

uvex

xact-fit

Hearing protection fit-test system



Who is uvex?

- ✓ Established in 1926
- ✓ 97 Years of PPE
- ✓ Servicing the SA market for 28 years
- ✓ Leading ***manufacturer*** of PPE
- ✓ ~~Meet~~ Exceed Standards
- ✓ Owning the process 100% from R&D to End User.



Understanding Noise Induced Hearing Loss

- 💡 Noise-induced hearing loss is the most common occupational health condition in the world (WHO & IOSH 2018).
- 👤 24% of adults (Carroll 2017).
- 🎧 Employees in industrial occupations are at higher risk.
- 👂 100% Irreversible.
- 😊 100% Preventable.



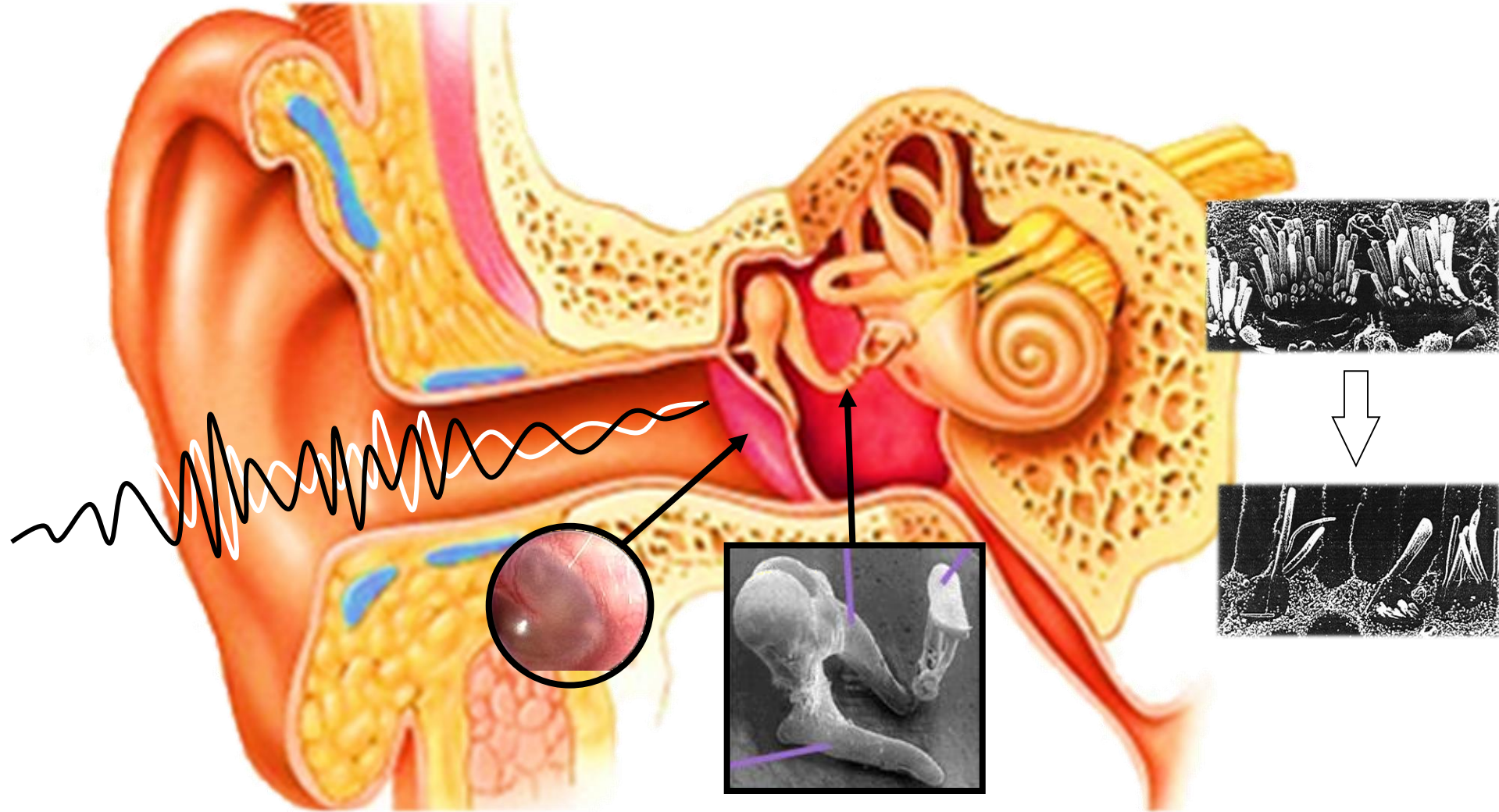
Understanding Noise Induced Hearing Loss

