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By: **Amanda Miller**, *Contributor*

# Fit-testing Should Be Part of Every Hearing Conservation Program

**Fit-testing is an essential cornerstone of modern hearing conservation. It ensures customized, reliable protection for every individual in the workforce.** *(photo courtesy Sensear/iStock-646889180)*

In today's industrial environments, outdated practices like derating hearing protection devices (HPDs) are no longer sufficient. It's time to adopt smarter, more personalized hearing safety strategies—starting with hearing protection fit-testing.

## WHY FIT-TESTING MATTERS MORE THAN EVER

When it comes to hearing protection, there's no one-size-fits-all solution, as everyone's anatomy is unique. Even devices with high Noise Reduction Ratings (NRRs) can underperform if they don't fit the individual user properly. That's where fit-testing comes in. It provides a measurable way to ensure every worker is getting the hearing protection they need.

### Insert-type hearing protector fit-testing

There are currently several insert-type hearing protector fit-testing systems on the market. Each has their own advantages and disadvantages. End-users may want to choose one that works on all types of insert HPDs. Furthermore, it might be advantageous to choose one that is compliant with ANSI S12.71-2018, "Performance Criteria for Systems that Estimate the Attenuation of Passive Hearing Protectors for Individual Users." Finally, it can be beneficial to use a system that tests the actual earplug that is worn by the employee instead of a "surrogate" that must be kept in stock as a consumable.

### Earmuff-type hearing protector fit-testing

Historically, there have been limited tools to validate the proper fit and effectiveness of earmuff-type or over-the-ear HPDs in industrial workplaces. This leaves a wide array of hearing protection solutions without a proper tool for safety professionals to make informed decisions. The good news is that this is changing.

### New over-the-ear, fit-testing solutions

These solutions verify that an HPD provides the necessary attenuation for a specific user by accounting for anatomical variability and unique circumstances, such as eyeglasses and head coverings. Rather than assuming an earmuff fits properly based on general size or manufacturer claims, these solutions deliver objective, data-driven, repeatable performance to verify the true effectiveness of HPDs.

## WHAT TO LOOK FOR IN A FIT-TESTING SOLUTION

When evaluating fit-testing options, consider the following:

- **Standards Compliance:** Does the system follow ANSI and ISO protocols?
- **Device Compatibility:** Can the system test a variety of HPDs from different manufacturers?
- **Data Reliability:** Is the testing outcome consistent and based on the employee's actual hearing protector?
- **Real-World Translation:** Can the test results be compared to actual workplace exposure levels to ensure adequate protection without needlessly impairing communication (overprotection)?

Fit-testing should offer transparent, comparable data across devices—not just proprietary metrics tied to a single product line.

## INDUSTRY VALIDATION AND LAB-LEVEL ACCURACY

Independent experts have long confirmed the importance of personal fit in hearing protection. Michael & Associates, an NIST-accredited laboratory specializing in psychoacoustics, has

demonstrated that personal attenuation ratings can vary widely even among workers using the same make and model of hearing protection. Their FitCheck Solo™ system, which aligns with ANSI and ISO standards, highlights how crucial personalized testing is in closing this protection gap.

This research illustrates that relying solely on labeled NRRs or applying a generic derating factor can be dangerously misleading. Only individualized fit-testing provides the reliable, real-world data needed to prevent noise-induced hearing loss (NIHL).

## LOOKING AHEAD: FIT-TESTING TO REAL-TIME MONITORING

While fit-testing provides a critical snapshot of proper HPD performance, some organizations are beginning to explore beyond fit-testing into continuous monitoring through in-ear dosimetry. In-ear noise dosimeters measure actual noise exposure over the course of a shift, providing insights into whether workers are consistently protected—even when HPDs are removed or not fitted correctly. These devices measure *protected exposure*, which is the only quantity that is directly related to the potential of noise-induced hearing loss. A new ANSI standard is being developed to describe the requirements of in-ear noise dosimetry, reportedly coming in late 2025.

## WHY THIS MATTERS NOW

NIHL is 100% preventable, but only if the hearing protection is fitted properly and consistently worn. With updated OSHA, NIOSH and U.S. Military recommendations and growing access to fit-testing tools, there's no excuse to rely on outdated assumptions. Personalized fit-testing is currently the best practice in hearing conservation.

Fit-testing isn't an optional compliance checkbox—it is an essential cornerstone of modern hearing conservation. It ensures customized, reliable protection for every individual in your workforce. When paired with smart communication tools, the result is a safer, more compliant and productive workplace. **IHW**

**About the Author:**

*Chief Executive Officer of Sensear, Amanda Miller is an enthusiastic leader who brings a wealth of experience from outside the industry. She has proven success as a strategic business development professional, with a track record of success in global sales. Amanda's passion for providing better hearing protection in industrial environments stems from personal experiences. She understands firsthand the critical role that certified hearing protection devices can play in improving employee safety and productivity.*