

NOISE-INDUCED HEARING LOSS (NIHL)

IN MINING WORKERS



1.3
BILLION
PEOPLE

ESTIMATED WORLDWIDE EXPERIENCE HEARING LOSS DUE TO NOISE EXPOSURE¹

90%
OF MINERS

HAVE DEVELOPED A HEARING IMPAIRMENT BY THE AGE OF 50² MINING WORKERS FACE A SERIOUS OCCUPATIONAL HEALTH RISK KNOWN AS NOISE-INDUCED HEARING LOSS (NIHL).

2ND
MOST REPORTED
INJURY

NIHL IS THE SECOND MOST COMMONLY REPORTED OCCUPATIONAL INJURY IN THE AUSTRALIAN MINING INDUSTRY³

LET'S EXPLORE THE IMPACT OF NIHL, ITS PREVENTABILITY, AND SOME OF THE PROTECTIVE SOLUTIONS AVAILABLE TO THE AUSTRALIAN MINING SECTOR

THE IMPACT OF NOISE-INDUCED HEARING LOSS (NIHL)



HIGH LEVELS OF NOISE

Mining workers are exposed to high levels of noise, which can lead to irreversible hearing damage over time. It's crucial to recognise the severity of this threat and take preventive measures.⁴



1 IN 4 Australian mining workers suffer from NIHL.⁵

17%

of adults aged 20–69 years (approximately 26 million) have suffered permanent damage to their hearing from excessive exposure to noise.⁶

37%

of hearing loss cases are attributed to preventable and repeated exposure to loud noise.⁷

THE FOUR 'P' POINTS OF NIHL

- PREVENTABLE:**
 - Implementing effective hearing protection measures can significantly reduce the risk of NIHL.
 - Educate workers about the importance of using appropriate hearing protection devices (HPDs) consistently.
- PERMANENT:**
 - Once hearing loss occurs, it cannot be fully restored.
 - Permanent hearing loss has a massive impact on an individual's personal and professional life.
- PAINLESS:**
 - NIHL often lacks noticeable symptoms in the early stages.
 - Regular hearing screenings are important to detect NIHL early, even without apparent symptoms.
- PROGRESSIVE:**
 - Untreated hearing loss can worsen over time if preventive measures are not taken.
 - Proactive intervention is needed to halt the progression of NIHL and preserve hearing health.

MEASURES EMPLOYERS CAN TAKE

- ENGINEERING CONTROLS:**
 - Identify and implement engineering controls to reduce noise levels at the source.
 - Encourage the use of quieter machinery or equipment in the workplace.
- ADMINISTRATIVE CONTROLS:**
 - Develop and enforce policies and procedures for noise control and hearing protection.
 - Rotate workers through different job tasks to reduce prolonged exposure to high noise levels.
- PERSONAL PROTECTIVE EQUIPMENT (PPE):**
 - Provide workers with comfortable and effective hearing protection devices (HPDs).
 - Train employees on the proper use, fitting, and maintenance of HPDs.
- REGULAR HEARING SCREENINGS:**
 - Encourage workers to undergo regular hearing screenings to monitor their hearing health.

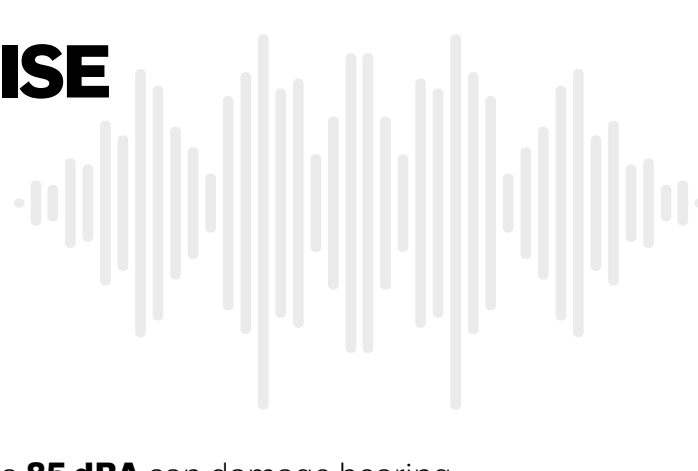
THE ECONOMIC IMPACT OF UNTREATED HEARING LOSS

Hearing loss, when left untreated, not only affects individuals but also carries significant economic implications for society. The figures below are highlighted from Hear-it.⁹

- The annual cost of hearing loss in Australia is 33.3 billion AUD and exceeds \$981 billion globally¹⁰
- By 2050, the number of people with hearing loss is anticipated to reach nearly 2.5 billion¹¹