- 💡 Hearing Protection is now a Category III Risk, acc. to PPE Regulation 2016:425 (risks that may cause irreversible damage to health)
- 👤 Just wearing earplugs does not guarantee protection.
- 🎧 Without measuring we cannot KNOW.



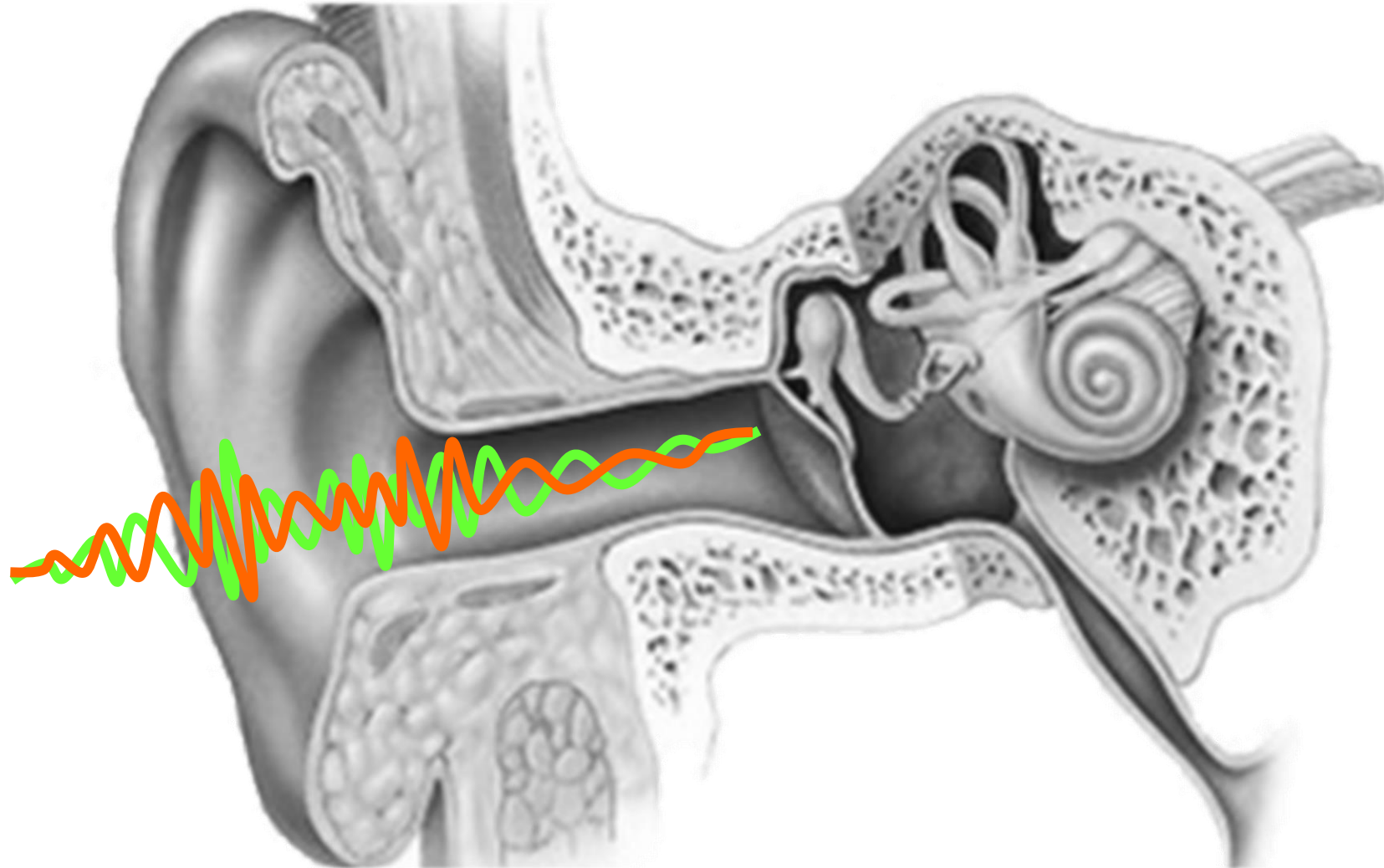
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How do we hear?



