Engagement Through Play: Practical Strategies for Pediatric Audiology Appointments

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Clinical Background

- Pediatric Audiologist at Hear Indiana and administrator for the Hearing Aid Assistance Program of Indian (HAAPI)
- Pediatric Audiology Specialty Certification (PASC)
- Member of both the American Academy of Audiology and the American Speech Language Hearing Association
- Student Preceptor
- Experience across the lifespan
- Typical and atypical development
- Financial Disclosure: Employed by Hear Indiana
- Non-Financial Disclosure: No relevant non-financial relationship to discuss

Questions

What are two engagement strategies you can use to successfully obtain tympanometry or OAEs in young children?

How can adapting response expectations in the sound booth improve test outcomes for pediatric patients?

What are some effective tools or activities to maintain a child's attention during cochlear implant mapping appointments?

Patient report surveys indicate that 48% of patients feel nervous prior to coming to appointments.

Why does this matter?

Child Health Evaluation report that 50% of children report being nervous at the doctor with the highest nerves reported between 2-5 years of age.

Medical Economics and PatientPoint/OnePoll (2023)

Make it fun!

0-3 year olds: 3-6 appointments in a year
4-6 year olds: 2-4 appointments in a year
7-10 year olds: 1-3 appointments in a year
10+: At least 1 in a year
New CI users can have up to 10 appointments in the first year

Keep the child comfortable

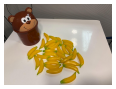
Sit on parent's lap
No strangers if unnecessary
Bring comfort item: Blanket/doll
High priority toys should stay high priority

Age Appropriate Testing

Auditory Brainstem Response (ABR): Infants and difficult to test patients

Visual Reinforcement Audiometry (VRA): 8 months to 2 years

Conditioned Play Audiometry (CPA): 2 years to 6 years



Conventional: 7 years and up

Assistive Technology Measure Modifications

Hearing Aids
- Verification
- Recorded carrier phrases
- Earmolds

Cochlear Implants
- Use toys to measure T-levels
  - Start as soon as possible, get them used to the feeling
- Objective measures (Impedances, NRI/NRT, ESRT)
  - Typically need to be completed last or in a solo appointment

Ideal audiology appointment

- Tympanometry
- Distortion Product Otoacoustic Emission (DPOAE)
- Air conduction 250-8000 Hz
- Bone conduction
- Speech Reception Threshold (SRT)
- Word Recognition Scores (WRS)
- Aided tonal thresholds
- Aided Speech Perception
- Speech in noise testing
- Hearing aid check
- Hearing aid programming with on ear measures
- Earmold impressions

Testing that requires touching ears:
- Tympanometry
- DPOAE
- Bone conduction
- Earmolds
- On ear measures

Maintaining attention

Take Breaks
Change the game you are playing
Race with the test assistant
Elicit parental support

Objective Measures

Distortion Product Otoacoustic Emission (DPOAE)

Tympanometry

Measurable outcomes

Participants will identify at least two strategies for obtaining tympanometry or OAEs in pediatric patients using age-appropriate engagement techniques.

Participants will describe at least two ways to modify traditional sound booth response methods to accommodate a child's preferred play or interaction style.

Participants will list at least two tools or activities that can be used to facilitate cooperation during cochlear implant mapping sessions.

Sleep Deprived ABRs

No sedation required
Cost effective
Sedation can be necessary

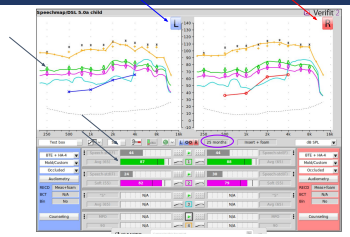
Desensitizing ears

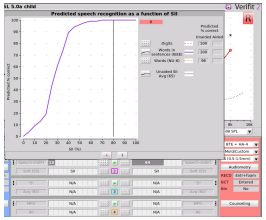
Touch ears everyday
Use a toy otoscope
Wear headphones at home
Play listening games at home
Keep positive appointments positive

What are other common services children with hearing loss are receiving?

Occupational therapy
Speech therapy
Listening and spoken language therapy
Physical therapy

Speech Intelligibility Index (SII)





Case Studies

5 year old

Very high energy
Hearing aid user
Sensory avoidant

Highly sensitive ears
Difficult to maintain attention
Delayed expressive language
Single sided deafness

5 year old - modifications

Use of a target on the wall with balls to throw to keep him engaged
Stacking blocks while running objective measurements
Coloring app on phone
Leave positive appointments positive
Express need for full time use to family

Where is he now?

CI user
13+ hours/day of wear time
Improving speech/language skills with outpatient therapy
Comprehensive audiogram and programming during 1 visit

3 year old

Neurodivergent
Bilateral hearing aid user

Difficult to obtain earmold impressions
Difficult to keep inserts in ears
Difficult to attend to tasks
Inability to obtain tympanometry
Low datalogging
Delay in expressive and receptive language

3 year old - modifications

Keep patient comfortable, sit on dad's lap
He loves math, use of phone calculator
OT to work on ear sensitivity
Increase wear time at home
ABA therapy
Outpatient speech therapy

Where are they now?

Tolerates earmold impressions
Tolerates full time use of his hearing aids
Continued outpatient therapies
Comprehensive audiogram and programming during visit, earmolds typically need their own visit

2 year old

Chronic middle ear concerns
Rare diseases and disorders clinic
Does not respond to loud sounds like a fire truck
Family history of hearing loss in sister
Passed newborn infant hearing screening, normal birth history
Will not tolerate on ear measures
Will not condition in soundfield after multiple attempts

2 year old - modifications

Worked to desensitize ears
Outpatient OT/PT
Came in multiple times to attempt testing

2 year old - where are they now?

Sedated ABR needed and revealed normal hearing

5 year old

Bilateral mild hearing loss
Global developmental delay
Genetic mutation needing many follow ups: Neurology, ophthalmology, GI specialist, OT, PT, ST/LSLS
Not making progress in speech, concern for hearing progression
Does well with on ear measures
Low data logging levels

5 year old - modifications

Use of sleep deprived ABR to confirm hearing loss
Work with ST/LSLS and OT on behavioral testing
Appropriately programmed hearing aids
Mom is the test assistant
Lots of breaks during his visits
Limit audiology appointments as he has many appointments

5 year old - where are they now?

Still no overarching diagnosis
Wears his devices most of the time
Will complete comprehensive audiogram
Tolerates earmold impressions