



Innovations in Audiology from Interacoustics

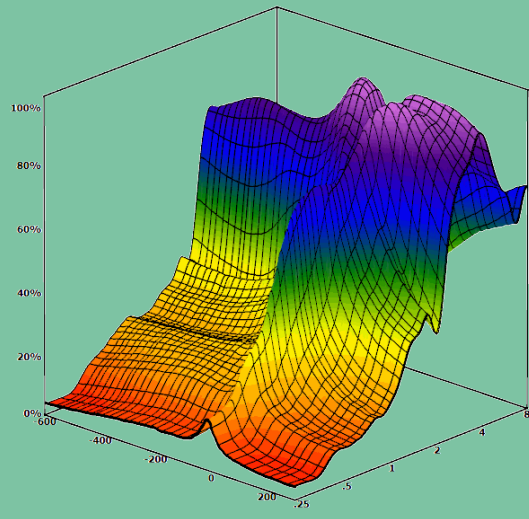
Attiq Rehman – Regional Manager

Applied research

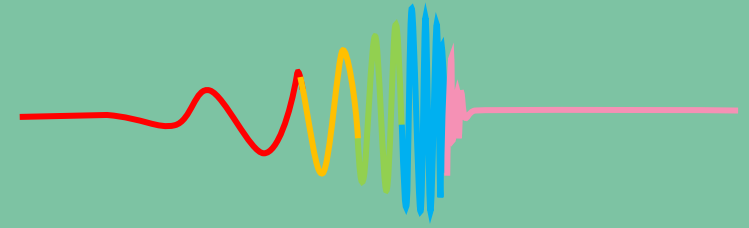


**Dedicated research center
(Interacoustics Research Unit) with
strong links to international research
and academia world**

- Open research projects in technical audiology
- Supports Interacoustics and other brands through publication, knowledge transfer and exploration projects.



Wideband Tympanometry



CE-Chirp®

ACT™

Audible Contrast Threshold test



IA-AMTAS



Quality Assurance

Multiple Tympanograms

Save time with fewer measurements

226 Hz Tymp

1000 Hz Tymp



Know your Type C Tympanogram

Know when OME is present in the middle ear

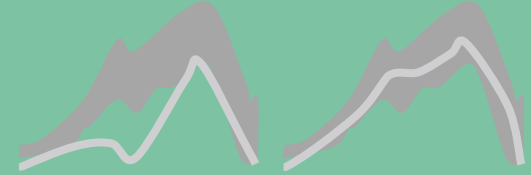
OME present
226 Hz Tymp

Air-filled
226 Hz Tymp



Absorbance

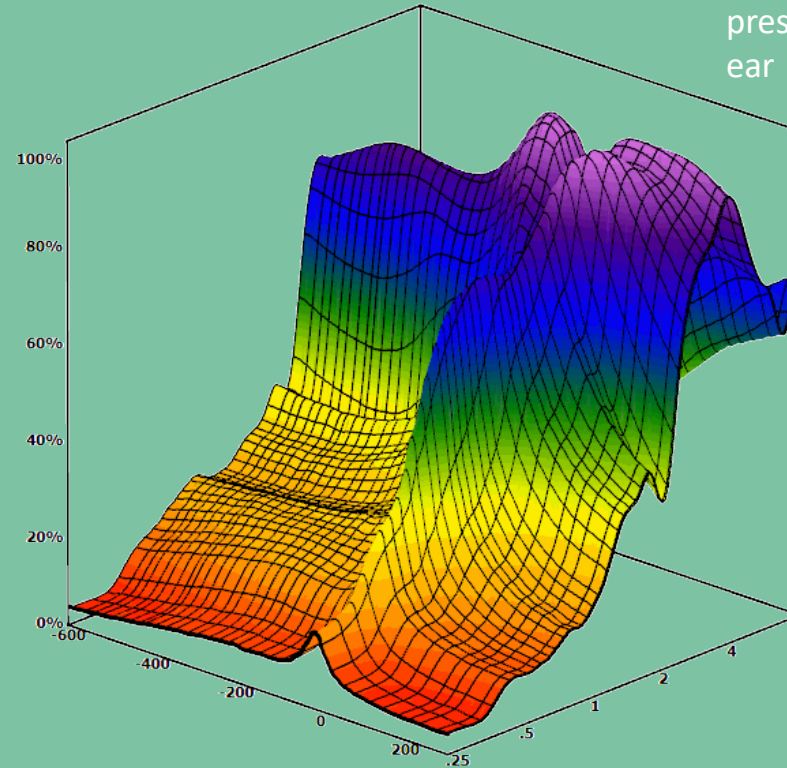
Absorbance



Improved Sensitivity

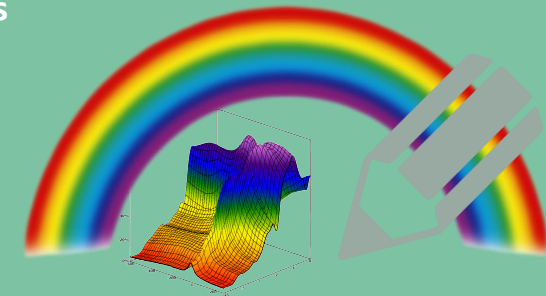
Improved accuracy over standard tympanometry

