



# Mountain Ear

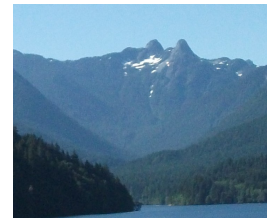
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## From the Desk of the President

by Hugh Hetherington

When newsletter time rolls around, one of my tasks is to prepare this report to keep you informed on what is going on at the North Shore Branch. It is not always easy since much of the work is administrative and routine and not very interesting to others. Nevertheless, it is important to keep the Branch functioning. As president and treasurer much of my work is financial, government reporting, setting up and hosting members and board meetings among other things. In April we invited Daniel Paccioretti, M.Sc, Aud(C) now retired and formerly Phonak's FM and Roger sales manager for Western Canada. He spoke on the topic of remote mics. You will find my summary report on his talk in this June issue.

Our other main programs each month are our two Sound Advice public meeting which I have talked about in previous newsletters. It is not easy to summarize what takes place at these meetings since we don't take notes and the topics are so varied because they depend upon what questions are asked of us by those attending. These questions lead to deeper group discussion on the various topics.

At the last couple of Zoom sessions I noticed a new participant in the list. It is OtterPilot Assistant. I didn't request it for our Zoom meetings but it seems to have come up as a trial. As an unpaid version it is limited to 40 minutes. Zoom also has assistant software available and I may try that, as well.

But, since I have its summary from our last meeting I will copy part of it here so you can see how it summarized our meeting. You will see that it breaks the summary down into different ways. There is a complete text of the meeting available to the host, but not shown here.

## "Summary Transcript

*The group discussed their experiences with hearing loss and communication challenges, emphasizing the importance of accessible communication for hearing impaired individuals. One Speaker shared her struggles with closed captioning and TV connectors, while Speaker 1 highlighted the benefits of keeping track of communication issues throughout the day. Speakers 2 and 6 discussed the challenges of living with hearing loss in noisy environments and the importance of adapting one's lifestyle to fit limitations. They also emphasized the value of using assistive devices like the Roger System to manage communication in these situations. The group also discussed the benefits of remote microphones in enhancing communication for individuals with hearing loss, with Speaker 1 emphasizing the importance of seeking solutions and Speaker 6 sharing their experience with the Phonak Roger system."*

## "Outline

### **Hearing loss and hearing aids.**

- *New attendees share hearing stories and ask questions in a support group.*
- *Newcomer shares her hearing story and asks questions in a group setting.*
- *Speaker 3 expresses frustration with the hearing aid industry, stating they felt they were ripped off for \$1000s of dollars first time.*
- *Speaker 4 shares their personal experience with ear canal size and hearing aid quality, emphasizing the importance of finding an honest provider.*
- *Speaker 5 discusses difficulty hearing on phone, researches for better sound quality.*

### ***Closed captioning options for phone calls.***

- *Speaker 1 discusses using cochlear implants and captioning on phones in the US and Canada.*
- *Speaker struggles with hearing in noisy environments, uses captioning on her cell phone to improve comprehension.*

### ***Hearing aid use and TV captioning.***

- *Speaker uses closed captioning on her TV for better hearing.*
- *Audiologists cannot hear what patients hear, so patients must communicate their hearing difficulties to them.*
- *Group recommends frequent follow-up appointments to address hearing aid issues.*
- *Group recommends jotting down hearing issues throughout the day to get hearing aids adjusted.*

### ***Living with hearing loss and solutions.***

- *The group discusses the importance of family members recognizing hearing loss in seniors.*
- *Speaker 2 shares challenges with hearing loss in daily life, including communication with family and strangers.*
- *Speaker 2 has learned to adapt to their hearing loss by limiting social interactions to smaller groups and using strategies like the Roger System to improve communication in noisy environments.*
- *Speaker 2 emphasizes the importance of finding ways to live with hearing loss rather than relying solely on hearing aids, and highlights the benefits of using the Roger System in addition to hearing aids for better communication.*

### ***Hearing aids and remote microphones.***

- *Roger system helps individuals with hearing aids communicate in noisy environments.*
- *Speaker 1 mentions an upcoming remote microphone talk at an evening meeting on April 15<sup>th</sup>, where a former Rogers salesperson will discuss remote microphones and their benefits.”*

While the above summary is not perfect it does give a reasonable idea of the topics that were discussed at the meeting. I did make some small changes where the text didn't make sense. I am looking forward to seeing if the Zoom assistant will give better results.

