

Modernize Your Hearing Conservation Program and Protect Your Employees with WAHTS Hearing



Presenter(s)

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WAHTS Hearing LLC

Isaac Lambert

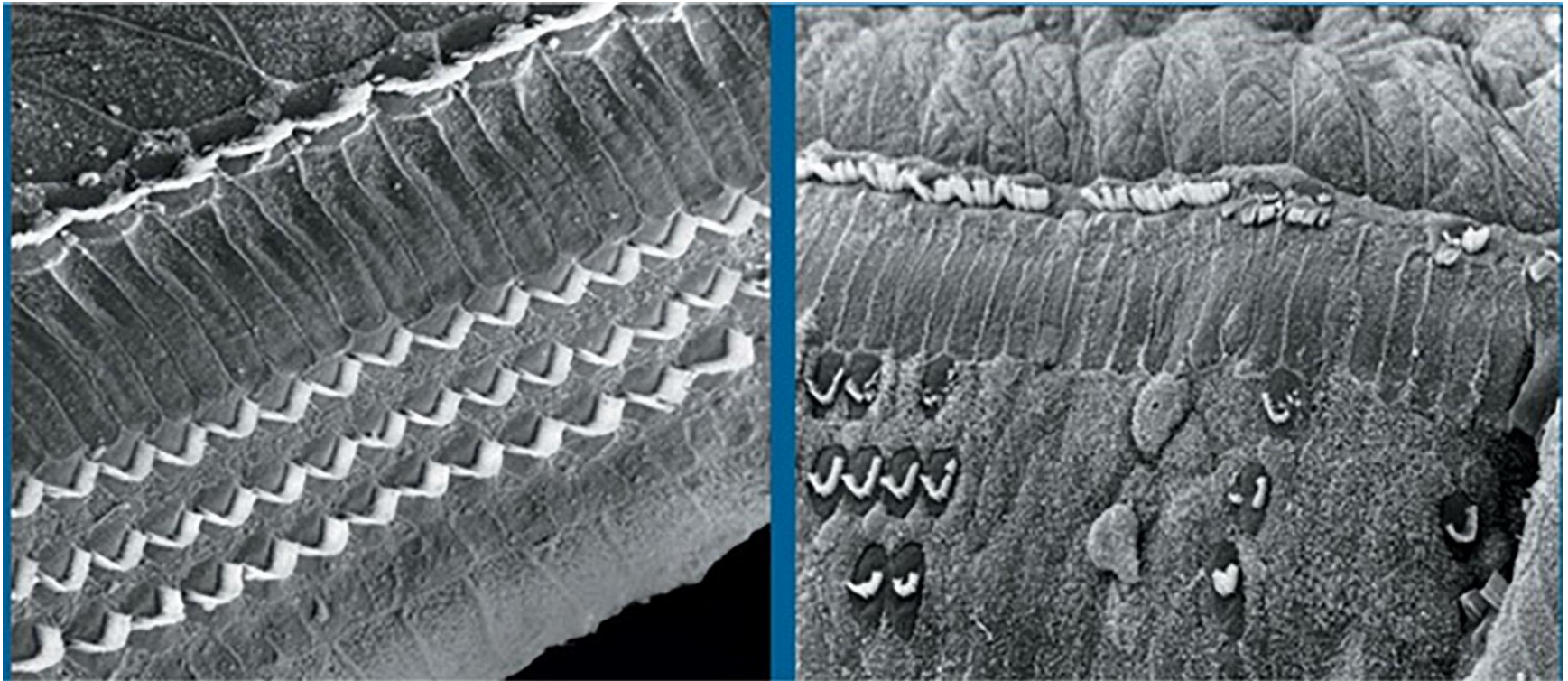
Sales & Marketing Manager

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Occupational Noise Exposure

- 22 million workers in U.S. are currently exposed to hazardous noise
- \$242 million being spent in the US each year on workers compensation claims
- Manufacturing sectors typically have the highest prevalence of noise exposure and hearing loss
- Noise-induced hearing loss is 100% ***preventable***

