

Knowledge Sharing: Pediatric Amplification Tips and Tricks

Implementing Best Practice

KIPAT

Knowledge Implementation in Pediatric Audiology Team



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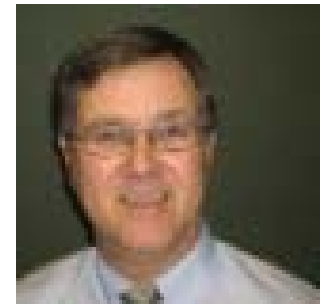
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Session goals

Review “Best Practice in Pediatric Amplification Survey” results.

Define gaps in practice and suggestions for implementing best practice.

Share information with one another – What are your tips and tricks.

Management of Pediatric Hearing Loss

Best Practice Survey

- Include information about survey participants

When measuring a child's hearing threshold levels who is under 6 months of age, I use the following audiometric transducer most of the time

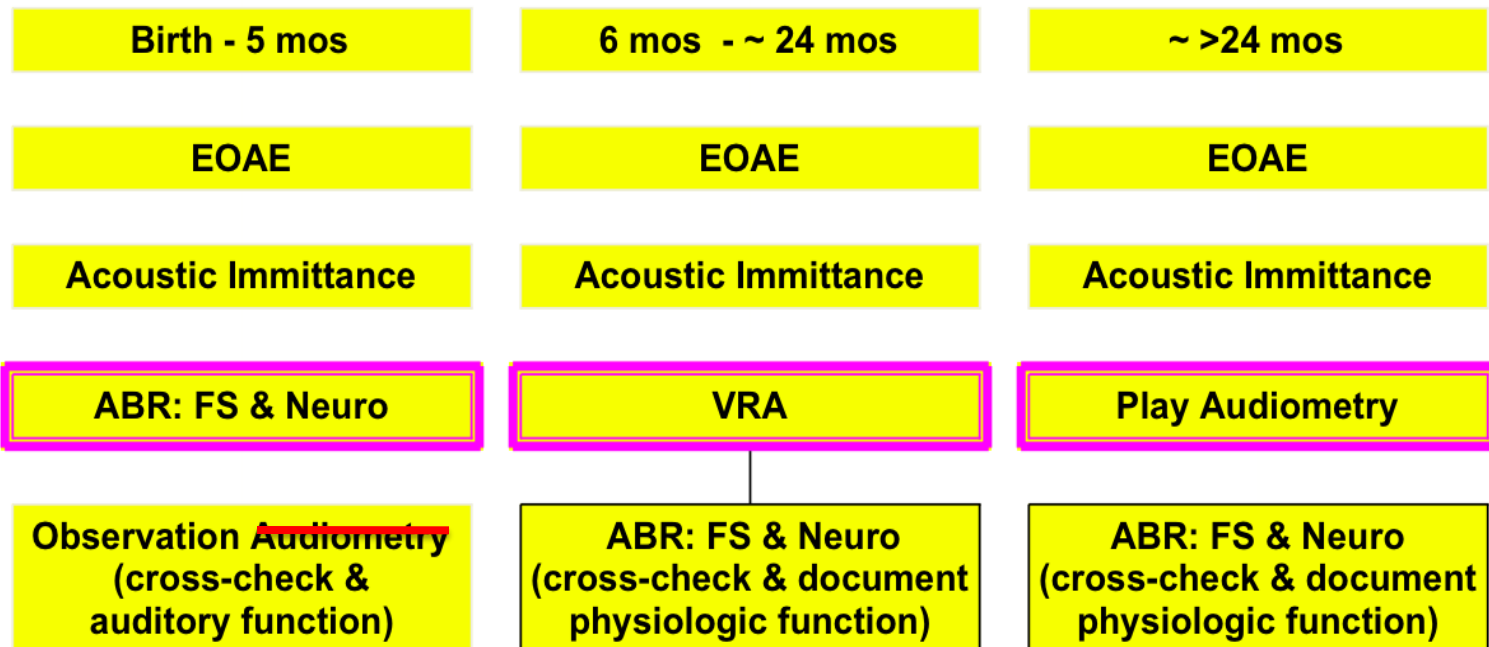
– 64.5% use insert earphones

– 23.1% use soundfield speakers at 45 degrees

Cross Check Principle

“The results of a single test are cross-checked by an independent test measure.”

Comprehensive Audiologic Assessment (includes case history)



Is it BOA or just “BO”

- Biased observers.
- Numerous behaviors accepted as response indicators.
- Age and developmental level of the infant/child strongly influence test results.
- Response probability dependent on infant state, the nature of the stimulus, the ambient noise level, and the agreement among two or more examiners.
- Infants with normal hearing show wide variability in responsiveness.