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How do we hear?



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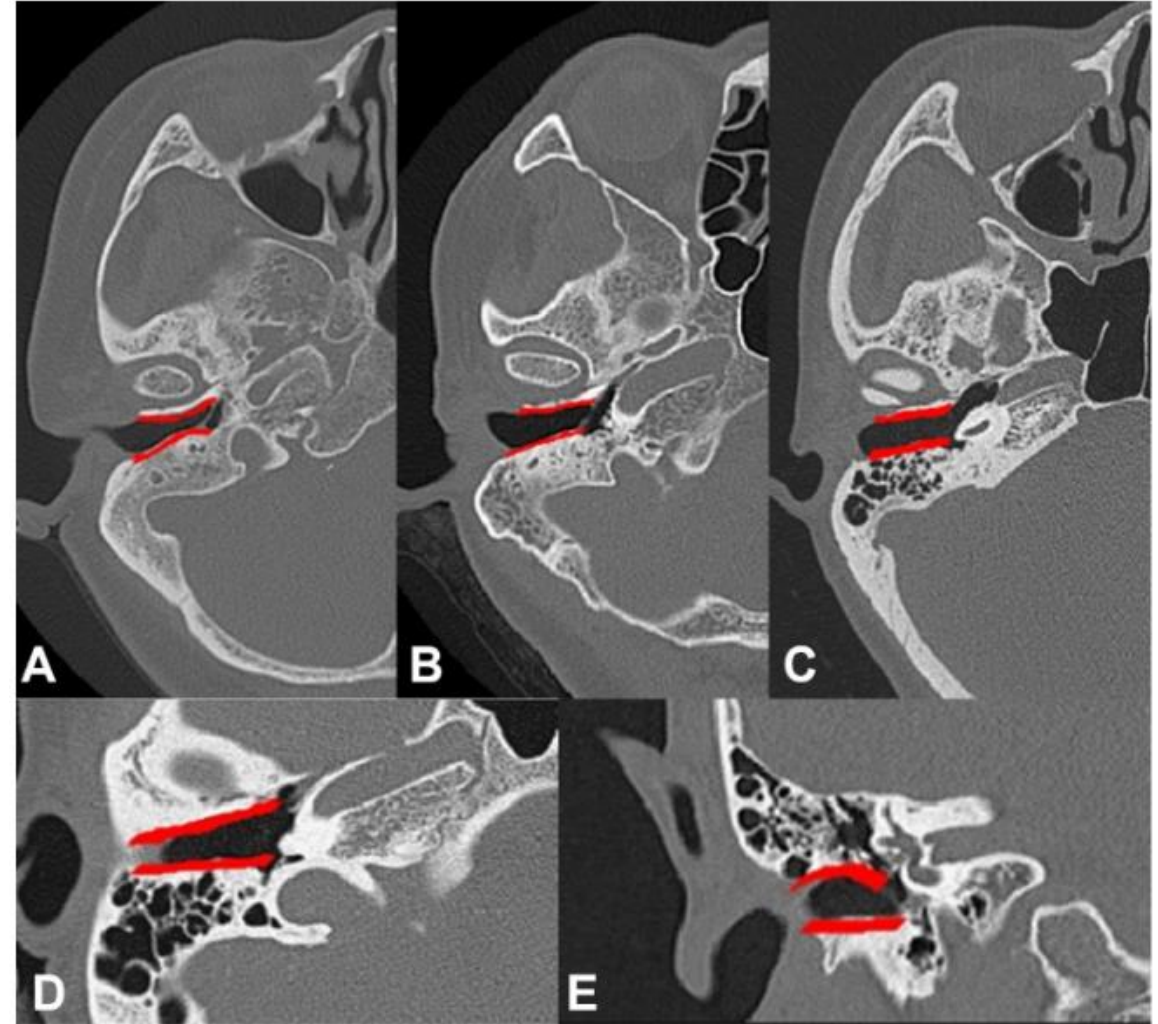
Look familiar?



