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From the Labs to the Clinics

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Robert V. Harrison, PhD, DSc

It is a pleasure to start a regular column in *Canadian Audiologist* on knowledge translation, or as the title above describes, moving ideas from the research lab to the hearing health care clinic. There will be a recurring theme in my writing, and that is to do with the apparent difficulty in getting new ideas, new diagnostic tests and new technology into audiology practice.

By way of illustration let me bore you with some personal experiences. I remember, 40 years ago, measuring one of the most fundamental aspects of sound analysis – cochlear frequency selectivity. It can be measured electro-physiologically or it can be assessed with behavioural tests. I, along with many others showed that in cochlear hearing loss this function is often seriously degraded. That being the case, why is it not a routine clinical test in audiology? Similarly, I remember, way back, measuring auditory thresholds with tone pip evoked ABR and electro-cochleography. Today, I don't see much clinical use of these methods in audiology. These are just two examples of useful laboratory research tools that have failed to translate into clinical audiology. There are many more examples.

There are multiple reasons why new ideas may not get adopted into clinical practice. The new knowledge might be seen to have no practical value, or be irrelevant to "patient care". (We will discuss the notion of what is clinically relevant in later columns.) The new tests may not be possible because the required equipment is not available. This certainly a major factor; audiology is driven by the devices that are available in the clinic. Furthermore, the extent of clinical testing is driven by external factors such as what tests can be billed for, or the "end goal" of the assessment. There is absolutely nothing wrong in testing specific aspects of hearing for a particular purpose, such as a threshold audiogram for a hearing aid prescription, an air-bone gap to advise about middle ear surgery. But how can we provide a fully comprehensive evaluation (to the limits of our present knowledge) of a hearing deficit? In my opinion this is seldom achieved.

These same bench-to-bedside translation issues dog many aspects of clinical care. Some estimates suggest that 20 years is the average delay for research ideas to take hold in the clinic. One often cited reason for this lag is that new ideas come with new trainees and that senior clinicians may not keep up. I know that most of the readers of this column do not page through the journal *Ear and Hearing* on their commute to work, or take copies of *Hearing Research* on vacation to read at the beach (if you do, then you need to get a life!). So, I will attempt to bring you a regular update on new findings and ideas that could be of interest to you as hearing health care providers.