Until next time,

Hugh ■

### **April Evening Meeting Recap**

*by Hugh Hetherington*

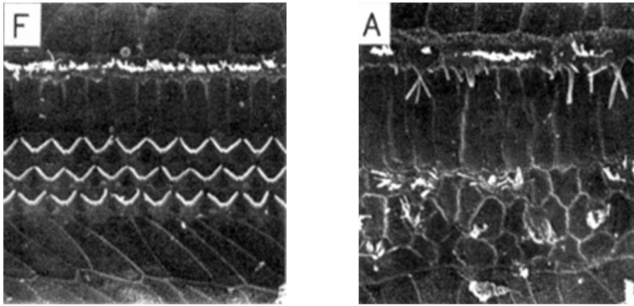
On April 15th for our evening member's meeting Dan Paccioretti, M.Sc., Aud(C) gave us a talk on remote microphones called "Remote Microphones – What Are They and Why Should I Care?". When I contacted Dan about giving the presentation he said that he had a talk on Remote Mics that he had prepared for another group and would be pleased to present it to our group, also. That topic also came up for discussion at our Sound Advice session on April 5th so it turned out to be very timely. I believe Dan put some thought into the title because he framed it in the form of a question, in fact, two questions: What are they? Why should I care?



In opening the talk Dan stated that he mainly wanted to focus on the second question, why should I care? He felt that most people listening already knew what a remote microphone was. I would like to add in though that when your hearing professional is assessing you for a hearing aid, especially if you are a first time user, that remote mics are not going to be foremost on their mind. Remote mics might or might not come up in follow up appointments as a lifestyle need for you personally.

As himself an audiologist, he started out by talking a bit about the auditory system and why we lose sensitivity over time and how it can impact how we hear in the presence of background noise. That is the real place

where remote microphones can really make a difference. If a person has normal hearing they are able to hear in some very hostile listening conditions and still understand what people are saying. But, just even in the beginning of hearing loss we begin to lose that ability. He showed some pictures of the hair cells magnified under an electron microscope.



He explained how hearing takes place in the brain and when our hearing loss is sensorineural, that it is generally due to damaged hair cells. That is shown in the pictures of normal hair cells vs. damaged hair cells. Every hearing loss is different and the degree of damage affects how each of us hears. He then talked about how hearing is tested and that the primary tool is the audiogram where your hearing is tested at various frequencies to determine the softest sound you are able to hear at each frequency and the loudest sound level you can tolerate without pain. This test is a measurement of your dynamic range but a poor test to determine how you hear in the real world environment.

While this test is part of standard diagnostics, it does not directly address the problems individuals are having. Sensorineural hearing loss usually has the following effects, loss of sensitivity and loss of dynamic range. It can also cause loss of spectral resolution which relates to the ability to determine that when different sounds are presented to a listener do they sound the same or different. There is also spatial resolution. This is the ability determine the direction the sound is coming from. It can make it difficult to understand a conversation when there is another separate conversation happening close by. He also mentioned temporal resolution where because of clarity it is difficult to hear the gaps between words.

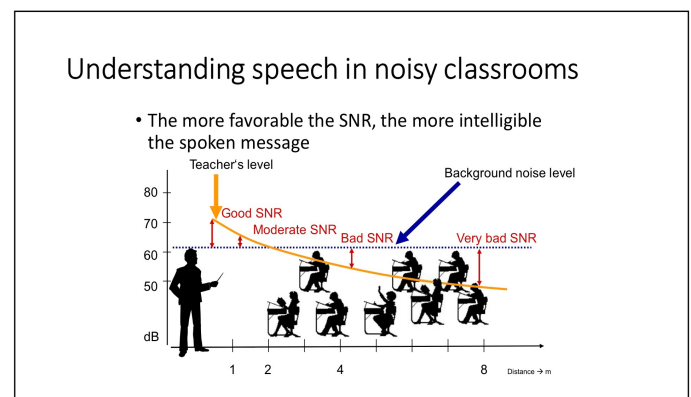
For a full evaluation for hearing loss it should include a Speech in Noise Test (SIN). This test is an important part of a hearing evaluation. Without this test your hearing

health care provider cannot properly recommend hearing solutions. This test will also help to determine the type of hearing technology you will need to consider to improve your hearing accessibility. If you have never had a SIN test, ask your hearing healthcare provider for one or find someone who can. It is that important!

