



# AAC

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# INTRODUCTION

- ▶ What is AAC?
- ▶ Augmentative – **supplement**
- ▶ Alternative – **substitute**

- ▶ ASHA has defined AAC system as “ an integrated group of components, including the symbols, aids, strategies and techniques used by individuals to supplement any gestural, spoken and or written communication abilities”.

# GOALS OF AAC SYSTEM

- ▶ Provision of a temporary means of communication until spoken communication is re-established to the level that is adequate
- ▶ Provision of life long means of communication where spoken communication does not become function
- ▶ Provision of a means for enhancing language development
- ▶ It enables the person to be a active communicator rather than a passive receiver.

# CANDIDACY:

- ▶ Children who are at risk for developing speech, language and communication problems with adverse pre, peri or postnatal history.
- ▶ Medically fragile children requiring repeated hospitalization with whom the focus of interaction is on life-support and providing basic daily care.
- ▶ Non verbal children with short life expectancy require bonding and facilitation of early communication skills through AAC.
- ▶ Children with multiple disabilities with heterogeneous clinical presentation.

- ▶ Children with CP with or without associated conditions with intact cognition and severe expressive deficit.
- ▶ Persistence of oral reflexes, lack of dissociated movements, poor breath support, phonation duration of less than 5 sees, oral in-co-ordination, lingual atrophy, poor oral, vocal and motor imitation patterns.
- ▶ Children with Dysarthria
- ▶ Children with additional sensory deficits like deaf-blindness and sensory integration problems require AAC.

- ▶ Children with other developmental disabilities like Mental Retardation, Hearing Impairment, Autism, Autistic spectrum disorders, epilepsy, post-traumatic brain damage.
- ▶ Stroke that results in Aphasia [In severe cases as in global aphasia]
- ▶ Cancer that affects the vocal mechanism.
- ▶ Patients with traumatic brain injury or progressive neurological disease like Parkinson's, multiple sclerosis, *or* Amyotrophic Lateral Sclerosis.

# Role Of Speech and Language Pathologist in the Area Of AAC Defined By ASHA

- ▶ Identification of persons who are appropriate candidates for augmentative communication intervention
- ▶ Determination of specific augmentative communication components and the strategies to maximize functional communication.
- ▶ Development of an intervention plan to achieve maximal functional communication between individuals who use augmentative components and their partners.

- ▶ Evaluation of the functional communication outcomes of the intervention plan.
- ▶ Implementation of intervention plan to achieve maximal functional communication.
- ▶ Ability to evaluate evolving aids, techniques, symbols and strategies in augmentative communication and to determine their utilization.

# Basics terms related to AAC

- ▶ AAC System
- ▶ AAC user
- ▶ Aid
- ▶ Alternative
- ▶ Argumentative
- ▶ Communicator
- ▶ Communicatee
- ▶ Direct selection
- ▶ Output
- ▶ Scanning

# Classification of AAC

- ▶ AAC are divided into three broad groups;
  1. **Unaided AAC**
  2. **Aided AAC**
  3. **Neuro tech**

# Unaided AAC systems

- ▶ Gestures
  - Body gestures
  - Pantomime gestures
- ▶ Sign Language: double hand single hand
  - ASL, ISL, American Indian Hand Talk, etc.
- ▶ Facial expression
- ▶ Eye Blink Encoding



# Aided communication system

- ▶ Aided AAC require some type of device or aid that is external to the user's body in order for a message to be transmitted.
- ▶ Tangible Symbols
- ▶ Representational Symbols  
(Photographs, Picture Communication Symbols, Rebus Symbols, Pictogram Ideogram Communication Symbols)
- ▶ Orthographic Symbols  
(Braille)

# Technology in AAC

- ▶ no technology
- ▶ Low technology
- ▶ High technology
  - Dedicated communication devices
  - Non-dedicated communication device

# Talking Mats



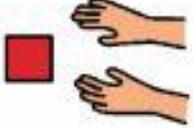
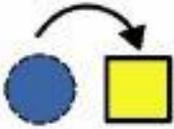
# E-TRAN





# Aided - Low tech device

Pretend Play - Band

I 	want 	sing 	more 	concert 	guitar 
what 	like 	listen 	finish 	microphone 	drum 
Sounds great! 	get 	play 	loud 	stereo 	recorder 
Sounds terrible! 	change 	bang 	quiet 	CD 	piano 