xact-fit test measures the Personal Attenuation Rating for any user, with unmodified earplugs

Why conduct fit-testing?

- You can identify a person in different ways:
 1. Fingerprints
 2. Dental Records / Tooth Imprints
 3. **Ear Canal Imprints**
- Every ear canal is **unique** to the **individual**. Right and Left...
- Therefore, it is **crucial** to ensure that the HPD provided is **tested** to the **individual** and that the personal attenuation rating (PAR) is **known**.
- **The only way to know... is to measure.**





Regulations



Hearing Conservation responsibilities of the employer in accordance with Section 43 of the Occupational Health and Safety Act 1993:

1. Noise Assessment
2. Exposure Control
3. Hearing Protection Device (EN352 & SANS 50352-1/2/3:2008)
4. Training
5. Health Surveillance



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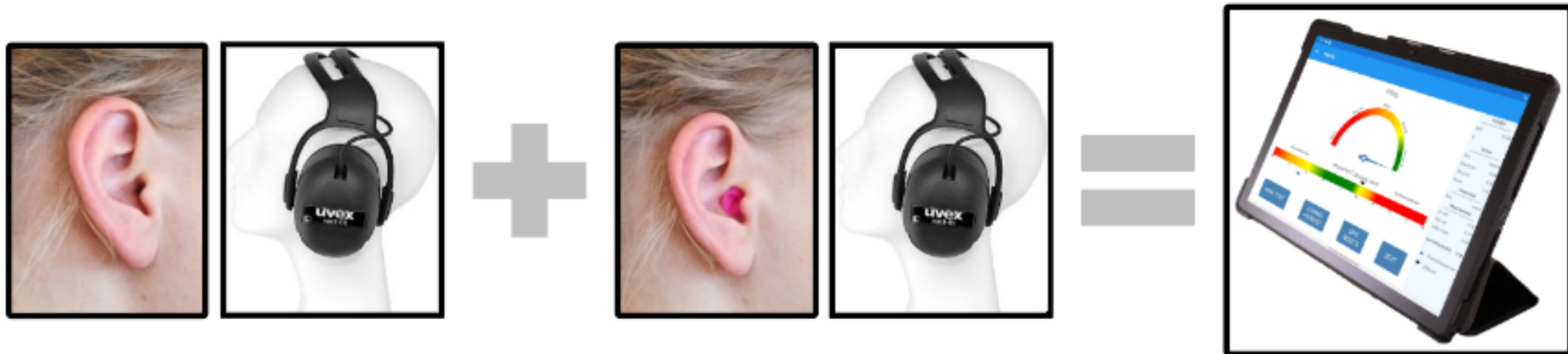
xact-fit

Hearing protection fit-test system



How does xact-fit test work?

- We use the hearing threshold for the test. **REAT** method (Real Ear Attenuation at Threshold)
- We test **both** ears at the same time; lowest is what matters.
- We make one test without, and one test with hearing protection.
- The difference between the tests (*without/with hearing protection*) is the individual result, **PAR** value.



- Right and left done at the same time so that the lowest performance (worst fitted earplug / problematic ear canal) is accounted for.
- Must be online (internet connection) to do the test.

The Solution:



Target

Fit test system to measure **Personal Attenuation Rating (PAR)** for any user, with any standard earplug

No more need for modified earplugs when testing

Fast and reliable testing

Features

Identify poorly fitted earplugs

Very good at helping select correct size/type of earplugs

Compare different models/brands of earplugs

Portable – test can be done anywhere, anytime.

