

The Audiometric Monitoring Program

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Purpose

To understand the major components of an effective audiometric monitoring program

Chapter Topics

- The Baseline Audiogram
- The Annual, or Monitoring, Audiogram
- The Retest
- The Exit Audiogram
- Taking an Aural Case History
- Hand Hygiene and Infection Control
- Visual Inspection of the Ear
- Preparing for Audiometric Monitoring
- Administering Pure-Tone Audiometry

The principal purpose of **audiometric monitoring** is to identify early indicators of progressive **noise-induced hearing loss** (NIHL) before workers experience a permanent hearing impairment. While other major elements of a **hearing conservation program** (HCP) can reduce the risk of NIHL (ie, through noise controls, personal hearing protection and training), only periodic monitoring of workers' hearing can determine if hearing loss is being prevented. Audiometric results can reveal temporary changes in hearing before they become permanent, so that remedial steps can be taken. One remedy might be to alert the worker that **nonoccupational noise** exposures might be contributing to a progression in hearing loss. A side benefit of the audiometric monitoring program is that **problem audiograms** may also reveal medical problems of the ear that should be referred to a physician or audiologist for evaluation and treatment. In addition, audiometric data provide an ongoing record of an individual's hearing status if needed for medico-legal purposes. Such **audiometric databases** can benefit workers, employers and professionals involved in determining work-relatedness of hearing loss.

The **audiometric monitoring program** accomplishes its purpose only if the monitoring is of sufficient quality. Audiometry done in an occupational health setting should not be referred to as, nor is it considered to be, "hearing screening." **Hearing screening** is typically done in schools or health fairs, where

the intent is to separate people into two groups: those who pass the screening and those who do not. In such screenings, the listener is asked to merely detect an auditory stimulus with a single, preset intensity level (usually set at a level considered the upper level of "normal" hearing). The purpose of such a screening is to determine if any of the screened individuals need follow-up attention and further evaluation.

In contrast, audiometric monitoring identifies the individual's actual hearing sensitivity at that time and records the results on an **audiogram**, a record that can be used for comparison with previous and subsequent audiograms. Reliable and valid audiometry is essential throughout the years of employment in noise-hazardous areas. For example, if a worker's initial audiometric test is not done properly, that **baseline audiogram** will not be an adequate reference for use with future audiograms. If subsequent audiometric tests are not performed properly, those audiograms will diminish the effectiveness and credibility of a company's hearing conservation efforts. Consequently, the next section describes methods that can increase the sensitivity and success of these comparisons of periodic monitoring—even if the monitoring is done by different individuals or in different locations. These methods must be used by personnel who perform audiometry consistently to have a reliable and valid audiometric monitoring program.

OSHA Occupational Noise Exposure 1910.95(g)(3)

"Audiometric tests shall be performed by a licensed or certified audiologist, otolaryngologist or other physician, or by a technician who is certified by the Council for Accreditation in Occupational Hearing Conservation or who has satisfactorily demonstrated competence in administering audiometric examinations, obtaining valid audiograms, and properly using, maintaining and checking calibration and proper functioning of the audiometers being used. A technician who operates microprocessor audiometers does not need to be certified. A technician who performs audiometric tests must be responsible to an audiologist, otolaryngologist or physician."