KINNECT
CREATING HEALTH CERTAINTY AT WORK

UNDERSTANDING

NOISE-INDUCED HEARING LOSS

An Occupational Health Professional's Perspective

What is Noise-Induced Hearing Loss?

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NIHL refers to the gradual loss of hearing resulting from prolonged or repeated exposure to excessive noise.

It typically develops slowly over time and may go unnoticed until permanent damage has occurred.

How does NIHL occur?

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The human ear contains delicate structures that make hearing possible. When exposed to loud sounds or excessive noise, especially over long periods, these structures can be permanently damaged. In particular, the hair cells in the cochlea, which convert sound vibrations into electrical signals for the brain, can be harmed or destroyed by too much noise.

This damage reduces the ability to hear certain frequencies, especially high-pitched sounds - a common feature of NIHL.

Increased exposure = Increased risk

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The risk of developing noise-induced hearing loss (NIHL) is cumulative: the longer or more frequently someone is exposed to excessive noise, the less opportunity the inner hair cells have to recover.

The risk of developing hearing loss from excessive noise is greatest during the first
10 to 15 years of exposure

Symptoms

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Early signs of NIHL can be subtle and often go unnoticed until significant damage has occurred.

- Difficulty Understanding Speech: Especially in noisy environments.
- Tinnitus: A ringing, buzzing, or hissing sound in one or both ears with no external source.
- Muffled Hearing: Sounds may seem distant, unclear or less sharp than usual.

Occupations at Risk

- **Construction:** Use of heavy machinery and power tools.
- **Manufacturing:** Operations involving loud equipment and assembly lines.
- **Mining and Energy:** Drilling and extraction processes generate sustained high noise levels.
- **Transportation:** Airports and railways expose workers to constant high-decibel environments.

Detection

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NIHL is detected via an audiometric test, which measures a person's ability to hear different frequencies, pitches, and sounds.

The test is conducted using specialised equipment in a soundproof room.

Prevention Strategies

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- **Elimination:** Removing the source of excessive noise altogether — for example, by designing out noisy processes or avoiding high-noise equipment where possible.
- **Substitution:** Replacing noisy equipment or tasks with quieter alternatives, such as using electric tools instead of pneumatic ones.
- **Engineering Controls:** Modifying machinery or the work environment to reduce noise at the source or along its path — for example, using sound barriers or acoustic enclosures.
- **Administrative Controls:** Reducing workers' noise exposure through job rotation, shift scheduling, or restricting access to high-noise areas.
- **Personal Protective Equipment (PPE):** Providing suitable hearing protection — such as earplugs or earmuffs — and ensuring they are used correctly and consistently.
- **Education and Training:** This is vital to help workers understand the risks of noise exposure and how to correctly use protective measures to prevent hearing loss.

The Role of Occupational Health Providers

- **Conducting regular hearing assessments:** Monitoring employees' hearing thresholds through health surveillance programs (audiometric tests, hearing fit tests) to detect early signs of NIHL.
- **Assisting in the development of hearing conservation programs:** Tailoring strategies to suit specific workplace environments and noise risks.
- **Training and education:** Informing both employers and employees about the importance of hearing protection and the correct use of personal protective equipment (PPE).
- **Policy support and implementation:** Contributing to the development and application of workplace policies aimed at reducing noise exposure and promoting a culture of hearing health.

Searching for more information?

www.kinnect.com.au/occupational-hearing-loss-resource-centre