HOW DO I DETERMINE HOW THE STUDENT CAN ACCESS AAC?

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What we will be covering:

- Access Methods for Speech Generating Devices
  - Direct
  - Mouse
  - Eye Gaze
  - Switch

Access Methods

- The following varies by SGD brand and model:
  - Access methods supported
  - How access method controls SGD
  - Programming options

Direct Access

Definition

- Direct access by finger or pointer to location on SGD display

Clinical Indicators

- Requires accuracy, finger isolation
  - For the required amount of vocabulary
- Requires sufficient activation pressure
- Requires ability to release
  - Stability
- Vision

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Facilitators

- Positioning
  - The client must be positioned optimally to facilitate function, including access
- Splinting
  - Wrist alignment
  - Finger isolation

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Facilitators

- Pointers
  - Hand held
  - Splint or universal cuff mounted
  - Head mounted
  - Chin mounted
  - If a tablet or even smart phone based SGD is being used, the pointer must have a specialized end to activate the device
    - It must be conductive

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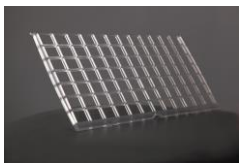
Facilitators

- Keyguards
  - Provide stability
  - Promotes finger or thumb isolation
  - Visual implications



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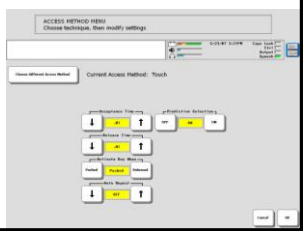
Programming

- Activation on contact or release
- Activation Acceptance time
  - Allows client to move across display without accidental activations
- Audio feedback
- Choices may differ on tablet based devices



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Case Study

- Alex
- 9 years old
- Cerebral Palsy
- SGD
  - Using Direct Access
- Alex's access was slow and difficult
- His positioning was not ideal
  - Not providing optimal posture or stability

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Case Study

- Once his positioning was optimized, his access was significantly improved
- The placement of the SGD was also changed to best meet his access needs
- But I don't have an after picture…

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Clinical Decision Making Moment:

"The client can use Direct Access, however this limits their vocabulary selections per page. When should I consider other access methods?"

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Clinical Decision Making Moment:

"The client can use Direct Access, however this is slow and accuracy is not great. When should I consider another access method?"

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Mouse Access

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Definition

- Hybrid access method in which movement of the mouse is translated into movement of a highlight or cursor over specific vocabulary options
- Typically vertical, horizontal and diagonal movement is recognized
- If SGD is a computer, mouse acts like a computer mouse

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Mouse Access

- What about those tablets?
  - iPads do not accept mouse input at this time
  - Android and Windows based tablets do

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Mouse Access

- Mouse Types:
  - Standard mice
  - Joystick mice
  - Adaptive mice
    - Trackballs
  - Head mice

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Mouse Access

- Mouse Types:
  - Standard mice
  - Most clients having the dexterity to use a standard computer mouse can directly access a SGD

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Mouse Access

- Mouse Types:
  - Joystick mice
    - Provides stability of a joystick and the maneuverability of a mouse
  - Trackballs
    - Accommodates larger, less controlled movement patterns
    - Speed may be adjusted on the mouse

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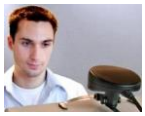
Mouse Access

- Mouse Types:
  - Head mice
  - Typically a light reflective dot is placed on the forehead or close by
  - Camera mounted to SGD translates head movement into movement of the cursor
  - These clients may also be able to use eye gaze



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Clinical Indicators

- If the client is using the mouse with their **hand**, they need to have very strong eye hand coordination to watch the cursor while moving the mouse
- If the client is using a **head** mouse, the client must be able to disassociate head and eye movements
  - To visually scan vocabulary selections before moving cursor

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Clinical Indicators

- Resting Position
  - The client must be able to move the cursor to a “resting” location on or off the display when not communicating to avoid accidental activations

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Clinical Indicators

- Dwell
  - The client must be able to sustain the cursor in position long enough for selection/activation (if Dwell is used)
  - If the Dwell setting is too short, the client will activate everything they are moving over to get to the desired selection
  - If the Dwell setting is too long, the client may have difficulty maintaining that position long enough for activation

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Clinical Indicators

- Click
  - The client must be able to click the mouse or activate a separate switch to select a location (if Dwell is not used)
  - Many clients will move their hand or head when attempting to click the mouse or activate a separate switch
  - If a separate switch is used, ensure the client can activate this without moving the mouse or, in the case of a head mouse, their head

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Clinical Indicators

- Vision
  - The client must have adequate vision to see each selection, distinguish a selection from those around it, and to see the cursor or highlight around items on display

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Facilitators

- General Positioning
  - If hand is used, provide adequate upper extremity support
    - Splinting for alignment and stability, if needed
  - If hand is used, provide mounting of mouse, if needed, in optimal location

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Programming

- Selection Method
  - Dwell or Pause
  - Switch Activation
- Speed
  - Typically programmed on SGD
- Keep the cursor on the display!
- May be helpful to program “resting” areas for the cursor

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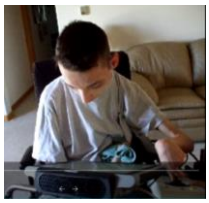
Case Study

- Eric
- 35 years old
- Cerebral Palsy
- Using Direct Access, but inefficiently
- Moved to Mouse Access
  - Joystick Mouse



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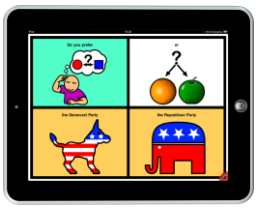
Clinical Decision Making Moment:

“The client can use a mouse, but only with several large targets. At what point do I consider other access methods?”



