

The More We Change, The More We Stay the Same

Published March 3rd, 2018

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I recall doing an ABR in 1980 with a very large 4-channel machine with a lot of flashing lights (it may have had a crank on it?) but only rarely have I done an ABR or other form of evoked testing since then. My areas of interest have always been the effects of music and virtually all aspects of hearing aids. But after more than 35 years in the field, I find myself gradually going back to evoked response audiometry.

This is not for traditional diagnostic reasons but to determine issues of separation between cochlear and neural function. It almost seems that we are now back in the 1960s and 1970s in trying to ascertain whether a dysfunction is cochlear or neural. But this time around it's to determine whether there is cochlear synaptopathy or hidden hearing loss. There is an unsubstantiated rumour that Canadian audiology programs will be extended to a third year just so their students can learn to say "synaptopathy" without stuttering.

Colleen LePrell has written a very impressive cover feature story for CanadianAudiologist.ca that overviews the current state of affairs with cochlear synaptopathy. We don't know the prevalence in humans or even how to assess it, but, at some point we will be looking for some neural measure(s) that demonstrates a dysfunction in the presence of normal cochlear function. This may include looking at wave I characteristics in ABR or even the ratio of the summing potential to the action potential (SP/AP). The SP/AP ratio is well studied for those with Meniere's Syndrome but perhaps it's time for a fine tuning of this common measure. There is data to support a high stimulus repetition rate and longer stimuli rates. Both of these maximize the cochlear contribution such that a very large SP/AP may be just the clue we are looking for.

The next question is what to do about it. This is not an issue of detection of retrocochlear pathology as it was in the 1960s and 1970s but just some form of neural dysfunction. Can there be auditory training that can result in some plasticity of synaptic function? What about a slight high frequency boost from amplification or a "hearable"? Maybe a Bluetooth enabled device coupled to a remote microphone(s) may do the trick for people that appear to have undue difficulty hearing in noisy environments?

As a field we are in the enviable (unenviable?) situation where we are on the brink of being able to measure something clinically, but not knowing what to do about it. You have to love the field of audiology. It never gets boring. No longer do we need to only get excited about filtered earhooks!

I hope that you enjoy reading the articles that our editorial group has put together for you in this issue of CanadianAudiologist.ca and I wish you all a pleasant spring. Watch out for those soakers!