Permanent Damage to the Cochlea



Normal rows of hair cells (left side). Missing and damaged hair cells following noise exposure (right side) Source: NIOSH

Costs of Occupational Hearing Loss

Intrinsic:

- Permanent HL & tinnitus
- Difficulty communicating
- Cardiovascular disease
- Social isolation
- Depression
- Fatigue
- Stress

Extrinsic:

- Hearing aids and clinical rehabilitation
- Reduced earnings
- Higher rates of absenteeism
- Increased risk of accidents, hospitalizations

Cost of the Hearing Conservation Program

- Cost and Effectiveness of Hearing Conservation Program at 14 US Metal Manufacturing Facilities
 - Annual costs ranged from \$67,000 - \$400,000
 - Avg cost of \$308 per worker
 - Per person total HCP costs were not significant predictors of any of the hearing health outcomes
 - ***Higher expenditures on training + fit-testing and fit-testing alone were significant predictors of lower rates of hearing loss***

Hearing Conservation Start-up Costs

Traditional System:

- One-person sound booth
\$8,500
- Audiometer \$1,218
- Headset \$1,224
- Fit test system \$3,330

Average Cost = \$14,500

WAHTS System:

- Soundbooth ✓
- Audiometer ✓
- Fit Test System ✓
- First year software ✓

Average Cost = **\$7350**

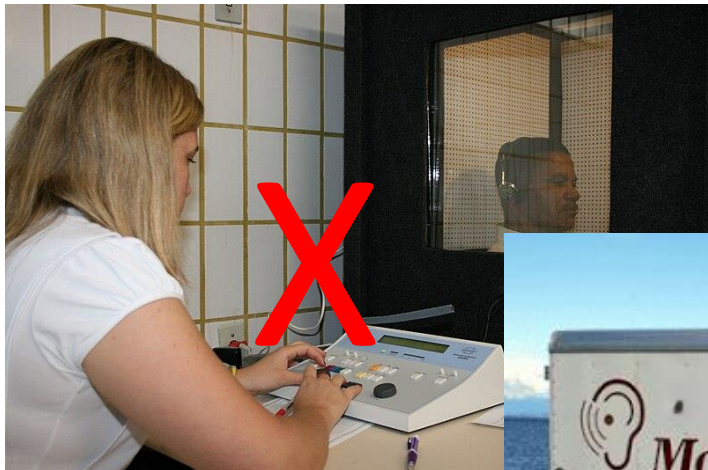
WAHTS Hearing

- **Technology developed with NIH and DoD**
- **Sales to US Military & government agencies beginning 2020**
 - Built for ruggedness and durability
- **Commercial sales**
 - Large presence in manufacturing, occupational health, oil & gas, etc.
- **Headquartered in the US**



Boothless Audiometry

- Automated, clinic quality testing without sound booths
- Changing the face of hearing conservation



Validation Studies

2024

- Niemczak, Christopher Edward and Ealer, Christin and Froese, Kaitlyn and Fellows, Abigail M. and Leigh, Samantha M. and Mirza, Sarah and Gui, Jiang and Magohe, Albert and Massawe, Enica Richard and Musiek, Frank and Buckey, Jay C., Response Times from Gap Detection Threshold Testing Relate to Cognitive Processing Speed. Available at SSRN: <https://ssrn.com/abstract=5006300> or <http://dx.doi.org/10.2139/ssrn.5006300>
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Validation Studies

2022

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2021

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WAHTS Features and Capabilities

High Attenuation	<ul style="list-style-type: none">- Enables accurate testing in many different environments- Meets OSHA and DoD requirements
Automated Testing	<ul style="list-style-type: none">- Customizable workflow- Manual testing included
Rapid Throughput	<ul style="list-style-type: none">- Average 7 minutes per test
Multi-Person Testing	<ul style="list-style-type: none">- Test multiple individuals simultaneously with or without an internet connection

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Remote Testing	<ul style="list-style-type: none">- Test admin can be in a different location as the listener (wearing WAHTS headset) and interact via mobile app

Portable and Durable



Each unit contains:

- WAHTS Headset
- Tablet with software preinstalled
- Output check stand
- Quick start guide
- Protective case

Standards and Regulations

Made to meet the highest standards.

