Proudly present —

“Meet Me Where I Am: Ramps to Cognitive & Physical Access of High Tech AAC Following Acquired Brain Injury”

October 13th, 2021 @ 7:00 pm ET
AAC AWARENESS MONTH

OCTOBER 2021 | #AACaware21

GET OUT, SPEAK UP AND BREAK THROUGH THE SCREEN IN A RECOVERING WORLD
Meet Me Where I Am:
Ramps to Cognitive & Physical Access of High Tech AAC Following Acquired Brain Injury

Presented by Jill Adlin, MA, CCC-SLP
Overview

Quick review of brain injury
Determining where your client is
Discussion of client needs
Access methods for AAC
Motivating therapy ideas
Resources
Brain Injury

Pre-Natal
- Hypoxic/Anoxic Events, Umbilical cord issues, Maternal Infections

Acquired
- Traumatic: Motor Vehicle Accidents, Falls, Violence or Gunshot Wound, Military Attack or Blast Injury
- Non-Traumatic: Stroke, Tumor, Cancer, Infection, Brain inflammation
Deficits related to brain injury

Physical
- Changes in bowel and bladder function
- Changes in level of consciousness, ranging from brief loss of consciousness to coma
- Dizziness
- Fatigue
- Headaches
- Impaired movement, balance, and/or coordination
- Motor speed and programing deficits (dyspraxia/apraxia)
- Nausea
- Pain
- Reduced muscle strength (paresis/paralysis)
- Seizures
- Vomiting

Link to Brain Injury information from ASHA
Deficits related to brain injury (cont.)

**Sensory–Perceptual**

**Auditory and Vestibular**
- Auditory dysfunction from injury to the outer ear, middle ear, inner ear, and/or temporal lobe, resulting in

**Visual**
- Changes in perception of color, shape, size, depth, and distance
- Changes in visual acuity
- Blurred vision
- Double vision (diplopia)
- Problems with visual convergence and accommodation
- Sensitivity to light
- Visual field deficits/visual neglect

**Other Sensory–Perceptual Sequelae**
- Gustatory—loss of taste
- Olfactory—inability to recognize smells
- Tactile—sensitivity or defensiveness to touch; changes in perception of pain, pressure, and/or temperature

Link to Brain Injury information from ASHA
Deficits related to brain injury (cont.)

Executive Functioning

Information Processing
- Increased response latencies
- Reduced processing speed (e.g., of rapid speech and/or complex language), resulting in confusion

Memory and Learning
- Deficits in short-term memory that negatively affect new learning
- Deficits in working memory that negatively affect following directions and task completion
- Difficulty remembering to perform a planned action (prospective memory) such as remembering to take medication
- Difficulty retrieving information from memory
- Post-traumatic amnesia marked by impaired memory of events that happened shortly before the injury (retrograde)

Metacognition
- Lack of insight for monitoring one's strengths, weaknesses, functional abilities, problem situations, and so forth
- Reduced awareness of deficits (anosagnosia)

Other Cognitive Deficits
- Deficits in orientation to self, situation, location, and/or time
- Impaired spatial cognition that can affect ability to navigate and ambulate

Link to Brain Injury information from ASHA
Language

Pragmatic/Social Communication

• Conversational turns marked by verbosity
• Difficulty initiating conversation and maintaining topic
• Difficulty taking turns in conversation
• Difficulty inhibiting inappropriate language or behavior
• Impaired ability to use nonverbal communication effectively (e.g., tone of voice, facial expression, body language)
• Impaired social cognition skills (e.g., regulating emotion; expressing emotion and perceiving emotion of others; ability to take the perspective of others and to modify language accordingly)
• Inability to interpret others' nonverbal communication
• Tendency to be tangential
Deficits related to brain injury (cont.)

**Language (cont.)**

**Spoken Language**
- Anomia or word retrieval deficits
- Decreased ability to formulate organized discourse or conversation
- Difficulty following directions
- Difficulty formulating fluent speech
- Difficulty making inferences
- Difficulty understanding abstract language/concepts
- Difficulty making inferences
- Tendency to perseverate in verbal responses
- Tendency to use tangential speech
- Use of incoherent or confabulatory speech

**Written Language**
- Difficulty comprehending written text, particularly with respect to complex syntax and figurative language
- Difficulty planning, organizing, writing, and editing written products

[Link to Brain Injury information from ASHA](#)
Impacts

COMMUNICATION

COGNITION

PHYSICAL

EMOTIONAL
“All contact with people, all situations which define a person's place in the social sphere, his role and fate as a participant in life, all the social functions of daily life are reordered.”

