• **BECOMING VERBAL WITH CHILDHOOD APRAXIA** (MARSHALLA, 2001)
• **CARRYOVER TECHNIQUES** (MARSHALLA, 2011)
Reading Issues & CAS

- Poor phonological memory skills
- Poor letter-sound skills
- Poor decoding skills
- Poor phonological/phonemic awareness skills

- **Orton-Gillingham Approach**—multisensory
  - Pinterest---tons of ideas (i.e. explanation of approach; CVC Blending Dot Cards; Word Family fun; etc.)
  - Teachers Pay Teachers---tons of ideas too!
Sensory Needs

• Often have parents complete The Sensory Profile to identify areas of concern

• Velleman 2019 indicated that kids with CAS score higher on “sensitivity” as they often respond to stimuli “passively”, are “picky eaters”, and avoid oral stimulation
SPEECH THERAPY ACTIVITIES & CONNECTED SPEECH TASKS
SENSORY HELP TO FOCUS

- sensory cushions
- water play
- sitting on balls
- t-stool
- trampoline
- Toobaloos
- fun sunglasses

- chewing gum before practice
- tube sock filled with rice--weighted
- indoor tent
- fidgets
- heavy work activities
- (book “The Out of Sync Child” by Carol Kranowitz 1998)
TOKEN REINFORCEMENT

- Soft shape sorter
- Blokus
- SuperDuper Animal Feeding
- Trains/cars (tape)
- wind-up toys
- Paw Patrol Bingo
- Melissa & Doug food toys
- Woodpecker Feeding Game

- drill toy
- SuperDuper Token Towers
- Pop-up Pirate
- FP Little People
- puzzles
- Penguin Chase
- Pop the Pig
- BBQ Blitz
- Brownie Match
Other Token Reinforcement Ideas

- Connect Four
- dry erase tables
- What’s Wrong cards
- “pick any card!”
- putting puff balls in egg carton
- stickers or stamps up arm
- bingo dotters
- jumping on mini trampoline
- looking in “treasure box”
- throwing Gertie ball
CONNECTED SPEECH TASKS

- What’s Funny Cards
- Family photos
- Walkie talkies
- Sequencing cards
- Wordless picture books
- Describing tasks
- Story retell
- Tell me how to.....
- Counting
- Reading materials

- Role play
- Photo cards
- Mad Libs
- Fun questions
- barrier games
- Games: Hedbanz; Password; Guess Who
- topics of interest on the internet
- explaining recipe, routine, movie
- reading tongue twisters
- reading sound-loaded paragraphs
• Madlibs
• News For You (internet)
• reading a children’s book to a younger group of kids
• Grossology; World Record Books
• Very short mysteries (internet)
Books to Use in Therapy (Young Kids)

• Use more fill-in and repetitive books in therapy
• All Better!/Little Bear Needs Glasses/Kisses, Cuddles, and Goodnight! (Usborne with reusable stickers)
• Yucky! Leslie Patricelli books
• Goodnight Gorilla
• Pete the Cat books
• No David Diaper books
Wordless Picture Books

• Goodnight Gorilla (Rathman)
• Chalk (Thomson)
• Frog, Where Are You? / One Frog Too Many (Mayer)
• Rainstorm/ Red Book / The Museum (Lehman)
• Usborne First 100 Words
THANK YOU!

julia.hoffmann@health.slu.edu
hoffmannjjj@yahoo.com
References


• www.apraxia-kids.org