



# Multimodal Approach to Teaching Children with Down syndrome Speech and Language Skills

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WEBINAR SERIES

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# Financial Disclosure



- ❖ Relevant Financial Relationship  
Employee of Children's Hospital Colorado and receive a salary.
- ❖ Relevant Nonfinancial Relationships  
None



# Objectives

1. Learn the model for Evidence-Based Practice (EBP) in determining therapy approaches.
2. Learn the basic challenges and strengths related to communication in children with Down syndrome.
3. Understand the terminology multimodal vs. total communication.
4. Learn at least 3 facts for each of the following modalities of communication:
  - a) Signing
  - b) Picture Exchange Communication System (PECS)
  - c) Augmentative and Alternative Communication (AAC).



# Evidence-Based Practice



Communication is the essence of human life and that all people have the right to communicate to the fullest extent possible. No individuals should be denied this right, irrespective of the type and or severity of communication, linguistic, social, cognitive, motor, sensory, perceptual, and or other disabilities they may present.

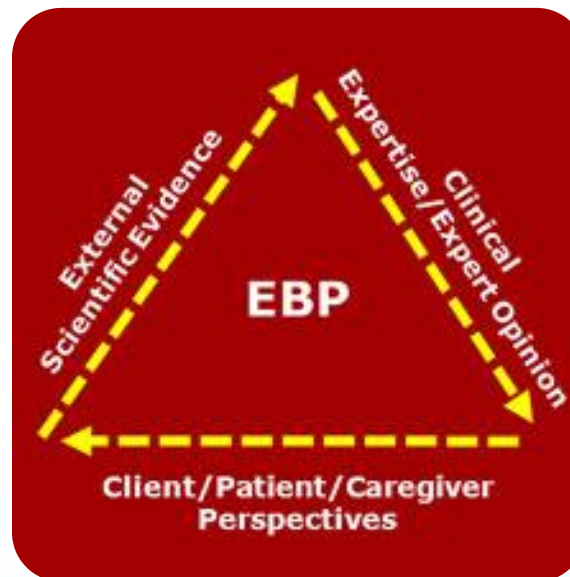
ASHA AAC Knowledge and Skills (2002)



# Evidence-Based Practice

The goal of EPB is the integration of:

1. Clinical expertise/expert opinion.
2. External scientific evidence.
3. Client/patient/caregiver perspectives to provide high-quality services reflecting the interest, values, needs, and choices of the individuals we serve.



ASHA (2005)

# Challenges Impacting Communication



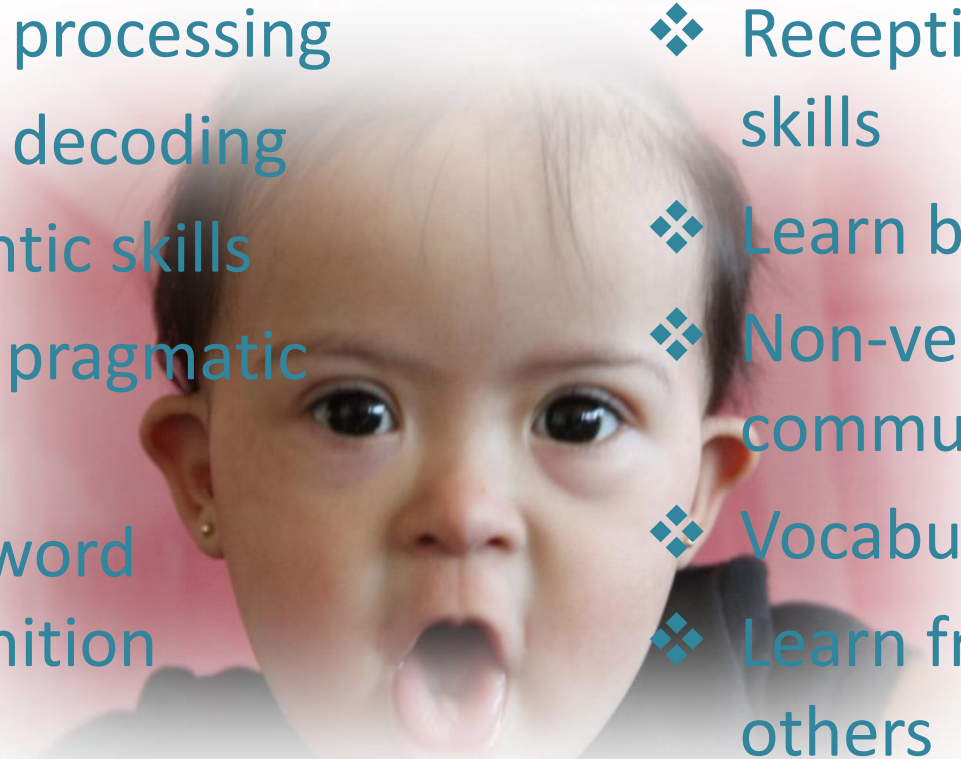
- ❖ Feeding and swallowing
- ❖ Craniofacial anatomy
- ❖ Delayed speech and Language skills
- ❖ Hearing loss and/or recurrent ear infections
- ❖ Auditory processing and memory
- ❖ Attention and/or behavior
- ❖ Vision
- ❖ Low muscle tone/joint laxity/decreased strength
- ❖ Sensory processing
- ❖ Early complex medical issues