-Lev Vygotsky
How do we meet clients where they are?
Determining where your client is -
A closer look at disability

Link to International Classification of Functioning, Disability and Health (ICF)
Determining where your client is -
A closer look at a client

TBI w/ Spinal Cord Injury
(Patient hit by car)

No movement below neck,
Tracheostomy, Severe oral
motor weakness

Communication,
Self care,
Mobility

Church, Friend group,
Weekly family dinner

Contextual factors

Supportive but worried wife &
kids, Spouse has health issues,
Outpatient SLP, No AAC

Good attention, Cognition largely
intact, Frustrated/depressed,
Unmotivated

Link to International Classification of Functioning, Disability and Health (ICF)
# Barriers to Communication

<table>
<thead>
<tr>
<th>Category</th>
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<tbody>
<tr>
<td>Client’s attitude</td>
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<tr>
<td>Communication partner attitudes</td>
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<td>Communication partner skills</td>
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<tr>
<td>Depression</td>
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<tr>
<td>Dysarthria</td>
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<td>Lack of motivation</td>
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<td>Language comprehension/expression</td>
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<tr>
<td>Physical access</td>
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<td>Social isolation</td>
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*MAKING LIFE-CHANGING CONNECTIONS*
When we build ramps, we reduce disability.
We meet the client where they are.
In home support for personal care

Wheelchair & accessible transportation for church & outings with friends
Accessing the environment
AAC has hit the big time!
Considerations
Just to name a few…

- Symbols/Text
- Grid/Visual Scene Display
- Low Tech/High Tech
- Dynamic Display/Static Display
- Portability
- Durability
Matching Persons and AAC Technology:
Primary, Secondary, and Tertiary Considerations of the Assessment
(Start at the top and work down.)

Primary Components
Language Representation Methods
- Single Meaning Pictures
- Alphabet-Based Methods
- Semantic Compaction

Vocabulary
- Core
- Extended

Methods of Utterance Generation
- SNUG (spontaneous novel utterance generation)
- Pre-stored sentences

Secondary Components
User Interface
- Symbols
- Navigation
- Automaticity
- Human Factors

Control Interface — Selection Methods
- Direct Selection
- Keyboard, head pointing, eye gaze
- Switches
- Physiological (EMG, BCI, etc.)
- Morse Code

Outputs
- Speech
- Display
- Electronic / Infrared / Radio Frequency
- Data logging

Tertiary Components
Peripheral and Integrated features
- Training and Support
- Teletreatment

Feature Match Comparison Chart
Suggestions for use:
1) Identify if the listed features are required for your client. If so, either place a check or
specifications in the Required Feature column. 2) Mark any features that are not necessarily
required, but are desired in the Wish List Feature column. 3) Identify 1-3 possible devices and
insert their names in the Device column and mark which features each has. You can also
indicate if more information is required. 4) Completion of the prior steps should assist you in
identifying which device(s) best fit your clients' needs, abilities, and wishes.

<table>
<thead>
<tr>
<th>Key Features</th>
<th>Required Feature</th>
<th>Wish List Feature</th>
<th>Device 1</th>
<th>Device 2</th>
<th>Device 3</th>
</tr>
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<tbody>
<tr>
<td>Dedicated Device</td>
<td>X</td>
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<tr>
<td>Integrated Device</td>
<td>X</td>
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</tbody>
</table>

Symbols/Message Keys
- None
- Objects
- Photos
- Symbols
- Symbols with Text
- Letters (Alphabet)
- Words/Text
- Font Size
- Color Schemes
- Bright & White
- High Contrast

Ability to Hide or Mask Keys

Vocabulary Organization/Representation
- Visual Scene
- Single Meaning Symbols
- Phrase/Sentences
- Core Vocabulary
- Activity (Function) Based
- Categories
- Alphabet/Syllabing

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Abandonment can be reduced if

- the AAC system serves the communication needs of the individual and can be updated when these needs change;
- there is a good match between the device and the user's language, physical, and cognitive abilities;
- there is collaboration with the AAC user and their family to incorporate their needs and values during selection of the device;
- the clinician provides realistic timelines regarding progress and use of the device that are understood by the user;
- the AAC user experiences communication success with the system;
- the AAC user values the system and has a sense of ownership;
- thorough training is conducted with both the AAC user and the family/caregiver after receipt of the device; and
- ongoing training is conducted for new communication partners (e.g., new staff at a vocational setting).
ASHA says

• The design of an AAC system incorporates each individual's strengths and needs. It incorporates the individual's full communication abilities and may include existing speech, vocalizations, gestures, languages spoken, and/or some form of external system (e.g., SGD).

