

NIOSH Science Policy Update

Individual Fit-Testing Recommendation for Hearing Protection Devices

The following describes the NIOSH policy for determining the attenuation provided by hearing protection devices for individual workers. This statement serves as an update to the 1998 NIOSH [*Criteria for a Recommended Standard—Occupational Noise Exposure*](#).

Recommendation

NIOSH recommends employers use individual, quantitative fit testing to evaluate the attenuation received by workers from their hearing protection devices. Quantitative fit testing is the physical or psychophysical measurement of noise/sound attenuation provided by a hearing protector. Fit testing results in an objective Personal Attenuation Rating (PAR) that accurately reflects the level of sound reduction an individual worker receives while wearing a specific hearing protector or it indicates an individual has achieved a specified level of protection. Employers should integrate individual fit testing into their hearing loss prevention programs.

Background

In the 1998 NIOSH [*Criteria for a Recommended Standard—Occupational Noise Exposure*](#), NIOSH stated that “... ideally, workers should be individually fit tested for hearing protectors” [(p.63) NIOSH 1998]. However, commercially available fit-test systems were not available in 1998. Therefore, NIOSH instead recommended derating the manufacturer’s labeled noise reduction rating to estimate a worker’s “as worn” hearing protector attenuation.

Since 1998, advances in research and technology have made it possible to quickly check the attenuation that each worker receives from their preferred hearing protection devices at the worksite. Several hearing protector fit-test systems are now available. An Acoustical Society of America/American National Standards Institute (ASA/ANSI) standard specifying performance criteria for the equipment and a method for computing a PAR is available [ASA/ANSI 2018].

NIOSH has developed, researched, and promoted advancements in hearing protector fit-testing technology for decades [NIOSH 1978, 2007, 2015]. NIOSH research demonstrated that laboratory-based hearing protector ratings overestimate worker protection in the field [NIOSH 1982], that derating schemes for hearing protectors cannot assess “proper fit” [Murphy et al. 2022], and that individualized training is necessary for fit testing to improve the attenuation workers achieve [Morata et al. 2024]. Therefore, NIOSH recommends individual, quantitative fit testing of hearing protection in lieu of the derating scheme.

Hearing protector fit testing provides a personal noise reduction value for each worker wearing a particular hearing protector. This policy statement clarifies that NIOSH recommends hearing protector fit testing as an essential practice to ensure that hearing protection devices are properly fit to each worker.



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While NIOSH recommends the use of individual hearing protector fit testing in the field as a best practice for employers, NIOSH does not favor any particular fit-testing method. Systems that compute a PAR by the most current ASA/ANSI standards meet this NIOSH recommendation. In addition, any technology that directly measures and documents a worker's protected exposure level (e.g., real-time protected exposure level monitoring) is consistent with this recommendation.

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Suggested Citation

NIOSH [2025]. NIOSH science policy update: individual fit-testing recommendation for hearing protection devices. Cincinnati, OH: U.S. Centers for Disease Control and Prevention, National Institute for Occupational Safety and Health, DHHS (NIOSH), Publication No. 2025-104, DOI: <https://doi.org/10.26616/NIOSH PUB2025104>.

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DHHS (NIOSH) Publication No. 2025-104
 DOI: <https://doi.org/10.26616/NIOSH PUB2025104>

January 2025