

# Auditory Verbal Strategies for Developing Listening and Spoken Language Skills at Home

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# Learning Objectives

By the end of this presentation, participants will be able to:

1. Explain that hearing loss is all about the brain
2. Explain what Auditory Verbal therapy is about
3. Discuss the importance of the family's involvement during therapy sessions
4. Enumerate the strategies for ensuring listening around the clock
5. Enumerate the AV strategies that will facilitate the development of listening and spoken language skills at home



# Fetal Hearing Development: A Timeline

Weeks of Pregnancy	Development
4-5	Cells in embryo start to arrange themselves into baby's face, brain, nose, ears, and eyes.
9	Indentations appear where baby's ears will grow.
18	Baby starts to hear sound.
24	Baby is more sensitive to sound.
25-26	Baby responds to noise/voices in the womb.



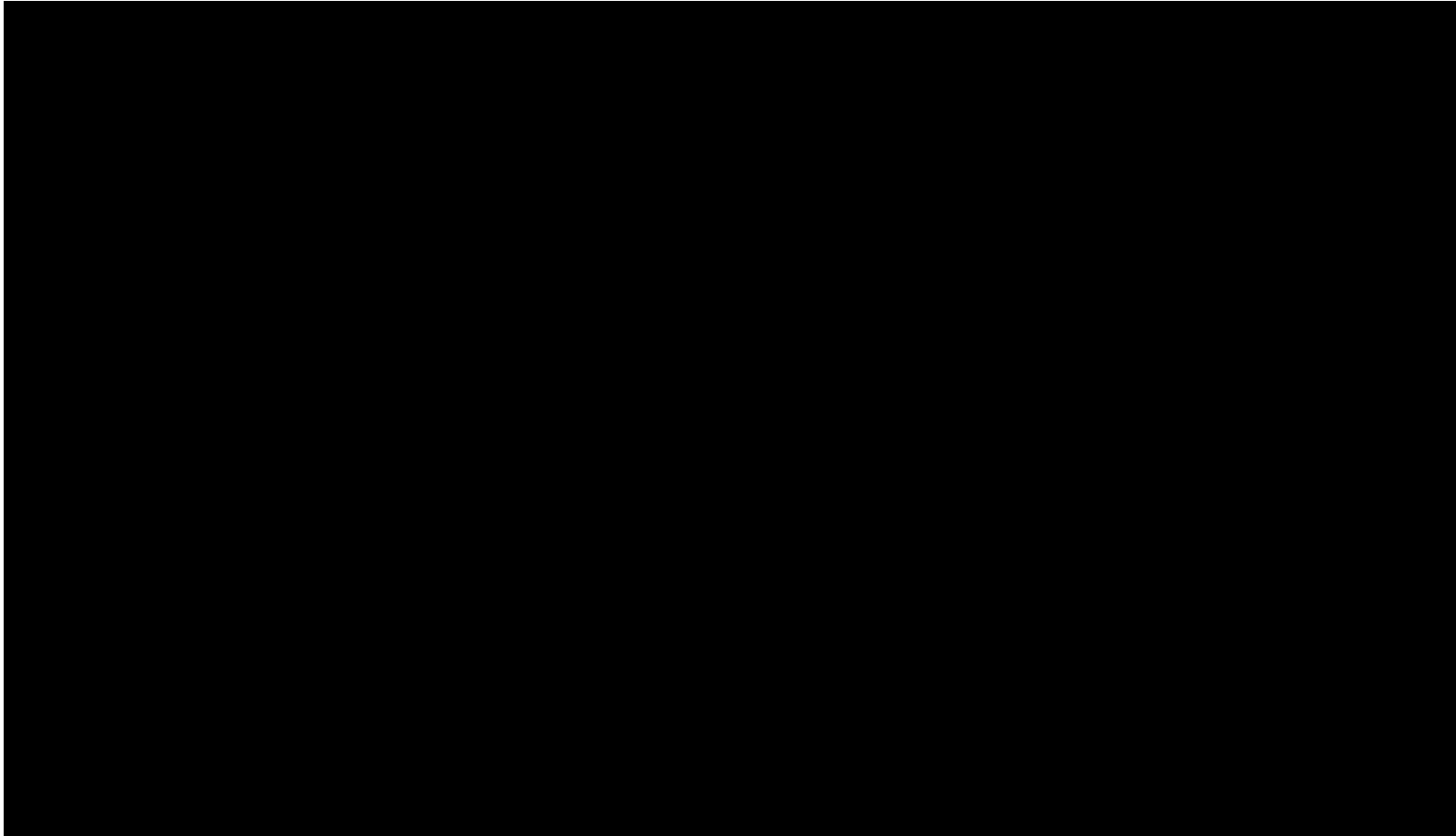
# Infant Auditory-Verbal Development

**At 4.5 months of age babies recognize and prefer to listen to their own name.**

**By 6 months of age, babies get the idea that objects and people have names**

**By 9 months of age, babies are sensitive to native stress patterns and pauses in infant-directed speech**

# How Babies Learn Language





# Auditory Foundation for Spoken Language

- Babies with typical hearing have had 20 weeks of listening before they were born
- Infants born with hearing loss begin life with a 20-week delay in their listening skills
- This highlights the critical period for babies born with hearing loss until they are diagnosed and receive appropriate amplification in order to access the entire speech spectrum of their native language

# Auditory Foundation for Spoken Language

- The delay can be
  - as small as 34 weeks if diagnosed at birth through newborn hearing screening
  - 2-3 years without screening at birth



