Since January 2020 Elsevier has created a COVID-19 resource centre with free information in English and Mandarin on the novel coronavirus COVID-19. The COVID-19 resource centre is hosted on Elsevier Connect, the company's public news and information website.

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Materials and Methods: The 1998 criteria document identified several areas in which additional research was needed in order to clarify the risks associated with various noise exposure scenarios as well as to develop appropriate recommendations to protect workers against the effects of these exposures. NIOSH and the scientific community have conducted research addressing these and other areas. Results: Results indicate that some of the previous recommendations should be updated. Data point to three main topic areas in need of updated recommendations—hearing protector fit-testing, improved age adjustment tables, and assessment of complex noise exposures. Updates could be disseminated in a revised criteria document and/or through other communication channels.

Conclusions: This presentation will highlight the latest research and the three main topic areas that are under consideration, and provide an update on the current efforts taken by NIOSH scientists and external collaborators to update occupational noise exposure guidelines in the U.S.

**Sp37-4**

**Hearing outcome analyses in mice and humans with exposures to mixtures of metals with noise**

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Introduction: Evidence shows that metals such as lead and cadmium are ototoxic. However, metal ototoxicity in the presence of noise or concurrent exposures to multiple metals is not well understood. This research uses both a toxicological and epidemiological approach to explore metal ototoxicity in the context of (1) a mouse model and (2) in a cohort of young adults in an occupational setting.

Materials and Methods: In the toxicology study, CBA/CaJ mice were exposed to lead, cadmium, and noise to evaluate alterations in hearing. Mice were tested using ABR, DPOAE, and cochlear cell counts. In the epidemiological study, noise, dosimetry, blood metal levels, and health history information was collected from electronic waste workers in Ghana then analysed with linear regression.

Results: Only noise exposures of 105 dB were associated with significant changes to ABR, cochlear cell counts and DPOAE in mice. In humans, sixty percent of electronic waste workers were found to have audiometric notches indicative of noise-induced hearing loss and this was supported by high levels of noise exposures.

Conclusions: Each hearing test indicated significant differences between groups. The temporary effect of the exposure was characterized by an increase of the threshold of the acoustic reflex. Measuring the shift in the acoustic reflex (EchoScan test) can identify work-related exposures that create auditory fatigue and help prevent hearing impairments possibly before they become permanent.

**Sp38-1**

**Warrior Women of the 21st Century: The Role of Female First Responders in the COVID-19 Crisis**

Claudia de Hoyos and Igor Bello

Session introduction

The crisis unleashed by the COVID-19 pandemic has disrupted the world of work, asymmetrically affecting men and women. Women have had a special impact by having the highest participation in the prioritized sectors of the economy (health, education, food) and this has had an influence on further widening inequities between genders, and especially in terms of their health. In this session we will address some of these aspects from a sectorized and global perspective.