- If you are viewing this course as a recorded course after the live webinar, you can use the scroll bar at the bottom of the player window to pause and navigate the course.
- This handout is for reference only. It may not include content identical to the PowerPoint. Any links included in the handout are current at the time of the live webinar, but are subject to change and may not be current at a later date.

ONLINE CONTINUING EDUCATION FOR THE LIFE OF YOUR CAREER

Dysarthria - Back to the Basics: Treatment

Jessica Huber, PhD, CCC-SLP

Moderated by:
Amy Natho, MS, CCC-SLP, CEU Administrator, SpeechPathology.com

Need assistance or technical support?

- Call 800-242-5183
- Email customerservice@SpeechPathology.com
- Use the Q&A pod

CONTINUED

How to earn CEUs

- Must be logged in for full time requirement
- Log in to your account and go to Pending Courses
- Must pass 10-question multiple-choice exam with a score of **80%** or higher
  - Within **7 days** for live webinar; within **30 days** of registration for recorded/text/podcast formats
- Two opportunities to pass the exam

CONTINUED

Dysarthria – Back to Basics: Treatment

Jessica E. Huber, Ph.D., CCC-SLP
Purdue University
jhuber@purdue.edu

6

CONTINUED

CONTINUED

Learning Objectives

After this course, participants will be able to:

- Describe how to employ patient characteristics in treatment planning.
- Describe how to apply principles of motor learning to treatment.
- Identify appropriate therapy techniques to use when patients present with given characteristics.

7

CONTINUED

Activity Limitation and Participation Restriction

- Presence of an impairment does not mean you should do therapy
- Base therapy decisions on the amount of activity and participation restrictions caused by the impairment
- Remember that estimates of the effects of the impairment may differ between the client, the family, and the clinician

8

Environment and Communication Partners

- Traits of the environment and communication partners impact whether to treat, the prognosis of therapy, and the plan for therapy
- These traits are also targets for therapy

9

What is your Goal?

- Reduce impairment
  - Goal may not be normal speech production
- Compensate
  - Modify speech production to maximize use of remaining skills
  - Can be behavioral or prosthetic

10

What is your Goal?

- Adjust
  - Reorganization of environment so that functions which were lost are not required to interact
  - Plan for the progressive loss of speech in degenerative disorders
  - Maximize communication so less adjustment is required

11

Basic Management Approaches

12

Prosthetic Management

- Includes the use of any device (high- or low-tech) to improve function
- Some examples include:
  - Palatal lift prosthesis
  - AAC (device, alphabet board)
    - AAC can be used to replace or supplement speech
  - Pacing board
  - Wearable devices: voice amplifier, delayed auditory feedback devices (Speech Easy), SpeechVive

13

Behavioral Management

- Can be speaker-oriented: focus on changing the speaker behavior (improve function or compensations)
- Can be communication-oriented: focus on changing the behavior of listeners or the environment

14

Counseling and Support

- Part of behavioral management
- Provide information about the dysarthria, the disease, prognosis, likely course of the disease, and what the patient and family can do to maintain communication

15

Severe Patients

- Unable to communicate verbally
- Establish a means of communication
  - AAC
    - Plan for future degeneration or improvement of function
- Patient and family education
- Environmental changes

16

Moderate Patients

- Can use speech for communication, but have intelligibility problems
- Maximize intelligibility
  - Teach compensations
    - Speaking rate
  - Use prosthetic devices

17

Mild Patients

- Intelligible but reduced efficiency and/or naturalness
- Maximize efficiency and naturalness
- Base goals on the participation restriction caused by the disorder

18

Guidelines for management

19

When to Start?

- Start early:
  - Begin once the patient is medically stable and has the attention, motivation, and cognition to participate
  - Early treatment may slow the degeneration of speech and prevent the development of maladaptive speaking strategies

20

Baseline Data

- Collect baseline data
  - Can use data from the initial evaluation for some of the baseline data
  - Get information about the impact of the disorder on communication
  - Inventory the patient's needs and goals, motivation, daily speaking environment, listeners, etc
  - Get baseline on specific treatment tasks

21

Compensation

- Identify compensatory strategies the client is using successfully
- Make the client conscious of speaking and compensatory activity which s/he is using
- Encourage the use of compensatory strategies

22

Maladaptive Behaviors

- Reduce the use of behaviors which are not improving communication
  - May be strategies which the individual is using to try to compensate for current difficulties speaking
  - May be strategies that worked at an earlier stage of the disorder, but now impede communication

