Speech and Communication Strategies for Multiple System Atrophy (MSA):

A guide to Augmentative and Alternative Communication (AAC) and Assistive Technology

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October 13, 2017
Learning Objectives

• Describe strategies and techniques to help with speech production
• Describe AAC and AT strategies and techniques to help augment natural speech production
• Describe both low tech and high tech AAC and AT systems for supplementing communication
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• Describe AAC and AT strategies and techniques to help augment natural speech production

• Describe both low tech and high tech AAC and AT systems for supplementing communication and support cognition
Dysarthria is a motor speech disorder. It results from impaired movement of the muscles used for speech production, including the lips, tongue, vocal folds, and/or diaphragm.

American Speech-Language-Hearing Association (ASHA)
MSA and dysarthria types

**MSA-Parkinson type**
- Reduced loudness
- Harsh vocal quality
- Breathy voice
- Repeated sounds
- Imprecise articulation
- Varying rate
- Monopitch
- Monoloudness
- Short rushes of speech

**MSA- Cerebellar type**
- Monopitch
- Harsh vocal quality
- Excess loudness variation
- Vowel distortion
- Imprecise articulation
- Equal and excess stress
- Prolonged sounds
- Slow rate
MSA and Dysarthria

- Speech Pathologist can assess motor speech
  - Determine strategies and techniques to assist with improving speech production
Dysarthria speech production strategies

• OPEN MOUTH MORE
  – Helps increase loudness, slow rate, over-articulate sounds

• SLOW DOWN
  – Use Pacing Board
  – Tap on leg or table

• DEEP BREATH
  – Use of diaphragmatic breathing
    • Helps increase volume and create pressure for sounds

• MODIFY MESSAGE
  – Use KEY words only
  – Shorter phrases and sentences
  – Establish a YES/NO system (head nod, thumbs up/down)
Dysarthria speech production strategies

• ORAL MOTOR EXERCISES
  – Can be contraindicated
  – Best exercises is continuing to use speech production for functional communication

• MOTOR SPEECH “DRILLS” → Traditional Approach
  – Can be contraindicated
  – Best exercises for speech is using for functional communication
Dysarthria speech production strategies


- Improves vocal loudness by stimulating the muscles of the voice box (larynx)
- Focused on a single goal “speak LOUD!”
- Treatment is administered in 16 sessions over a single month (four 60min sessions/per wk)
Voice and Message Banking

Message Banking
• Saving messages on a digital recorder
• Can be transferred into a communication device

Voice Banking
• Programs to record a large sample of your voice which is then compiled into a digital voice; can be used on communication device
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What is Augmentative and Alternative Communication (AAC)?

Augmentative and alternative communication (AAC) includes all forms of communication other than oral speech, used to express thoughts, needs, wants, and ideas. We all use AAC when we make facial expressions, gestures, pictures, or write.

American Speech-Language-Hearing Association (ASHA)
What is Assistive Technology (AT)

Any product, device, or equipment, whether acquired commercially, modified or customized, that is used to maintain, increase, or improve the functional capabilities of individuals

United States Assistive Technology Act of 1998
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Speech Production Supports

Apply environmental controls
- Minimize outside noise
- Face-to-face conversation
  - Video Calls (FaceTime or Skype)

Apply partner-assisted communication
- Establish topic FIRST
- Establish YES/NO system (head nod, thumbs up/down, eye blinks etc.)
- Use Communication Hierarchy
Communication Hierarchy

• Broad Subject or Topic
  – Sub-topic or category
  – Detail
  ‣ In natural conversation, we have context that often dictates the broad subject or topic
  ‣ In more unnatural circumstances, we need to follow a communication hierarchy to identify needs
  ‣ Use of a systematical approach for communication

Examples:  TOPIC ➔ SUBTOPIC ➔ DETAIL
FOOD ➔ BREAKFAST ➔ SCRAMBLED EGGS
BODY ➔ PAIN ➔ RIGHT ARM ➔ MOVE UP
Speech Production Supports

• Alphabet Board: Point to the first letter of each word as you’re saying it
  – Slows down speech
  – Gives listener cues
  – Can spell out word
  – Cognitive component
Speech Production Supports

• Amplifier
  – Increases loudness of natural speech
  – Can use in larger group settings
  – Use for communication across distances or noisier situations (driving in car etc.)