Reduce potential for compensation claims in regions where this may be critical

Potential

Guarantee the right product to have the correct fit and protection, based on individual need

Build trust and competence to uvex

Allow possibility to **sell protection of hearing, not just hearing protectors**

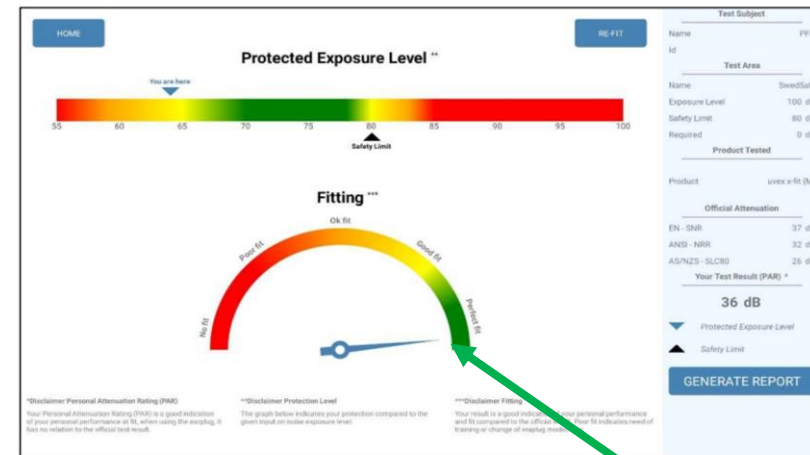
xact-fit test

measures the **Personal Attenuation Rating (PAR)** for any user, with unmodified earplugs.



Incorrect Fitment

VS



Correct Fitment

The Product:



| Features | Version 3.0 (2124.099) |
|--|------------------------|
| Possible to create reports | X |
| PC Manager tool included (PC software) | X |
| Import/export data to software(xact-fit App) | X |
| PC Manager updates automatically | X |
| xact-fit app updates automatically | X |
| AWS data storage region based | X |
| Scheduled test plan | X |

Specially Designed Earmuff

Big and deep earmuff allows the testing of all unmodified earplugs that can be fitted under the muff:

- Foam plugs
- Pre-molded plugs
- Pin plugs



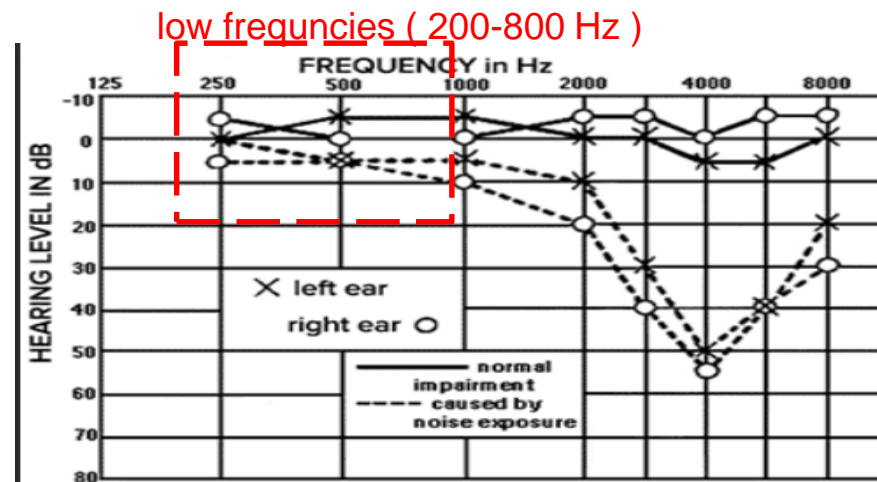
How the test work?

1. We use the hearing threshold for the test. Real Ear Attenuation at Threshold (REAT) method.
2. We test at both ears at the same time.
3. One test without , and one with hearing protection.
4. The difference between the tests (*without/with hearing protection*) is the individual result, in a PAR value.



xact-fit test - Testing actual fit of ear plugs

- The test transmits a "chirp" signal at mix of low frequencies (200-800 Hz)
- The test subject adjusts a volume slider and then selects when "chirp" is audible or not.