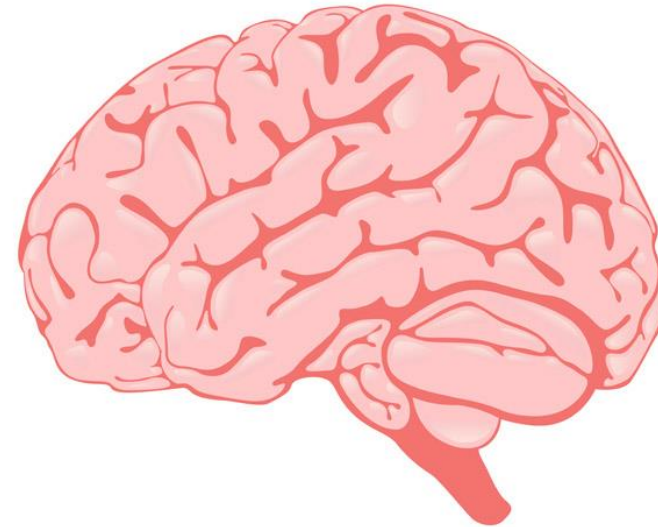
# Effect of Hearing Loss on Language Development

Sounds Not Heard Clearly	How This Affects the Child
High pitched speech sounds	<p><b>/s/, /f/, /th/, /k/ and /t/</b></p> <ul style="list-style-type: none"><li>• Speech intelligibility will be affected</li><li>• Will have a hard time comprehending past tense or plurals</li></ul>
Small words and speech sounds	<p><b>he/she, they/them</b> (pronouns) – little words and sound very similar; very challenging for children with hearing loss</p> <p><b>is, it, the</b> and <b>a</b> – often not heard and therefore, often omitted, affecting intelligibility of the message and length of sentences</p> <p><b>Is? Do?</b> and <b>Are?</b> – words that begin a question are often inaudible. Children don't know how to include these words at the beginning of sentence when asking a question</p>
Intonational changes	<p>Rising intonation signal to the listener that the speaker is asking a question. If a child doesn't hear this, he will not respond appropriately.</p>

# Effect of Hearing Loss on Language Development

Sounds Not Heard Clearly	How This Affects the Child
Language that is not directed to the child	A child with hearing loss may not be aware of language going on around him/her. This results in significant delay in language comprehension and expression
All the words in a sentence	<p>Following directions can be difficult because they don't hear all the words.</p> <p>If the child hears fragmented language, the child's own language will develop in a fragmented fashion with gaps in understanding and expression</p>
Sounds from a distance	<p>May not hear danger signals.</p> <p>May not hear teacher's instructions from the far end of the classroom</p> <p>May affect socialization – not hearing friends from a distance inviting child to play</p>

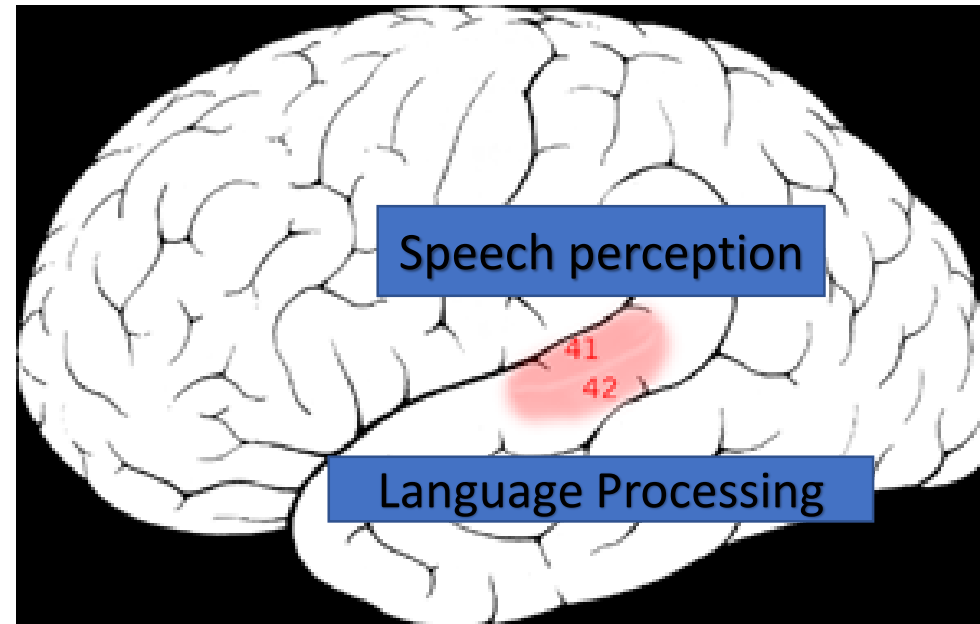
# Let's Look At The Big Picture



Hearing loss is not about the ears; it's about the brain! We hear with the brain; the ears are just a way in.