23

Specificity of Training

- "specificity of training:"
  - Train specific to the ultimate task
  - This is true when using non-speech tasks
- Practice speech to improve speech
  - Use speech tasks once it is possible
  - Mental practice is better than not practicing, but not as good as real practice

24

CONTINUED

Instruction

- Instruct the client as to what to do
  - Use multiple modes of instruction (auditory, visual, tactile)
- Self-learning is important
  - Let the client figure out how best to achieve some of the goals
  - Self-learning assists with retention

25

CONTINUED

Feedback

- Feedback is essential
  - Learn more quickly with regular, immediate feedback
  - Retain better with less regular feedback, with longer intervals between feedback
  - May want to alter feedback schedules as you move from learning to maintenance
- Use clinician-provided feedback, client-provided feedback, and other-provided feedback (group therapy)
- Can also use biofeedback (instrumental feedback) to help a person achieve the goal and feel what the goal feels like. Then remove the biofeedback
  - Use of biofeedback for too long causes a reliance on it and does not allow the behavior to be internalized

26

Practice

- Use drill
  - Brief periods (10 minutes at a time) of drill interspersed within the session will help solidify skills
- Use consistent and variable practice:
  - Consistent: repetition of the same task, better for skill acquisition
  - Variable: use of a range of tasks, better for skill generalization

27

Strength Training

- Remember that speech should not require the system to produce maximal force
- Should not be excessively emphasized in speech therapy
  - Use in severely impaired patients whose require improvement in physiologic support for speech

28

When To Use Strength Training?

- Is weakness present?
- Does the weakness interfere with speech functioning?
  - Speech only requires 10-20% of the max force of the lips
- Are there contraindications for strengthening exercises?
  - Will the course of the disease make strengthening exercises futile?
  - Will the person fatigue to the point of not being able to complete everyday activities (communication, swallowing)?
- **Cautions about Strength Training**
  - There is no evidence to suggest that strength training helps in patients with neurodegenerative diseases
  - Do not delay other interventions until you are done strengthening the muscles
  - Only use with individuals who will do drills at home daily
  - Use speech or speech-like tasks asap

29

Sessions – Task Ordering

- Begin with an easy task
- Proceed to harder ones
- End with success
- Spend some time working to improve communication each session

30

CONTINUED

Adaptability

- Make sure to work on how speaker adapts to different speech tasks:
  - Short vs. long utterances
  - Stressed vs. unstressed words
  - Conversational speech vs. reading
  - Speaking to one listener vs. a group
  - Speaking in quiet vs. in noise

31

CONTINUED

Individual vs. Group Therapy

- Individual therapy: allows for more individualized management, can complete more practice trials, can alter activity based on response more quickly
- Group therapy: allows for carry-over and natural practice, give an opportunity for the client to see techniques being employed, lets the client see s/he is not alone, allows for peer feedback

32

Generalization

- Make sure the client practices production outside of the clinic room
  - This may require the assistance of caregivers, aides, and family members
  - You may need to train them to work with the client on the practice exercises
- Use a series of steps
  - Fade feedback
  - Increase complexity of tasks
    - Can use scripted and partially-scripted conversations as a step between reading and spontaneous speech
  - Teach speaker to critique own productions

33

Some Specific Treatment Approaches to Consider

34

Inspiratory and Expiratory Muscle Trainers

- Individual breathes into a tube with nose clips on or into a mask
- On the end of the tube or mask is a resistance
- Resistance makes it difficult to breathe in or out
- Expiratory: EMST 150 from Aspire Products
- Inspiratory: PowerBreathe (can buy on Amazon)

www.aspireproducts.org

35

Inspiratory and Expiratory Muscle Trainers

- Can increase the amount of resistance as the individual becomes stronger
- Can help with breath support for anyone with weak respiratory muscles
  - Also may help for professional voice users who need additional respiratory support
  - Do not use with patients who get fatigued easily (ALS, Myasthenia Gravis) or with those who problems do not involve muscle weakness
- Generally need an MD script for use
- Must follow basic muscle training guidelines

36

CONTINUED

EMST Program (Sapienza and colleagues)