Xact-fit test

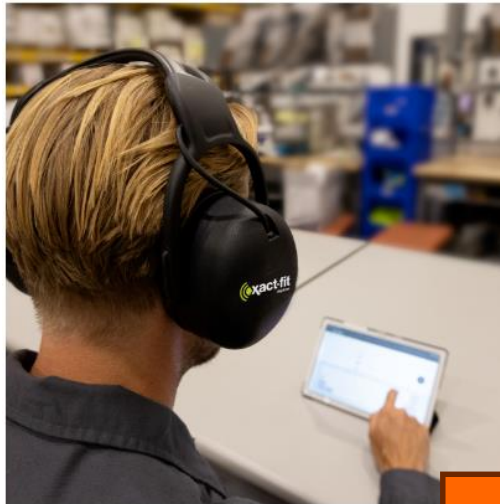
- why only test on low frequencies between 200 and 800 Hz ?

- 1. Low frequency sounds are the best way of detecting leakage.**
- 2. Accounts for employees with existing degree of hearing loss.**
- 3. Lower frequencies are hardest to protect from. Therefore we test the worst-case scenario.**

xact-fit test:

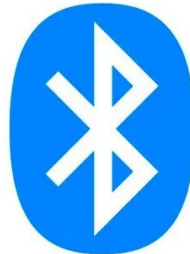
How does it work?

1. Conduct Test with and without HPD



5 – 10 min

2. Connect to the tablet via Bluetooth



3. Software generates a report, you get an opportunity to re-do the test.



4. Store result on cloud and Local PC using PC manager tool.



6 Reasons why to trust the xact-fit test system:



1. CONVENIENCE:

Quick (5 to 10min p.employee), Portable, Anywhere, Any time



2. ACCURACY:

R.E.A.T. Testing Method. Max. 1.5dB deviation. No modified earplugs.



3. UNIVERSAL:

SNR and/or NRR Calc Methods. Open system = all brands.



4. COMPLIANCE:

Immediate PDF and excel reports. Secure cloud Based record keeping system.



5. FIT FOR PURPOSE:

Identifies poor fitment and real life individual scenarios.



6. SIMPLE:

Pre-installed software. Includes all required hardware. No expert / clinic / sound booth / professional required.



Customer feedback

Dow Chemical – Midland, Michigan

This system is by far the most user friendly of the systems I have used. Test participants agree that the procedure and tones make it a better experience than the system we currently have been using. The mobility is another great feature because I don't have to have my computer hardwired to complete a test, I just need the muffs and tablet making it more efficient. The tablet is easy to navigate and start a test from the company test plan as well.



Valero Energy – Meraux, Louisiana

- Like how easy our system is to use and **that you can use any earplug to test it.**
- Not currently using a fit test system and are interested in starting to offer this as part of their hearing conservation program.



Bell – Fort Worth, Texas

- Enjoy how non-invasive it is compared to the _____ system. They like that they don't have to get into their employees' space.
- They love how clean and visual our report is and **how simple the test is to run.**



PCA – Deridder, Louisiana

- **Love the capabilities of our fit test system and that they can test different manufacturers' earplugs.**
- They are the first customer to purchase an xact Fit system in the US.
- They've already started to purchase and implement our simpleFit reusable plugs.



Shell – Geismar, Louisiana

I used the Xact-fit test system last week with a small group of operators. Overall, I like it – easy to use, quick results, good impression from the operators (being **quick and easy** makes it a lot easier to get them interested, too).



Consumers Energy - Michigan

- **They love how easy and quick ours is to use and that it's mobile.**
- They have a _____ system right now but haven't used it because it's quite time consuming to set up and run the tests.



