Aural Rehabilitation In-Service for School Personnel (K-12)
Developmental Impacts of Hearing Loss

● Hearing loss can affect the development of children in the following areas:
  ○ Self-esteem
  ○ Social skills
  ○ General health
  ○ Mental health
  ○ Relationships with family and friends

● The long term effects of hearing loss include:
  ○ Vocation
  ○ Quality of life
    ■ Isolation
Educational Impacts of Hearing Loss

- Inconsistent or distorted auditory input can contribute to:
  - Reduced vocabulary development
  - Delayed syntax development
  - Difficulty following directions
  - Hard time maintaining attention/ “daydreaming”
  - Inappropriate/ delayed responses to questions

- There is a strong negative correlation between educational success and severity of hearing loss; however, even a mild HL can prove to be detrimental and hinder a student’s educational growth.
**Additional Disabilities with comorbid hearing loss**

- Estimated 30-40% who are deaf or have hearing difficulties have an additional disability
- On average children with additional disabilities have poorer outcomes than those with hearing loss alone
- Some coexisting conditions include:
  - Cerebral Palsy
  - Cognitive/Learning Disabilities
  - Autism Spectrum Disorders (ASD)
  - Visual impairments
  - Behavioral-Emotional Disorders
- Person-centered treatment is optimal; a transdisciplinary model will yield the best results
AR Services Provided in the School

- Screening and assessment of hearing impairment
- Management of amplification
- Direct instruction and indirect consultation
- Hearing conservation
- Evaluation and modification of classroom acoustics
- Transition planning to post-secondary placements
  - Ideally, all these services would be provided by an audiologist
  - Professionals who also are responsible for AR services include:
    - Teachers
    - Speech-language pathologists
    - School nurses
    - School Psychologists
    - Adapted physical education teachers
Screening and Assessment

- **Timeline for mandatory hearing screening for those with unidentified HL:**
  - Newborn screening
  - Kindergarten
  - Grades 1-3
  - 12th grade

  - These hearing screenings prove beneficial, as more children are presented with high frequency noise-induced hearing loss, that would fall under the radar if not for screenings.

- **Those children who are identified as having a HL receive a hearing screening **annually** to monitor the progression of the hearing loss.**
Educational Screening Tool (S.I.F.T.E.R)

- **S.I.F.T.E.R** → Screening Instrument for Targeting Educational Risk
  - Subjective likert scale styled tool designed to screen students with suspected hearing loss
  - The screener covers a plethora of school related categories including:
    - Academics, Attention, Communication, Class Participation, and School Behavior

- Listed below is a link that will give you access to the SIFTER form:
# Hearing Loss vs. Auditory Processing Disorder

<table>
<thead>
<tr>
<th>Hearing Loss</th>
<th>Auditory Processing Disorder</th>
</tr>
</thead>
<tbody>
<tr>
<td>Difficulty understanding words</td>
<td>According to the SAB, there are 12 clues that there is a presence of APD:</td>
</tr>
<tr>
<td>Difficulty in background noise or crowds</td>
<td>1. Difficulty hearing or understanding in background noise.</td>
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<tr>
<td>Withdrawal from conversations or social settings</td>
<td>2. Misunderstands, especially with rapid or muffled speech.</td>
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<td>Turning up the volume on different devices</td>
<td>3. Difficulty following oral instructions.</td>
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<tr>
<td>Speech seems delayed or not clear</td>
<td>4. Difficulty in discriminating and identifying speech sounds.</td>
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<tr>
<td>Often asks for clarification, misunderstands</td>
<td>5. Inconsistent responses to auditory information.</td>
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<tr>
<td>Does not follow directions</td>
<td>6. Poor listening skills.</td>
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<td></td>
<td>7. Asks for things to be repeated.</td>
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<td></td>
<td>8. Easily distracted.</td>
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<td></td>
<td>9. Learning or academic difficulties.</td>
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<td>10. Short attention span.</td>
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<td></td>
<td>11. Daydreams, inattentive.</td>
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<tr>
<td></td>
<td>12. Disorganized.</td>
</tr>
<tr>
<td>A lot of these are mimicked in APD….</td>
<td>Auditory Processing Disorder does not mean the child has a hearing loss!</td>
</tr>
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Auditory Processing Disorder does not mean the child has a hearing loss!
## Role of a Teacher vs. Role of Educational Audiologist