Wireless Voice Amplifier Portable, Julyfox Bluetooth Speaker Amplifier
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MSA and cognition/language skills

Cognitive/Language difficulties

- Trouble with finding words
- Trouble understanding information
- Trouble remembering information
- Trouble with decision making
- Cognitive Fatigue
  - Difficulty over time with increased thinking demand
  - May fatigue when paired with motor tasks
MSA and cognition/language skills

• Speech Pathologist can assess cognitive/linguistic skills
  – Determine supports and strategies to assist with any difficulties
MSA and motor skills

• Cause the progressive loss of motor skills
• Muscle Rigidity
• Problems with eye movement

Communication device/support implications
• Trouble physically access device/product
• Trouble using alternative access methods
SLP/AAC Evaluation

• Speech Pathologist will assess all areas
  – Speech Production
  – Cognitive Skills
  – Language Skills
  – Motor skills as they relate to use of cognitive and communication supports and systems
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Types of AAC systems

- **No tech**: non-digitized or computerized output
  - Static/unchanging

- **Low Tech**: Limited number of digital output
  - Static/unchanging

- **High Tech**: Digitized or computerized output
  - Dynamic/changing
  - Alternative Access
No tech or low tech AAC

• No Tech/Low Tech Communication Aides
  – Alphabet Boards
  – Communication books or boards
  – Picture Dictionary books
  – Eye gaze boards
  – Writing
  – Drawing
  – Use of pictures
Low Tech Communication Systems

- Writing/Drawing
  - Dry erase board or Boogie board
    - Write and erase
    - Portable; hand-held
    - Communication partner can give written choices
No/Low Tech Communication Systems

- Static Boardmaker Communication Board/Book
  - Create static picture boards for individual to point to topic or specific information or need
  - Ability to change field of choices and size of picture and text
No/Low Tech Communication Systems: Boardmaker Board

- Boardmaker Online
  - https://www.boardmakeronline.com/
  - Gives opportunity to make custom boards and/or access to shared to locate pre-made boards
  - Get a free 30 day trial with an account
No/Low Tech Communication Systems:

- Oxford Picture Dictionary
  - Book of vocabulary arranged by categories
  - Gives pictures and text
  - Arranged in functional contextual picture scenes
  - Comes in multiple languages
  - $20 purchase off Amazon
  - Can be complex but can help support cognition and language
No/Low Tech Communication Systems:

• Visual Supports
  – Create a visual schedule of daily tasks
    • Help with orientation to date and activities of day
    • Check off completed activities for day
  – Create instructions for procedures to follow
    • Making coffee; using remote etc.
  – Access FREE pre-made supports on shared Boardmaker site
Visual Supports

**My Bedtime Schedule**

1. Go to the bathroom.
2. Wash hands.
4. Turn off light.
5. Put on pajamas.
6. Get into bed.
7. Read a story.
8. Good night hug and kiss.
9. Wash face.
10. Go to sleep.

**I BRUSH MY TEETH**

1. Squeeze toothpaste onto your toothbrush.
2. Hold toothbrush under the tap.
3. Brush your teeth.
4. Spit the toothpaste into the sink.
5. Rinse your mouth and smile.

**Instructions**

- Turn on light
- Shut door
- Sit on toilet
- Wipe with toilet paper
- Flush toilet
- Wash hands
Visual Schedule Board

- Eat breakfast.
- Eat a snack.
- Take morning meds.
- Watch the news.
- Re-tell the same article from earlier.
- Take a break.
- Sort and organize mail.
- Workout.
- Read an article.
- Use memory strategies.
- Re-tell an article.
- Put appointments in phone calendar.
- Take mid-day meds.
- Eat dinner.
- Take evening meds.
- Check Vanderbilt Portal.
- Speech Therapy.
- Get on work.
- Check folder for speech homework.
- Read an article.
- Re-tell news story.
- Research topic on internet.
- Take notes in phone on topic.
- Set schedule for tomorrow.
- Complete the task.