# The Auditory Cortex

It is the region of the brain that is responsible for the ability to hear

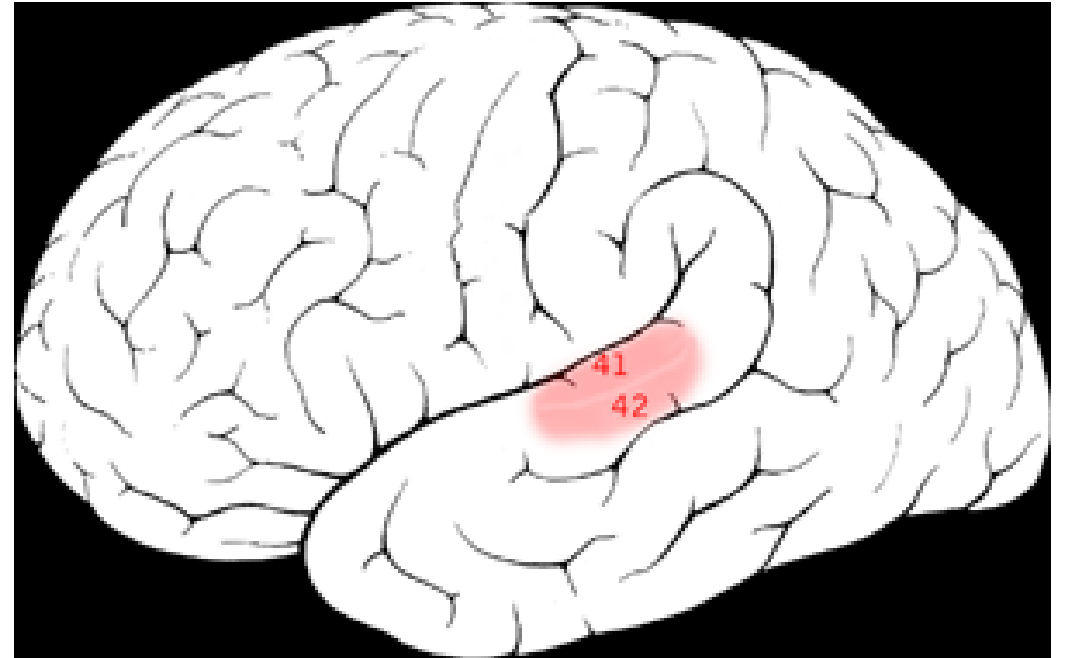


# Critical Period for Auditory Cortex Development

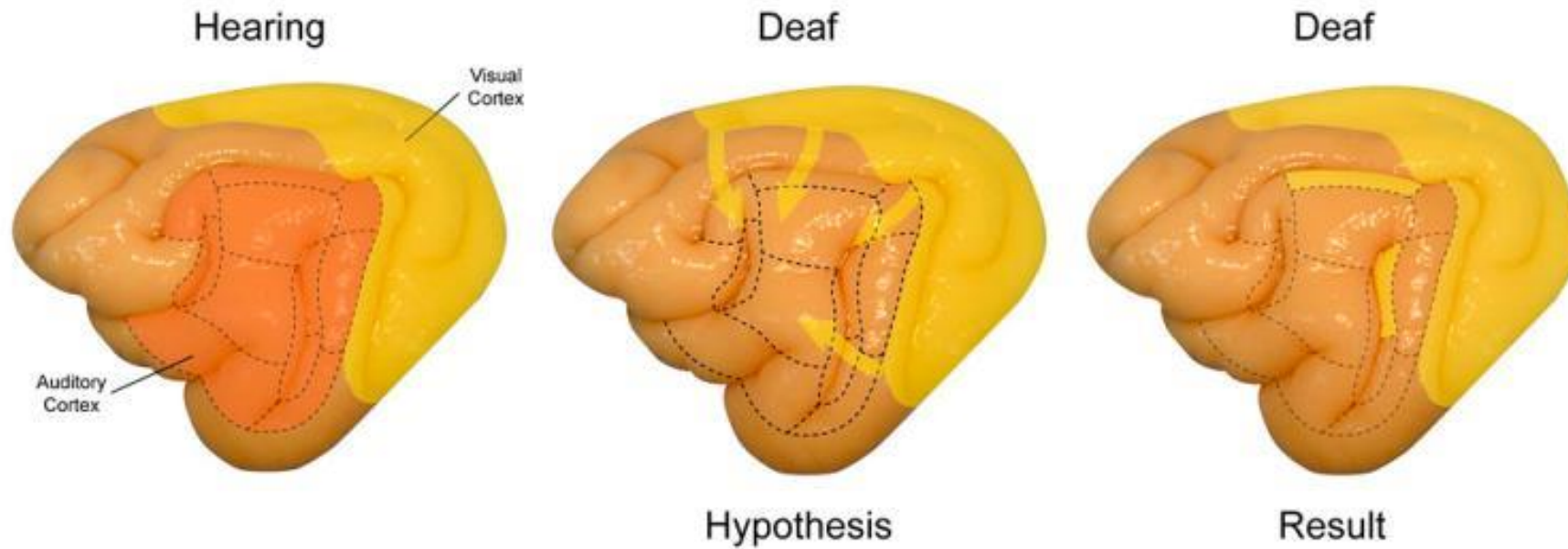
The cortex matures in stages/columns, and the level of maturity depends on the richness of exposure and experience

Level one of the cortex probably matures by 12 months. This 1<sup>st</sup> stage, the “setup” stage for the cortex, has the brain being “always-on.”

In this period, all it takes to develop auditory pathways is exposure to sound



# The Hearing vs Non-Hearing Brain



# Hearing Loss and the Auditory Brain

If babies don't hear till they are one year of age, they need massive auditory input to make up for the deficit

This means that we have to fit that hearing technology early, and then create an environment that is rich in auditory language communication when the desired outcome of the family is listening and spoken language



# Deaf Baby Hearing For The First Time



# Three Critical Components

These are necessary for a child with hearing loss to learn to listen and speak:

1. Early identification and diagnosis
2. Early auditory access to the brain via appropriately fit amplification
3. Access to trained professionals/high quality auditory based intervention



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Parents Play an Important and Active Role

Ideally, babies learn to listen and talk early in life in the security and warmth of their own homes by interacting with parents, relatives, and caregivers.

AVT:  
a parent and  
family-centered  
approach



In auditory-verbal practice, coaching, guidance and teaching focus primarily on the parents, especially in the child's early years of life.

# Parents' are the Therapist's Greatest Allies

Through the therapist's help, parents learn

- interactive techniques and strategies
- thinking and listening behaviours which they can model and teach to their children
- auditory verbal techniques and strategies that they can use to stimulate and enhance the development of listening and spoken language in their children.





# Father and Son Listening and Talking



AV sessions can take place in a variety of locations.....,

but the venue where the **most learning will happen is in the child's home!** In many cases, real things and situations will be the stimulus for conversation





# What is Auditory Verbal Therapy

- **highly specialist** early intervention program
- **equips parents** with the skills to maximize their deaf child's speech and language development
- **stimulates auditory brain development** and enables deaf children with hearing aids and cochlear implants to make sense of the sound relayed by their devices

As a result:

children with hearing loss are better able to develop listening and spoken language skills, with the aim of giving them the same opportunities and an equal start in life as hearing children.

# What is Auditory Verbal Therapy

- Through play-based therapy sessions, parents are given the **tools** – **Auditory Verbal techniques and strategies** – to develop their child's listening and spoken language
- All learning from the sessions carries over into daily life
- This means that at home, parents can make everyday activities such as setting the table or reading a story into a fun listening and learning opportunity

# Is Auditory Verbal Therapy Evidence-Based?

There are a lot of evidence that shows the effectivity of AVT in the early intervention of children with hearing loss. Most of the studies conclude that many children following an Auditory Verbal Approach developed age-appropriate listening and spoken language skills.