The energy contained in speech is very weak even close to the source. It is measured in microwatts. The three enemies of persons with hearing loss are distance, background noise, and reverberation (echo). Sound transmission follows the inverse-square law. This states that for each doubling of the distance that sound has to travel its energy will decrease by 6 dB. The further the speech must travel the lower the amount of energy that will arrive at the listener's ears. In considering background noise Dan stated that it can have a masking effect making it difficult to understand what someone is saying particularly in the fine details like intensity and frequency changes and to determine the gaps between sounds and words. Individuals with normal hearing can still hear when background noise is relatively high whereas individuals with hearing loss will find it difficult to listen in background noise.

Dan also spoke about what is called signal to noise ratio. This is a relationship between the intensity of the signal and the intensity of the background noise. For example, if the speech intensity is 75 dB and the noise intensity is 65 dB, then the signal to noise ratio is +10 dB.

To put this into perspective, the following picture shows how the SNR gets worse as the person sits farther away from the teacher in a classroom.



Considering reverberation (echo). As sound leaves the source it travels outward in a series of waves that soon strike all surfaces. Direct sound is that portion of sound that occurs before it strikes a surface. After direct sound collides with a surface, it is converted into reflected sound. Reverberation is the bouncing back or echoing of sound. Determining the minimum SNR a hard of hearing person requires to understand speech in background noise or reverberation depends upon their degree of hearing loss. Typically with a mild hearing loss of 30 to 40 dB a +4 dB SNR is required. For a moderate degree of hearing loss 40 to 50 dB a +5 to +7 SNR is required. For a severe degree of hearing loss 70 to 90 dB a +9 to +12 SNR is required. Beyond 90 dB hearing loss at least a +18 SNR is the minimum required.

There are a number of different technologies available for reducing noise. In hearing aids there is noise reduction circuitry. This is generally ineffective and at best is most useful for providing comfort in a noisy environment. Next there are directional microphones. There are well documented improvements in SNR over omni-directional microphones. These are proven to have increased performance and user satisfaction. The range of improvement is in the 3 to 8 dB SNR range. Looking back to the required SNR for different ranges of hearing loss this takes us to that required down to a moderate hearing loss.

Beyond that is when remote microphones are the best solution to the problems discussed. Placing a microphone close to the source will improve the SNR significantly, by as much as 12 to 15 dB. The microphone can pick up the speech sounds better. They are stronger close to the source and are typically louder than the background noise. Remote Microphones can help to overcome the issues of hearing in noise, distance, background noise and reverberation (echo).

How does a remote microphone system work? The speaker speaks into the microphone. The speaker's voice is transmitted via the remote microphone and FM or digital radio waves to the remote microphone receiver in the hearing aids and hence delivers the sound directly to the individual's ears. This effectively collapses the distance between the speaker's mouth and your ears.

Depending upon the type of remote microphone that is provided by your hearing professional the frequencies employed will be different. For FM systems there is the

H-band: 168-176 MHz and the N-band: 216-217 MHz. The N-band is approved for use in Canada. If FM remote mics are used by different people in the same room they should be on different frequencies. Multifrequency transmitters and receivers can be changed to a different frequency if there is conflict. Only use legal frequencies in whatever country you are in.

Digital Remote microphones are now the standard. They use the 2.4 GHz Industry, Science and Medical band (ISM) which is globally license free. They allow for low delay and reliable long range broadcast towards miniature, low power receivers. Their audio bandwidth is up to 7300 Hz. They provide for privacy and are essentially interference proof. They use channel hopping in combination with repeated broadcast which avoids interference issues. They have an end to end delay that is well below 25 milliseconds.

Who can benefit from an RM system?

1. Children with hearing loss that attend special (deaf) schools or regular schools
2. Adult hearing instrument users
3. Children and adults with cochlear implants
4. Children and adults with unilateral hearing loss (single sided deafness)
5. Children and adults with auditory processing disorder
6. Non-native learners
7. Adults with multiple sclerosis
8. Children with Autism spectrum disorder

Adults with hearing loss who suffer from poor critical signal to noise ratios should consider RMs. More adult hearing aid wearers are discovering RM benefits and they are being increasingly accepted. More hearing care professionals consider RM systems a crucial component of intervention for adults with hearing loss. RM systems can be successfully fitted to elderly people provided that they receive quality counselling.

Product choices are determined by the user's lifestyle, age, communication needs and budget. Also the amplification an individual uses has to be considered.

In conclusion, hearing loss covers more than what a simple pure tone audiogram tells us. Better speech

understanding in noise is the number one desire of experienced hearing instrument users. RM systems provide the greatest improvement in signal to noise ratio of all the technological options available. Hearing impaired children, adults, CI users, and those with unilateral hearing loss can all benefit from RM systems. There are RM systems for all ages, lifestyles and communication needs.