DONE

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No/Low Tech Communication Systems

- Eye Gaze Boards: ETRAN Board
  - [http://lowtechsolutions.org/index.html](http://lowtechsolutions.org/index.html)
DIY Eye Gaze Alphabet Man
No/Low Tech Communication Systems

• Speak Book Eye Gaze Board
  – Write phrases on colored strips
  – Individual looks at desired quadrant and color to indicate choice
  – Can print out FREE Speak Book
    • Can use with colors or shapes

Video:
  – https://vimeo.com/25812980
No/Low Tech Communication Systems

- SENteacher Eye Gaze Board
  - Can customize and create own eye gaze boards using symbols or text based
  - Has multiple free eye gaze board printables
  - [http://www.senteacher.org/print/aac/]
No/Low Tech Communication Systems

• DIY eye gaze boards with plexiglass
  – Purchase plexiglass, use velcro to attach text or pictures
No/Low Tech Communication Systems

YES/NO Eye Gaze Boards
High Tech Communication Systems

Non-dedicated AAC devices (no insurance coverage): Ipad and Android apps

Dedicated AAC devices (insurance coverage)
Important apps that support communication

- Yes/No choice board apps
- WhiteBoard apps
- Pain Scale apps

*Multiple Free available on devices*
Text Communication Apps

Text-Based Communication Apps

• Text-to-Speech
  – Type out a phrase or sentence, speaks for you

• Organized in categories and phrases
  – List and grid formats

• Multiple different features of apps
  – Texting/Emailing capabilities
  – FlipWriting
See an AAC specialist for recommendation of specific app to meet needs
Symbol Communication Apps

• Use pictures to give extra cognitive or language support if needed
• Hit button/picture and speaks out for you
• Organized in categories and phrases
  – List and grid formats
• Multiple different features of apps
  – Texting/Emailing capabilities
Symbol Communication Apps

See an AAC specialist for recommendation of specific app to meet needs
High Tech Dedicated Devices

Speech Generating Devices (SGD)
  - “Dedicated” to communication vs. “app”

• Made by company/vendor
• Insurance may cover this device
• Offers additional features
High Tech Dedicated Devices

What are the differences/extra features

- Alternative Access
  - Head pointing
  - Switch Access
  - Eye gaze
High Tech Dedicated Devices

What are the differences/extra features

• Environmental Controls
  – Control lights/fans/remotes etc.
  – Phone calls directly from device
  – Easier access to Windows programs
    • Email, web control, other windows programs
High Tech Dedicated Devices

An SLP is required to write an evaluation in order to purchase a Speech Generating Device (SGD) through insurance.
Other AT for access

Alternative methods for computer access

• Speech recognition
  – Built in features in both Windows and Mac computers

• Mouse and Keyboard adaptations
  – Trackball mouse

• Head mouse
  – HeadMouse Extreme, CameraMouse program

Technology Access Center (Nashville, TN)

• Provide loaners and additional information
What’s Next: So many resources

When to start looking at communication supports and options or get referral

• Noted changes in speech production or changes in cognition/language skills
What’s Next: So many resources

Early Intervention

• Give more control and independence
• Have system in place to use as backup
• Prepared as additional changes occur
• Many people wait until they cannot communicate
  • Want to prevent “communication crisis”
What’s Next: So many resources

- Use resources out there to make DIY free communication supports
- Get referral to see an AAC specialist or SLP
  - Target speech production maintenance
  - Support cognitive or language changes
  - Provide AAC systems and supports
Questions??


https://www.psp.org/iwanttolearn/


https://www.multiplesystematrophy.org/