WB Averaged Tymp



Drawing Rainbows

Child tolerates measurement

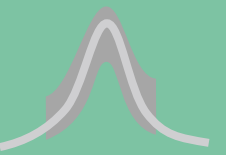


Stable and robust results

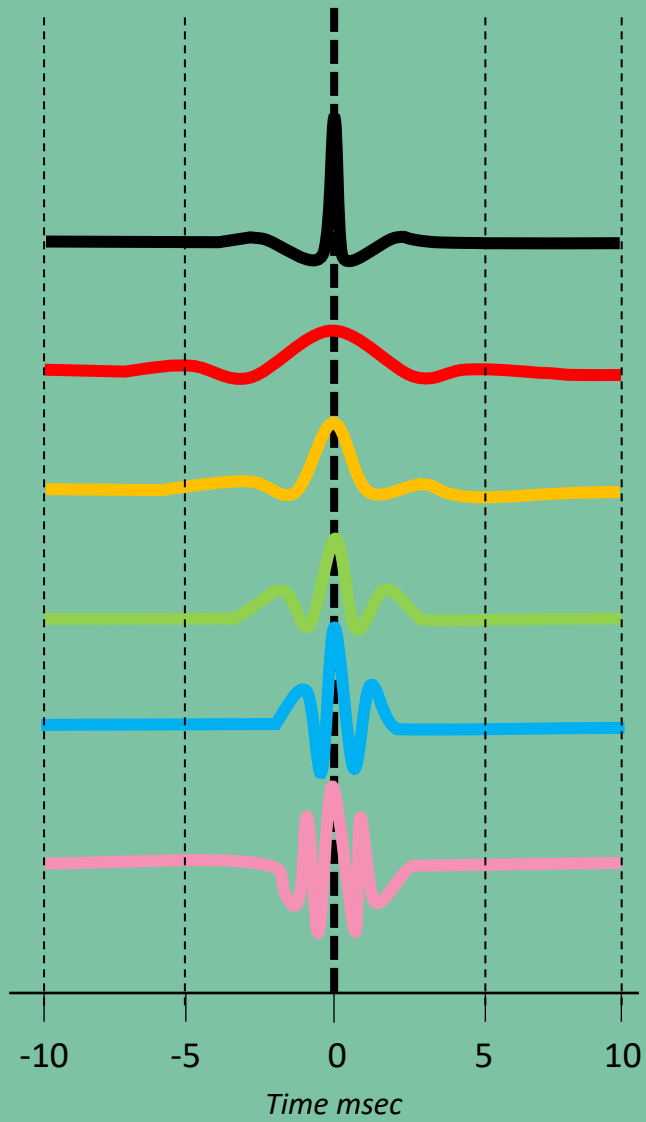
Clear results with noisy children

Noisy 1000 Hz Tymp

WB Averaged Tymp



Wideband Tympanometry



Sum
(500 Hz - 8 kHz)

