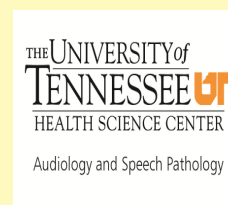




Fit to Talk: Checklist for Success

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Introduction

Is your infant or toddler fit to talk? Infants and toddlers are being fit with hearing aids at younger ages due to the success of newborn hearing screening. The EHDI 1.3.6 benchmark is being met across the country. This provides babies with access to sound sooner. A pediatric team, consisting of professionals and parents, is key to positive outcomes. The protocol and team approach at the University of Tennessee Health Science Center will be presented.

Clinical Questions

1. How do audiologists and speech-language pathologists collaborate to ensure that hearing aids are fit appropriately and outcomes are met?
2. How are hearing aids verified appropriately on young ears?
3. What factors influence progress?
4. How is progress with new hearing aids monitored over time?

Three case studies are outlined describing history, initial and ongoing assessment, verification, validation and intervention using the Fit to Talk Checklist.

Case Study 1: Auditory Neuropathy

- ◆ Born full term via C-section with increased gestational weight- 11 lbs, 2 oz.
- ◆ NICU 8 weeks, photolight therapy, supplemental oxygen, gentamicin for neonatal sepsis; failed NHS.
- ◆ Diagnosis: mild to moderate sensorineural hearing loss (SNHL) and later diagnosed with auditory neuropathy spectrum disorder (ANSD).
- ◆ Fit with Oticon Safari 300 SP BTEs and enrolled in aural/oral (a/o) communication therapy (tx)- 50% attendance rate; initially wore hearing aids consistently, however, became inconsistent over time; ANSD diagnosis later confirmed.
- ◆ Family has deferred a cochlear implant (CI) at this time.

Current Status: 3 yo male with bilateral ANSD. Recently issued Widex Dream D9 BTEs; plan to begin preschool in a mainstream classroom with individual speech-language therapy. Goals are to establish consistent wear schedule with amplification, attend preschool and therapy consistently to ensure success with listening and spoken language.

LittleEARS 35/35 (Meeting Milestones); PEACH (Further Review Indicated) : Quiet = 13/54%, Noise = 10/50%, Overall= 23/52%; Verification: RHA (soft) 55dB = 86% SII; (average) 65dB = 88% SII; LHA (soft) 55dB = 85% SII; (average) 65dB = 89% SII; MPO verified and ensured to be appropriately loud yet comfortable (Electroacoustically Acceptable).

Case Study 2 : JCIH Risk Factors Later Onset

- ◆ Born full term via C-section, decreased birth weight (5 lbs; 10 oz), placenta previa.
- ◆ NICU stay 12 days, required oxygen & ventilation for 2 days.
- ◆ Initially passed an ABR while in the NICU; JCIH risk factors- later onset HL.
- ◆ Diagnosis: normal hearing sloping to moderately severe SNHL for the RE and normal to moderate SNHL in LE.
- ◆ Fit with Oticon Sensei Pro 13 BTEs and enrolled in a/o communication tx (consistent attendance) due to low average auditory behavior and at risk for language delay.

Current Status: 18 mo male with normal hearing sloping to moderately-severe SNHL for the RE and normal to moderate SNHL in LE. Consistently wears Oticon Sensei Pro 13 BTEs and regularly attends a/o tx one hour weekly. Consistent progress with listening and spoken language.

LittleEARS 35/35 (Meeting Milestones); PEACH (Typical Performance) : Quiet = 22/91%, Noise = 18/90%, Overall= 40/91%. Verification: RHA (soft) 55dB = 90% SII; (average) 65dB = 92% SII; LHA (soft) 55dB = 87% SII; (average) 65dB = 88% SII; MPO verified and ensured to be appropriately loud yet comfortable (Electroacoustically Acceptable).

Fit to Talk Checklist for Success

UT
Diagnostic Audiology and Medical Checklist

- ✓ Infant fails newborn hearing screening.
- ✓ Infant fails hearing re-screen.
- ✓ Infant seen by pediatrician for medical evaluation and referral to audiologist.
- ✓ Infant seen for diagnostic evaluation with audiologist: Otcscopy, Tympanometry (1 kHz under age 6 months), Acoustic Reflexes, OAE, ABR, ASSR all confirm hearing loss.
- ✓ Type and degree of hearing loss diagnosed.
- ✓ EHDI 1.3.6 compliance: Referral made to state early intervention services (Part C) to include developmental assessment, appropriate referrals & family support.
- ✓ Appointment set with pediatric ENT to evaluate patient, discuss hearing loss.
- ✓ Hearing aid trial initiated following medical clearance.
- ✓ Pediatric ENT orders etiology studies: MRI, CT, and Lab workup for hearing loss.
- ✓ Consultations: Ophthalmology, Genetics, Cardiology Pediatric Psychological/ Developmental Evaluation (when appropriate).