Hearing Testing

FDA registered ✓

ANSI S3.6 compliant ✓

OSHA 1910.95 compliant ✓

IEC 60645-1 compliant ✓

Fit Testing

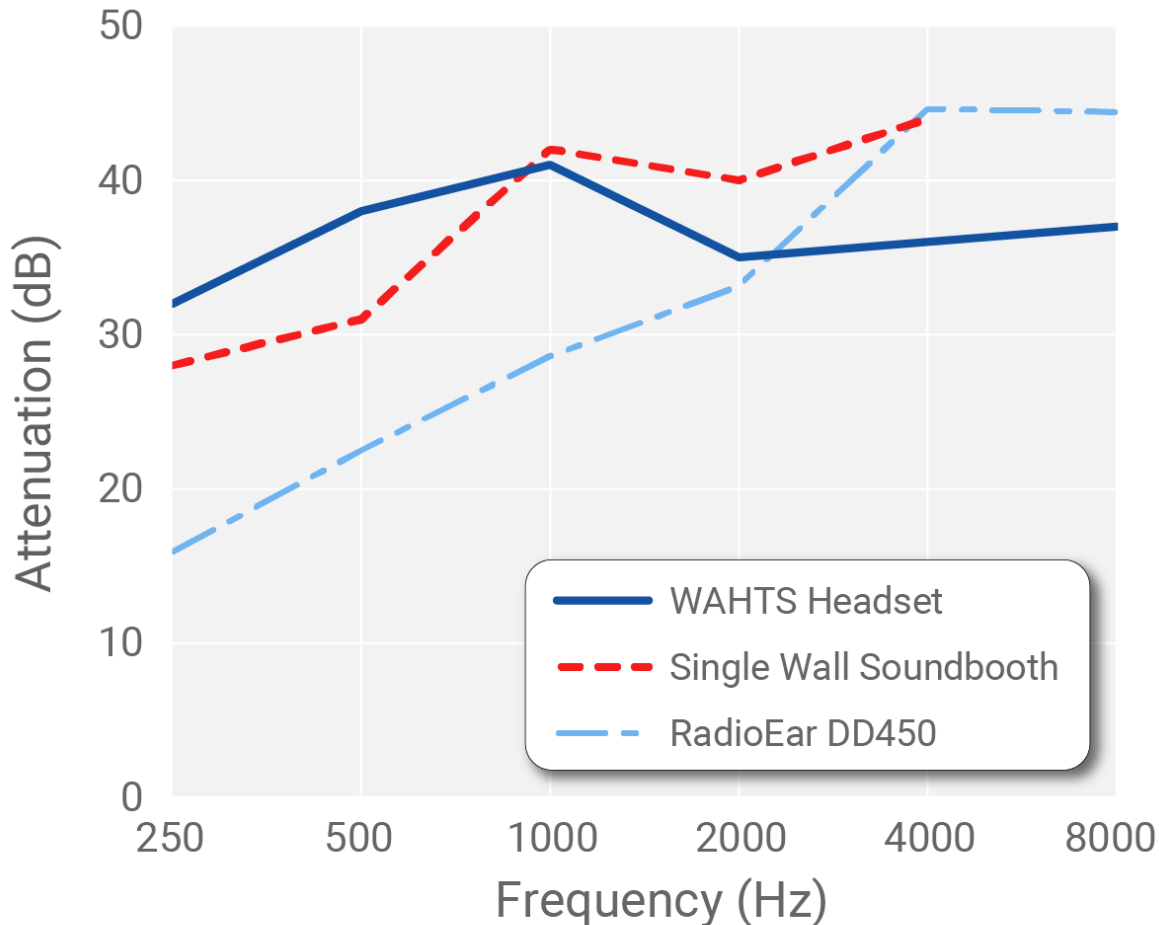
ANSI S12.71 ✓

OSHA 1910.95 ✓

DODI 6055.12 ✓

NIOSH ✓

High Noise Attenuation

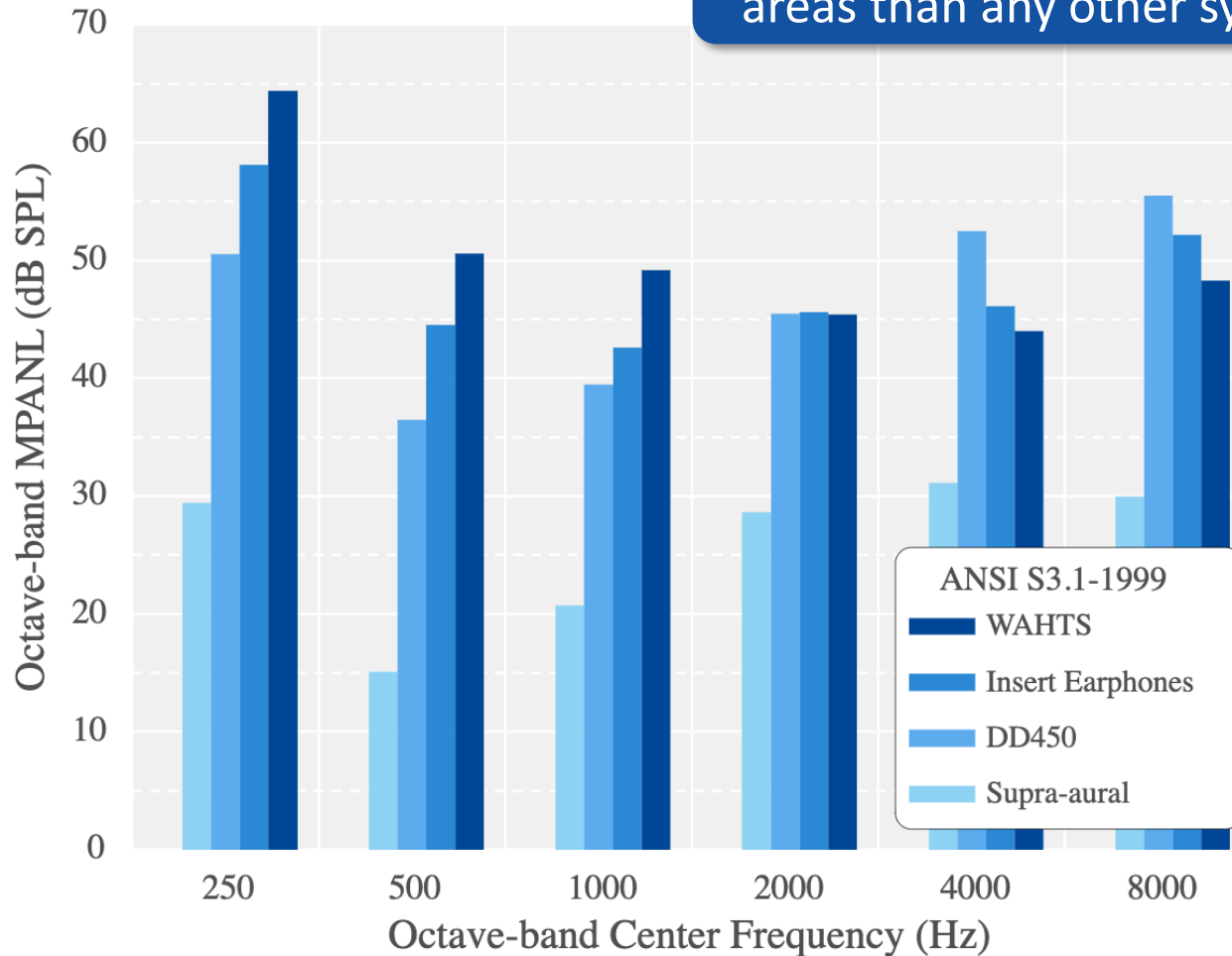


- **More** attenuation than a single wall soundbooth at 250, 500 and equivalent at 1000
- Low frequencies cause the most issues during testing