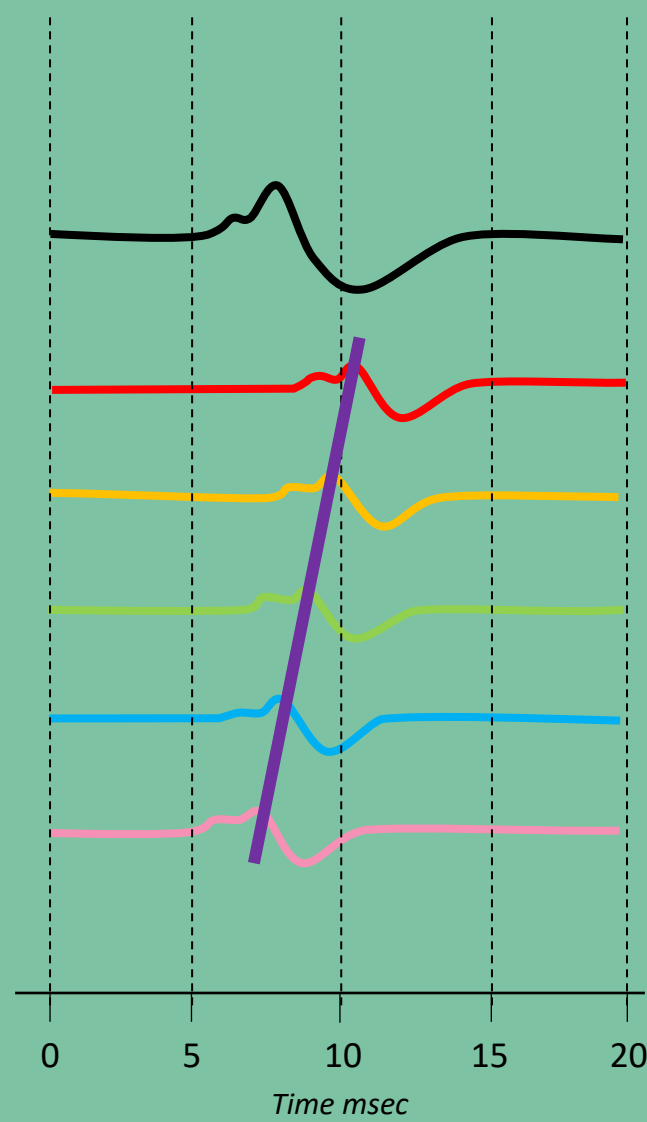
500 Hz

1 kHz

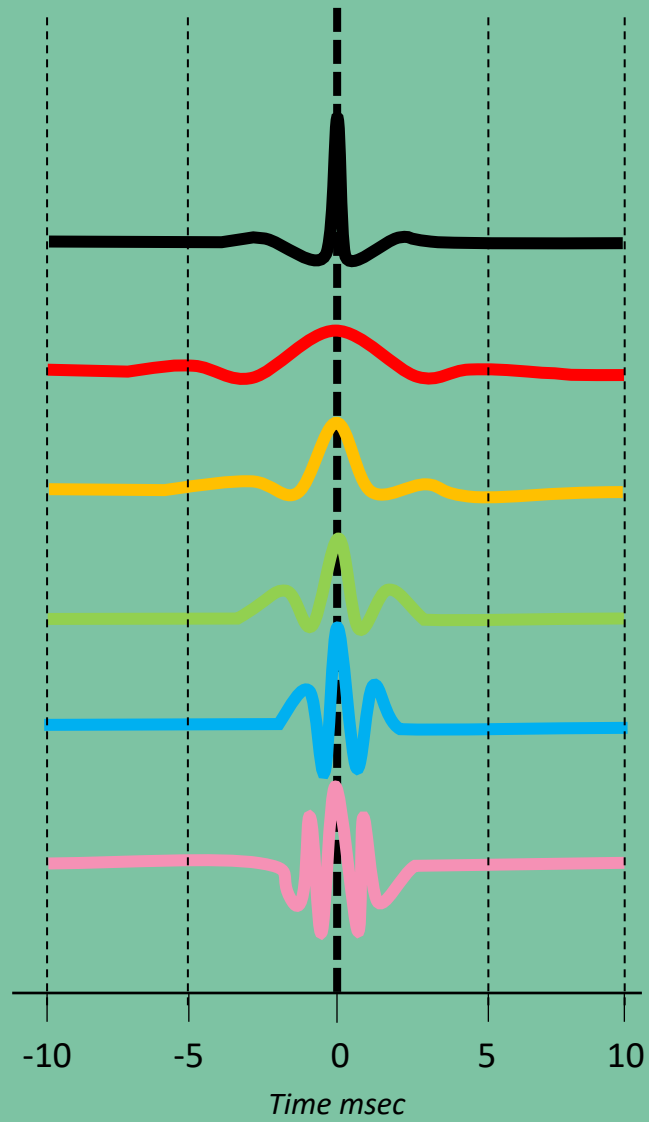
2 kHz

4 kHz

8 kHz



CE-Chirp[®]



Sum
(500 Hz – 8 kHz)

