

# The ABCs of Hearing and Communication Development

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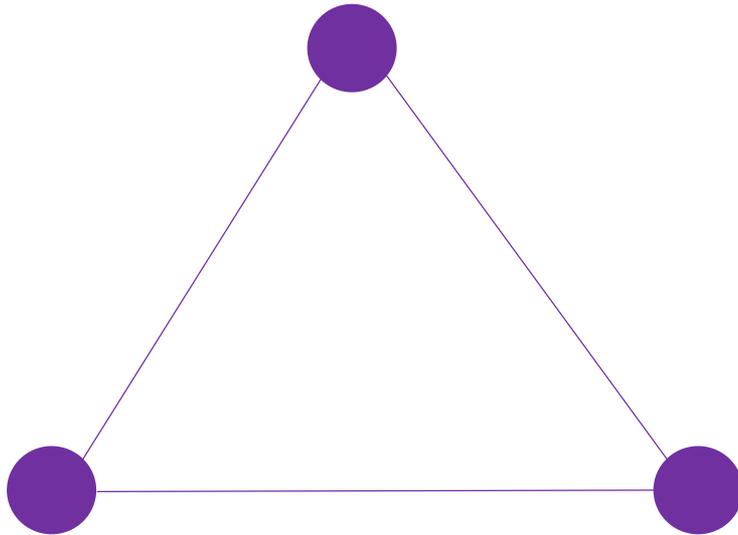
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**NORTHWESTERN**  
UNIVERSITY

# Connecting the Dots of Spoken Communication

## Spoken Language Development



**Hearing**

**Spoken Communication**

- Social interactions
- Conversations



Academic success,  
Social relationships,  
Career success

# Spoken language development



Children must *hear* their language so that they can *learn* what sounds go together to make *words*. Social interactions are key!



# Today's talk

We will overview aspects of spoken language development that should be considered *after* a child is fit with hearing devices.

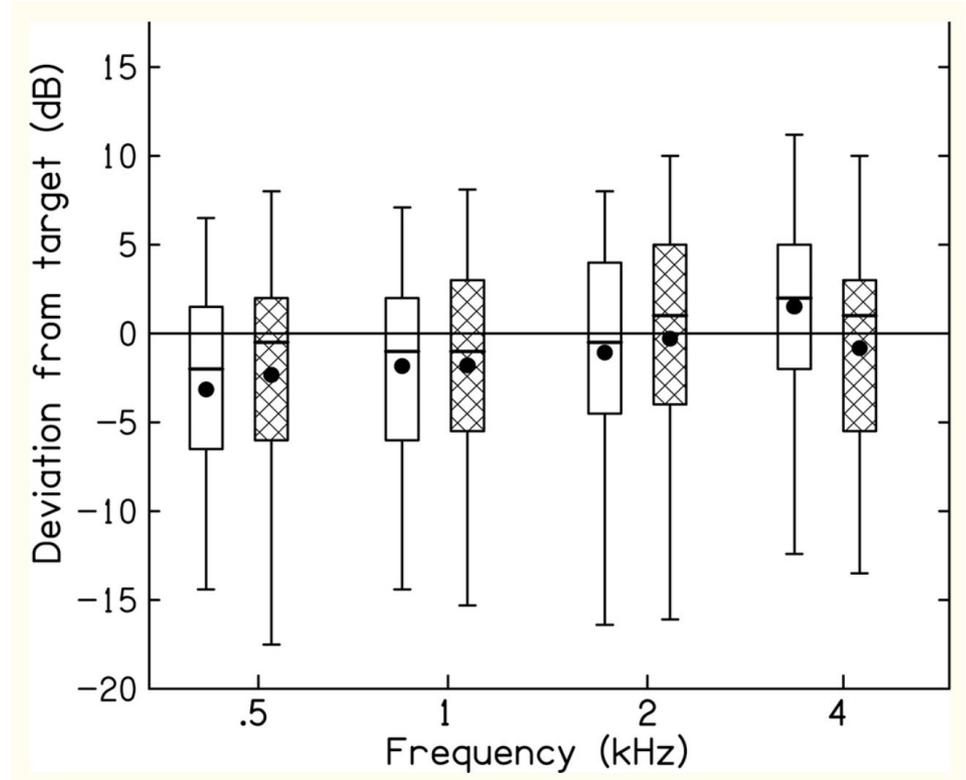


# ABCs of Hearing and Communication

## A. Hearing...but what I really mean is **audibility**

Approximately 55-60% of children had hearing aid settings that deviated by more than 5 dB from the prescriptive target based on their hearing loss.

