

Senate Standing Committee on Health, Aged Care and Sport

Submission to the Inquiry into the Hearing Health and Wellbeing of Australia

Australian Institute of Occupational Hygienists Inc (AIOH)

Introduction

Thank you for the opportunity to present to this Senate Committee information on this important topic. This submission provides comment from the professional body representing occupational hygienists. All comments are confined to our area of expertise, namely prevention of occupational noise-induced hearing loss.

It is noted that this inquiry follows on from a similar Senate Inquiry in 2010¹, and it is unlikely that much of the evidence submitted by the AIOH or other interested bodies at that time will have changed much in the intervening period. However, it is also noted with some concern that it is not yet known as to what extent some of the recommendations from this report have been implemented, for example *Recommendation 18 The committee recommends that the Department of Health and Ageing work closely with Safe Work Australia to investigate the relationships between ototoxic substances and hearing impairment, and the possible implications for workplace safety practices.*

The AIOH

The Australian Institute of Occupational Hygienists Inc. (AIOH) is the association that represents professional occupational hygienists in Australia. The AIOH is the largest occupational hygiene society in Australia and the only professional society representing qualified occupational hygienists in Australia. The overall objective of the AIOH is to use science and engineering to prevent ill health caused by the environment in which people work. The AIOH seeks to achieve this by:

- Promoting the profession of occupational hygiene;
- Improving the practice of occupational hygiene and the knowledge, competence and standing of its practitioners;
- Representing the profession nationally and internationally;
- Increasing public awareness of the field of occupational hygiene.

The Institute was formed in 1980 and Incorporated in 1988. An elected governing Council, comprising the President, President Elect, Secretary, Treasurer and three Councillors, manages the business and professional affairs of the Institute.

The AIOH is a member of the International Occupational Hygiene Association (IOHA).

Occupational Hygiene

Occupational hygiene uses science and engineering to measure the extent of worker exposure, and to design and implement appropriate control strategies to prevent ill health caused by the working environment. It helps employers and employees understand the risks, and promotes improved working conditions and working practices.

The AIOH defines occupational hygiene as the art and science dedicated to the anticipation, recognition, evaluation, communication and control of environmental hazards in, or arising from, the workplace that can result in injury, illness, impairment, or affect the well-being of workers and members of the community. These hazards are normally divided into five categories Biological, Chemical, Physical, Ergonomic and Psychosocial.

In lay terms, occupational hygienists use their scientific and engineering knowledge and skills to champion the protection of workers from the hazardous chemicals and other agents they work with. We want Australian workers to be able to go home safely at the end of each day to their family and friends.

¹ Community Affairs References Committee, *Hear Us: Inquiry into Hearing Health in Australia*, May 2010

Hearing Health and Occupational Hygiene

As indicated above, the practice of occupational hygiene is relevant to this inquiry, as noise induced hearing loss and tinnitus are among the most common work related illnesses. Moreover, occupational noise induced hearing loss is entirely preventable and for this reason it is considered that hearing health is best maintained through good management of the work environment. Given this, the AIOH will confine its submission to the following terms of reference:

8. Developments in research into hearing loss, including: prevention, causes, treatment regimes, and potential new technologies;
9. Whether hearing health and wellbeing should be considered as the next National Health Priority for Australia; and
10. Any other relevant matter.

Background

Exposure to noise in the work environment is a significant issue for Australian workers, employers, taxpayers and ultimately, the economy. Safe Work Australia is the lead government agency for occupational noise and their website contains a number of informative documents. Despite this, Safe Work published a report in 2010, on occupational noise induced hearing loss which indicated that there was little information available on how many workers in Australia are exposed to or affected by exposure to noise².

More specific data is available from another government agency. In 2009, the Secretary of the Department of Veteran's Affairs (DVA) reported to the Senate Community Affairs Reference Committee³ into Hearing Health in Australia that 10,667 veterans had hearing related disabilities only and that a further 68,756 had multiple disabilities that included a hearing related disability. The total cost of hearing services provided through the Office of Hearing Services, hearing devices provided through the Rehabilitation Appliances Program and of disability pensions, amounted to approximately \$83.3 million.