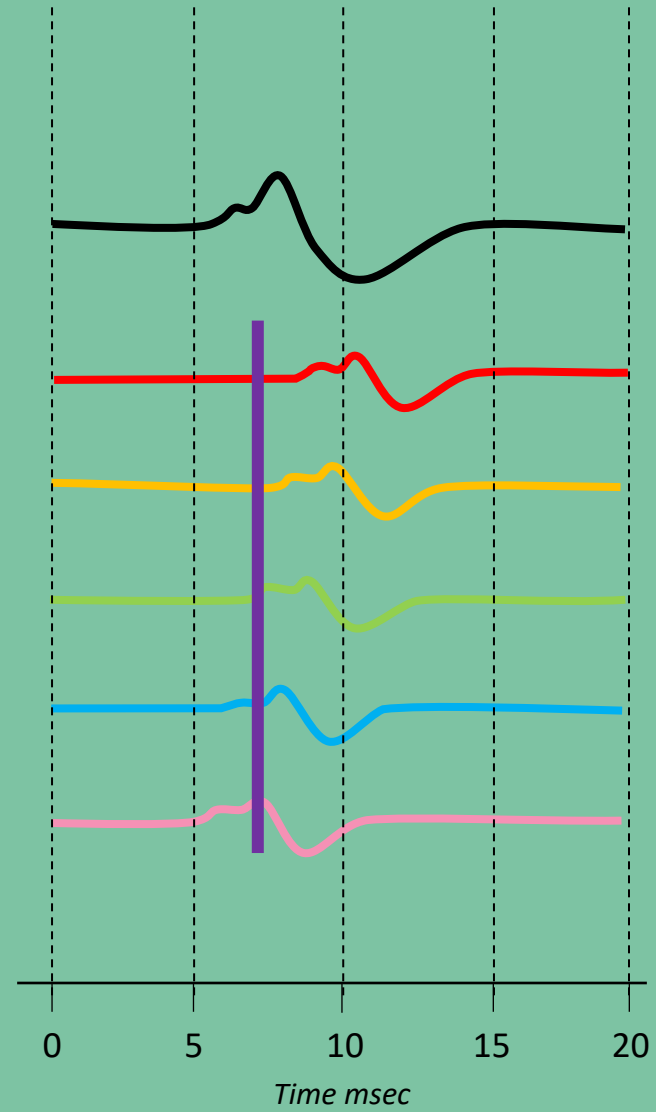
500 Hz

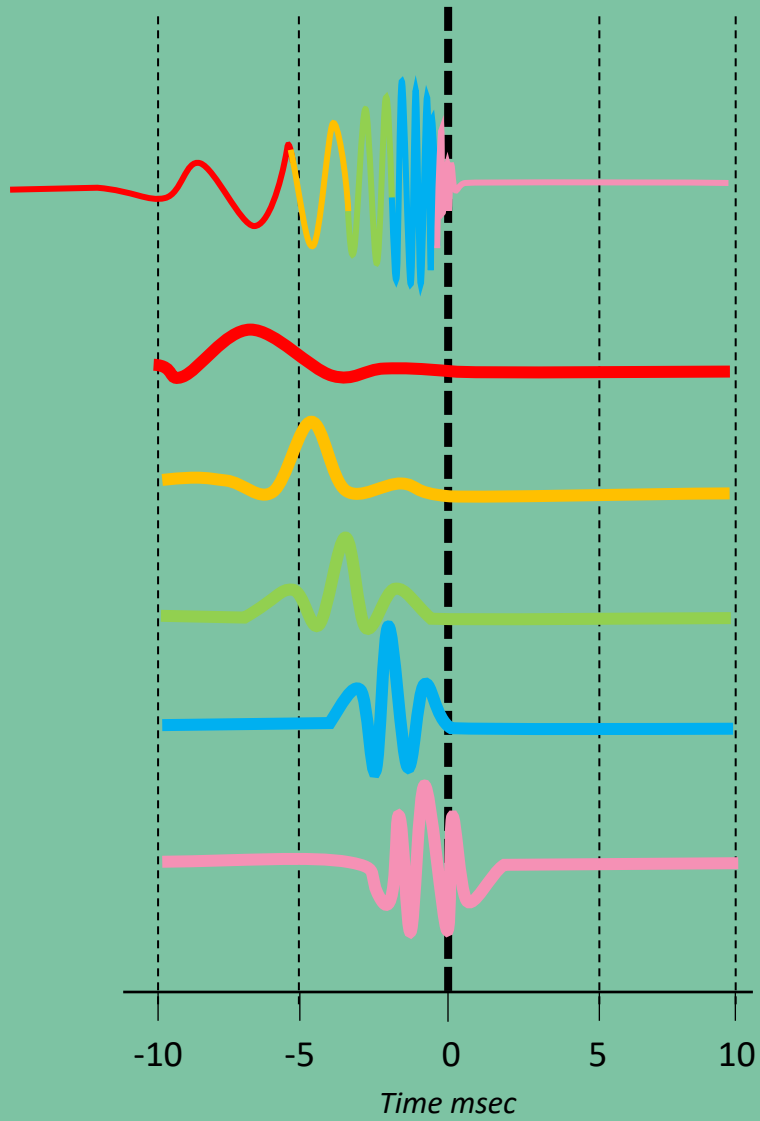
1 kHz

2 kHz

4 kHz

8 kHz





Sum
(500 Hz – 8 kHz)

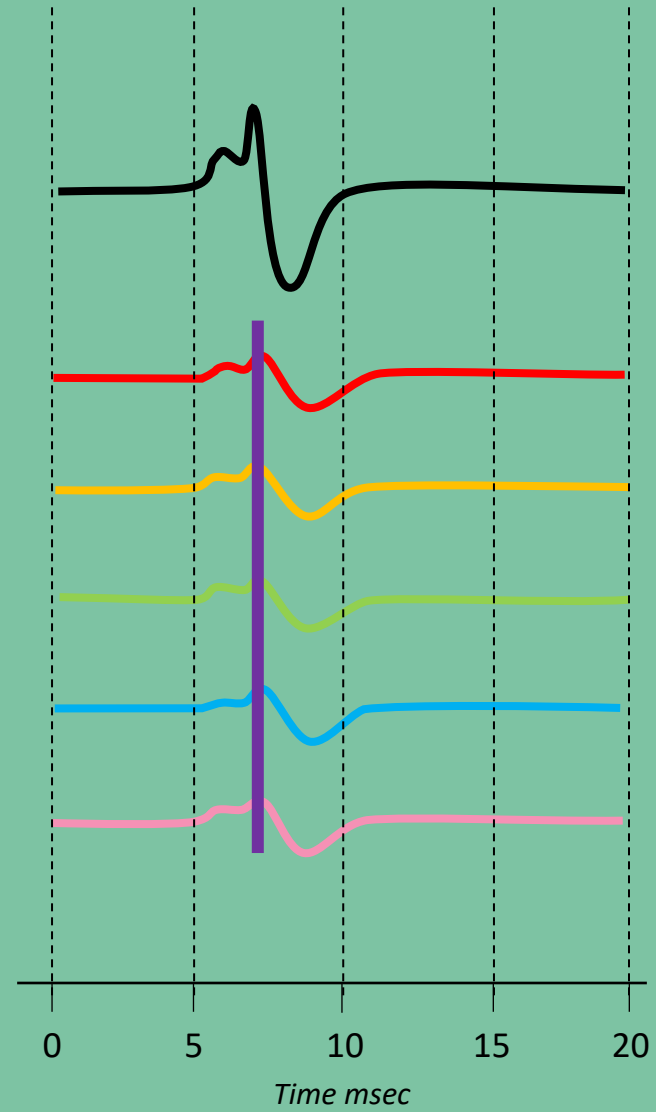
500 Hz

1 kHz

2 kHz

4 kHz

8 kHz



Automated PTA and speech testing – freeing the Audiologist to perform other tasks simultaneously