<table>
<thead>
<tr>
<th>Teacher</th>
<th>Educational Audiologist</th>
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<tbody>
<tr>
<td>Day-to-day management of amplification</td>
<td>Identify child with hearing loss, then use appropriate audiological screening techniques</td>
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<tr>
<td>Properly know how to use Assisted Listening Devices in the classroom</td>
<td>Determine the severity and refer beyond if needed</td>
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<tr>
<td>Make proper classroom modifications</td>
<td>Provide aural rehabilitation, auditory training, and listening device orientation</td>
</tr>
<tr>
<td>Encourage student to self-advocate, or continuously check in with the student</td>
<td>Assess classroom acoustics and make recommendations to improve listening environments for students with hearing loss and APD</td>
</tr>
<tr>
<td>Refer a student if they believe the student has a hearing loss or auditory processing disorder</td>
<td>Lead efforts to provide information on hearing loss prevention measures</td>
</tr>
<tr>
<td>Contact Educational Audiologist with any questions</td>
<td>Make recommendations to improve access to communication</td>
</tr>
<tr>
<td></td>
<td>Counsel teachers, parents, and student</td>
</tr>
</tbody>
</table>
Evaluation and modification of classroom acoustics

● Noise level
  ○ Computers
  ○ Heating systems
  ○ Floor noise
  ○ Student noise

● Reverberation
  ○ Hard surfaces/walls
  ○ Replace with rugs, minimize the number of large spaces

● Distance
  ○ Sound level drops 6 dB per doubling of distance
  ○ Don’t turn your back to the student

● Visual Stimuli
  ○ Writing directions or notes on the board
  ○ Lip reading does help
Other Modifications

- In addition to amplifying sound and changing the environment, teachers can also do the following to aid in the learning of children with HL and APD:
  - Use external aids:
    - Notebooks
    - Calendars
  - Use metalanguage to encourage language development
    - Verbal chaining, mnemonics, paraphrasing, summarizing
  - Use a variety of teaching styles
    - Top-down, bottom-up, visual, inference, critical thinking
  - Use gestures and sign language (if appropriate)
  - Encourage self-monitoring and self-evaluation
- Teachers should reach out to the school audiologist or SLP for more techniques
AR Services for Students with APD

In addition to the environmental modifications, students with APD can benefit from other forms of remediation which can be offered in the schools:

1. Direct Therapy
   - Auditory training techniques, ex. discrimination tasks
   - Listening practice
   - Desensitization of background sounds

2. Coping and Problem-Solving Strategies
   - Planning ahead
   - Pre-tutoring
Management of Amplification

● Common amplification includes:
  ○ hearing aids
  ○ personal FM systems
  ○ cochlear implants

● Without systematic monitoring, hearing aids and personal FM systems result in a 50% failure rate in operation

● Daily visual inspection and listening check to note:
  ○ Note broken or cracked areas
  ○ blockage of openings
  ○ build-up of moisture in tubing
  ○ corrosion in battery compartment (teacher, classroom aides, SLP)
Direct instruction and indirect consultation

- Children who have hearing loss usually need direct instruction to aid in developing their listening skills, speech production, and use of language. This occurs in one of two ways:

  - Direct
    - Instruction within the classroom, one on one, or in small groups (pull out or push in)
    - Conducted by a teacher, SLP, or audiologist

  - Indirect
    - Teachers and related service providers receive training and administers
    - Teacher may perform daily listening check of amplification
    - Ex. SLP provides an inservice on how to develop language skills within existing curriculum
Counseling Component of Aural Rehabilitation

- Children with HL often present with a myriad of non-hearing related difficulties:
  - Self-esteem issues
  - Personal identity issues
  - Assertiveness issues
  - Anxiety/ Stress issues
  - Family problems
  - Cultural Issues

- If you recognize any of these difficulties in your student, consult fellow professionals.
Transition Planning to Post-Secondary Placements

To prepare for transition after high school, a meeting is held to establish an Individualized Transition Plan (ITP).

Individualized Transition Plan (ITP): A long-term plan to arrange further education or job training after high school.

Who attends meeting:
- Student
- Teacher
- Parent
- Representative from future college, vocational training program, or work setting
Take Home Message

- HL can have significant impacts on many aspects of child development, including education.
- Identification of HL is important, so screenings are mandated at several times during a child’s primary and secondary education:
  - Teachers can help with identification: SIFTER.
- Teachers are part of an team including SLPs and audiologists that provide aural rehabilitation.
- Aural rehabilitation can include:
  - Environmental changes
  - Amplification
  - Direct instruction & indirect consultation
  - Counseling
- Teachers should use SLPs and audiologists as a resource.