- 5 sets of 5 breaths completed 5 days per week
- Do the training in the seated position at the same time of day
- Set muscle trainer to 75% of the patients maximum expiratory pressure (MEP)
  - Obtain by asking patient to breathe to top of VC and then blow hard and fast into pressure meter
- Wear nose clips with trainer
- Can follow a similar protocol with inspiratory training
- Sapienza recommends training for 4 weeks, but that is likely not long enough for people with motor disorders

37

CONTINUED

LSVT® LOUD

- Premise: ability to control SPL is an important component of speech production
  - Appropriate SPL is crucial to the perception of loudness, intonation, and emotional content, and for overall intelligibility
- Most data available on the use of this program are from individuals with PD
- Intensive – 4 times per week for 4 weeks
  - Work to increase vocal effort across a range of tasks leading to carry-over in everyday life
- Requires clinician to be certified to provide the therapy

38

CONTINUED

SpeechVive

- Worn by the individual with Parkinson's disease in one ear
- Plays multi-talker babble in one ear when the person talks, eliciting the Lombard effect
- Patients and caregivers reported improvements in communicative competence
- 75% patients improved SPL by the end of treatment
- 85-90% of patients improved in some way (vocal intensity, rate, and speech clarity) after wearing device for 8 weeks
- Acts as a prosthetic as about half of participants didn't carry-over changes to speech when not wearing the device

39

CONTINUED

Voice Amplification

- Portable microphone and speaker system which is used to amplify the speakers voice
- Example: Chattervox

http://www.chattervox.com/

40

Reducing Hyperadduction

- Can use behavioral therapy techniques aimed at reducing vocal fold tension
  - i.e., confidential voice, easy voice onset
- Can use relaxation techniques
- May need to use biofeedback for the individual to get the feel for what you want them to do
- Do not use techniques that increase vocal effort as these will worsen hyperadduction

41

Palatal Lifts: Candidacy

- Use with individuals who have consistent VP inadequacy
- Patient must be cooperative and motivated to use the prosthesis
- May be difficult to fit lift in individuals with spastic velums
- If condition is deteriorating rapidly, may not want to fit prosthesis
  - It may not have an effect for long enough

42

Palatal Lifts: Candidacy

- May increase difficulty swallowing secretions if that is a problem
- Difficult to fit if edentulous or dentures are ill-fitting
  - There is nothing to attach the prosthesis to
- May need to make adjustments to the prosthesis as neurologic status and skills change

43

Palatal Lifts: Follow-up

- Check the fit of the prosthesis, especially for the few months
  - Fit may change later due to changes in muscle tone or weight loss
- Make sure there is no pain once the client has adjusted to the lift
- Make sure there is no trauma to the soft palate or pharyngeal tissues
- May be only needed temporarily, so monitor for need

44

CONTINUED

Intelligibility Drills

- Words (two or more), which differ only by one phoneme, are produced
- Words are printed on 3X5 cards
- The cards are shuffled
- Clinician determines "correctness" by identifying the words
- Do not give specific instructions as to how to produce the sound
- Allow for compensation based on feedback about intelligibility
- Can adjust the difficulty of the task easily
- Can be used even with severe patients

45

CONTINUED

Intelligibility Drills Can Be Functional Practice

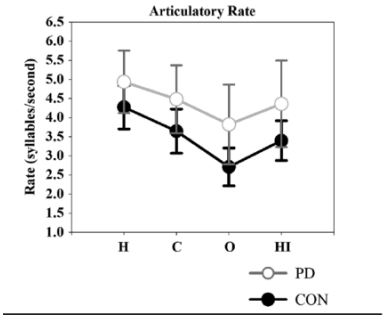
- Allow for early training in resolution of communication breakdowns
  - Speaker must provide feedback as to whether the listener is correct in ID
    - So speaker is active in feedback process
  - If ID is wrong, speaker repeats word once
  - If still wrong, speaker must resolve the breakdown in another way

46

CONTINUED

Clear Speech

- Studies have used a variety cues:
  - Overenunciate
  - Speak as if you are talking to someone with a hearing impairment
  - Speak clearly
- Has been shown to improve speech intelligibility



Lam and Tjaden (2016). Clear speech variants: An acoustic study in Parkinson's disease. JSLHR, 59, 631-646.