ECONOMIC COSTS:	WORKERS COMPENSATION:	LEGAL PENALTIES:	SOCIAL IMPACT:
<ul style="list-style-type: none"> Health system costs: 881.5 million AUD Productivity losses: 12.8 billion AUD (9.3 billion AUD due to reduced employment) Informal care costs: 141.6 million AUD 	<ul style="list-style-type: none"> Occupational hearing loss claims are prevalent Financial implications impact both workers and employers 	<ul style="list-style-type: none"> Non-compliance with safety standards may lead to penalties and fines Adhering to regulations is essential to avoid legal consequences 	<ul style="list-style-type: none"> Untreated hearing loss has personal and social consequences Communication, relationships, and quality of life are affected

PROTECT YOUR HEARING FROM MINING EQUIPMENT NOISE



- Regular 8-hour exposures to **85 dBA** can damage hearing
- Repeated exposures of just 1 hr/day to **100 dBA** noise can damage hearing

EQUIPMENT/ACTIVITY DECIBEL LEVELS¹²

120-130 dB	100-120 dB	90-100 dB	85-95 dB	85-95 dB	85-95 dB	80-90 dB	80-90 dB	75-85 dB	70-80 dB	
Blasting	Bulldozers	Drilling Rig	Pneumatic Drills	Rock Crushers	Grinders	Crushing Machines	Excavators	Welding Operations	Conveyor Belts	Truck Traffic


The table demonstrates the length of time a person without hearing protection can be exposed before the standard is exceeded.¹³

Noise Level (dB(A))	Exposure Time
80	16 hours
82	12 hours
85	8 hours
88	4 hours
91	2 hours
94	1 hour
97	30 minutes
100	15 minutes
103	7.5 minutes
106	3.8 minutes
109	1.9 minutes
112	57 seconds
115	28.8 seconds
118	14.4 seconds
121	7.2 seconds
124	3.6 seconds
127	1.8 seconds
130	0.9 seconds


HEARING PROTECTION SOLUTIONS

HONEYWELL UNDERSTANDS THAT THE NOISE LEVELS AND HAZARDS IN A MINING ENVIRONMENT VARY GREATLY AND THUS, OFFERS A WIDE RANGE OF HEARING PROTECTION SOLUTIONS TO MEET THE SPECIFIC NEEDS OF EACH MINING WORKSITE.


HONEYWELL HEARING PROTECTION PRODUCTS




Maximum foam plugs
Disposable foam earplugs for comfort and greater protection



Antimicrobial-Protected HL400 dispensers
Antimicrobial-protected dispenser for earplugs to reduce cross-contamination of microbes on shared surfaces of earplug dispensing




SmartFit® Earplugs
Reusable earplugs for ease of insertion and use




Verishield™ 100 Series Passive Earmuffs
Designed with ultimate comfort and optimized noise attenuation technology. Available in steel-wire and dielectric headbands, and a wide range of styles.

