Noise Induced Hearing Loss: Re-emergence of an old workplace problem

Professor Malcolm Sim
Centre for Occupational & Environmental Health, Monash University, Victoria, Australia
Noise induced hearing loss

• In 2005 financial cost of hearing loss was estimated: $11.75 Billion or 1.4% of GDP (Access Economics)
• 37.1% of Hearing loss in adults is NIHL (Wilson et al, 1998)
• High proportion of NIHL is due to the workplace
• Workplace noise has been around since ancient times
• Strong perception that noise exposure is under control
• Well established hierarchy of controls
• Despite this, concerns about increase in burden of NIHL

www.coeh.monash.org
Aim to analyse time trends and the demographic and occupational characteristics of workers claiming for NIHL related Impairment Benefits (IB) and hearing aids (HA) through WorkSafe Victoria

• Funded through the Institute for Safety, Compensation and Recovery Research (ISCRR) – a joint initiative of Worksafe Victoria, the Transport Accident Commission and Monash University – compensation database
Methods

- Data based on computerized claims (excludes Commonwealth employees, sole traders and self Insurers, about 8%)
- Covered period for all claims 12 Nov 1997 (when NIHL claim threshold increased from 7% to 10%) to 30 June 2009
- Claims coded by affliction nature code, deafness code 250 or 771, n=5183 claims
- Excluded 772 due to audio shock, 206 not related to hearing, 12 disease of mastoid and 6 due to trauma
- Payroll used to estimate Workplace size: >$1m, $1m to $20 m, >$20m (not number of employees)
- Crude industry/occupation categories
Industry analysis

Industries with the two highest IB incidence rates

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Incidence of IB claims by workplace size

- Manufacturing: similar incidence rates at the beginning of the period, higher upward trend in small and medium workplaces from 2003-04 onward
- Construction: increase in small workplaces, steady rates in medium workplaces, upward trend in large workplaces
Figure 1. The number and the cost of new and ongoing ACC claims annually between July 1995 and June 2006.

Conclusion: “The substantial and increasing societal costs despite decades of NIHL control legislation suggests that current strategies addressing this problem are not effective, inadequately implemented, or both.”

Thorne et al. 2008
Prevalence of Hearing Loss in the United States by Industry

Elizabeth A. Masterson, PhD, CPH, CRC, Mosh,1* SangWoo Tak, ScD, MPH1,2 Christa L. Themann, MA, CCC-A, Mosh,1 David K. Wall, MSE, Mosh1 Matthew R. Groenewold, PhD, MPH, Mosh,1 James A. Deddens, PhD, Mosh,1 and Geoffrey M. Calvert, MD, MPH, Mosh1

Background Twenty-two million workers are exposed to hazardous noise in the United States. The purpose of this study is to estimate the prevalence of hearing loss among U.S. industries.

Methods We examined 2000–2008 audiograms for male and female workers ages 18–65, who had higher occupational noise exposures than the general population. Prevalence and adjusted prevalence ratios (PRs) for hearing loss were estimated and compared across industries.

Results In our sample, 18% of workers had hearing loss. When compared with the Couriers and Messengers industry sub-sector, workers employed in Mining (PR = 1.65, CI = 1.57–1.73), Wood Product Manufacturing (PR = 1.65, CI = 1.61–1.70), Construction of Buildings (PR = 1.52, CI = 1.45–1.59), and Real Estate and Rental and Leasing (PR = 1.59, CI = 1.51–1.68) had higher risks for hearing loss.


KEY WORDS: occupational hearing loss; hearing impairment; hazardous noise; noise-induced hearing loss; occupational noise exposure standard

“Workers in Mining, Construction, and specific Manufacturing industries appear to have a much higher prevalence of hearing loss………”

“Although noise exposure in these industries has been regulated for decades by OSHA and MSHA, these results suggest that the current regulations and their enforcement need to be revisited.”
Other recent publications highlighting NIHL


European Commission report on the current situation in relation to occupational diseases' systems in EU Member States and EFTA/EEA countries, 2013 – NIHL a common priority condition
Should there be a reduction in the workplace noise guideline values?
Interventions to prevent occupational noise induced hearing loss (Review)

Verbeek JH, Kateman E, Morata TC, Dreschler W, Sorgdrager B
Recent Cochrane systematic review showed a lack of good evidence for effectiveness of interventions to prevent occupational NIHL (Verbeek et al, 2009 and 2012)

- Low quality evidence that implementation of stricter legislation can reduce noise levels in workplaces.
- Effectiveness of hearing protection devices depends on training and their proper use.
- Very low quality evidence that the better use of hearing protection devices as part of HLPPs reduces the risk of hearing loss.
- Better implementation and reinforcement of HLPPs is needed.
- Better evaluations of technical interventions and long-term effects needed.
Focus groups workers/employers:

- an over-reliance on personal hearing protectors
- infrequent and improper use of personal hearing protectors,
- lack of prominence of noise as a serious work health and safety issue
- insufficient knowledge of the effects of loud noise on hearing and quality of life
- belief that noise control costs too much
- belief that hearing loss is inevitable
- small or medium-sized businesses
Key points

• Despite increase in threshold for accepting NIHL claims, numbers and rates are increasing in Australia (particularly over past 5 years)
• Mirrors the situation in several other countries
• Increased awareness to claim? – is so, suggests previous under-reporting, as with most occ diseases
• Results suggest noise management programs over past 30 years sub-optimal
• Cochrane review shows that increasing regulation unlikely to be effective
• ‘Burn out’ and complacency in workplaces
• Need for greater enforcement in noise control and efforts in hearing protection programs, not just relying on hearing protectors