



Learning Outcomes
After this course, you will be able to: Describe why Bod For verification is important in
 Describe why Real Ear verification is important in hearing instrument fittings
 Understand which systems support Real Ear Fit in the EXPRESS fit Fitting System
 Understand how to use Real Ear Fit and the steps required to a successful first fit
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In Agreement

- International Hearing Society (IHS)
- American Academy of Audiology(AAA)
- American Speech, Language Hearing Association (ASHA)

 All recommend real ear measurements for the verification of hearing instrument fittings



Houston... We Have a Problem

- 2009 Consumer Report on hearing instruments found that hearing care providers incorrectly fit about 2/3 of patients, due to lack of verification with REM
- Under-fit: leaving important speech cues inaudible
- Over-fit: delivering excessive amplification re: hearing loss

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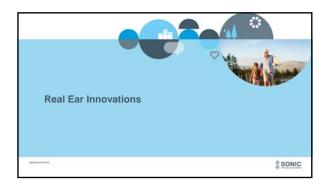


Why Don't We Use Real Ear?

- Number 1 reason Hearing Care Providers do not use real ear is the lengthy process or lack of time
 - Calibrating the probe tube, inserting the probe tube, inserting the probe tube with the hearing aid etc...
 - Going back and forth between the fitting software and the real ear software

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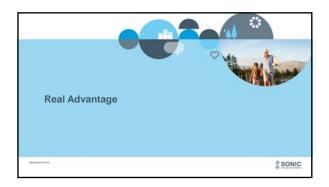




Real Ear Fit from Sonic Real Ear Fit An effective, efficient and easy-to-use verification tool embedded in the EXPRESS fit Fitting Software An automatic match to an individuals unique targets reducing the need for time-consuming manual fine tuning

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Real Ear Fit from Sonic Compatible REM systems MedRx Avant Speech MedRx Avant Speech + MedRx Avant REM sp Interacoustics Affinity Interacoustics Callisto



Efficiency	
Automatic adjustment of the response to match prescriptive targets within EXPRESS fit Fitting Software, without switching to a separate REM software	
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Ease of Use	
Easy to understand prompts taking the guesswork out of complex verification protocols	
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Accuracy	
Each individual ear canal volume is measured	
to create a personalized and accurate fit to target	
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The Outer Ear

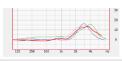
- Provides a natural boost of sound in the high frequencies, known as the resonant peak
- Influencing the resonant peak
 - Open ear canal resonance
 - External ear canal resonance of the pinna and concha
 - Head diffraction



Real Ear Un-aided Gain (REUG)

• REUG

- Sound pressure level of an open ear at the level of the tympanic membrane
- Each individuals exact REUG is unknown until measured





Audiogram • Once the hearing loss is identified, hearing thresholds are only the starting point for calculating gain in the fitting software

In-situ Gain • The difference in SPL at the tympanic membrane versus free-field • In-situ gain targets influenced by electroacoustic parameters such as: • Vent Size • Hearing Instrument Style • Age • Fitting Rationale

Insertion Gain

- With In-The-Ear style hearing aids, the space taken up by the instrument impedes the open ear gain
- Fitting software overcomes this loss by applying the appropriate insertion gain (aided gain unaided gain)
- Insertion gain targets can vary by fitting rationale for the same exact hearing loss



Fitting Rationales

• 3 fitting rationale insertion gain targets (50 dB flat loss)



Real Ear Aided Gain (REAG)

- The first fit on a hearing instrument remains an approximation to prescriptive targets unless REM confirms the gain in the aided ear
- Over or under amplification may be occurring across the frequency range
- Manual fine tuning is commonly needed to match the response to the prescribed targets

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Real Ear Fit One integrated system to simplify the steps of the verification procedure 1. Measure REUG 2. Measure REAG 3. Automatic fine-tuning of the response to meet target





Set-up

- Connect and install your REM equipment and software on the same PC as EXPRESSfit
- The Real Ear Fit icon will appear in the EXPRESSfit toolbar

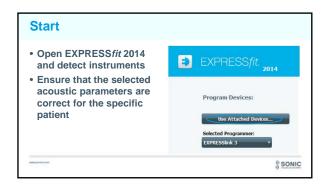


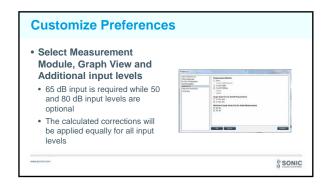
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Calibrate the Speaker

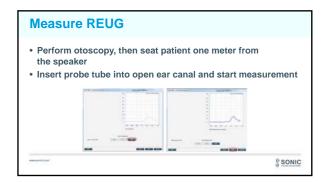
- Before launching EXPRESSfit, calibrate the speaker used for measurements
- Once speaker calibration is complete, close the REM software
 (Real Ear Fit cannot open if REM software is open)







Calibrate Probe Tube • Hold the reference mic one meter from the speaker, select right or left • When finished, select 'Next'



Measure REAG Carefully place hearing instrument into position magnetic action in the property of the position in the property of the propert

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Real Ear Measurement Complete The fitting graph will now reflect the patient's real ear data Option to either apply or discard Real Ear Fit adjustments to the hearing instruments Select 'Finish' to apply your choice

Real Ear Measurement Complete • If you apply the adjustments, you can still return to Predicted Fitting data under 'Edit' in the Toolbar

Real Simple • Future changes to Audiogram, Fitting Rationale, or Experience Level will not require a new REAG measurement • Changes to acoustics or Instruments will require a new REAG measurement • When the state of the control of the control







• Run Feedback Manager • Perform Real Ear Fit • Adjust for Patient's Own Voice

Real Easy, Real Simple Improved accuracy of first fit No manual fine tuning involved Procedure takes 5 to 10 minutes Reduces follow up appointments Increases satisfaction at first fit

Final Comments

- Thank you so much for attending Real Simple, Real Ear Fitting Tool
- Any Questions?
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