# Strengths that Aid Communication

- 
- ❖ Visual processing
  - ❖ Visual decoding
  - ❖ Semantic skills
  - ❖ Social pragmatic skills
  - ❖ Sight word recognition
  - ❖ Receptive language skills
  - ❖ Learn by repetition
  - ❖ Non-verbal communication
  - ❖ Vocabulary
  - ❖ Learn from watching others

Chamberlain & Strobe (1999)

# Multimodal vs. Total Communication



## Multimodal

- ❖ Using more than one mode to communicate.
- ❖ A “whole” view of communication, often using a range of modalities.
- ❖ Having access to a means of communication.
- ❖ Creating a best fit system of communication taking advantage of skills and reducing impairment.
- ❖ All forms of communication are valued equally.

## Total Communication

- ❖ Total Communication (TC) is philosophy of educating children with hearing loss that incorporates all means of communication; formal signs, natural gestures, fingerspelling, body language, listening, lipreading and speech.
- ❖ Children in TC programs typically wear hearing aids or cochlear implants. The goal is to optimize language development in whatever way is most effective for the individual child. Total Communication is truly a *philosophy* rather than a *methodology*. As a result, the implementation of the TC philosophy with one child may look entirely different than its implementation with another child.
- ❖ <http://www.handsandvoices.org/comcon/articles/totalcom.htm>





# Support of Multimodal Approach

There may be a period of time when your child needs a transitional language system with which to communicate until they are ready to use speech. The most frequently used...sign language, PECS, photo and picture cards, communication boards, and electronic communication devices.

Kumin (2012)

“The use of computers and communication aids as assistive technology (AT) tools that help those with Down syndrome achieve their maximum communication potential.”

Miller, Leddy, & Leavitt (1999)

# Multimodal Communication



# Signing



## Myth

Signing and/or sign language is only for children who are deaf or hard of hearing.

## Fact

In addition to providing a (possibly temporary) substitute for speech in young children, signing can help reduce **frustration** and **challenging behavior**. They suggest that this may facilitate **improved interaction patterns** which, in turn, assist speech development.

Remington and Clark (1996)

# Signing



## Myth

Signing may delay  
my child's  
acquisition of  
verbal language.

## Fact

Children with Down  
syndrome show an early  
advantage for signing and  
signs can significantly  
increase their  
communicative ability  
during an important  
developmental period.

Miller (1992)



# Signing



## Myth

Communication and language are an important part of everyday life. How can signing support language development?

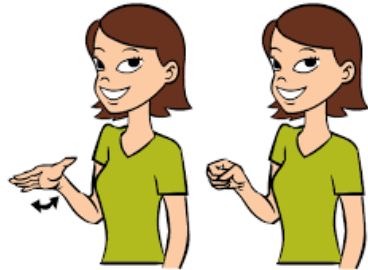
## Fact

- ❖ Makes communication possible – or easier.
- ❖ Capitalizes on learning strengths.
- ❖ Allows more time for processing.
- ❖ Supports memory.
- ❖ Reduces frustration.