Comprehensive Assessment (birth to approx. 6 months)

- Child and family history, an evaluation of risk factors for congenital hearing loss, and a parental report of the infant's responses to sound.
- A frequency-specific assessment of the ABR using air-conducted tone bursts and bone-conducted tone bursts when indicated.
- Distortion product or transient evoked OAEs.
- Tympanometry using a 1000-Hz probe tone.

Comprehensive Assessment (birth to approx. 6 months)

- Clinician observation of the infant's auditory behavior as a cross-check in conjunction with electrophysiologic measures.
- Behavioral observation alone is not adequate for determining whether hearing loss is present in this age group, and it is not adequate for the fitting of amplification devices.

When measuring a child's hearing threshold levels who is between 6 and 36 months of age, I use the following audiometric transducer most of the time

– 57.9% use insert earphones

– 23.1% use soundfield (speakers at 45)

Visual Reinforcement Audiometry

Why use insert earphones?

- Ear-specific information
- Reduce external noise
- Ease of mobility of head
- Avoids ear canal collapse
- **Allows for the accurate calculation of HL to SPL**

Visual Reinforcement Audiometry



Tips and Tricks

- Have child sit in a high chair so assistant (caregiver/staff) can help keep child's hands busy
- Give the child something to hold
- Clip insert earphones behind the child
- Trim down the foam for tiny ears
- Use child's earmolds coupled to the insert earphones
- What are your "tips and tricks"?