# Evidence

**Percy-Smith, L. (2017) Auditory verbal habilitation is associated with improved outcome for children with cochlear implant.**

*Children following the AV intervention outperformed children in standard habilitation on all three tests of speech and language*

*This evidence has been used in getting the government in Denmark to offer all children with bilateral hearing loss 3 years of AVT*

**Goldblat, E., & Pinto, O. Y. (2017). Academic outcomes of adolescents and young adults with hearing loss who received auditory-verbal therapy. *Deafness & Education International*, 1-8.**

*Results suggest that AVT graduates outperform adolescents and young people with Hearing Loss who were not rehabilitated via this rehabilitative approach*

# More Evidence

**Hogan S, Stokes J, White C, Tyszkiewicz E, Woolgar A. (2008) An evaluation of Auditory Verbal Therapy using rate of early language development as an outcome measure. Deafness Educ Int. 10,143–167**

*One of the results in this study showed that a child with a hearing loss needs to have the right therapy for their spoken language to be accelerated through listening, as well as optimal hearing technology and early identification of hearing loss.*

# Listening and Spoken Language Specialist/Auditory Verbal Therapist

- LSLS are the ones who provide AVT. They are speech language pathologists, teachers of the deaf or audiologists who have received advanced specialized instruction and practical experience through university courses, specific A-V centers, and/or from LSLS Cert.AVTs.
- While a **certified** Listening and Spoken Language Specialist in Auditory-Verbal Therapy (LSLS Cert. AVT™) has completed 3-5 years of supervised, mentored practice and has successfully passed a rigorous exam to obtain The LSLS credential.

# What's the Difference

**Auditory Verbal Therapy**



**Speech Therapy**





# What's the Difference

## **Auditory Verbal Therapy**

### Unisensory approach

- Uses audition/listening alone to teach speech and spoken language
- If a child has a lot of hearing experience, the child will have a hearing brain
- Better for deaf only kids

## **Speech Therapy**

### Multisensory approach

- Uses visual, tactile (touch) and audition to teach speech and language
- If a child has a lot of looking experience, the child will have a looking brain
- Better for deaf+ kids

## Why Must We Develop Language Skills Through Listening (and not by looking)?

- Only 30% of sounds (in English) look distinguishable on the lips
- If we teach children through looking, we are teaching them to guess 70% of the time



# Listen Around the Clock

## (Setting the Stage for Optimal Listening at Home)

The following will enhance the development of listening and support language development:

1. Parents demonstrate a working knowledge of hearing loss and the importance of hearing technology
2. Parents establish H.A./CI use all waking hours
3. Parents will maintain H.A./CI in good working condition and be proactive in ear mold fit

# Listen Around the Clock

## (Setting the Stage for Optimal Listening at Home)

### **4. Parents minimize auditory distractions and provide the best listening environment possible throughout the day's activities**

- Make modifications because a noisy home can make it very difficult to learn language through listening
- Know which rooms have the best listening conditions/have the most difficult listening conditions for the child
- Turn-off noisy appliances or re-position them around the house so they are put of ear shot of the child. Make sure that the parents voice is the strongest signal.
- Close the doors and windows to prevent outside noise from coming in
- Put sound-absorbing things in your rooms such as carpet, area rugs, pillows or heavy curtains in order to cut down on the echoes and create much better listening environments for children with hearing loss

- Move closer to your child (12-18 inches) when talking to him/her
- Get your child's attention before talking to him/her
- Face your child at his/her eye and ear level while talking to him/her
- Position yourself between your child and the noise, so our voice becomes the more important and closest signal

# Listen Around the Clock

## (Setting the Stage for Optimal Listening at Home)

### **5. Parents provide pleasurable and meaningful experiences with sound**

- Engage your child in vocal play or babbling games
- Use familiar rhythmic phrases often and appropriately: Uh-oh, you dropped the spoon,” “Up, up, up...go up the stairs,” “mmmm, sooo yummy!”
- Listen and dance to music of different tempos and rhythms
- Sing with your child, adding hand motions to children’s songs

Subscribe to  
their YouTube  
Channel





- Read repetitive, rhythmic books to your child – ex: Brown Bear Brown Bear What Do You See?
- Bombard them with Early Learning to Listen Sounds – sounds of animals and vehicles
- Play games with sounds, e.g. Pat-a-Cake, Rolly Polly

## **6. Parent will call the child's attention to naturally occurring environment and voice sounds and talk about them**

- When in the kitchen, the sound of the toaster's ting takes on meaning as you point it out and attach language to it, "I heard the toaster ting. The bread is toasted."
- While on the street, watch for signs that your child is searching for a sound. Point out the source of the sound. "Look there, it's an ambulance! They're taking someone to the hospital!"
- When it's nearing dinner time, the sound of Mommy's voice calling takes on meaning as you react and talk about it.....(how?)

# Sounds We Hear Exercise (Level F, L12)

## **7. Parent will know whether child responds auditorily or through the use of visual and situational cues**

Examples:

1. Jonathan hears soft sounds from his electronic toy, but every time his toy makes a sound, it also lights up. Did Jonathan really respond to just the sound alone?
2. Jonathan and Mommy are in the bedroom and he has his back to the door. Daddy comes in and says, “Hi, Jonathan!”

Jonathan turns around, smiles and runs to Daddy. Did Jonathan really hear Dad's voice? Maybe!

However, it's important to remember...

- A child with hearing loss tunes in to many visual cues and changes in the environment to aid him in his responses
- What other clues did Johnny use to respond?
  - a. Did Mommy look up the door when Daddy opened it?
  - b. did the pressure in the room suddenly change when Dad opened the door?