• An individual may use multiple modalities or many systems of AAC in combination, allowing for change based on context, audience, and communicative intent. A well-designed AAC system is flexible and adaptable. It allows for changes to vocabulary and mode of access as the individual's language and physical needs change over time. A well-designed system also maximizes the individual's abilities to communicate effectively and efficiently across environments and with a variety of communication partners (Beukelman & Mirenda, 2013).
A robust AAC system should provide at least

- S.N.U.G.- Spontaneous Novel Utterance Generation
- Phrase-based communication options
- Ability to retell stories
Personal Factors

No movement below neck, on vent, Severe oral motor weakness
Access Options

Touch

Scan

Eyegaze
Low Tech
Partner
Assisted Scanning

<table>
<thead>
<tr>
<th>A</th>
<th>B</th>
<th>C</th>
<th>D</th>
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<td>W</td>
<td>X</td>
<td>Y</td>
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<td></td>
<td>space</td>
<td>New Word</td>
<td>Start Over</td>
<td>Please Guess</td>
</tr>
<tr>
<td></td>
<td>Yes</td>
<td>Don’t Care/Know</td>
<td>Thank You</td>
<td>Turn Over</td>
</tr>
</tbody>
</table>

“Partner Assisted Scanning: A Low Tech Way To Communicate.” YouTube, uploaded by AmyandpALSvideos, 12/30/13, https://www.youtube.com/watch?v=d8KLjuJ2fw
High Tech Scanning
Low Tech Eyegaze

“Etran: Low Tech Communication for People with Only Eye Movement.” YouTube, uploaded by AmyandpALSvideos, https://www.youtube.com/watch?v=0EDtsPdRO_Y
High Tech Eyegaze
Personal Factors

Good attention, Cognition largely intact, Frustrated/Depressed, Unmotivated
Physical Access

Communication

Communication Partner

Language

Social Isolation

Emotional State

Motivation
Communication is connection
Activities for Real Connection

Skype or FaceTime with kids/grandkids/friends
Send texts
Post to twitter or facebook

MAKING LIFE-CHANGING CONNECTIONS
Stories of hope, support, and empowerment have appeared previously in the personal narratives of people with TBI. Hope is fundamental to achieving positive outcomes in TBI recovery and is an important feature of depression after TBI.

Indeed, a recent review identified that hope is a critical factor in rehabilitation and recovery after TBI and rehabilitation professionals aim to foster hope and provide the person and their supporters with information and ways to garner emotional or practical support from peers.
Let the Client Lead

- Train communication partners
- Advocacy work
- Mentor younger AAC users
Tell Stories That are Meaningful

This was when I went hanggliding for my 24th birthday.

It was a surprise from my boyfriend at the time.

It was a tandem ride so the hanglider was really big.

We got to 3000 feet above take off. That never happens with a big tandem glider.

I am an adrenaline junkie so I was very excited!

The guy I flew with was amazing!

Everyone cheered when we landed because we had flown so high and so long.

Do you like to do high adventure things?

He followed the hawks who were soaring on thermals.

finished
A Word About Device Displays
Back

Snorkeling

Gella Ballet

France

MAKING LIFE-CHANGING CONNECTIONS
Connect with Other AAC Users

Help clients find and join online AAC user groups.

Start an AAC book group.

Get out and about with fellow AAC users - work with other therapists in your area to create social networks & AAC meetups.
Just for Fun!

Create a joke page

Command Alexa or Google

Teach the family dog to do tricks using AAC users device
Alexa Commands
Dog Tricks!
Physical Access

Emotional State

Social Isolation

Communication Partner

Language

Communication

Motivation

MAKING LIFE-CHANGING CONNECTIONS
Communication is connection
When we build ramps with our clients, they connect and they succeed

MAKING LIFE-CHANGING CONNECTIONS
Resources

- ICF Resources
- ICF Checklist
- Communication Supports Inventory-Children & Youth
- Communication Matrix
- AAC Assessment Resources
- Communication partner training
- Bridges AAC Mentoring Program
- Aphasia Book Club
- SpeakBook Download
- AAC User Groups Post on PracticalAAC
- Facebook groups:
  - AAC - Alternative Awesome Communicators
  - Ask Me-I’m an AAC User!
More Low Tech Examples

- ETRAN
- SpeakBook
- Eyegaze Quadrants
- PODD
- Partner Assisted Auditory Scanning
Works Cited


Thank you!
Have questions, ideas or suggestions?
Want to collaborate or know more about anything you saw?

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Learn more about Control Bionics & the NeuroNode
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MÉXICO
COMMUNICATION BEYOND BORDERS
COMUNICACIÓN SIN FRONTERAS
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