*Are they hearing everything that they should be hearing?*



# ABCs of Hearing and Communication

## A. Hearing



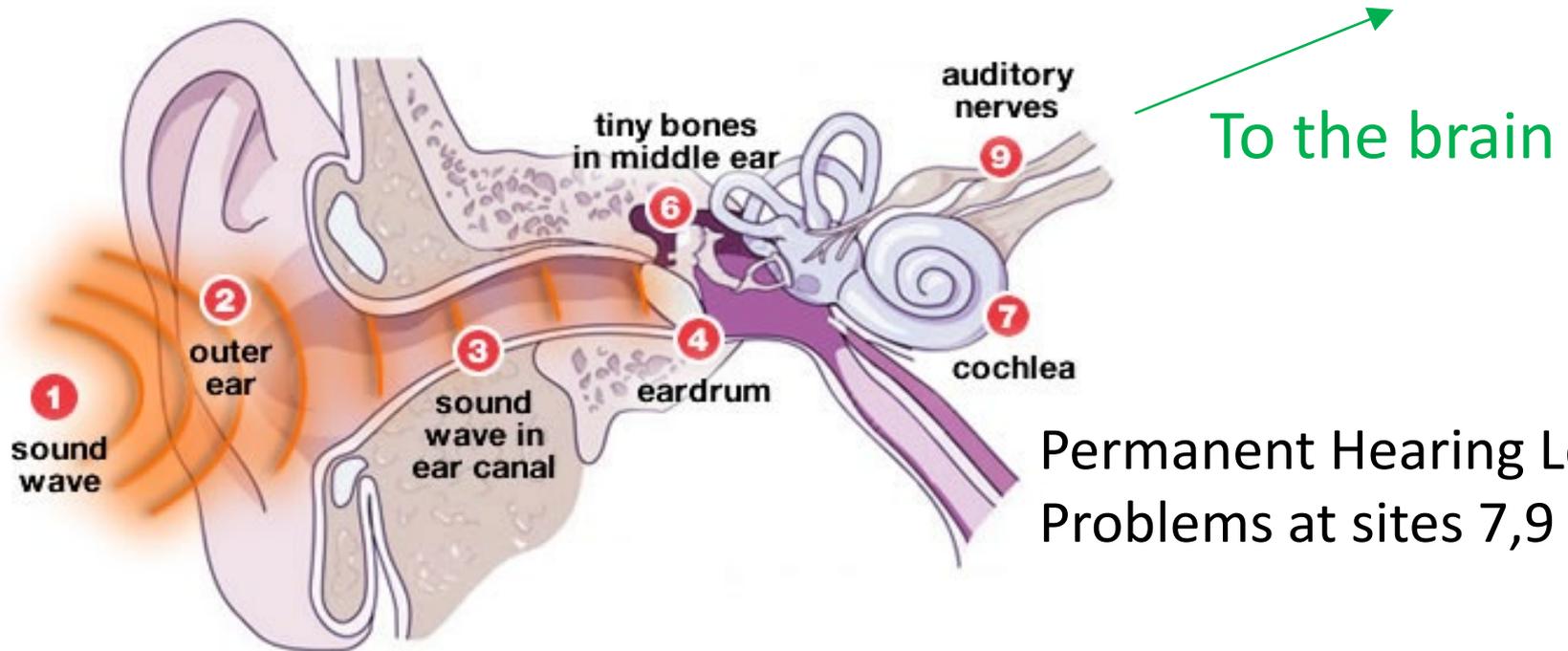
8 out of 10 (80%) children will have an ear infection by the time they are 3 years of age.

Ear infections can be associated with *hearing loss* due to the build up of fluid in the ear.

# ABCs of Hearing and Communication

## A. Hearing

Temporary or Fluctuating Hearing Loss  
Problems at sites 2-6



# Impact of ear infections on language development

WALLACE ET AL.: *Otitis Media and Language*

TABLE 5. Descriptive statistics for Bayley MDI and SICD language scales in otitis media and otitis free groups.

<i>Measure</i>	<i>Otitis free</i>	<i>Otitis positive</i>	<i>t (df)</i>	<i>p</i>
Bayley MDI <sup>a</sup>				
<i>M</i>	104.3	99.2	0.86 (25)	.396
<i>SD</i>	14.6	16.5		
Range	74–122	81–130		
<i>n</i>	15	12		
SICD Language Receptive (months) <sup>b</sup>				
<i>M</i>	11.4	10.9	0.43 (22)	.669
<i>SD</i>	3.2	1.9		
Range	8–16	8–12		
<i>n</i>	13	11		
SICD Language Expressive (months) <sup>b</sup>				
<i>M</i>	13.2	9.8	2.66 (22)	.014
<i>SD</i>	3.0	3.3		
Range	4–16	4–12		
<i>n</i>	13	11		

<sup>a</sup>Bayley Mental Developmental Index (Bayley, 1969). <sup>b</sup>Sequenced Inventory of Communication Development (Hedrick et al., 1984).