- **Gestures, situational clues and knowledge of the situation** provide support to a child's developing auditory responses.
- These are all **helpful and provide support** and meaning as the child develops his memory for sounds
- It is **not suggested that parents stop doing** any of the above things
- However, it is **helpful to explore what level of support the child needs** in order to respond to auditory signals

## **8. Parent will associate sounds with meaningful language and concepts**

- In the beginning of the listening journey, parents have worked on making the child aware of the sound and labelling it

Ex: Child hears, “wang-wang...” Mom will say, “Oh, you heard that. It’s the ambulance. They’re taking someone to the hospital”

- When the child has become a more sophisticated listener and is talking a lot more, we need to expand his information about what he is hearing. For instance, we know the child can hear the siren of the ambulance. Does he know why ambulances have sirens?



- So the next time your child, who is now a sophisticated listener hears the siren of the ambulance, you could say, “You hear the siren. The driver wants other people to get out of his way. He needs to rush to the hospital.
- Group exercise: Garbage truck honking. Daddy’s car honking. Doorbell ringing. Dog barking. Toaster’s ding

# Why Do We Need to Talk About Strategies?

Listening and talking doesn't just happen because a child is fit with appropriate amplification.

It is not the amplification alone that creates listening potential for a child.

In order for a baby or child to learn to listen, they must develop auditory attention first

# Why Do We Need to Talk About Strategies?

Therapists, teachers, audiologists and, most important of all, parents and caregivers **must create listening expectations and environments through the application of auditory-verbal strategies.**

Strategies are one of those aspect of AV practice that promotes listening and spoken language in children with hearing loss

## Goals and Strategies



STRATEGIES MUST  
FIRST BE LINKED TO A  
GOAL

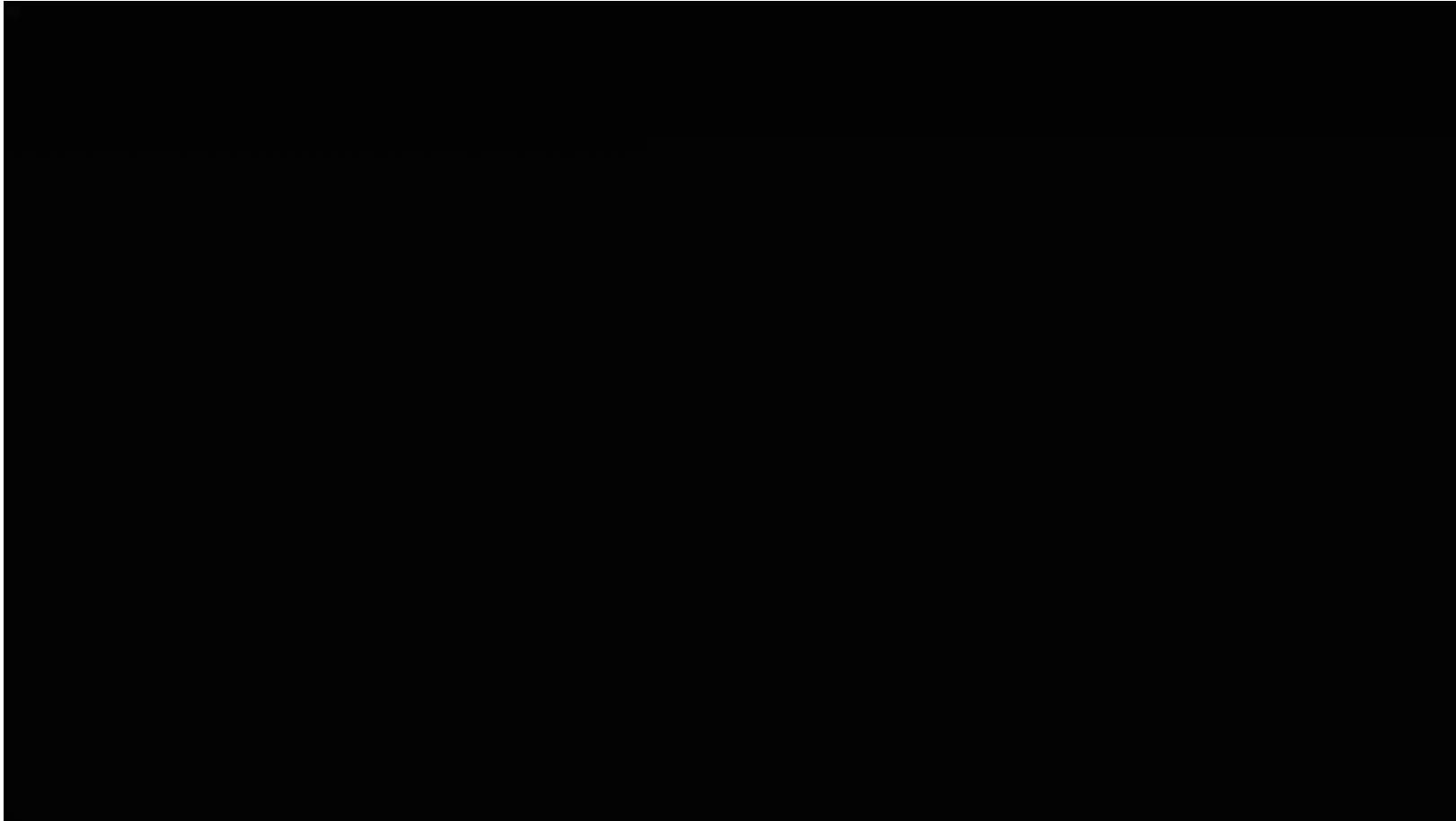


TARGET FIRST, THEN  
STRATEGY CHOICE!