Reduce waiting lists

Remote/satellite clinics and teleaudiology

Quality indicator report ensuring accuracy

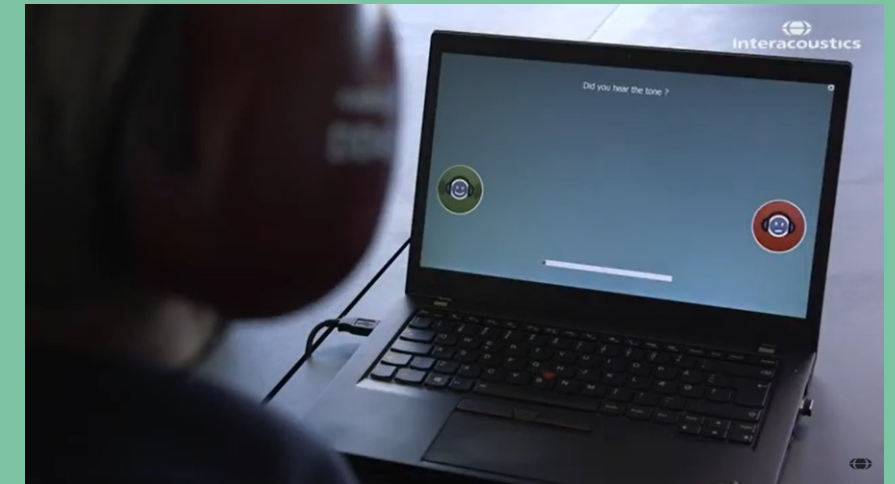
Developed with; University of Minnesota, the University of Utah, and the James H. Quillen Veterans Administration Medical Centre. The development was funded by the National Institutes of Health Small Business Technology Transfer (STTR) Program

Margolis, R. H., Glasberg, B. R., Creeke, S., & Moore, B. C. (2010). AMTAS: automated method for testing auditory sensitivity: validation studies. *International journal of audiology*, 49(3), 185–194. <https://pubmed.ncbi.nlm.nih.gov/20109081/>

Eikelboom, R. H., Swanepoel, deW., Motakef, S., & Upson, G. S. (2013). Clinical validation of the AMTAS automated audiometer. *International journal of audiology*, 52(5), 342–349. <https://pubmed.ncbi.nlm.nih.gov/23548148/>



IA-AMTAS



13 PTA indicators and 9 REM indicators which can all be configured to match the protocol of the local site



A system to ensure clinical compliance and quality across large trusts with varying grades of staff and locations

Traffic lights and prompts to perform a sequence of tasks in Audiometry and Real Ear Measurements



Quality Assurance



The Audible Contrast Threshold test (ACT™)

ACT Test

Audible Contrast Threshold

A Psychoacoustic test that predicts Aided Speech in Noise ability. Guiding optimal setting of help in noise features.. It takes 2 minutes.. Is inclusive of all languages “language independent”.. The results can soon be automatically incorporated by some hearing aids and there is guidance to the Audiologist on what to do with the results.



Predicts speech in noise
ability



Language independent

ACT™

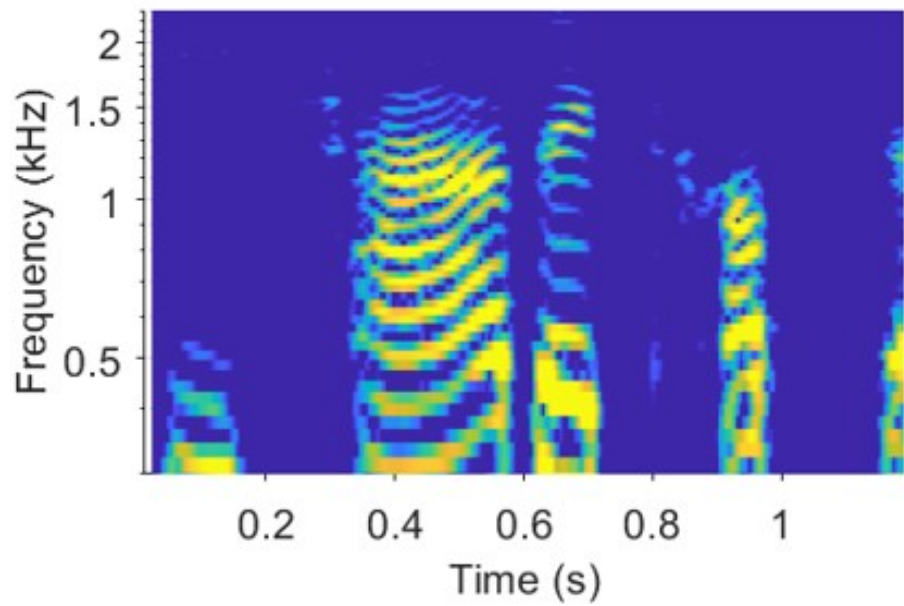
Audible Contrast Threshold test



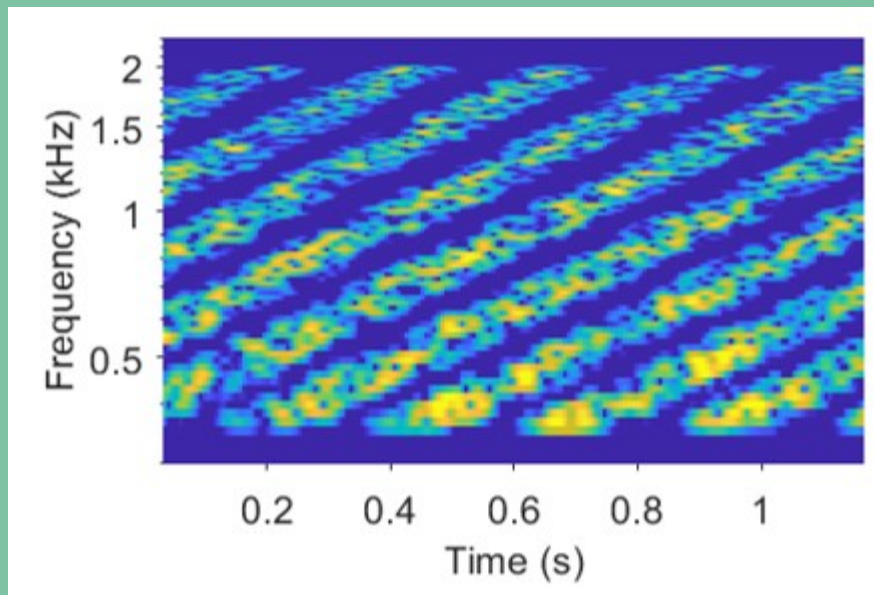
The stimulus automatically adjusts
to the PTA

2 minutes to perform

If ACT doesn't use
speech, what is the
stimulus?