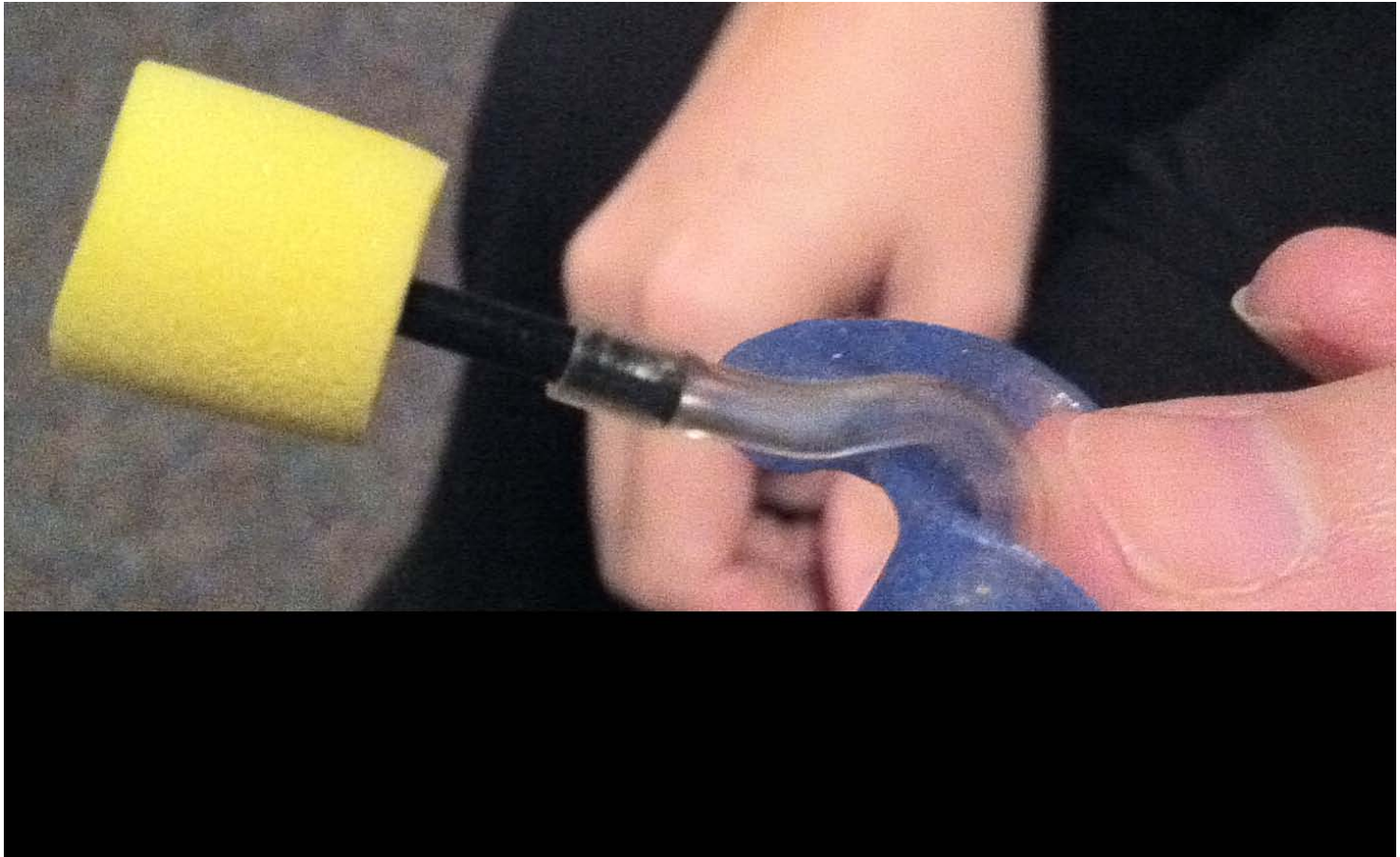
Tips and Tricks

“The earmold tubing is stretched!”

- Change tubing?
- Fun tack?
- Tape?
- Adapt the tubing?



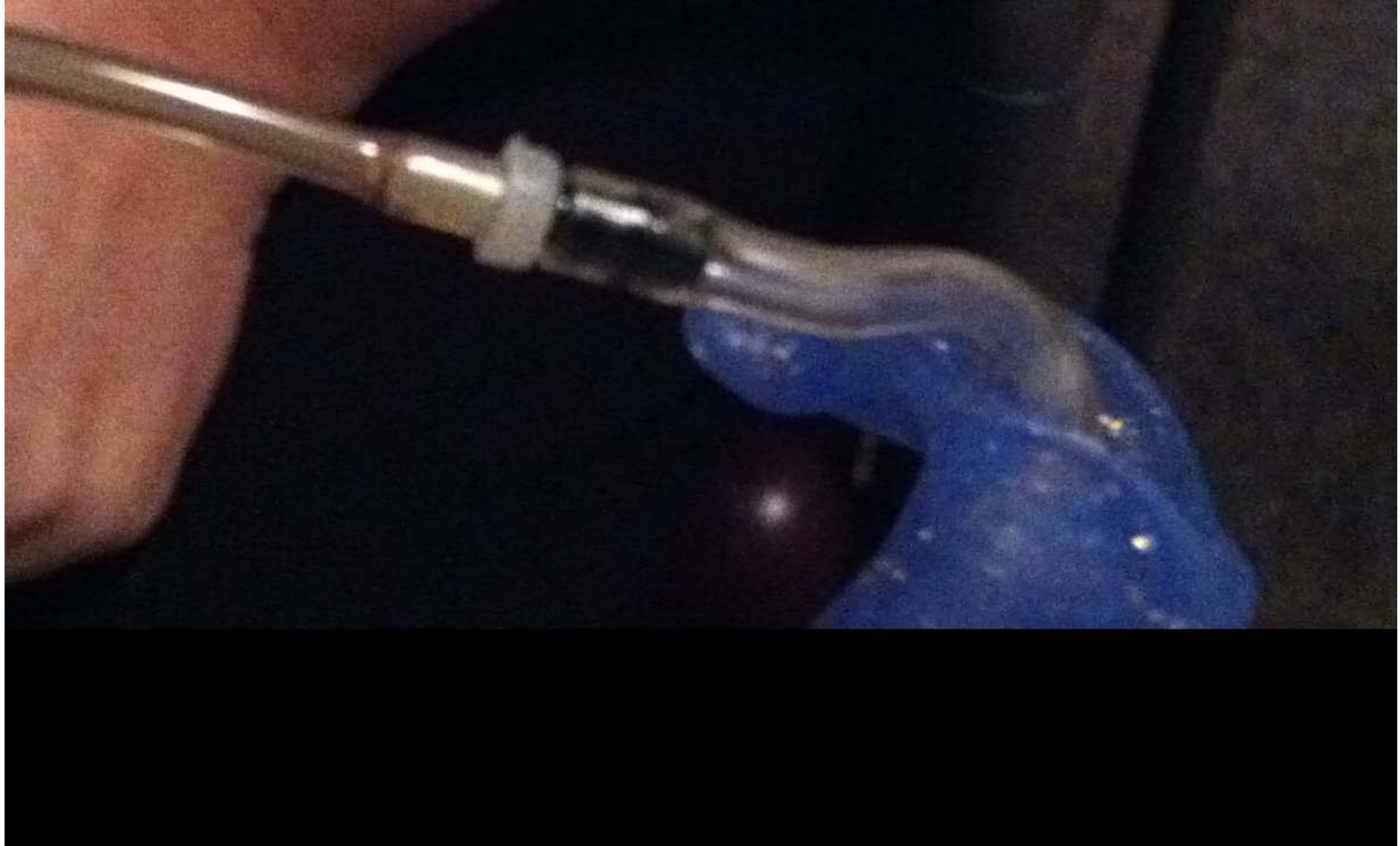
Tips and Tricks



Tips and Tricks



Tips and Tricks



When measuring a child's hearing threshold levels who is older than 36 months of age, I use the following audiometric transducer most of the time

