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Message from the Editor-in-Chief

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Non-auditory Effects of Lower-Level Environmental Noise

This issue of CanadianAudiologist.ca is about audiology and also not about audiology. The topic of how lower levels of environmental noise affect the body has been formally studied since 1946, yet has not shown anything definitive about long-term effects related to sleep disruption, annoyance, or overall stress. The following is from the conclusions section of our cover feature:

"*This is admittedly an extremely difficult area of study with a range of many potentially confounding factors and measures that either have poor test-retest reliability or have a poor correlation with sleep disruption, cognitive and educational issues, stress, and general annoyance. For example, noise that may cause the greatest sleep disruptions may be judged as a noise source associated with relatively little annoyance.*

There are also a range of other uncontrolled (or unconsidered) phenomena where some people, in some circumstances, and with some types of noise, are more susceptible to its effects than others. This may be a dose-related effect, or even a genetic pre-disposition, … or not- the literature is unclear on this. And to be fair, this same issue of differential "susceptibility" is observed for some sections of the population even for high levels of noise and/or music exposure for measurable and permanent hearing loss, where again, the reasons are not well-known.

There are no "smoking gun" studies, or set of studies, that definitively describe predictable and associated effects for low-level noise exposures when taken together. Moreover, while many studies demonstrate changes in some measures, there is no clear evidence that these changes will have long-term consequences.

While it would be tempting to say the sentence "more research needs to be performed," given the inherent difficulties in this area of study, it would be unrealistic to conclude that definitive and predicted results would be able at some point in the near future to be obtained. All that can realistically be said is that for a range of low-level environmental exposures, some people are quite susceptible to its effects, whereas other are not, and these effects can include sleep disruption, potentially cognitive and educational issues, and an increase in stress and annoyance."

Audiologists have traditionally not been involved in studying the systemic effects of lower levels of noise on the body, and very few of the studies mentioned in this lead-off article appear in traditional mainstream audiology publications. Yet this seems to be where the media has been turning to audiologists for their comments and expertise. Unfortunately, the writing of this white paper was now spurred on due to the recent truckers' demonstrations in Ottawa, Ontario, and

Sarnia, Ontario, and the ensuing noise created in residential areas.

Of interest is that in the history of environmental noise control, Canada was at the forefront of advocacy, and Walter Montano from Argentina is quick to point this out in his excellent contribution to this issue of CanadianAudiologist.ca. In addition, Arline Bronzaft has contributed an article on modern forms of advocacy. It should be noted that it was Dr. Bronzaft (Bronzaft and McCarthy, 1975) who was able to demonstrate in the 1970s that students in an elementary school in New York City whose classroom was on the quiet side of the school performed significantly better on language comprehension and reading tests than matched children whose classrooms were on the noisier side of the school adjacent to noisy railway tracks.

While lower levels of environmental noise alone do not cause measurable hearing loss, and it is questionable whether its effects are long-term, environmental noise can indeed degrade one's quality of life on many levels. As a result, and despite the lack of any "smoking gun" studies, lower levels of environmental noise may be one of many factors that do contribute to long-lasting health issues.

I wish you all a healthy early summer break from the snow and ice and hope that the articles in this issue of CanadianAudiologist will provide an overview of this audiological (or perhaps non-audiological?) field of study.