¹Attenuation measured according to ANSI 12.6-2008 Method A by Michael & Associates, Inc. (NIST NVLAP: 100427-0)

Maximum Permissible Ambient Noise Levels (MPANL)

Allows testing in higher noise areas than any other system!



Background Noise Monitoring

Continuous Background Noise Monitoring

Connect Svantek

Manually enter noise levels, or connect Svantek SV973 for integrated noise monitoring

Frequency (Hz)	Measured	MPANL OSHA & ANSI
250		67.6
500		53.6
1000		52.7
2000		48.8
4000		47.1
8000		50.4

TestTaker 3 (3) (525)

Hearing Test

Manual View Pause Abort

Hearing Test Training Complete



Multi-Person Testing

- With or without Internet
- Synchronous or asynchronous group testing

Photo credit: Dr. Vikki Bugtong, Ft. Meade

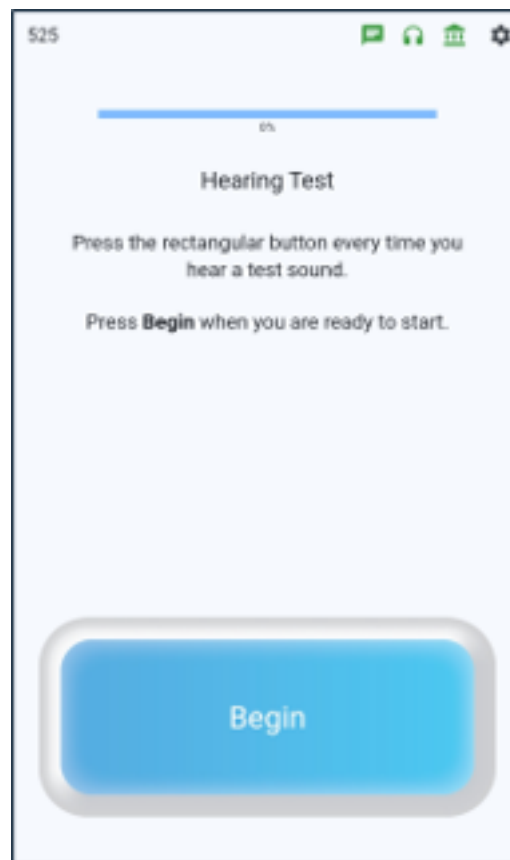
Multi-Person Testing

Oregon Army National Guard Testing



- 50 soldiers per hour in the first two hours of testing
- 12 WAHTS units
- Average test time of seven minutes