TARGET: TO HEAR /S/  
STRATEGY: ACOUSTIC  
HIGHLIGHTING

# Identify the AV Strategies





Acoustic Highlighting

Auditory Closure

Serve and Return

Expand/Extend

Wait Time

Whisper

Self Talk

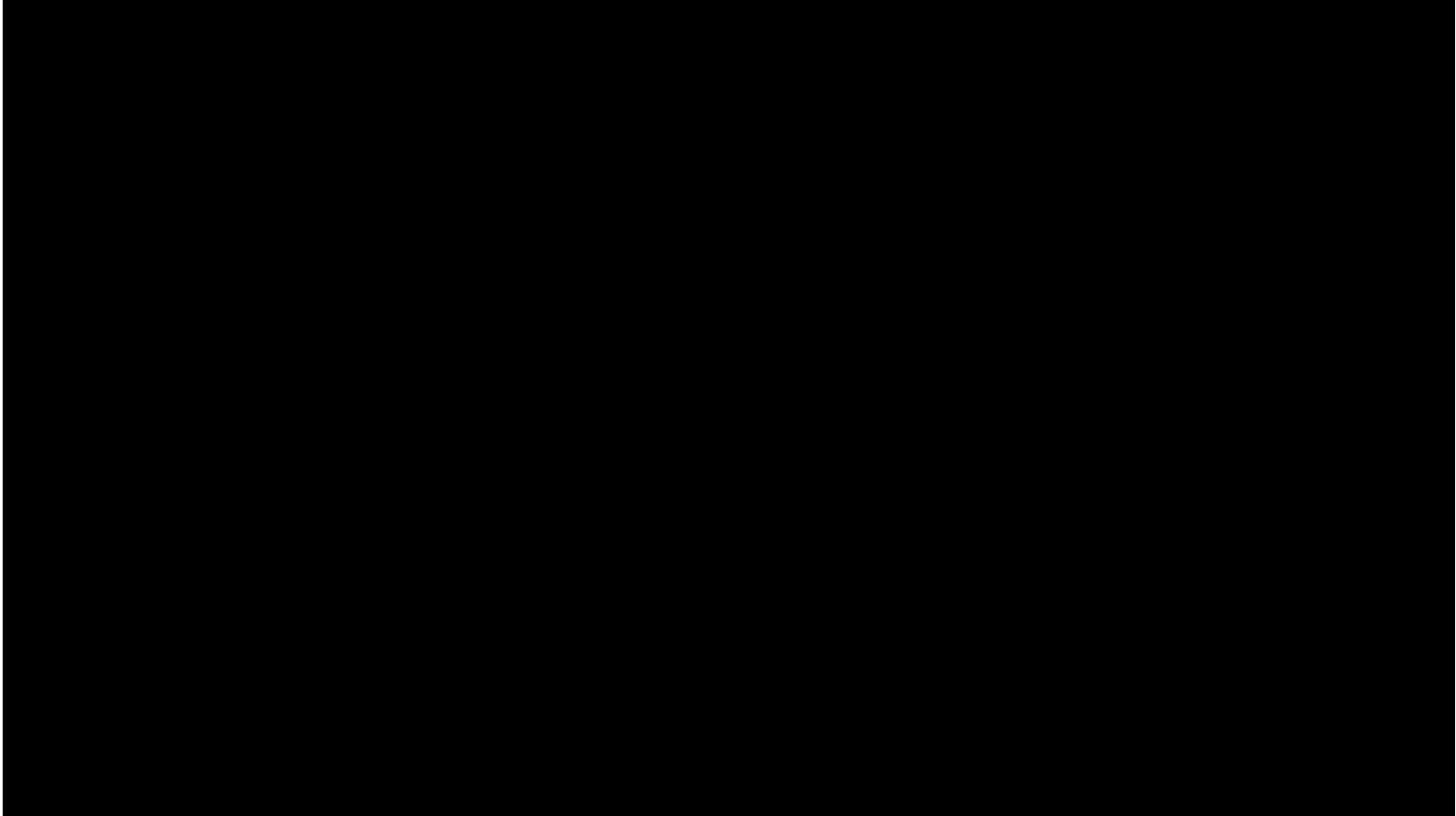
Toolbox of AV Strategies

# AV STRATEGIES

## **Serve and Return**

- is the act of responsive parenting. It involves looking for a child's communication attempts and appropriately reacting to those attempts
- some of these interactions are verbal and some are non-verbal: crying, cooing, moving their bodies, eye contact/eye gaze, and many others





## Examples of Serve and Return

- Child cries - parent picks up child and gives child a hug
- Child says /m/ - parent imitates /m/ while making eye contact
- Child wiggles - parent repeats the activity that excited the child
- Child vocalizes - parent maintains eye contact with child while child “talks”
- Child reaches for object - parent says “you want the ball?” and assists the child with accessing the ball while talking about the ball.
- Child gestures with a wave - parent waves back and says “bye bye! See you later!”
- Child points- parent looks where child points and talks about what is seen

What happens when serve and return is not practiced by a parents? (Still Face Experiment)





# AV STRATEGIES

## WAIT TIME

- Children need time to process information that was said, to formulate a response, and to produce the response.
- It promotes the idea that the child is expected to respond and gives them the time to respond appropriately.
- Sometimes the child's response may just be a smile or a head turn.

# AV STRATEGIES

## AUDITION FIRST

- When introducing something new, a new toy perhaps, the associated sound or phrase should be said many times BEFORE the toy is shown. If this is done animatedly, the child's attention will be held.
- If the toy is shown first, the child will focus on the visual object rather than the sounds.

# AV STRATEGIES

## LISTEN CUE

- This is a strategy used to focus the child's attention and alert him/her to sound
- Point to your ear and say, "listen or I heard that"
- This will help the child to focus on listening and start to understand where he/she is hearing sounds





# AV STRATEGIES

## ACOUSTIC HIGHLIGHTING

- an added emphasis used to make a sound or word more easily understood
- is a broad term used for any number of strategies which increase *acoustic saliency* (making sound more noticeable or important)

# Types of Acoustic Highlighting

1. **Pausing** - pausing before and/or after a targeted word, sound, or grammatical structure.