# Topic board

Goldilocks and the Three Bears by Paul Galdone CCM

Goldilocks	who	cook	say	break	porridge	home	woods	hot	there
Great Big Bear	what	taste	wait	lie down	bowl	dining room parlor	pillow	cold	all gone
Middle-sized Bear	where	eat	go	sleep	spoon	living room	hungry	hard	too high at head
Little Wee Bear	when	see/look	walk	awake	rocking chair	bedroom	curious	soft	too high at foot
no one	why	enter	smell	jump	bed	cool	good	Just right!	mad
I, me	stranger	cry	sit	run	window	door	afraid	sad	dangerous
you	someone	yell	3	Great Big	Middle-sized	Little Wee	no	uh oh	no symbol

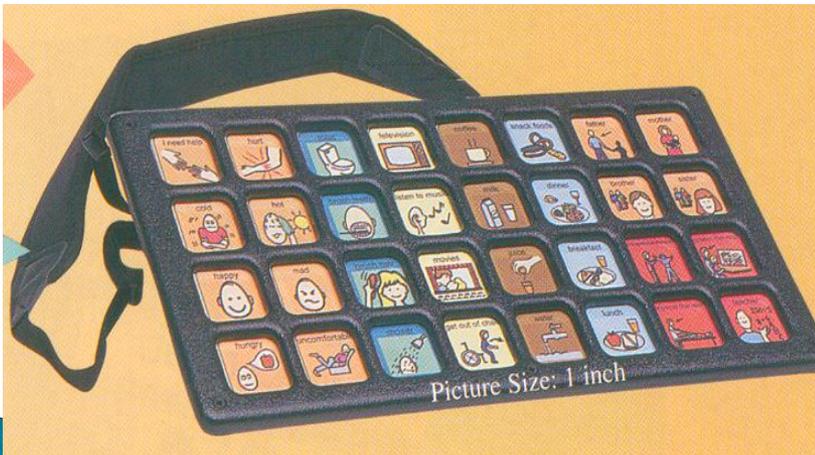
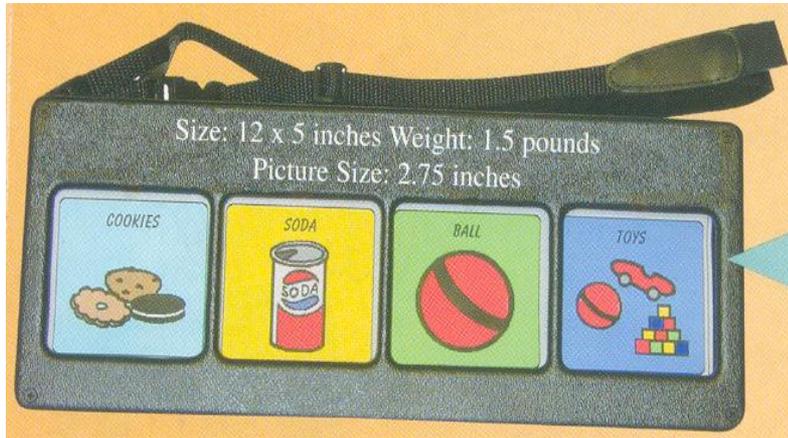
The Picture Communication Symbols © 1981, 2005 by Mayer-Johnson, LLC. All Rights Reserved Worldwide. Used with permission.

# *High tech device*

- ▶ High technology AAC systems have voice, printed or combinations of output modes available for the user.
- ▶ They are computer based programs.



# High tech devices



# Neuro Assisted

- ▶ Muscle action potentials
- ▶ Brain waves

# Combined Symbols – (Unaided + Aided)

- ▶ Visual Phonics
- ▶ Sigsymbols
- ▶ Makaton Vocabulary

# Need for AAC

- ▶ → To give and get information, things
- ▶ → Express intension, feelings, experience
- ▶ → Get the listeners to do, feel, believe
- ▶ → Solve problems
- ▶ → Describe events
- ▶ → Learn new behavior
- ▶ → Interact with others
- ▶ → Converse and dialogue
- ▶ → Aids to therapy

# Underlying factors and characteristics of AAC

- ▶ I. General simplification of input
  - Verbiage (noise) is reduced:–
  - Rate is adjustable:–
  
- ▶ II. Response production advantages:–
  - Pressure for speech is removed
  - Physical demands are decreased
  - Physical manipulation of the response is possible.
  - Clinician's observation of shaping is facilitated.

- ▶ **III. Advantages for individuals with severe cognitive impairment.**
  - **Vocabulary is limited and functional.**
  - **Individual's attention is easier to maintain.**
  
- ▶ **IV. Receptive Language/auditory processing advantages.**
  - **Structures of language input is simplified.**
  - **Auditory short-term memory and or auditory processing problems are minimizes.**

- ▶ **V. Stimulus processing/stimulus association advantages.**
  - **Stimulus consistency is optimized.**
  - **Temporal duration is greater.**
  - **Modality consistency is facilitated**
  
- ▶ **VI. Symbolic representational advantages**  
**Visual representation is possible**

# Selection

## UNAIDED

### PORTABILITY:

Quite mobile  
Use of gestures may interfere with use of hands for other activities.

### ADAPTABILITY:

Quite adaptable to any physical impairment, cognitive/ experimental limitations

### MESSAGE:

The communication partner must be well versed with the communication system

### SOCIAL INTERACTION:

Requires total attention to the message sender to see the signs. Enhance eye contact and general interactions.

### FLEXIBILITY:

Vocabulary can be increased  
Grammatical structures may be taught

## AIDED

Less mobile due to weight, size, power source and physical impairment

Adaptations in device may suit need in various settings, classroom or field settings

Some symbol systems may require printed words with symbols. Also vocabulary on printed output is available

Message receiver must concentrate on the display

For many displays vocabulary may be limited due to lack of space.  
Grammatical structures may be indicated to some degree

# *ASSESSMENT*

- ▶ Case History
- ▶ Contributing factors
- ▶ Assessment of Social Communication
  - Procedures
    - Screening
    - Consultation with Parents or Caregivers
    - Consultation with Other Professionals
    - Authentic Assessment
    - Formal Testing
- ▶ Analysis
- ▶ Interpretation
- ▶ Prescription/ recommendation/ counselling

# General guidelines

- ▶ To assess the communication needs.
- ▶ To assess the verbal linguistic skills.
- ▶ To assess the educational or occupational demands.
- ▶ To assess the physical capabilities.
- ▶ To obtain information on the cognitive level.
- ▶ To assess the overall strengths and limitations.
- ▶ To assess the family constellation and its communication strengths and limitation.
- ▶ To assess the person's sensory capabilities.
- ▶ To assess the cost of AAC device options that may be appropriate.
- ▶ To assess candidacy for particular type.
- ▶ To suggest the particular type/ method.

# Assessment Of AAC

- ▶ SLP should assess both AAC system and AAC user also. This assessment has four primary objectives.
- ▶ 1. Determine the functional communication needs of the individual.
- ▶ 2. To increase or maintain the individual's opportunities for participation in communication interactions by meeting those communication needs – today, tomorrow and in the future.
- ▶ 3. To monitor change within the individual.
- ▶ 4. To measure and evaluate the effects of intervention.

▶ The assessment process involves gathering information related to four specific components

1. AAC user

2. Communication partners

3. Communication environments

4. AAC system

▶ **Manufacture AAC Assessment**

▶ **Assessment of AAC user**

▶ **Test**

◦ INteraction CHEcklist for Augmentative Communication (Bolton & Dashiell, 1998)

◦ Test of Aided-Communication Symbol Performance (Bruno, 2010)

