

Alternative Access

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About Me:

- In the beginning...Interpreter for the Deaf
- Andrew Early Intervention
- St. Joseph's College, Adelphi University
- Agency work
- CP Nassau
- Molloy College
- Now for today's topic...

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First...What is AAC?



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Second...What is Alternative Access?

- Many individuals with Complex Communication Needs (CCN) also present with physical impairments
- Movement challenges can make direct selection extremely difficult or impossible
- **Devices and technologies used to support access needs of individuals with severe physical impairments**

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4 Areas of Learning in AAC

Operational	Linguistic
Social	Strategic

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Why is access so important?

There are many barriers that our AAC users must overcome to be competent communicators...an inappropriate access recommendation should not be one of them...

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Selection Set

- Selection set of an AAC system includes the visual, auditory, or tactile presentation of all messages, symbols, and codes that are available at one time to a person who uses AAC.
- Computer displays
- Visual displays
- Auditory/Tactile displays

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Types of Selection Set Displays

- Fixed
- Dynamic
- Hybrid
- Visual Scene

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Physical Consideration of Displays

- Number of items
- Size of items
- Spacing of items
- Orientation of Display

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For Example:

- Direct selection is possible with 8 symbols per page, no smaller than 2" in size
- 24 months vocabulary can be ~300 words
- Weigh the complexity of navigation
- Think about as language develops

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Selection Techniques

Direct Selection

- Physical contact
- Physical Pressure
- No contact pointing

Scanning

- Circular
- Linear
- Group-item

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Physical Considerations of individuals with CCN: Positioning/Seating

- Individuals who have increased/decreased muscle tone
- Efficient use of AAC will require external support or environmental adaptations to compensate
- Consider reflexes
- Scoliosis – motor experts on the AAC team will need to compensate
- Athetosis – uncontrolled movements

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Principles and Techniques

- It is easy to underestimate an individuals capabilities if he/she is not properly seated and supported.
- Improper seating and inadequate support can result in fatigue and discomfort. Emotional state, attention as well as ability to move may be compromised.

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Principles and Techniques

- FIRST STEP IN ASSESSMENT IS OPTIMIZING POSITIONING
 - Use yourself as a reference
 - Ensure stable base of support
 - Decrease the influence of atypical muscle tone
 - Accommodate deformities
 - Provide least amount of intervention to achieve greatest level of function
 - Provide support for resting

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Assess Motor Capabilities

- Identify a gestural y/n response for assessment/back-up and identify alternative access for long term
- **Discover motor capabilities, do not describe motor problems**
 - Short Term techniques
 - Can the individual answer y/n questions accurately? If reliably "yes" there is your short term direct selection technique...
 - If not highly accurate and unambiguous then assess hand
 - If not then assess eye gaze
 - ALLOW ADEQUATE TIME – IT FEELS TO LONG TO US – WAIT!!!

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Long Term Motor Skills

- Minimize cognitive, linguistic and technical demands so that motor control can be assessed in isolation
- Direct selection
 - Hand/arm
 - Head/orofacial control
 - Foot/leg
- Provided temporary manual supports
- Optimize control
 - Accuracy
 - Maximum range and number of targets
 - Adaptations
- Assess negative impact

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Switch Assessment for Scanning

- Again minimize the cognitive, visual and communication demands consider using a switch activated toy, or a simple computer game.
- Hands, head, feet, legs and knees

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Switch Assessment for Scanning

- 6 components
 - Wait
 - Activation
 - Hold
 - Release
 - Waiting
 - Reactivating

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Scanning

- Directed Scanning – cursor moves as long as switch is activated
- Automatic Scanning – activate switch to start scan pattern, hit switch again to select
- Step Scanning – one to one correspondence

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Types of Switches

- Buttons
- Wobble
- Wireless Bluetooth/Radio Frequency
- Sip/Puff
- Proximity
- String
- Grasp
- Twitch

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Feedback

- Activation - Let's the individual know an item has been selected
- Message – Provides the individual with information about the message that has been formulated

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Any questions??

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Eye Gaze

- No contact direct selection method
- Technology that uses a camera and an IR light source to illuminate the eyes and then the reflections on the cornea are used as a reference for eye gaze and eye movements

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Consider: Eye Disorders

- Cataracts
- Ptosis
- Nystagmus
- Strabismus
- CVI
- Mydriasis

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Story to Share...

- It all started with the question:
- Do you know how to calibrate an eye gaze?



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Head-Tracking

- No contact direct selection method
- Camera mounted on device which also uses IR technology to detect a reflective dot worn by the user
- Translates the users movements into cursor movements

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Any questions??

Thank you for your time and attention!!

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References

Beukelman, D.R., & Mirenda, P. (2013). *Augmentative and alternative communication: Supporting Children & adults with complex communication needs*. Baltimore, MD: Brooks.

Kay, D. (2014). Holistic Approach to Physical Motor Access Assessment in Pediatric AAC. *Perspectives on Augmentative and Alternative Communication*, Vol 23 pages 84-90.

Kay Chen, S., O'Leary, M. (2018). Eye Gaze 101: What Speech Language Pathologists Should Know About Selecting Eye Gaze Augmentative and Alternative Communication Systems. *Perspectives of the ASHA Special Interest Groups SIG 12*, Vol 3 (Part 1) pages 24-32.

Koch Fager, S. (2018). Alternative Access for Adults that Rely on Augmentative and Alternative Communication. *Perspectives of the ASHA Special Interest Groups SIG 12*, Vol 3 (Part 1) pages 6-12.
<https://pubs.asha.org>