Although it doesn't use language, the stimulus replicates the modulations that code language into speech



Full

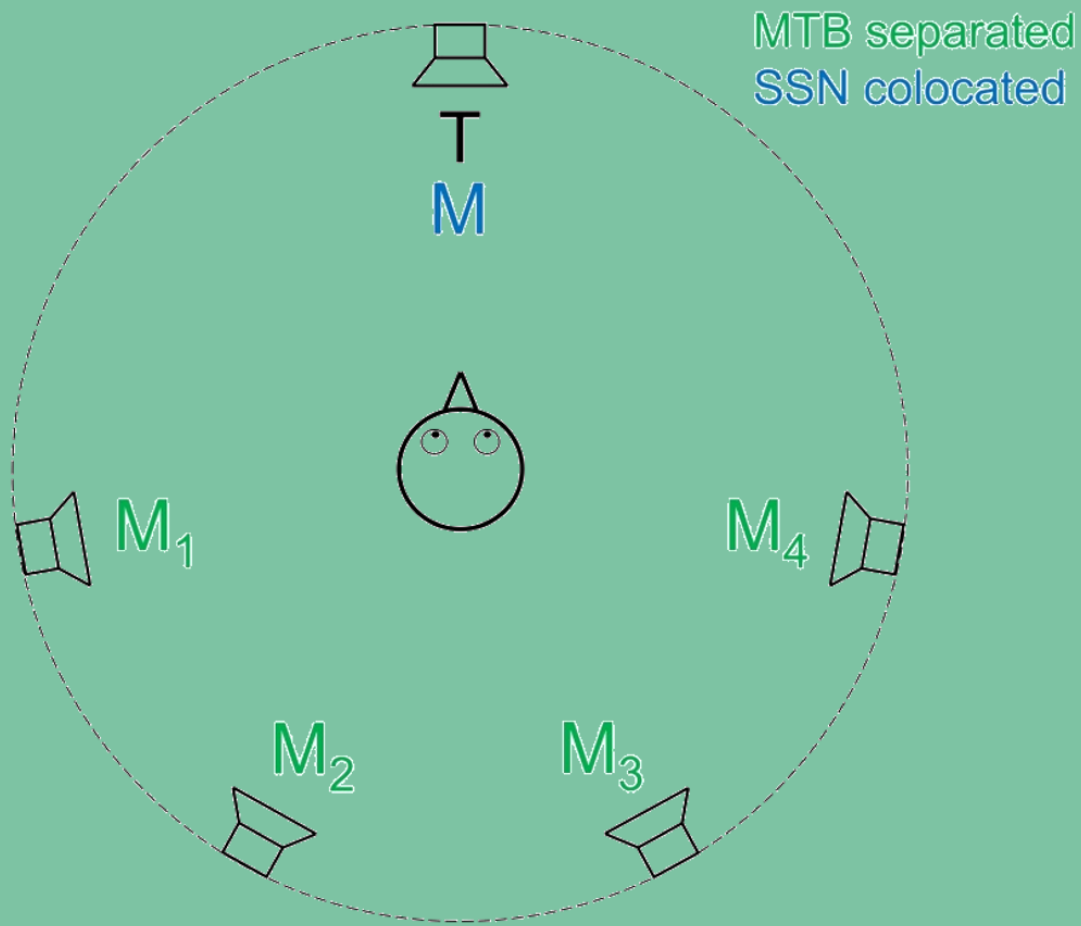


Ref

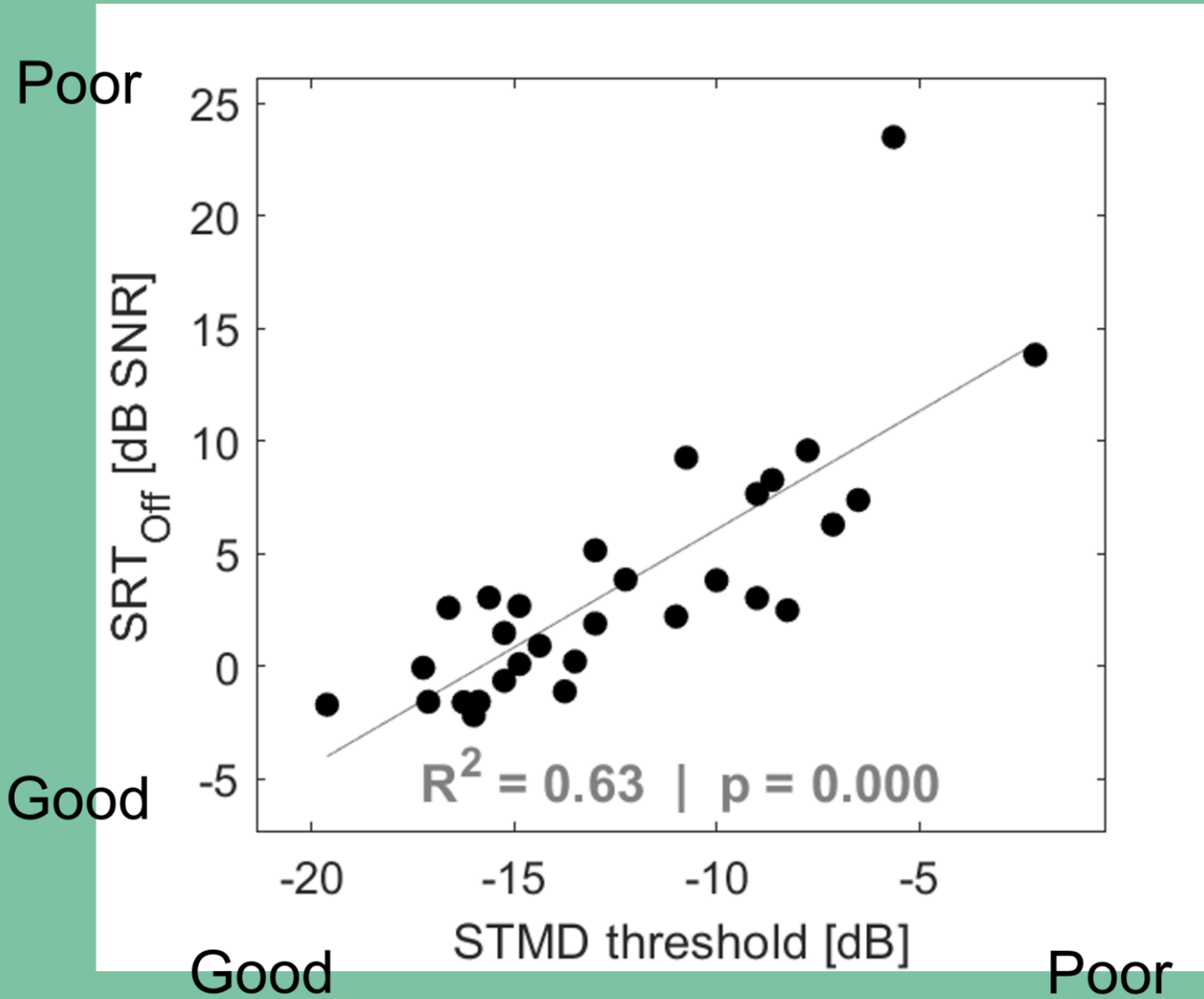


-12 dB

How does this replicate