- 79.6% use insert earphones
- 20.2% use standard or supra-aural earphones

Why supra-aural?

- Audiologists who chose supra-aural earphones often commented that:
 - *the child's activity level and behavior determines whether inserts or standard earphones are used.*
 - *I use supra-aural headphones with younger children doing CPA, since it can be helpful to sit at a portable audiometer in the soundbooth. We do not have insert earphones for our portable audiometer.*

Why supra-aural continued

- *For older children, I use insert earphones. I tend to use the portable audiometer for play above the level needed (ages 5 & 6 often), because CPA is more engaging than standard audiometry for the younger children, even if they are capable of doing standard audiometry.*

Why supra-aural continued

- *inserts used for children w/ HL. Children scheduled in non-HI appts, supra-aural headphones are used 'most of the time'*
- *Depends on the ears and head and child. Use what works best for the individual.*
- *I use standard earphones when doing play audiometry (3 -4 years of age), otherwise I use insert earphones (4-5 years or older).*

Why supra-aural continued

- *Probably a matter of **habit** based on how long I have been practicing. If there is any question of collapsing canals I use inserts.*

Tips and Tricks

Have your play audiometer recalibrated for insert earphones or use correction factors if you only have output for one transducer.



Why do 62% Never or Seldom measure RECD at Assessment?

- I NEVER or SELDOM measure the RECD at the time I measure hearing threshold levels because:
Choose all that apply.

– Measure RECD only at fitting/verification:	86.5%
– Children are often uncooperative	30.6%
– I don't have time to measure RECD	15.7%
– Do not feel confident taking RECD measurements	14.4%
– Don't think that RECD provides additional info	12.7%
– Do not own real ear system:	6.6%
– Protocol doesn't include RECD	3.9%
– I do not believe the RECD to be useful	2.6%
– <i>I don't know what an RECD is</i>	0% 😊

Real-Ear-to-Coupler-Difference

- Allows the audiologist to know the difference between the output in the real-ear and the output on a 2cc coupler that is used in the hearing aid fitting and verification process.
- The RECD first allows the audiologist to accurately **convert assessment information collected with insert phones from dB HL to dB SPL** (ear canal level) for use within the hearing aid selection and fitting process.

Tips and Tricks



Tips and Tricks



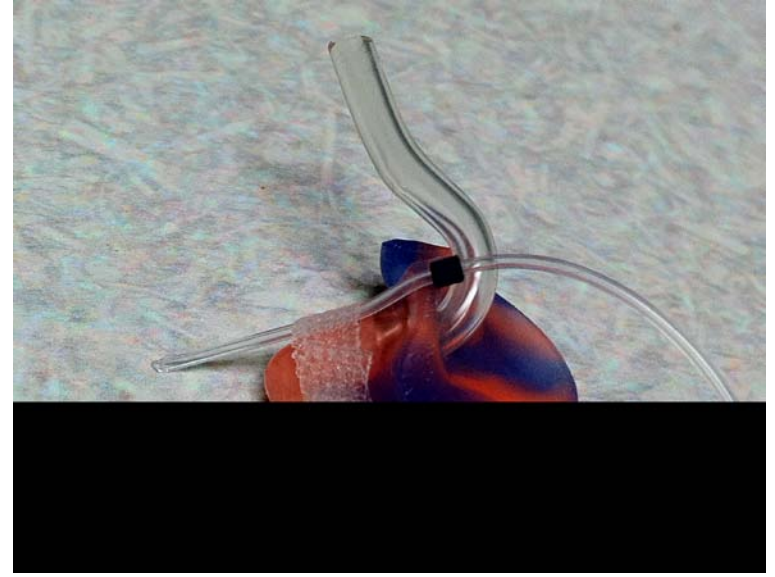
Tips and Tricks

Be confident!