Young & Brunetti ([signingtime.com](http://signingtime.com))

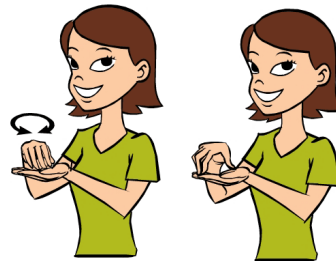


# Signing Tips

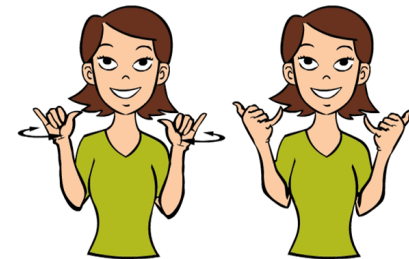


milk

Start with general (drink, eat, more),  
but quickly move to specific.



cookie



play

Keep it functional.  
Keep it meaningful.



# Signing – What Does it Look Like?





# Picture Exchange Communication System (PECS) – What Does it Look Like?



Intervention strategies that capitalize on strengths in visual memory, such as the use of visually-oriented pictures and storybooks, may enhance learning in individuals with Down syndrome.

Chapman (2003), Hick, et.al. (2005), Roberts, Chapman, Martin & Moskowitz (2008)

# Picture Exchange Communication System (PECS)



## Myth

My child is using a visual schedule and pictures to communicate, they are using PECS.

## Fact

PECS is an expressive communication system for individuals with severe communication impairments. The protocol includes 6 distinct phases of teaching, as well as strategies for introducing attributes into the individuals language.

# PECS



## Myth

PECS is only for people who don't speak at all.

## Fact

### Advantages of PECS

- ❖ Requires interaction with other people
- ❖ Individual initiates communication rather than responding to a prompt
- ❖ Starts with requesting, not labeling or commenting

Frost & Bondy (2011)

# PECS



## Myth

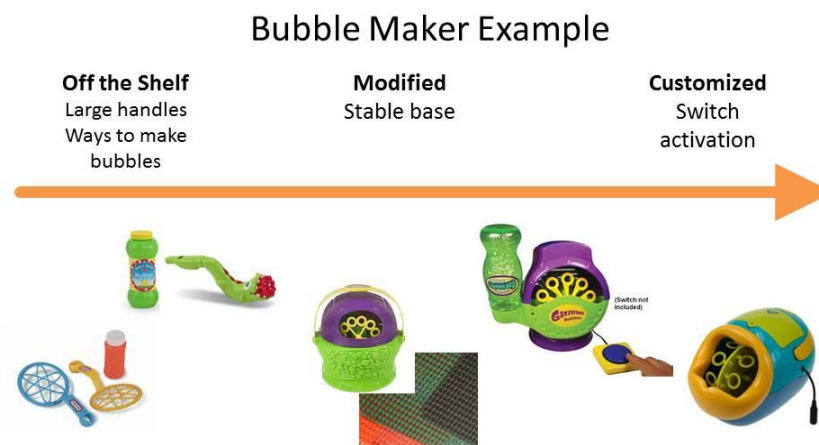
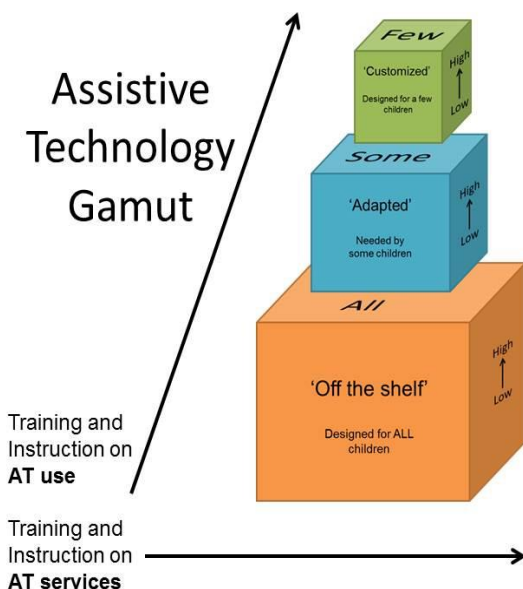
PECS is only  
for people  
with autism.

## Fact

Although PECS was developed at the Delaware Autism Program in the United States and did therefore have its origins in the field of autism intervention. What has been discovered over the 20 plus years since its inception, though is that PECS is being used with individuals with autism, Down syndrome, developmental delays, language disorders, apraxia, and several other diagnosis.

