

Noise-induced hearing loss in the workplace

Noise-induced hearing loss is permanent, measureable, preventable, and costly.

Noise exposure is one of the most common causes of hearing loss in Australia and 37 per cent of all hearing loss is attributed to noise. One in every six Australians are affected by hearing loss at sometime during their life and it is projected that one in every four Australians will be affected by hearing loss by 2050 (Listen Hear!: 2006).

The effect of occupational noise exposure on an employee's hearing depends on the type, duration and level of noise exposure received by the auditory system. The effects of long term noise exposure on hearing are often gradual and can go unnoticed. Occupational hearing loss while mostly gradual in onset, will respond to preventative measures.

Employers can reduce the severity of hearing loss with education, training, healthy hearing awareness programs

and the enforcement of preventative procedures and protocols.

As 60 per cent of Australian adults with hearing loss are male, gender differences have been attributed to workplace noise exposure. (Listen Hear: 2006)

How loud is too loud?

Noise-induced hearing loss can be caused by a one-time exposure to an intense sound, or by continuous exposure to loud sounds over an extended period of time. The noise produced by power tools and machinery in the workplace are some of the sources that can increase the risk of occupational hearing loss.

'Excessive noise' as defined in the Workplace Health and Safety Regulation (2008), is a level of noise above:

- a) an 8 hour equivalent continuous sound pressure of 85dB or

b) a peak sound pressure level of 140dB

A person's hearing ability can become temporarily or permanently impaired if the person's unprotected ear is exposed to 'excessive noise'. Permanent hearing loss may be a result of excessive noise exposure in the work place.

Costs associated with a hearing loss in the workplace

According to Access Economics (Listen Hear!—economic impact and cost of hearing loss in Australia: February: 2006), "productivity loss related directly to hearing impairment accounts for well over half of the total financial cost of productivity loss some \$6.7billion a year".

Direct and in-direct costs due to noise exposure may include re-education or training and associated support services for the employee who develops a noise induced hearing loss due to excessive noise; communication aids and devices for safety in the workplace; loss of wellbeing and as a consequence possibly depression due to a change in lifestyle; reduced capacity to communicate with workmates, family and friends; reduced ability to hear, listen and respond to speaking; a reduced ability in communication impacting on a person's life socially, personally and in the workplace; adverse health effects such as stress, sleep disturbance, fatigue, aggression, raised blood pressure, reduced immune response, headaches, and heart disease.

All have been associated with hearing loss.

Employers have responsibilities under the *Workplace Health and Safety Act 1995* to ensure the

protection for employees from excessive noise. Steps an employer should undertake to manage noise exposure in the workplace may include the following areas.

Developing a hearing conservation program.

This involves conducting preliminary noise checks to assess if problems do exist in the workplace. Employers should also provide audiometric assessment at the commencement of employment to determine a base level of hearing. Ideally, periodic testing is performed annually to monitor hearing thresholds and to measure if the noise control measures and the hearing protection provided, is appropriate.

A hearing assessment prior to an employee leaving the workplace also documents the level of hearing on exit and provides the employer with comfort the preventative procedures in place did protect the employees' hearing.

Perform a risk management assessment to determine the risks from noise exposure.

A risk assessment should include all employees and the public who may be exposed to noise in the work place. This will identify the levels of intensity and period of time to which a person will be exposed to noise and will determine the control policy required for the workplace.

Develop a noise control policy

The policy should set target goals for noise exposure levels within the workplace and develop strategies to achieve these goals. Measure noise levels in the workplace to identify "excessive noise" areas.

Noise control measures

One way to reduce hearing loss and associated risks from noise exposure is to

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introduce effective noise control measures such as personal hearing protectors, appropriate for the intensity of the sound and time the employee is being exposed. Specially designed earmuffs that resemble earphones can protect your employees' ears by bringing most loud sounds down to an acceptable level. Custom-moulded earplugs can also effectively protect employees' hearing from damaging noise.

Education

Provide the employees and their families with information on noise, the risks associated with noise exposure and the

related effects on the hearing mechanism. Employees should be made aware of the associated health and possible social side effects on a person's life and family.

Private providers of audiological services can work with organisations, employees and their families to improve employee participation, productivity, and general well being. ■

REFERENCES

Listen Hear!: The Economic Impact and Cost of Hearing Loss in Australia. A report by Access Economics Pty Ltd, February 2006.

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