speech in noise?



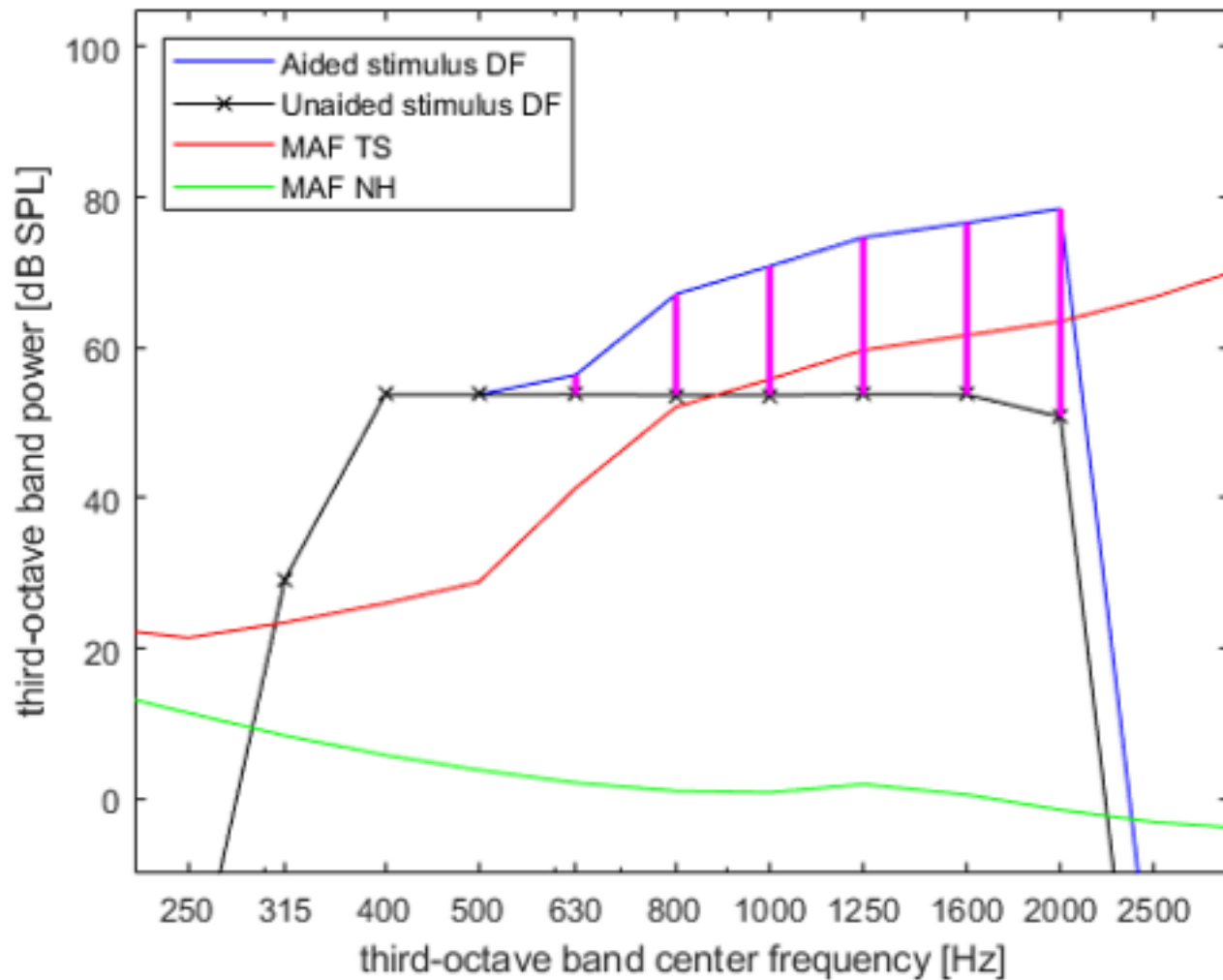
The ACT test is correlated to an “ecologically valid” HINT set up. Meaning reverberation, multiple noise sources and noise from speech were all factored in