Reed (Myths and Misconceptions)

# Augmentative and Alternative Communication (AAC) vs. Assistive Technology (AT)



<https://sites.google.com/a/udel.edu/weeat/home/at-gamut>

Assistive Technology (AT) is a broad term referring to assistive, adaptive, and rehabilitative devices that assist an individual to function in society at a more appropriate and independent level.

Glennen & Decoste (1997)





# AAC System vs. AAC Device



Facial expressions

Electronic Devices



Picture symbols

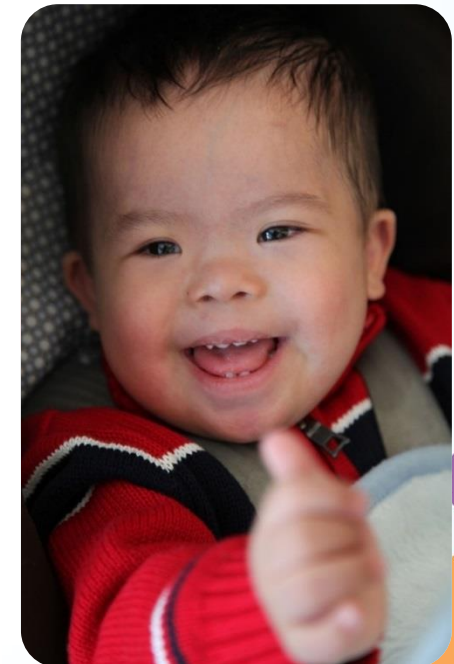


AAC - SGD

Signing

Speech

Vocalizations



Manual gestures

# AAC – What Does it Look Like?





# AAC

## Myth

I want my child to focus on natural speech, so we should just focus on verbal communication.



## Fact

It is important to simultaneously focus on **natural speech** and **AAC**. It is not an either/or situation.

Romski, M.A., & Sevcik, R.A. (1996)



# AAC



## Myth

My child is too young to use AAC.

## Fact



- ❖ Young children (age 3 and below) can successfully use both aided and unaided AAC.
- ❖ Communication partners were effective in creating communication opportunities for their learning in infants and toddlers.
- ❖ Using AAC with young children facilitates “early learning experiences that can promote the child’s further development.”
- ❖ None of the studies reviewed supported the idea of a minimum age requirement for introducing AAC.

Branson & Demchak (2009)

# Further Resources




<http://aackids.psu.edu/index.php/page/show/id/1/index.html>

Janice Light & Kathy Drager

## Early Intervention

*for young children with autism, cerebral palsy, Down syndrome, and other disabilities*

- Home
- Success Stories
- FAQ
- Step 1: Identify Contexts
- Step 2: Provide Effective Means
- Step 3: Select Appropriate Vocabulary
- Step 4: Set Up the Environment
- Step 5: Use Interaction Strategies
- Summary of Intervention
- Research Results
- Additional Resources
- Acknowledgements



### Home

#### What is the purpose of this website?

This website provides guidelines for early intervention to maximize the language and communication development of young children with special needs including:

- Infants
- Toddlers
- Preschoolers

The website provides guidelines for early intervention specifically designed for children with complex communication needs, including children with:

- Autism spectrum disorders
- Cerebral palsy
- Down syndrome
- Multiple disabilities

The website provides:

- Step-by-step guidelines for early intervention to build language and communication skills
- Photographs and videotaped examples of intervention with young children with special needs

# AAC



## Myth

AAC will inhibit my child's speech, it will make them lazy and only provides a crutch for them.

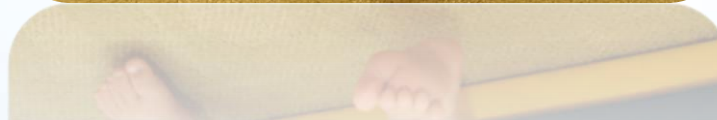
## Fact

- ❖ AAC intervention facilitates the production of natural speech  
Millar, Light, & Schlosser (2006)
- ❖ Reduces the pressure, thereby reducing stress and indirectly facilitating speech  
Lloyd & Kangas (1994)
- ❖ Allows individuals to bypass the motor and cognitive demands of speech and focus on communication.  
Ronski & Sevick (1996)
- ❖ AAC that provides speech output provides an immediate and consistent verbal model for speech production.  
Blischak (2003), Ronski & Sevcik (1996), Smith & Grove (2003)

# AAC – Success!



Questions?





Thank you!!



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DOWN SYNDROME  
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