Hearing Test: Listener Prompts

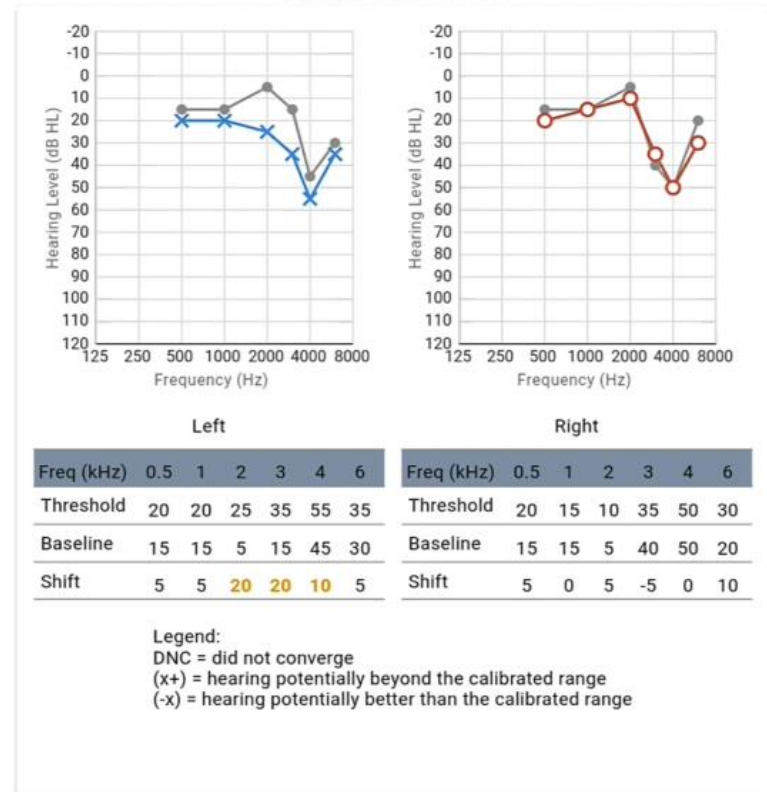


OSHA Formatted Results

- Automated shift analysis
- Data stays on the tablet
- Results can be transferred
 - PDF or CSV files
 - Integrated with electronic health records (i.e. Cority)



María dela Cruz

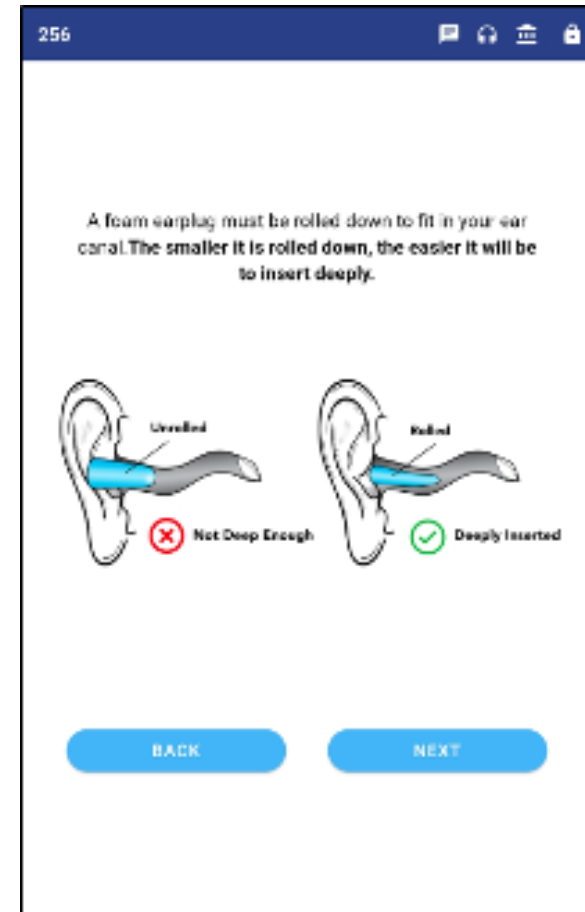


By signing below, I certify that I am the person who took the test.