Sequential insertion – measure depth, anchor with finger or lanyard of probe assembly, insert foam tip or earmold

Simultaneous insertion

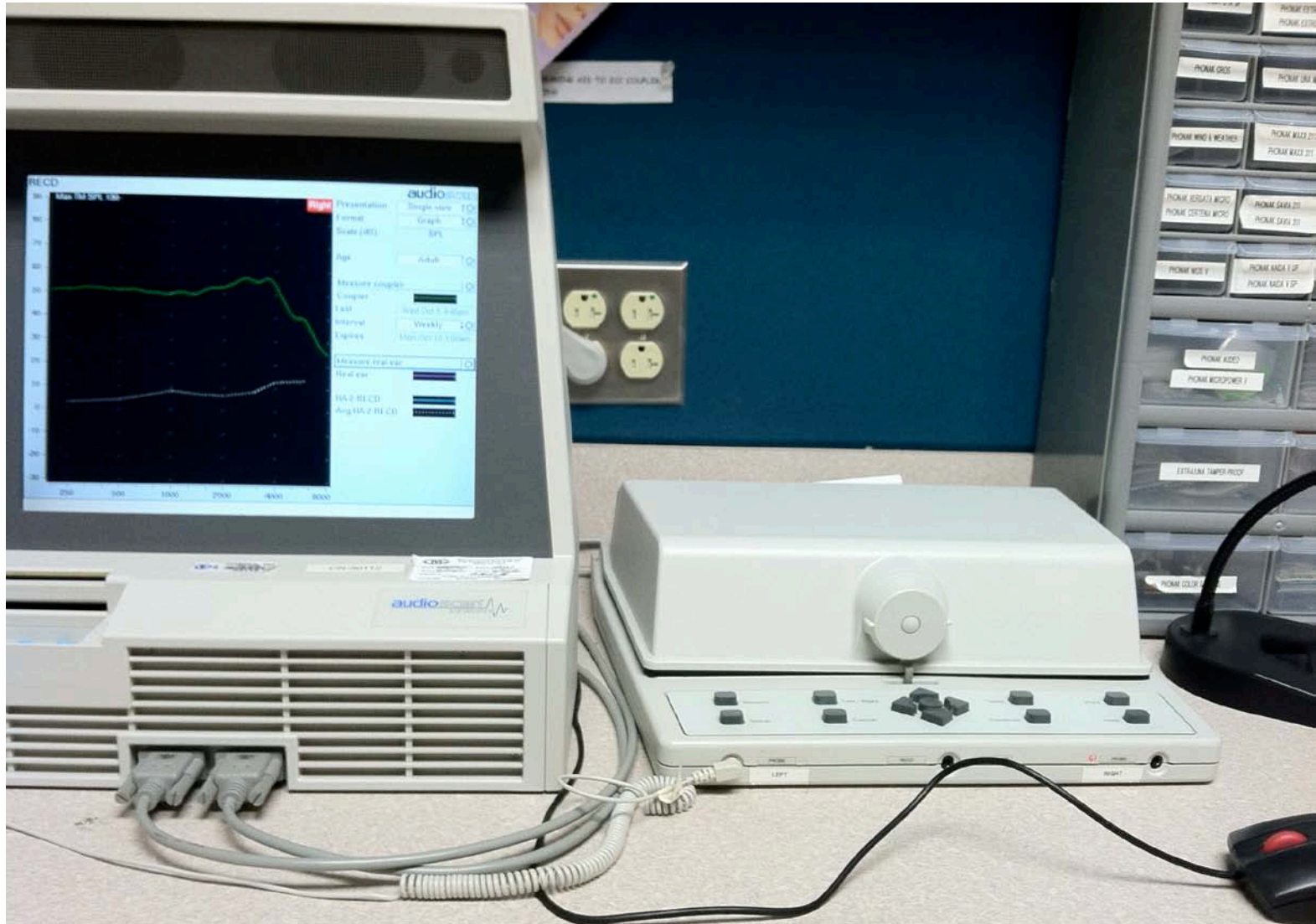
Tips and Tricks



Common Pitfalls

- Not being prepared (pre-measure, plug-in, calibrate, measure coupler)
- Occluded probe
- Slit leak venting
- Probe not in far enough
- What are your tips and tricks?
- My favorite (and most common mistake)

What's wrong with this picture?



Survey results on real-ear

In my practice I perform real ear measurements directly on the child's ear to my prescriptive targets _____ of the time. Fill in the blank selecting from the %age options in the dropdown menu below.

53.53%

“Real” Real-Ear



Tips and Tricks

- Be prepared and relaxed
- Use external speakers
- A little movement is fine
- Bubble are magic but can be too busy
- Find quiet distracting toys
- What are your tips and tricks?