UT
Hearing Aid Checklist

- ✓ Determine goals for child's auditory skills development.
- ✓ Make earmold impression(s) & select personal hearing aids based on type, degree and configuration of hearing loss to include direct audio input for FM if needed.
- ✓ Select colors, pediatric accessory kit, extended pediatric warranty, tamper proof battery doors.
- ✓ Issue earmolds and hearing aids.
- ✓ Complete orientation to devices and accessories, including Ling 6 daily listening check.
- ✓ Disable directional microphones, noise management and volume control.
- ✓ Verify hearing aids using Desired Sensation Level (DSL) 5a pediatric prescriptive fitting method.
- ✓ Complete simulated real ear measures (SREM) with measured real ear to coupler difference (mRECD) at 55dB, 65dB and MPO.
- ✓ Note Speech Intelligibility Index (SII) and compare to normative data for 55dB and 65dB inputs to ensure appropriate match to DSL 5a targets.
- ✓ Ongoing verification is needed as the child's ears grow and new audiometric results are documented.
- ✓ Make new earmolds approximately every 3-6 months or sooner if needed.
- ✓ Complete outcome measures such as LittleEARS and/or PEACH if not administered by SLP.
- ✓ Complete behavioral testing at approximately 6 months of age to support objective test findings. Hearing should continue to be monitored every 3 months until age 3.
 - Visual Reinforcement Audiometry (VRA) at approximately age 6 to 24 months.
 - Conditioned Play Audiometry (CPA) at approximately age 24 months.
- ✓ Amplification follow-up should continue every 3-6 months until age 3
 - Visit should include: listening check, visual inspection of HA and EM, EMI if needed, data logging check, counseling as needed, verify instruments each time new EMs and/or new audiogram is obtained.
 - FM system and/or Cochlear Implant consultation may be considered if performance is poor based on scores on PEACH, LittleEARS and input from SLP.

UT
Speech Language Pathology Checklist

- ✓ Perform listening check of hearing aids prior to beginning any assessment or session.
- ✓ Obtain case history including medical, developmental, educational and social information.
- ✓ Complete Family Needs Survey and respond to questions the family has regarding the child's hearing loss, aural rehabilitation therapy, etc.
- ✓ Assessment of Receptive/Expressive Language including Cognition, Play and Pragmatics: PLS-5, REEL, Rossetti, MacArthur-Bates, Integrated Scales of Development, Formal Language Sample.
- ✓ Assessment of Listening: Auditory Skills Checklist, IT-MAIS, LittleEARS, Integrated Scales of Development, CPA, Ling 6 Sound Check, ESP, Mr. Potato Head Task.
- ✓ Assessment of speech sounds if warranted: GFTA-2.
- ✓ Provide family education regarding communication options, audiometric results, assessment results, recommendations/goals for therapy, hearing age/language age and typical development.
- ✓ Follow up with referring audiologist and pediatric ENT regarding outcomes.
- ✓ Initiate aural habilitation focusing on goals set by clinician and family.
- ✓ Perform ongoing assessment of speech, language and listening every 3-6 months to ensure child is meeting listening and language expectations and closing the gap between their hearing age and language age.

Case Study 3: Connexin 26

- ◆ Born full term via C-section with normal birth weight; failed NHS.
- ◆ Diagnosis: mild to moderately-severe SNHL for the RE and a moderate to moderately-severe SNHL for the LE.
- ◆ Fit with 2 Oticon Sensei Pro BTEs.
- ◆ Enrolled in a/o communication tx weekly with consistent attendance.
- ◆ Limited progress; struggled to wear hearing aids.
- ◆ Hearing loss progressed overtime.
- ◆ CI at LE (activated December 2014) following unsuccessful use of hearing aids; acclimated quickly to L CI ; continues to refuse RHA.
- ◆ R CI scheduled for May 2015.

Current Status: 28 mo female with CI at LE and HA at RE (moderately-severe to severe SNHL). Patient never acclimated to wearing hearing aids. Remarkable progress has been noted since activation of L CI. **IT MAIS CA = 6 months = 10/40 = 25%; IT MAIS CA= 27 months = 21/40 = 52.5%. LittleEARS Pre-CI 17/35; LittleEARS Post-CI -20/35 (Not Meeting Milestones). Verification: RHA (soft) 55dB = 52% SII; (average) 65dB = 55% SII; MPO verified and ensured to be appropriately loud yet comfortable (Electroacoustically Acceptable).**

Take Home Points: FIT TO TALK



- ◆ **Focus first on finding support through EHDI, Hands & Voices and Guide By Your Side.**
- ◆ **Initiate conversation with professionals to ensure you understand your child's hearing loss.**
- ◆ **Take time for specialized speech/language & ongoing audiological assessments.**
- ◆ **Team must set goals.**
- ◆ **Outcomes must be measured.**
- ◆ **Talk to other parents and professionals for additional support.**
- ◆ **Audiologist should always verify the hearing aids.**
- ◆ **Long term outcomes are affected by several factors.**
- ◆ **Know that commitment is essential for your child's success.**

A team approach using precise verification, validation, standardized & criterion referenced assessments is essential to ensure your child is Fit to Talk.



References

Available on Handout

14th Annual Early Hearing Detection & Intervention (EHDI) 2015