Reading – Oklahoma

- Overall they like the system
- Like how low profile ours is/**portable**
- They felt that the testing went fairly quick



Hearing Conservation eLearning



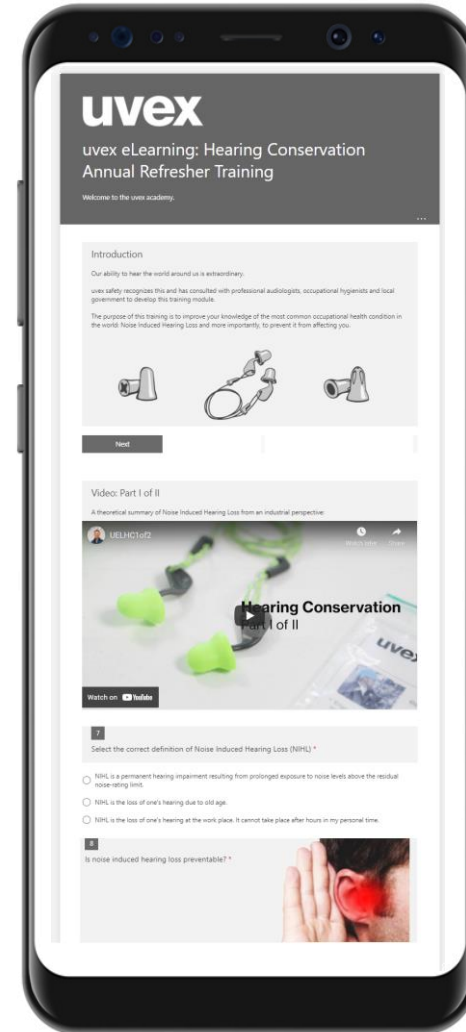
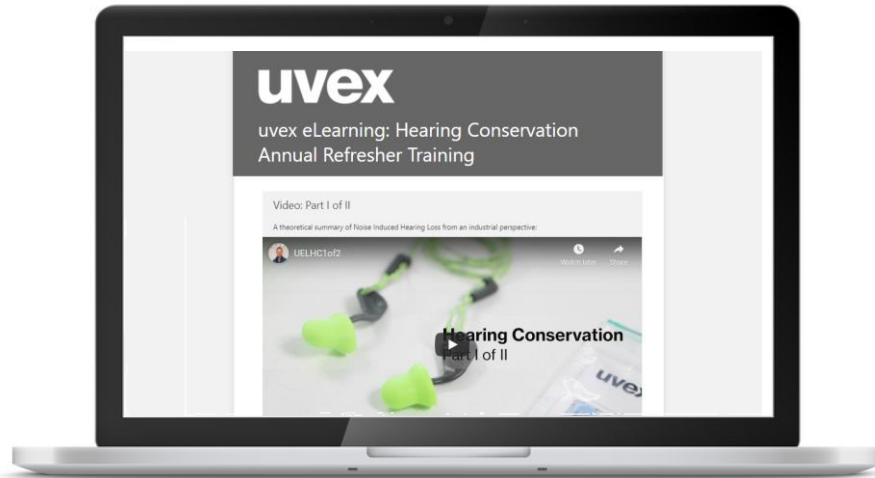
Hearing Conservation

NOISE-INDUCED HEARING LOSS REGULATIONS OCCUPATIONAL HEALTH AND SAFETY ACT, 1993

- 4.1 “An employer shall establish for all employees who may be exposed to noise at or above the noise-rating limit a **training programme**”
- 4.3 “**Refresher training shall be conducted annually**”
- 4.5 “An employer shall ensure as far as is reasonably practical that his or her mandatories who may be affected by noise exposure at the workplace are **given adequate information, instruction and training.**”
- 4.6 “An employer shall **keep a record of any training** that is given to an employee in terms of this regulation.”



eLearning Hearing conservation Training



EAR INSTITUTE
for excellent hearing



SAPEMA
Southern African Protective
Equipment Marketing Association

Record Keeping



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Summary:

- Our ability to hear is a privilege that should be respected and protected.
- Our ears are exposed to noise 24/7.
- Hearing loss can occur in all people.
- Noise induced hearing loss is preventable.
- Signs demarcate hazards.

protecting people

Hearing Conservation
Part II of II



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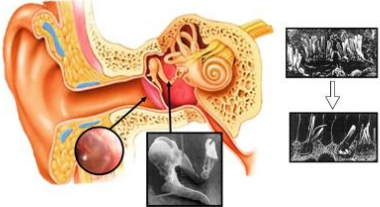


protecting people



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How do we hear?



protecting people

Thank You