This continues to be a major source of disability claims for DVA. In determining the majority of liability claims, the Department refers to the Repatriation Medical Authority Statements of Principles (SOPs). Of the 15 most frequently claimed disabilities under the Veteran's Entitlements Act, based on SOPs, in 2014–15, sensorineural hearing loss (1,386 claims) and tinnitus (1,333 claims) were the second and third most frequently claimed conditions⁴.

Safe Work Australia has declared noise induced hearing loss a priority disorder, on the basis of the severity of the consequences for workers, the number of workers estimated to be affected and the existence of known prevention options⁵.

The role of occupational hygiene in preventing noise induced hearing loss

Occupational hygienists work in many industries including mining and minerals, defence, manufacturing, construction, health, and in the tertiary education sector, in research and/or teaching. Regarding noise, their activities may involve:

- Anticipation – early involvement in project planning, design or prior to purchase of machinery or plant, can ensure that noise control is considered at the most cost effective stage. Even for small items of equipment such as powered hand tools, employers are encouraged to 'buy quiet'.
- Recognition – While anyone can recognise loud noise, an occupational hygienist can characterise the noise in terms of form, magnitude and nature. Hence, noise may be impulsive, intermittent or continuous; noise measurement can use different weighting scales, depending on the form of the noise; and a frequency analysis of the noise will help determine the most effective means of control.

² Safe Work Australia, Occupational Noise Induced Hearing Loss in Australia, Overcoming barriers to effective noise control and hearing loss prevention, August 2010.

³ Submission by Ian Campbell, Secretary DVA, to Community Affairs Reference Committee inquiry into *Hearing Health in Australia*, 21 October 2009.

⁴ Department of Veterans' Affairs, Annual Reports 2014 -15, Table 6 p.41, 1 October 2015

⁵ Safe Work Australia, Australian Work Health and Safety Strategy 2012 – 2022.

- Evaluation – Noise levels can be measured with a sound level meter, in accordance with the appropriate Australian Standard⁶. Personal exposure can be measured with a noise dosimeter, a device which measures the noise exposure at the ear of the wearer. The measured noise level is compared with the exposure standard for noise, which in relation to a person, means:
 - (a) LAeq,8h of 85 dB(A); or
 - (b) LC,peak of 140 dB(C)⁷.
- Control – the results of the noise measurement and evaluation inform the type of control required. There is a hierarchy of controls, which is in order of effectiveness:
 - Eliminate the risk;
 - Substituting plant or processes to reduce noise;
 - Using engineering controls;
 - Isolating the source of noise;
 - Using administrative controls;
 - Using personal hearing protectors⁸.

Occupational hygienists can also assess the harmful effects of extended work shift durations (>8 hours); the level of exposure to chemical agents known as ototoxic substances, which can contribute to hearing damage, or to other physical agents such as hand-arm vibration, which has been linked to hearing loss. As noted in the introduction, ototoxics formed the basis of Recommendation 18 from the Senate Inquiry of 2010. For further reference, a recent paper by Teague et. al., reviewing the impact of non-auditory synergistic impacts on occupational hearing loss was presented at this year's AIOH annual conference⁹.

Despite the recommendation for research into possible implications for workplace safety practices, it should be noted that exposure standards for chemicals and noise have not yet been altered to take account of increased risk to hearing. Until revised standards are established, Safe Work Australia recommend that the daily noise exposure of workers exposed to any of the ototoxic substances listed in Table A.1 of the Code of Practice, be reduced to 80 dB(A) or below. They should also undergo audiometric testing and be given information on ototoxic substances.

Safe Work Australia is currently reviewing workplace exposure standards. Currently, exposure standards may be designated as carcinogens, 'Sen' for sensitisers, or 'Sk' if absorbed dermally. As part of the review process it is suggested that exposure standards for chemicals should also designated as ototoxins to raises awareness in employers and workers of this hazardous aspect of certain chemicals.