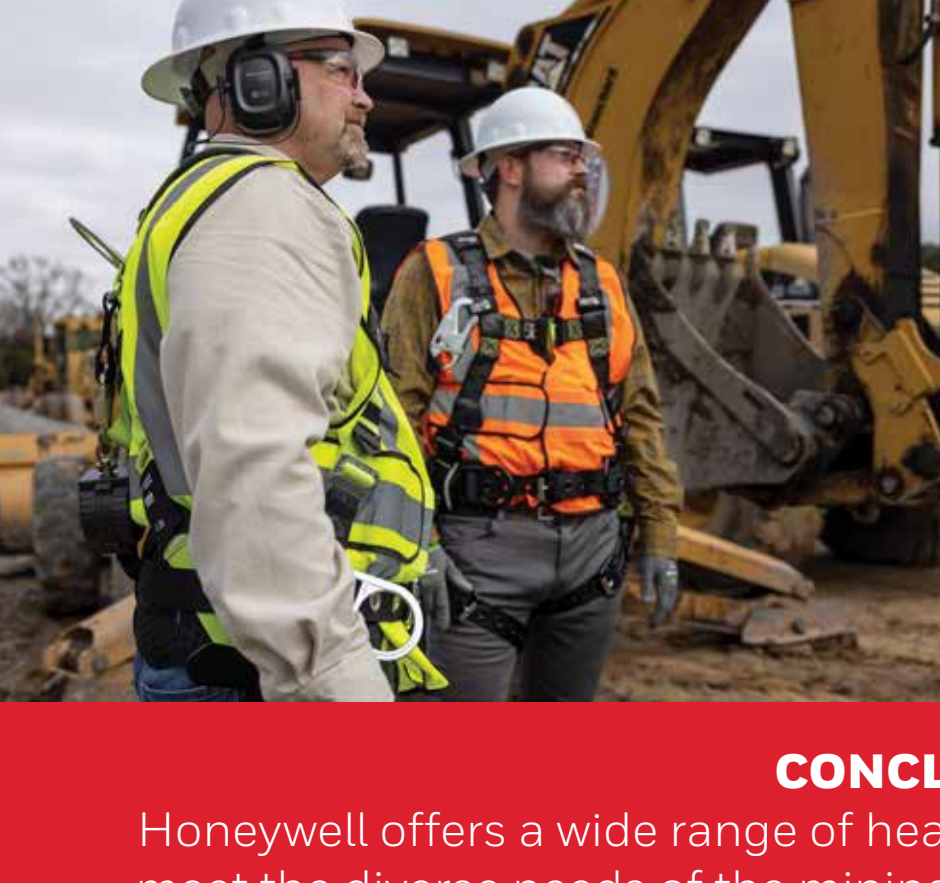
Over-the-Head



Behind-the-Neck



Helmet



PARTNERING FOR SAFETY



Honeywell collaborates with mining companies and safety professionals to develop comprehensive hearing conservation programs. Honeywell provides training, support, and expertise to enhance workplace safety and promote a culture of hearing protection.

CONCLUSION:

Honeywell offers a wide range of hearing protection solutions designed to meet the diverse needs of the mining industry. By leveraging our expertise and innovative products, you can effectively protect your workers from noise-induced hearing loss while maintaining their comfort and productivity.

¹Muggleton, N. (2022). Cutting Through the Noise. Safety Management Magazine. Retrieved from https://www.britsafe.org/publications/safety-management-magazine/safety-management-magazine/2022/cutting-through-the-noise/
²Sun, K., & Azman, A. S. (2018). Evaluating hearing loss risks in the mining industry through MSHA citations. Journal of occupational and environmental hygiene, 15(3), 246–262. https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5849488/
³AMSJ. (2017). Noise-induced hearing loss: Causes and Prevention. Retrieved from https://www.amsj.com.au/noise-induced-hearing-loss-causes-prevention/
⁴National Institute for Occupational Safety and Health (NIOSH). (2010). Engineering Controls Research Shows Promise in Reducing Noise Exposure Among Mine Workers. Retrieved from https://www.cdc.gov/niosh/docs/2010-156/default.html
⁵National Institute on Deafness and Other Communication Disorders. Bethesda, MD, U.S. Department of Health and Human Services, August 2008. https://www.nih.gov/about-nih/what-we-do/nih-almnac/national-institute-deafness-other-communication-disorders-nidcd
⁶Hearnet. (n.d.). The Facts On Hearing Loss. Retrieved from https://hearnet.org.au/hearing-loss/facts-on-hearing-loss
⁷American Occupational College of Preventive Medicine. (2011). Basic Course in Occupational and Environmental Medicine, Part III. Retrieved from https://www.aocpm.org/assets/documents/10-31-11-Basic_Course_III_Occupational-noise-induced_hearing_loss_lance_correct%20background.pdf
⁸Hear-it.org. (2018). Annual cost of hearing loss in Australia: 33.3 billion Australian dollars. Retrieved from https://www.hear-it.org/annual-cost-hearing-loss-australia-333-billion-australian-dollars
⁹McDaid, D., Park, A.L., & Chadha, S. (2019). Estimating the global costs of hearing loss. PubMed. Retrieved from https://pubmed.ncbi.nlm.nih.gov/33590787/#:~:text=Results%3A%20The%20global%20economic%20costs%20for%20children%20age%200%20to%2014
¹⁰Tordrup, D., Smith, R., Kamenou, K., Bertram, M. Y., Green, N., & Chadha, S. (2022). Global return on investment and cost-effectiveness of WHO's HEAR interventions for hearing loss: a modelling study. The Lancet Global Health. Retrieved from https://www.thelancet.com/journals/langlo/article/PIIS2214-109X(21)00447-2/fulltext
¹¹WorldSafe NZ. (2019). Noise Levels Created by Common Construction Tools. Retrieved from https://healthandsafetybydesign.co.nz/wp-content/uploads/2019/02/noise_levels_of_common_construction_tools.pdf
¹²Safe Work Australia. (2015). Managing Noise and Preventing Hearing Loss at Work Code of Practice. Retrieved from https://www.safeworkaustralia.gov.au/system/files/documents/1702/managing_noise_preventing_hearing_loss_work.pdf