Industrial Audiology
Guidelines

Hearing loss incurred in the workplace is a compensable disease in terms of Schedule 3 of the Compensation for Occupational Injuries and Disease Act (COID act).

An Audiologist should thus in practice be aware that a hearing loss diagnosed in a patient could be an Occupational disease.

Hearing loss, as an occupational disease can manifest itself as follows:

1. Impairment of hearing due to exposure to hazardous noise (>85 dB) develops over a number of years (5-10 years) and results in a bilateral sensory neural impairment that is symmetrical.
2. Hearing loss caused by exposure to sudden intense forms of acoustic energy such as explosions, blasts or changes in atmospheric pressure in the workplace. The audiologist should be aware that these hearing losses can be sensory neural, conductive or mixed in nature.
3. Physical injury to the ears eg a spark flying into the ear.

An occupational disease should be reported to the Compensation Commissioner or relevant Mutual Association. The disease should be reported within 12 Months from the commencement of the disease. The date of commencement of the disease is the date of the first diagnostic audiogram.


Instruction 171
Instruction 171 replaced instruction 168. The main difference is that 4000 Hz is now also included in the calculation of percentage hearing loss. The most important information from instruction 171 is:

Baselines:
A baseline test must be available on all workers. A baseline test must be performed after a 16 hr noise free period. A baseline consists of 2 air conduction audiograms that does not differ by more than 10 dB at any given frequency. The test is performed prior to employment or within 30 days of employment. Between the promulgation of instruction 171 and Nov 2003 all the current workers in RSA had to be baselined. A hearing loss is compensable on the date that a diagnostic hearing test shows a hearing loss of 10 % or more above the baseline. If a baseline is unavailable the assumption is that the worker’s hearing was normal at the time of employment.

It is important to study all the relevant documents listed below since the equipment used, the calibration of the equipment, the testing environment, the timing of the tests, the test person, record keeping etc are described in detail that cannot be duplicated in this guideline.

Screening tests:
According to the Mine Health and Safety act (MHSA) and the Occupational Health and Safety Act (OHSA) the employer should follow a program of medical surveillance. The audiological surveillance is done with screening hearing tests. The objective of screening tests is to monitor the hearing status of the individual and to identify auditory damage. Workers exposed to noise levels of 85 dB (A) and more should be tested annually and workers exposed to >105 dB (A) 6 monthly. Workers
with a hearing loss that has deteriorated by 10 % from the baseline should be referred for a diagnostic test.

**Diagnostic tests**
Diagnostic tests are performed by an Audiologist registered by the HPCSA. The workers must be noise free for 24 hrs. Two diagnostic tests need to be performed if the diagnostic test has confirmed the 10% shift. The two tests should be consistent in that the 2 tests should be within 10 dB of each other at every frequency. The percentage hearing loss is calculated using actuarial tables weighted according to the importance of the frequencies of 500 Hz, 1000 Hz, 2000, 3000, 4000 Hz respectively.

**Requirements for diagnostic audiograms are:**
1. Pure tone air conduction
2. Pure tone bone conduction
3. A comment on the reliability of the worker’s thresholds
4. Two diagnostic test done on same day but not during the same sitting
5. Speech reception thresholds to be commented on if there is doubt re the consistency of the audiograms
6. Do a third audiogram if audiograms are inconsistent
7. If the audiograms are still not consistent the testing should only be repeated in 6 months time
8. Failure to get consistent and reliable audiograms should then lead to referral to an ENT.

Submission for compensation
The worker must be exposed to noise of 85 dB or more at work or have been injured at work. The hearing must have deteriorated by more than 10 % from the baseline. The following documents need to be submitted.
1. An employers report on the occupational disease/injury and a service record
2. 2 consistent audiograms
3. The audiologist should verify the worker’s identity and countersign a copy of the ID document
4. The occupational medical practitioner should do a medical report if the percentage hearing loss is less than 30 %. An ENT report is required if the hearing loss is more than 30 %. The medical report should clearly state whether the hearing loss is occupational or not. The medical and occupational history need to be taken into consideration.
5. The 2 baseline tests

Instruction 171 and all the subdivisions of screening and diagnostic audiometry (eg the equipment used, calibration of the equipment, the environment, record keeping , the test person etc) is further explained in the SANS 10083:2004 document.

The following publications should be studied before embarking in the field of medico-legal audiological claims:


