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## An amazing 10-year collection of hearing loss prevention supplements by the National Hearing Conservation Association

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Ten years ago, we had the privilege to be guest editors of the first *International Journal of Audiology* (IJA) National Hearing Conservation Association (NHCA) supplemental journal issue, which was released in 2011. We were delighted to again repeat the feat, by being the guest editors of the current supplement, containing a few of the presentations at the 2019 NHCA annual conference.

The current supplement gives us a chance to revisit and celebrate the tenth consecutive year of these publications. The selection of papers in each of this 10-year collection represent well the multidisciplinary nature of NHCA, with its membership that includes a diverse population of individuals (audiologists, industrial hygienists, physicians, scientists, engineers, students and many others) who learn from each other. This rich pool of expertise is unique -and needed- to address the challenge of preventing the harmful effects of noise.

In examining the body of work captured in this 10-year supplement collection, some trends were noted. First, the need for early identification and intervention for noise-induced hearing loss is highlighted in several papers that considered the risk of noise-induced hearing loss in youth and young adults (in the supplements of 2011, 2013, 2014, 2015, 2016, 2018) and others that provided evidence-based intervention outcomes in this population (2012, 2014). These manuscripts provide further support for expanding the focus of hearing loss prevention beyond the workplace. A second trend reveals the overdue recognition of the need to extend hearing loss prevention activities and strategies toward workers that are not traditionally considered in typical workplace hearing loss prevention programs. In particular, readers will find papers which covered those who are exposed to music as part of their profession or recreation (2011, 2015, 2018), construction workers (2011), and workers in sports or entertainment venues (2013, 2016, 2017, 2018). In the current supplement, a paper by Stumpf et al., describes the extreme noise exposures of sugar cane mill workers, obtained by personal noise exposure measurements conducted in Guatemala. It also provides valuable insight towards noise control and other hearing loss measures to be tailored to this population. This supplement then takes us from Guatemala to space; and we learn about the noise dosimetry measurements on the International Space Station, a key element for the success of NASA's hearing loss prevention initiatives.

The third trend we noted was on the wide range of new technologies that are making their way into hearing loss prevention in the context of ensuring the audibility of critical speech, sounds and signals. Papers have been published on new tools for measuring

and communicating noise information, testing hearing, developing and evaluating new hearing protection in nine of the 10 published supplements (2011, 2012, 2014–2020). In the current supplement, three papers examine aspects to be considered for the successful implementation of new technologies. Dr. Cave et al. describe the training needs for the successful implementation of a Portable Auditory Localization Training System, which can improve localization accuracy, and situation awareness. These auditory skills can be a matter of safety for military and public safety professionals. In the Giguere et al paper, the authors investigated the effect of individual factors, i.e., hearing loss and language proficiency, on speech perception and production intelligibility when paired with a same-sex partner via tactical radio communication devices. Open-source mobile software is featured in the Shapiro et al manuscript. Both researchers and clinicians need flexible software, data collection, and storage solutions to advance our science and service delivery to more diverse populations. Advances in hearing loss prevention will depend upon these resources being readily available to a wider audience. The technological surge of this decade offers a clear opportunity to expand and improve hearing health, particularly in hearing loss prevention; but only when founded upon a solid scientific basis and paired with a robust implementation strategy.

The 10-year collection also includes significant contributions on audiological testing instruments and protocols, the unique risks and considerations for noise exposure from high-level impulse noise generated by firearms and the epidemiology of hearing loss among populations of different ages, ethnicities and workers from different industries and nationalities. In the current supplement Flamme et al provide an inclusive and extensive update and expansion of population-based age adjustment tables used in occupational hearing conservation programs. Their approach provides reference values for men, women, non-Hispanic Black or other race/ethnicity aged 18–85 years which are validated by longitudinal data and may further inform the regulatory reference tables for age correction used by several government agencies, while providing a useful resource for hearing loss prevention professionals.

Finally, the collection offers new insights in noise monitoring and control; and refreshingly, includes pioneering papers on the effectiveness of varied interventions. The breadth of themes addressed at the NHCA conferences and the subset of topics selected for presentation in this supplement highlight the complexity of hearing loss prevention and the new approaches being studied and/or implemented to address current challenges. In 2011, we expressed our desire to “expand the world of effective hearing loss prevention to the unprotected, the underserved, and the young and old” (Meinke & Morata, S1). The topics, authors, and focus of the manuscripts over the past nine years have certainly met this goal and we look forward to sharing the 2020 supplement publications in this same spirit.

In closing, we publicly express our appreciation to the authors in the supplements and the peer reviewers for their dedication to making this partnership a success for IJA, NHCA, and NIOSH. In particular, we would like to publicly thank Dr. Ross Roeser (IJA editor-in-chief emeritus) for his foresight and willingness to partner with NHCA and to the current editor-in-chief, De Wet Swanepoel for continuing his vision. We hope you will agree that the body of knowledge assembled in this collection has the potential to help people from

around the world make informed decisions about their noise or sound exposures, take an active role in protecting their hearing, increase the effectiveness of hearing loss prevention and intervention programs, and reduce the burden of noise-induced hearing loss and tinnitus on society. It has been an honor to work together for a second-time and we humbly submit our contributions to the current supplement.

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## Biography