47

CONTINUED

Modification of Stress Patterns

- Modifying targeted stress
  - Do not give specific info as to how to do this. Specific instructions can lead to unnatural productions
  - Tell them to "make the target word stronger," "emphasize the target word," or "use extra force on the target word"
- May need to instruct the speaker to reduce stress
- Identify the features (F0 or duration) used by the speaker in the most natural productions
  - Train the speaker to consistently use the identified features
  - Once they are better able to use one cue, they may become able to use other cues more easily

48

Modification of Intonation Patterns

- May choose to use duration as primary cue to stress
  - Can not control all three cues simultaneously
  - Exaggerated durations are perceived as less abnormally than exaggerated SPL and F0
  - May be able to teach them to use pauses more appropriately and then they can learn other cues
  - Example: ataxic dysarthria
- Do not use a "normal" model for the speaker with dysarthria since they are not likely to be able to achieve that

49

Breath Group Length

- Can also use respiration and breath groups to improve prosody and naturalness
- If client cannot produce adequately long breath groups, teach them to shorten utterances so prosody fits syntax
- If client can produce adequately long breath groups but does not, teach to lengthen breath groups
- As a final step, assess prosodic patterns across breath groups
  - Assess for monotony
    - Monopitch and monoloudness within breath group, monopatterning across breath groups, breath groups of equal length

50

Speaking Rate

- Goal is to optimize speaking rate
- Can use:
  - Delayed auditory feedback
  - Behavioral instruction
  - Pacing techniques
- Consider:
  - Effectiveness for reducing rate
  - Training requirements
  - Consequences of the slow rate (and patient's preferences relative to these consequences)

51

Alphabet Supplementation

- Speaker points to the first letter of each word as they say it
  - Provides grapheme cues
  - Also slows rate of speech
  - Listener often shadows the speakers productions
- Speaker must be able to speak minimally, identify the correct first letter, and select the letter from the board (point, light, eye-gaze), and be adept at repairing communication breakdowns

52

Speaker-Managed Strategies

- Prepare your partner: let the listener know you are about to speak
- Set the topic: identify the topic prior to speaking
  - Verbally, with gestures, using an AAC board (choosing a pre-printed category, spelling out the topic)
  - Be sure also to indicate any topic changes

53

Speaker-Managed Strategies

- Use gestures: encourage speakers to use natural gestures
  - Movements which demonstrate the action of the sentence visually, pointing to the object of a sentence, etc.
- Use turn maintenance signals: indicate that they want to begin a turn and maintain a turn
  - Instruct listeners on what the signals mean

54

Speaker-Managed Strategies

- Plan the timing of communication: plan important communication for when they are least tired and the listener is least distracted
- Select a conducive environment: choose quiet places to converse, choose places where speaker and listener can see each other

55

Listener-Managed Strategies

- Maintain topic identity: periodically check that the speaker and listener are still on the same topic
  - Can also help with repair communication breakdowns
- Pay attention to the speaker: concentrate on listening to and looking at the speaker
- Piece together clues: take the pieces you understand and try to put them together to understand the entire message

56

Note on Facilitators

- If facilitators (familiar listeners) are used to help others understand the person with dysarthria:
  - Encourage the pair to set boundaries for when the facilitator will help
  - Encourage facilitator to report the message as produced by the speaker (not to edit the message)

57

Strategies to Augment Residual Speech

- Shifting communication modes: using something other than speech as primary mode of communication
  - Use all modes as needed (writing, gesture, alphabet supplementation, spelling)
    - May want to train the individual to consider this with environmental effects (noise) and when there is reduced linguistic predictability (past events, abstract topics)

58

Strategies to Augment Residual Speech

- Providing context for communication:
  - Can supplement speech with "remnant books" and photo albums
    - Remnants are things like ticket stubs, programs, menus, etc.
    - Person uses them as a list of topics
    - Photographs can be sequenced to assist with telling about an event or to explain how to do something

59

Reducing Societal Limitations

- Policy barriers: legislative/regulatory decisions
- Practice barriers: procedures/conventions of the environment
- Attitude barriers: individuals who are barriers
- Knowledge barriers
- It is our job to work to reduce barriers to communication broadly

60

CONTINUED

Reducing Societal Limitations

- Perceived reactions of others:
  - Listeners may be apprehensive about communicating with someone with a disability
  - Speakers may feel that listeners are not treating them as they wish to be treated (overly solicitous or negative)
- Environment:
  - Lubinski: nursing homes/LTC facilities are "communication-impaired or –deprived environments"
    - No one to talk to, few things to talk about, few quiet, private places to talk, and many policies and practices which reduce communication opportunities

61

CONTINUED

Questions?

62