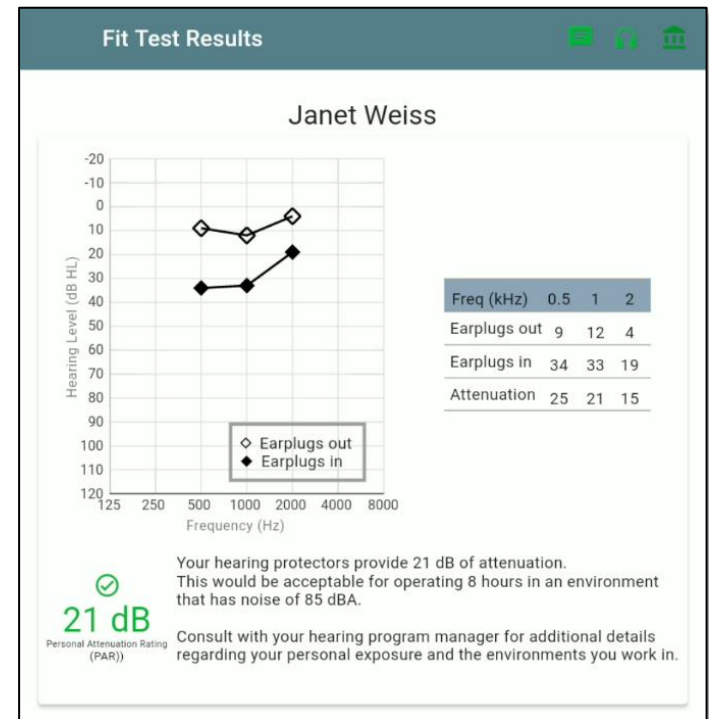
Why is Fit Testing Important?

- NRR is a laboratory value
- Individuals usually receive less attenuation than the listed NRR
- Can be a valuable training tool
- Helps reduce noise-induced hearing loss!



HPD Fit Testing: Ensuring Protection

- *How much protection are they getting?*
- *Are they wearing their earplugs correctly?*
- *Are they properly trained?*
- *Am I taking care of my people?*



Hearing protector fit testing is integrated into the WAHTS system
Quick --- Accurate --- Compatible with all in-ear types and brands

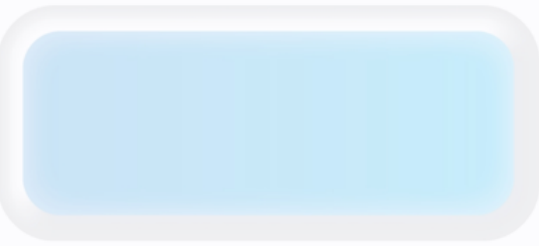
HPD Fit Testing: Listener Prompts

525

Earplug Test Training
Learn how to test your earplugs
[Instructions](#)

- 1) Put your headset on.
- 2) Press Begin.
- 3) Press the rectangular button every time you hear tones.
- 4) Hit Pause to stop the training at any time.

Begin

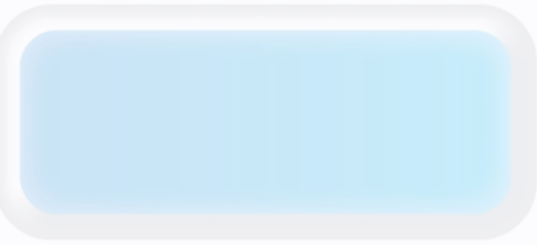


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Testing with earplugs out

Begin

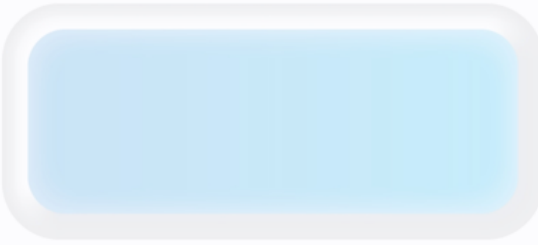


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Testing with earplugs in

Begin



Key Takeaways

1. Boothless technology is transforming the way patient care is delivered
2. Asynchronous multi-person testing can provide rapid through-put for high volume testing
3. Hearing protector fit testing provides an objective measure of protection provided by an earplug and can help decrease +STS rates



Questions?

Contact Information

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References

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