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Clinical Decision Making Moment:

"The client can use a mouse, but cannot release to click or activate a switch without moving the mouse. Do I explore Dwell, a different type of mouse, or a different access method?"

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Eye Gaze Access

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Definition

- Eye movement is translated into cursor movement

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Clinical Indicators

- Good eye gaze control
- Adequate vision to distinguish desired selection
- Good head control
  - Newer technologies can accommodate this much better than before

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Facilitators

- Positioning for optimal head control and stability
- Head support that provides optimal support and stability

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Programming

- Selection Method
  - Dwell or Pause
  - Switch Activation
    - Head mounted option
- Speed
  - Dependent on speed of eye movements

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Case Study

- Jesse
- 7 years old
- Brain injury

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Case Study

- Jesse was trying eye gaze when I met him
- He was struggling with the task and the school team wanted to know if scanning was more appropriate
- We started with positioning…

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Case Study

- With a new, more supportive seating system,
- With a repositioned head support,
- Jesse did just fine with eye gaze

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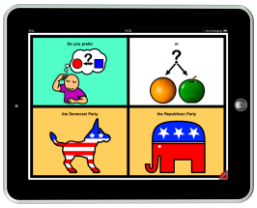
Clinical Decision Making Moment:

"The client can use Eye Gaze, but only with several large targets. At what point do I consider other access methods?"



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Clinical Decision Making Moment:

"How do I determine if the client has adequate vision to use Eye Gaze?"

*Functional Vision Assessment

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Switch Access

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Definition

- Indirect access method
- 1 – 2 switches are used with a specific scanning strategy to move to a desired vocabulary choice and select

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Clinical Indicators

- When client cannot use the other access methods
- Least efficient method…most of the time
  - Other access methods may limit vocabulary
- Any switch type or location

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Where do I put the Switch?

- For more information, join us for an upcoming webinar on 8/14/18
- In general, an ideal switch site uses a small, isolated and volitional movement

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Facilitators

- Positioning of the client
- Positioning of the switch
- Stability for isolated control

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Programming

- Scanning Method
  - Single switch
    - One switch starts scan, makes selection
  - Dual switch
    - One switch moves highlight
    - Second switch selects

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Single vs. Dual Switch Scanning

Single Switch Scanning

- One switch site required
- Less switch activations
- More waiting and anticipation

Two Switch Scanning

- Two switch sites required
- One switch requires numerous switch activations
- Less anticipation and timing

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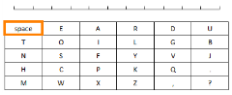
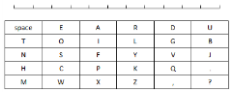
Programming

- Scanning Pattern
  - Auto scan, single switch
  - Linear
  - Row Column
  - Column Row
  - Quadrant



linear



Row column

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Programming

- Scanning speed
  - For auto scan
- Select on activation
  - Hold time
- Select on release (sometimes called Inverse scan)
- Scanning strategies
  - prediction

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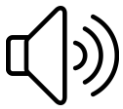
Programming

- Auditory Scanning
- Provides an auditory “cue” to the client during the scan
- Critical for clients who lack adequate vision to see the display, distinguish between symbols, or see well enough for the required vocabulary set
- Some clients who may otherwise be able to use Direct, Mouse, or Eye Gaze Access may require switch scanning due to visual deficits
  - Acuity
  - CVI
  - Even ability to keep eyes open



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Programming

- Auditory Scanning
- This feature can also be used by clients who require a cue for cognitive reasons
  - Brain injury
  - Memory and sequencing
  - New user
  - Young user

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Auditory Scanning

- Some communication partners (the listener) will attempt to “engage” the auditory cues
- Auditory cues can be very distracting to others
  - Classroom
- Private listening can be provided with a speaker
- The communication partner only hears the selections, not the cues

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Case Study

- Brady
- 7 years old
- Cerebral Palsy
- CVI

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Case Study

- Brady did not have adequate fine motor control to use Direct or Hand Mouse Access
- He did not have adequate head control for a Head Mouse
- He did not have functional vision and would require auditory scanning to access vocabulary
- He was able to activate a switch by the right side of his head

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Case Study

- Brady listens to his cues through a private speaker
- He uses Quadrant Row Column scanning with Auditory Scanning
- He also has Predictive Scanning
- He can choose from pre-programmed vocabulary and generate unique vocabulary
- All with very limited motor control and vision!

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Clinical Decision Making Moment:

"The client can activate a switch in several locations. How do I determine the optimal location?"

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Clinical Decision Making Moment:

"The client can activate a switch with hand over hand assistance. How important is it to explore independent switch access?"

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Take Home Message:

- Optimal use of a Speech Generating Device relies on optimal access
- A variety of Access Methods are available
- Facilitators and Programming are critical
- Determining optimal access can provide independent communication!

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Questions?

Thank You!

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