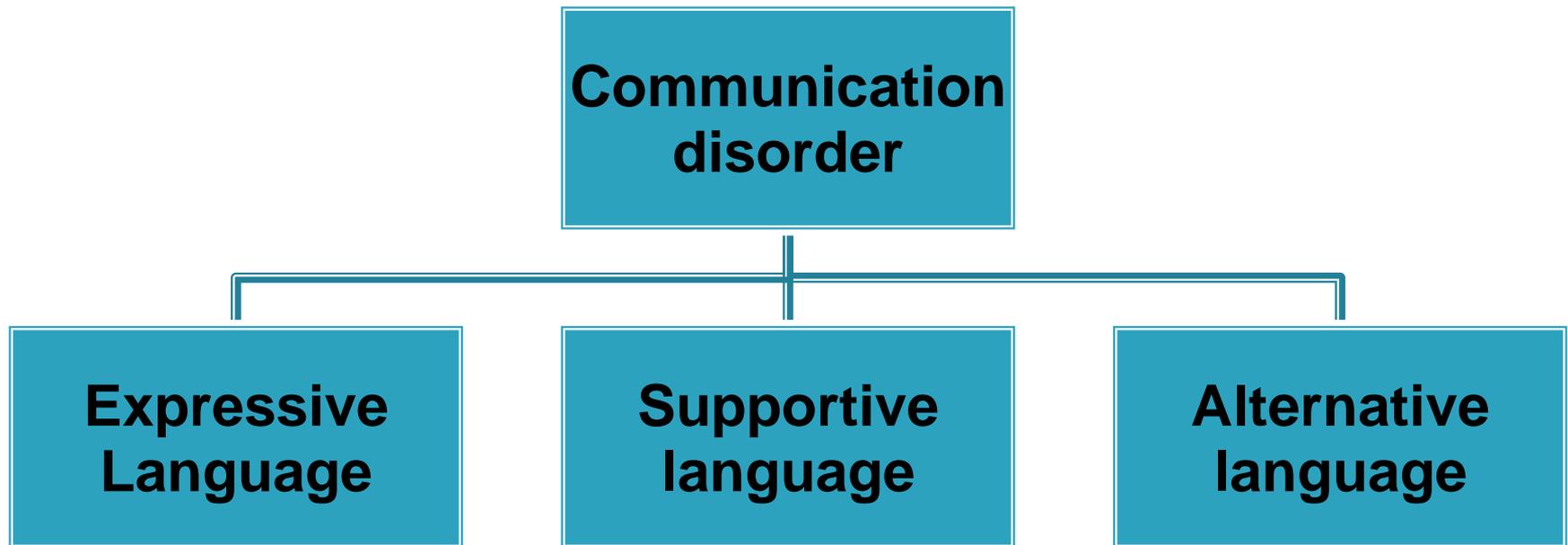
# Apps for AAC

- ▶ “AutisMate” by SpecialNeedsWare
- ▶ “GoTalk Now” by Attainment Company
- ▶ “LAMP Words for Life” by Prentke Romich Company
- ▶ “My First AAC” by NCSOFT
- ▶ “My Talk Tools” by 2nd Half Enterprises LLC
- ▶ “Predictable” by Therapy Box Limited
- ▶ “Proloquo2Go” by AssistiveWare
- ▶ “Sonoflex” by Tobii Technology
- ▶ “Speak for Yourself” by Speak for Yourself LLC
- ▶ “SPEAKall!” by SPEAK MODalities LLC
- ▶ “TouchChat” by Silver Kite
- ▶ “Verbally” by Intuary

# DEVELOPING INTERVENTION GOALS

- ▶ Purpose of intervention: to **facilitate** optimal communication functioning in everyday environments
- ▶ Goals should modify the most **urgent** and **critical problems**.
- ▶ **Immediate** and **future** needs.
- ▶ Work on the acceptance and motivation.
- ▶ Work closely with the person and the caregivers

# INTERVENTION PRINCIPLES



# Unaided

- ▶ Start with simple gestures (yes/no), then keep on adding.
- ▶ Teach a pattern of eye-blinks
- ▶ Teach pointing to objects.
- ▶ Teach sign language.
- ▶ Teach pantomime.
- ▶ Teach unaided methods along with speech production.
- ▶ Increase the oral speech gradually.
- ▶ Fade away the unaided method when person regains or improves oral speech.

# Aided

- ▶ Teach the person to communicate with photographs, drawings
- ▶ Teach the person to communicate with various symbols.
- ▶ Teach the person to communicate with messages on a non-electronic communication board.
- ▶ Teach the person to communicate by writing or orthographic forms.
- ▶ Teach the person to use electronic system.
- ▶ Start with simple messages, give plenty of practice.
- ▶ Fade away the aided method when person regains or improves oral speech.

# Neuro assisted

- ▶ Train the person to use muscle to generate signals.
- ▶ Give feed back and repeated instructions each time.
- ▶ Till person is able to perform.

# Children with MSD

- ▶ Developmental disability: **Symbolic communication**
- ▶ Apraxia: Build speech only  
Build AAC (aided & unaided)  
AAC + speech.
- ▶ CP: **Aided AAC**

▶ **Thank you**