June 2024

Health control plan resources

Noise

What is loud or hazardous noise?	Why is it a health hazard?	What are the exposure monitoring requirements for the health hazard?	What are the health monitoring requirements for the health hazard?
In regard to hearing loss, this refers to loud or hazardous noises that exceed the workplace noise exposure standards.	Loud noise can cause irreversible damage to a worker's hearing, as the cochlear (part of the inner ear) has tiny, hair-like cells called stereo cilia (vital for the transmission of sound energy) that are damaged or immediately destroyed by exposure to frequent and/or loud noise. These hair-like cells do not regenerate.	As a reasonable first step, a PCBU should establish what areas in the workplace are likely to be producing hazardous noise levels. Consult with workers by (asking if they need to raise their voice to have a normal conversation in any areas of the workplace[1]. This can often assist in quickly and simply identifying areas of concern that may be **at, or above** the prescribed exposure standard. To accurately confirm noise levels in the workplace, noise measurements (by use of noise meters) is required. The following levels are legislated exposure standards1[2] at which permanent damage to a person's hearing can occur; **$L_{Aeq,8h}$ of 85**	Under clause 58 of the WHS Regulation, a PCBU audiometric testing must be provided by a PCBU when a worker is frequently required by the PCBU to wear hearing protection at work as a control measure to protect them from noise-related hearing loss from noise that exceeds the noise exposure standard. Audiometric testing is painless and non-invasive. It measures a person's ability to hear different sounds, pitches and frequencies. During the procedure, the person tested is usually seated in a soundproof enclosure or booth, wearing headphones. The person is asked to

[1] A 'rule of thumb' suggests that difficulty in hearing a conversation at 1m indicates a background noise level in excess of 85+ dB (A). For accurate measurements a noise meter would be required.

[2] Work Health and Safety Regulation 2022 (WHS Regs 2022); part 4.1 cl56 (1).

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		dB(A) – sustained, unprotected exposure to this level, averaged over a typical eight hour working shift2, or **$L_{C,peak}$ of 140 dB(C)** – any unprotected, exposure to this noise level 'peak'. Once accurate noise levels have been identified and confirmed, a PCBU needs to determine the exposure levels of workers. This is most easily achieved by fitting workers most 'at risk', with noise dosimeters. These simple devices will track noise levels of workers wearing them and establish their total noise exposure. These measurements should be conducted by a competent person such as an occupational hygienist or noise specialist. **NOTE**: The nature of sound is such that for every 3dB increase, the exposure time before the occurrence of damage, is halved. So at 91 dB a person will exceed safe exposure level in 2 hours (85 dB= 8hrs, 88 dB= 4hrs, 91 dB= 2hrs, and so on).	press a button every time they hear a sound through the headphones. Audiometric testing of workers is required within 3 months of commencing, and every 2 years thereafter or until exposure to hazardous noise levels ceases. More frequent testing may be required for workers exposed to high average noise levels during their work shifts (e.g., noise levels greater than 100 dB(A)).

Controls – Loud or hazardous noise

Eliminating the source of hazardous noise must always be explored as a first option. If not reasonably practicable then controls that act on the source of hazardous noise are the next most effective option. Beyond this, training, signs (exclusion zones) and hearing protection should be used. These latter two control types (administration and PPE) work best in conjunction with higher order controls such as elimination, substitution and isolation. Some examples of control types could include (but are not limited to):

- **ELIMINATION** – Purchase plant and machinery that operates below the exposure limit ('buy quiet' program).
- **SUBSTITUTION** – Change the process/task method (e.g. reduce speed of motor or fans).
- **ISOLATATION** – Isolate noise source from workers (e.g. reposition noisy fans, motors). This could include enclosing noise sources in sound-shielded containers or areas.
- **ENGINEERING** – Reduce hopper drops lengths, use baffles to diffuse sound, reduce 'elbows' and 'turns' in noisy venting or pipework.
- **ADMINISTRATION** – limit access to reduce exposure. Monitor workers and rotate workers out of noisy areas well before exposure limits are reached (should be combined with higher controls).
- **PPE** – Ensure strict compliance to the use and understanding of hearing protection (should be combined with higher controls).

Further information can be found in the Safe Work Australia code of practice Managing noise and preventing hearing loss at work (July 2020).

What are the legislative obligations with regards to health records?

This is the same for all health hazards with long onset periods and should be kept for a minimum of 30 years.