In the following example, think of the asterisk (\*) as a pause:

**You: Pick the big, blue square.**

**Child: picks the big, red square**

**You: Pick the big, \* blue \* square.**

**This helps make the word bracketed by the pause more acoustically salient.**

# Types of Acoustic Highlighting

## 2. Elongate a targeted sound

- Hold the /s/ sound on the beginning of the word “snake” – ***sss*snake**
- Add a bit more concentrated articulation to plosive sounds like the /t/ sound on the end of the word “cat”

# Types of Acoustic Highlighting

## 3. Positioning

Three factors that affect how sound is perceived by everyone but more dramatically by children who are deaf or hard of hearing are:

- Distance from the sound source
- Background noise
- Reverberation

We cannot control background noise or reverberation by the implementation of LSL strategies

We can control for the distance aspect by the implementation of the LSL strategy of **positioning**

“Come closer to me, gain 6 dB” – Daniel Ling

## Types of Acoustic Highlighting

### WHISPERING

**Loudness of Sounds Chart**

The sound ____	is ____ times louder than the voiceless "th"
f	5
p	6
b,d	7
k	13
g,t	15
s,z	16
n	36
m	52
ng	73
l	100
r	210
i (lip)	220
e (key)	260
oo (moon)	310
A (may)	350
I (kite)	370
ow (cow)	470
a (map)	490
u (cup)	510
o (mop)	680

This chart demonstrates how many times louder each sound is compared to the quietest sound (the voiceless "th"). What sounds are the loudest? What sounds are the quietest?

# Types of Acoustic Highlighting

## Repetition

This is a way to highlight a word you want to teach. By using the same word repeatedly, the word becomes more salient and “pops” when the child is trying to listen.

Example:

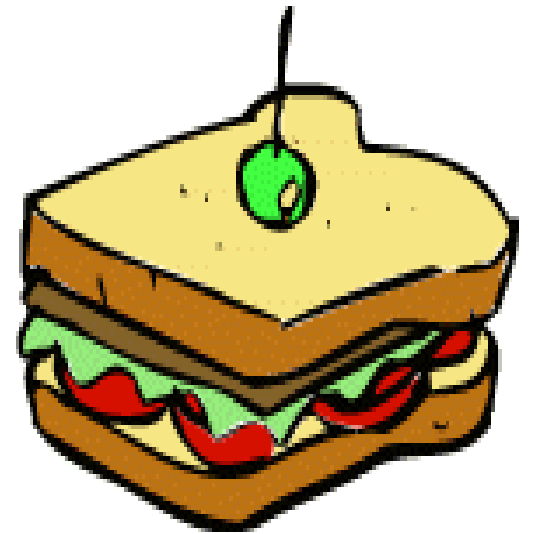
Parent: Where is the **car**? I see your **car**, beep beep! The **car** goes fast, vroom. May I have the **car**. I want the red **car**. Beep beep, watch out **car**! It crashed! Oh no! **Car**, **car** are you okay? I think the **car** is wrecked.



Another strategy that uses repetition is the **auditory sandwich**.

The **bread** of the sandwich is listening or an **auditory signal**. The **filling** of the sandwich is **whatever context** is necessary for the child to understand what is being discussed.

The primary concepts of the auditory sandwich include “**audition first**” and “**repetition**” “or **put it back into audition.**”



# AV STRATEGIES

## **Modeling**

In order for children who are deaf or hard of hearing to learn to communicate through spoken language, they must have language modeled for them.

### **But how do we talk?**

What is our volume or rate of speech like?

Are we using proper grammar?

How about articulation?

Are we talking so fast

## **The aspects of modeling to consider are:**

- Rate of speech
- Volume
- Articulation
- Word choice (rich and varied)
- Length of message (one step ahead of the child)
- Complexity of message
- Proper grammar

- The importance of language is undeniable. A 1995 study by Hart and Risley concluded that children exposed to more words spoken by a parent per day correlated with higher language skills for the child later in life.

# How Words Grow a Baby's Brain

We transform hard science  
into accessible and  
easy-to-remember concepts.

# AV STRATEGIES

## Self Talk

- is the act of describing what you are doing. A parent or caregiver can narrate everything they are doing throughout the day.
- Example:  
Parent: It's time to put the laundry in the washing machine. I will put the dark clothes here, the light clothes in this pile, and the red clothes alone. Uh oh! A stinky sock! Ew! It's dirty. Pee-you! Pee-you, stinky! We have to put it in the washing machine.

## Parallel talk

- is the act of describing what the child is experiencing or doing along with the parent.
- Parent: You see the dog! Woof woof! I hear the dog! He says woof woof. You want to pet the nice dog. I want to pet the dog, too! Pet, pet. You are petting the dog. Nice dog, pet pet. Oh he's soft. His fur is soft. He's licking your hand!

# AV STRATEGIES

## Auditory Closure

- refers to the brain's ability to **fill in missing parts of a message**. It is the ability to use the information you have (background knowledge, context) and make sense out of an incomplete message.

- Fickenscher and Gaffney (2016) define auditory closure as:

Auditory Closure is when a speaker begins a song, rhyme, or sentence and then stops talking in order to encourage the child to fill in a verbal response.



# AV STRATEGIES

**Expansion, Extension and Scaffolding** – are methods of staying one or two steps ahead of the child's ability to communicate, encouraging more elaborate, detailed communication, an important goal of Talk More

## **Examples:**

- a. Expansion – restates what the child is saying by filling in the blanks.  
“Brownie dirty.” – “Yes, Brownie is dirty.”

b. Extension – uses words a child already knows as building blocks for more elaborate communication. This may include adding a verb, an adjective or a prepositional phrase.

“The ice cream is good” – “The strawberry ice cream tastes so good, but it is so cold!”

c. Scaffolding – when a child uses one word, parents respond with two or three; for a child who uses two or three words, parents uses short sentences

# AV STRATEGIES

## Decontextualized Language

- **not talking about the hear and now.** At about the ages three and five, children begin to use language about things or events that they are not currently seeing or experiencing
  - a. important sign of intellectual progress
  - b. it takes a higher level of thinking for processing and responding
  - c. it has a significant relationship to a child's brain development

This entails using familiar words to talk about things that a child and parents have done together

Example: a toy recently played together

a recent trip to the mall

a friend or favourite relative

Being able to understand and respond to decontextualized language optimizes school learning since so much of academics involves decontextualized language without the advantage of a parent standing by to explain

# Reading Aloud: The Road to Literacy

- Reading should be part of you and your child's daily routine as you work toward their LSL goals of listening, spoken language, and literacy.
- Just **15 minutes a day** of reading aloud can make a big difference! When you make reading together a daily habit in your family, you're preparing your child for school success.