Recommendation 1.

For substances which are known to be ototoxins, workplace exposure standards should include an indication of this hazard.

Despite the fact that hearing loss is preventable and that exposure to occupational noise being well regulated for many years, there appears to be little information indicating that existing measures to reducing the impact of exposure to occupational noise have been successful. Indeed, the most recent data from Safe Work Australia indicates that there was an increase in the rate of worker's compensation claims for noise induced hearing loss over the period 2000-01 to 2010-11¹⁰. This indicates that further work is required to identify more effective and efficient means of reducing exposure to noise in Australian workplaces.

⁶ AS/NZS 1269.1:2005 Occupational noise management—Measurement and assessment of noise immission and exposure

⁷ Work Health and Safety Regulations 2011, Chapter 4 Hazardous work , Part 4.1Noise,

Regulation 56 Meaning of exposure standard for noise

⁸ Safe Work Australia, *Managing Noise and Preventing Hearing Loss at Work* Code of Practice, September 2015

⁹ Teague, P., Alexandrou, V., Burgess, M. and Williams, W. (2016) *Consideration of Non-Auditory Synergistic Impacts on Occupational Hearing Loss*, Proceedings of the 34th Annual Conference, AIOH, December 3-7 2016, Gold Coast, Queensland.

¹⁰ Safe Work Australia, Occupational Disease Indicators, *Noise Induced Hearing Loss*, July 2014

As noted in the 2010 Inquiry, hearing loss can be caused recreational noise exposures¹¹. If anything, with the growth in usage of personal music players, this risk is likely to have increased. Other recreational sources include live music venues, motor sports, sporting shooting or even some restaurants.

For this reason, the concept of considering occupational noise as being somehow separate to non-occupational noise is not helpful. As far as hearing loss is concerned the effects of noise are cumulative and measuring only workplace noise exposure fails to account for the other 16 hours of exposure outside the workplace. The US Air Force has recently embarked upon a study to monitor all forms of noise to which study participants may be exposed to in the course of a 24-hour day. This is a part of the Total Exposure Health Initiative and the long-term goal of the study is to find out what is working in terms of hearing loss prevention and what is not, find new approaches to preventing hearing loss and tinnitus and to open the door to further research. New discoveries in the realm of hearing loss prevention will not only help soldiers, but civilians as well¹².

Under the terms of reference, this Standing Committee has the widest of remits in order to examine the hearing health and well-being of Australia. This presumably enables this group to work with any number of other stakeholders, whereas organisations such as Safe Work are limited to workplaces. It would be appropriate for the Committee to monitor the outcomes of the USAF trials, with a view to considering conducting similar studies in Australia.

Recommendation 2.

Consideration should be given to conducting a study similar to that of the Total Exposure Health Initiative.

Conclusions

Occupational exposure to noise is a major contributor to hearing loss. Despite occupational health and safety legislation relating to the control of workplace noise having been in place for many years, it appears that more work is required to achieve effective control of noise induced hearing loss.

An alternative approach suggested is to consider looking at non-auditory factors, such as ototoxics, and total exposure to noise over a 24-hour day.

Recommendation 1. For substances that are known to be ototoxins, workplace exposure standards should include an indication of this hazard.

Recommendation 2. Consideration should be given to conducting a study similar to that of the Total Exposure Health Initiative.

¹¹ Community Affairs References Committee, *Hear Us: Inquiry into Hearing Health in Australia*, May 2010, para. 2.51 Recreational hearing Loss (RHL)

¹² U.S. Air Force noise study aims to prevent hearing loss, <http://www.healthyhearing.com/report/52698-U-s-air-force-noise-study-aims-to-prevent-hearing-loss>

Yours Sincerely,

Philip Hibbs
President 2017
Australian Institute of Occupational Hygienists Inc.
23rd December, 2016