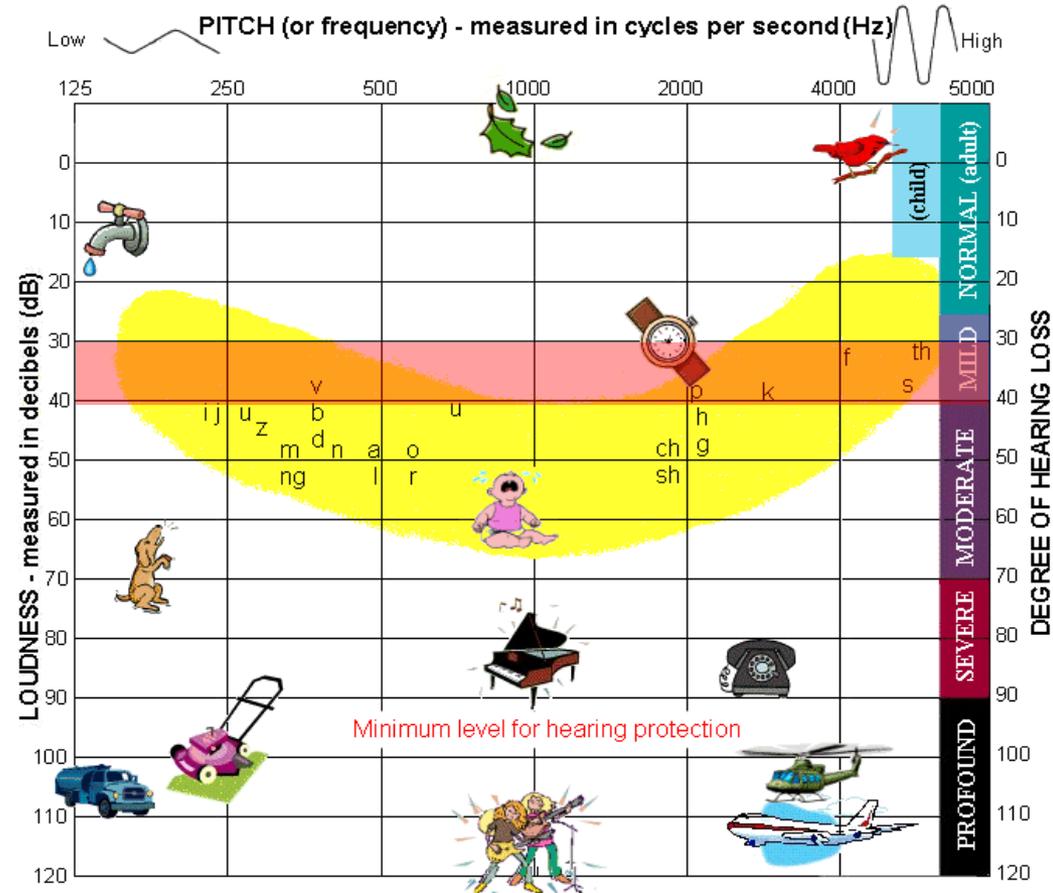
# Consequences of poor audibility

Access to speech sounds is disrupted

Speech production is typically altered

Children can be mistaken for

- Attention problems
- Behavior problems



# ABCs of Hearing and Communication

A. Hearing

**B. Language exposure**

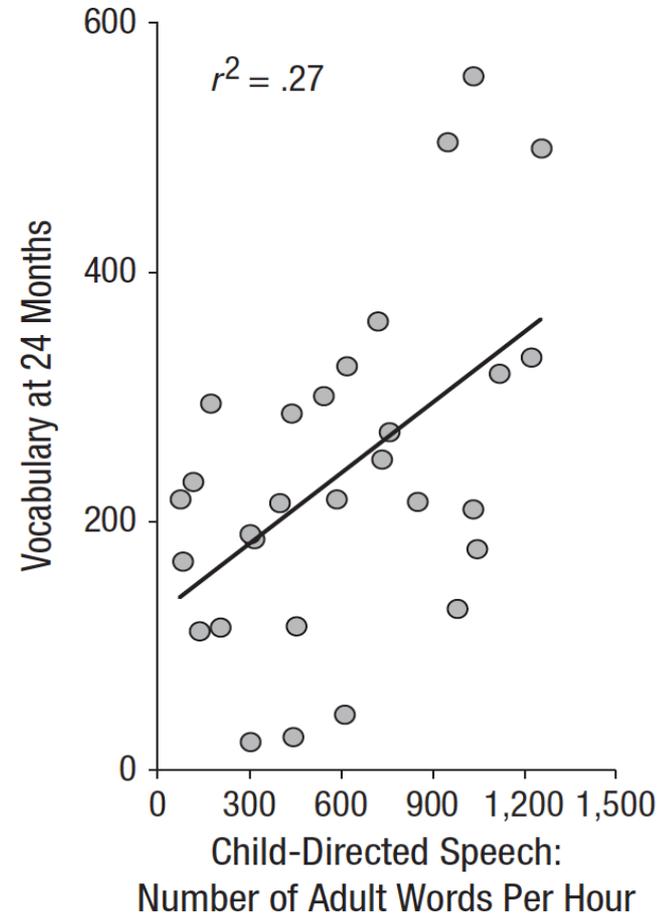


# ABCs of Hearing and Communication

## A. Hearing

## B. Language exposure

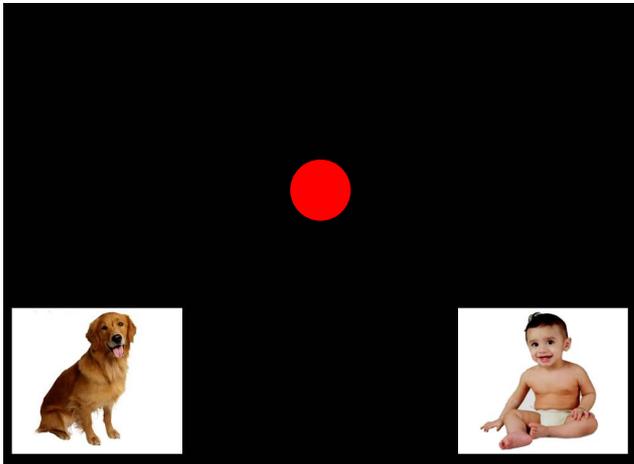
Children who heard *more* words at 19 months of age had *bigger* vocabularies when they were 2 years old.



# ABCs of Hearing and Communication

A. Hearing

**B. Language exposure**



“Baby”

Children with hearing loss may be slower at processing spoken language in real time.

# ABCs of Hearing and Communication

**A. Hearing**

**B. Language exposure**

**C. Making sense of it all**

**Speech sound perception:** what sounds are part of my native language?

**Pattern detection (statistical learning):** what sounds go together?

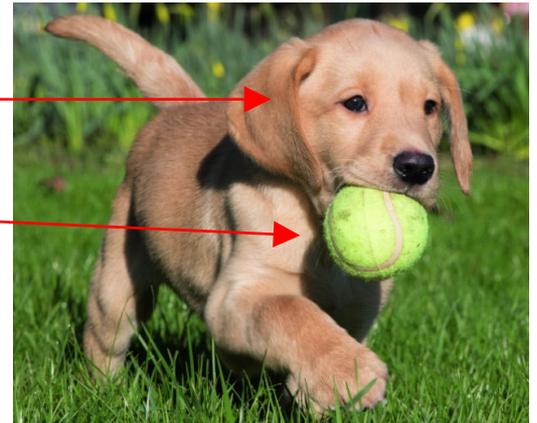
**Word learning:** what do these new sounds represent in my world?



“Baby”



“Doggie”



“Ball”



# What can delay language development?

## **A. Hearing Loss**

If children can't hear the language that is being spoken to them, they will have trouble learning it!

## **B. Poor Exposure**

If children don't experience language, they will have trouble learning it!

## **C. Learning problems**

If children can't put it together, they will experience delays

# What can delay language development?

## **B. Poor Exposure**

If children don't experience language, they will have trouble learning it!

How can you encourage parents to expose children to language?



# Language Facilitation Strategies

- Follow the child's lead – let them lead the play

# Creating Opportunities for Communication

1. Set up the opportunity to encourage the child to communicate
  - Not enough of something: give only a little bit of something (one cheerio, a little bit of play-doh)
  - Needs help: Wait expectantly before jumping into help (juice box with straw, shoes, bubbles with top on)
  - Choices: hold up two objects
2. Wait until the child communicates (gestures, vocalizes, says a word).
3. Expand this communication

# The role of language in development



2, 3, 5, 7, 11, 13, 17, 19, 23, 29, 31, 37, 41, 43, 47, 53, 59, 61, 67, 71, 73, 79, 83, 89, 97.

**Social development:** language supports social interactions and play

**Emotional development:** language supports expression of feelings, wants, and needs

**Cognitive development:** language and cognition provide ways for children to make sense of their environment

# Summary

1. Spoken language development depends on good audibility
2. Spoken language development depends on exposure to spoken language
3. Spoken language development depends on the child putting it all together – impact of other language or neurodevelopmental issues
4. Language development facilitates communication, which provides more opportunities for language experience

# Questions?

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