# Reading Aloud: The Road to Literacy

When you read with your child, they can hear language in meaningful stories that helps them develop the vocabulary they need to become a healthy reader. Make time for reading aloud every day and your child will gain important LSL and literacy skills that will help them be successful in school and in life.



Check out this YouTube video for tips



How to read to a child with hearing aids  
and cochlear implants



# Music Supports the Auditory Development of Children with Hearing Loss

- Researchers at University of Helsinki, Finland, and University College London have found **evidence that children with hearing impairment and cochlear implants can benefit from hobbies involving music and especially singing**
- the auditory skills of hearing impaired children are connected to the amount of singing and music in their everyday lives.



# Music Supports the Auditory Development of Children with Hearing Loss

- Children with hearing loss with cochlear implants who **sing regularly have better perception of speech in noise compared to children who don't sing**. This is an important skill in day care or school where children discuss and receive instructions in noisy
- The results also imply that parental singing is important
- Day-care and school use music and singing every day as a means to support learning. This gives all children the possibility to enjoy music, singing, and the benefits they bring."

# Summary of Strategies

- Serve and Return
- Wait Time
- Audition First
- Listen Cue
- Acoustic Highlighting – Pausing, Elongate a Target Sound, Positioning  
Repetition, Auditory Sandwich
- Modeling

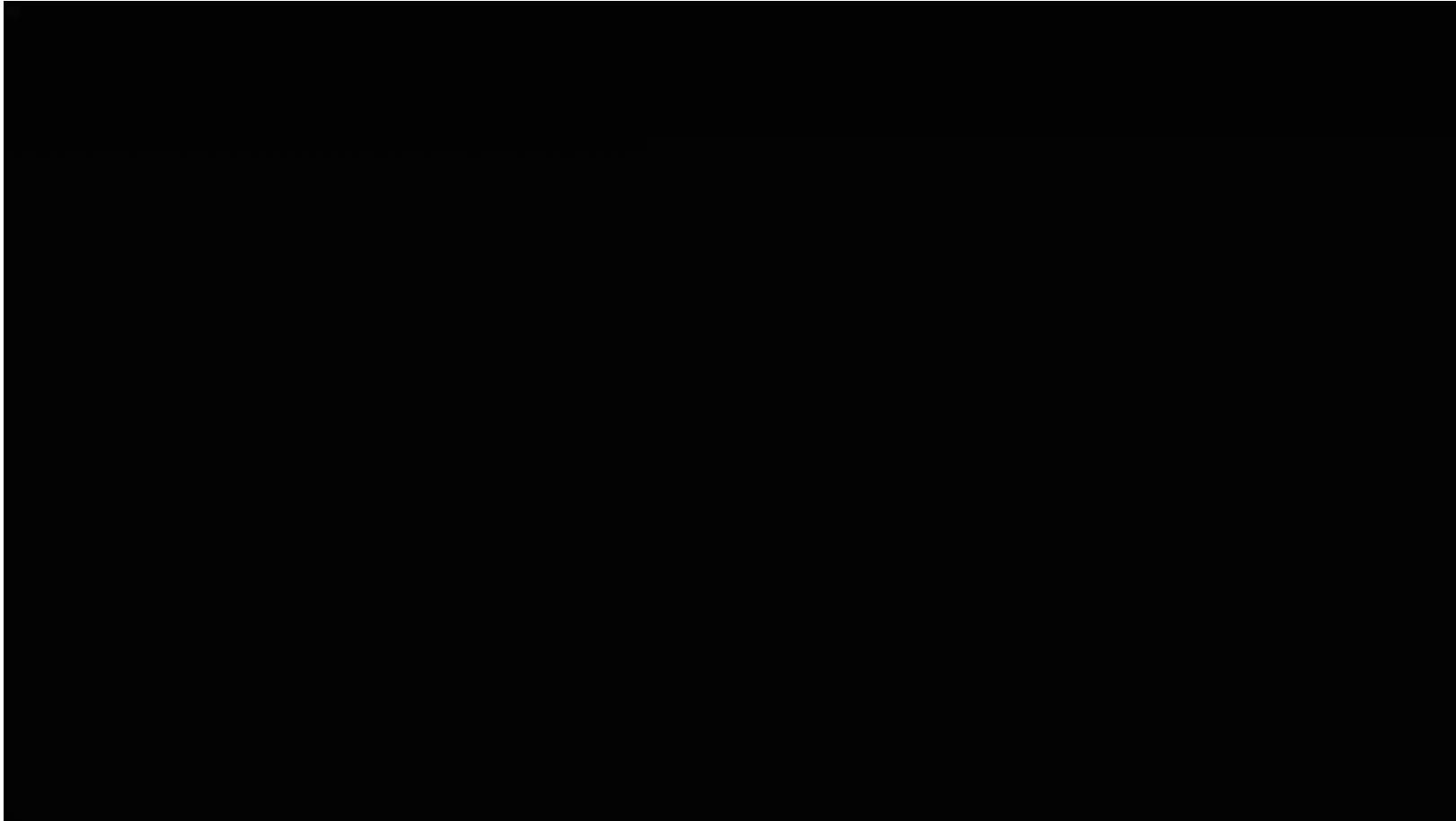
# Summary Of Strategies

- Self Talk
- Parallel Talk
- Auditory Closure
- Expansion
- Extension
- Scaffolding
- Reading Aloud
- Music Singing

# Look for Other Strategies

- Sabotage
- Joint attention
- Parentese
- What did you hear?

# Let's Practice: Identify The Strategies!



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