ACT is now useful for even very poor performers and has a high correlation with the complex HINT set up.

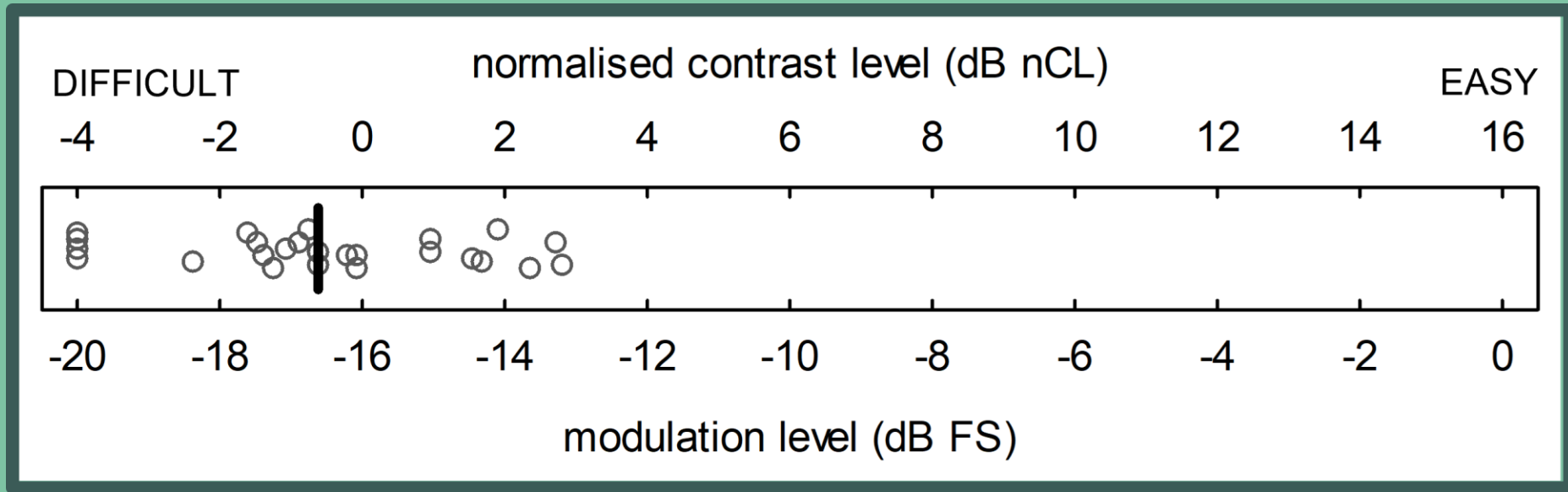
This correlation is maintained in other languages including tonal languages

How is audibility ensured for all clients?



Using the patient's PTA, the stimulus is adjusted to ensure consistent audibility for all participants within the limits of the transducer used

How do I interpret the results?



Normative data were measured allowing for the results to be applied to anyone in the clinic and to generate helpful guidance and automated adjustments to the help in noise features of hearing aids.

This study also showed an average test time of 2 minutes



ACT value (dB nCL)
-4 to 4

CONTRAST LOSS
Normal

PREDICTION FOR AIDED SPEECH IN NOISE PERFORMANCE
Normal range

FITTING ADVICE
Adaptive features set to minimum level
- help preserve natural sound in all environments

ACT value (dB nCL)
4 to 7

CONTRAST LOSS
Mild

PREDICTION FOR AIDED SPEECH IN NOISE PERFORMANCE
Mildly poorer than normal

FITTING ADVICE
Adaptive features set to slightly higher than the minimum level - help preserve natural sound and improve speech understanding in the most noisy environments

ACT value (dB nCL)
7 to 10

CONTRAST LOSS
Moderate

PREDICTION FOR AIDED SPEECH IN NOISE PERFORMANCE
Moderately poorer than normal

FITTING ADVICE
Adaptive features set slightly lower than the maximum level - help balance speech understanding while maintaining natural sound in moderately noisy environments

ACT value (dB nCL)
10 to 16

CONTRAST LOSS
Severe

PREDICTION FOR AIDED SPEECH IN NOISE PERFORMANCE
Severely poorer than normal

FITTING ADVICE
Adaptive features set to maximum level - help (prioritize) speech understanding in even the least noisy environments. Also consider streaming devices and communication training



Contact us

Phone: [01698 208225](tel:01698208225)

Email: servicehub@interacoustics.com