That was the end of Dan's talk on remote microphones. He did also speak about the new Auracast Bluetooth system that is coming along on the horizon. This is still a way in the future. Some hearing aid manufacturers have their hearing aids Auracast ready while others are still working on it. Auracast is a new Bluetooth broadcast system that was announced in 2020 by the Bluetooth Special Interest Group (SIG) who are responsible for Bluetooth standards and licensing. It was made possible by the new Bluetooth LE (Low Energy) and in the next few years will change the way hearing aids will interact with other devices. Conventional Bluetooth involves the pairing of two devices, however, Auracast is a Bluetooth broadcasting system which will enable Bluetooth transmitters to broadcast audio signals that will allow users to tune in with their Bluetooth audio devices. such as, hearing aids, headphones, earbuds, or cochlear implants. Pairing will not be necessary and when you tune in to an Auracast broadcast you will receive the signal in real-time and with low latency.

The system consists of an Auracast transmitter, an Auracast assistant (a Smartphone, Smartwatch or a hearing aid remote) and an Auracast receiver such as, hearing aids, headphones, or cochlear implants.

The Auracast transmitter may be located in an airport, theatre, sportsbar or religious venue. The Auracast assistant (ie your Smartphone) will display a list of available broadcasts. You will select the broadcast you want and you will hear it through your hearing aid, headphones or earbuds.

Will Auracast mean the end of loop systems? Loop systems and telecoils will still be around for many years. They do have significant advantages for hearing aid wearers and have been around for many decades. However, Auracast will provide another option for places of worship, public venues and meeting rooms. For example, some venues may not be suitable for loop systems. In some locations they may have poor audio

quality due to electrical interference. In some instances it may not be possible to install a loop system or it may be too costly to install.

Dan mentioned that many hearing companies are already Auracast ready. These include:

1. GN's ReSound Nexia and Jabra Enhance 20 (Costo)
2. Signia's Integrated Experience hearing aids
3. Demant Groups Oticon Intent and Philips Heartlink 50
4. Cochlear Corporation's Nucleus & Sound Processor

Others will roll out in the future as hearing aid manufacturers are working on new Auracast ready products. ■

**CHHA-NSB**  
**Evening Meeting**  
**Monday, June 17, 2024**  
**7:00 pm via Zoom**

**Guest Speaker:**

Gael Hannan, author, humourist,  
 editor & frequent contributor to

[HearingHealthMatters.org](http://HearingHealthMatters.org)

**Topic:**

“Living Skillfully with Hearing Loss!”

The meeting is open to the public and there are no restrictions on the number of people who attend.

The meeting is expected to last one hour: a presentation followed by questions & discussion.

For **information** call: 604-926-5222

To **request** an invitation to join this Zoom meeting, please email:

[chhansb475@gmail.com](mailto:chhansb475@gmail.com)

## Living Successfully with Hearing Loss

by Lisa Dillon Edgett

We know hearing loss can create challenges, misunderstandings, and effortful communication. Are you frustrated by your hearing loss? Do you feel those around you might also be frustrated?

Do you wish you could manage challenging listening situations more effectively? Want to become a better speechreader? Be more assertive about your needs? Feel more connected to others?

The **Living Successfully with Hearing Loss** course, offered through Vancouver Community College, was developed to address these issues and so much more. New courses will begin in September. Currently, the courses in the Fall will be delivered online on Tuesdays, with Zoom sessions in both the afternoon and evening. Find out more about the course here: <https://www.vcc.ca/courses/dhhe-0618/>

Students provided these comments after their recent courses:

- I've accepted that the obstacles that I and other hard of hearing people face will never go away but there are strategies to live our lives the way we want to live them. I've learned a lot of practical skills and I've become a more confident hard of hearing person.
- The games she had us play on speechreading were fun and participative and a good idea to introduce to our family. As I became more transparent about my hearing disability, others were inspired to share their issues and improve their own skills. We advanced together and everyone thrived.
- Going on the hearing loss journey alone is a choice, and not a good one. There's real value in sharing the journey, experiences and lessons learned with others.

Please email Lisa, the instructor, at [ldillonedgett@vcc.ca](mailto:ldillonedgett@vcc.ca) to find out more about the course, ask any questions you may have, or inquire about registration.

Lisa Dillon Edgett, Ph.D., RAUD, Aud(C)

## Sound Advice

Presented by:

The Canadian Hard of Hearing Association  
North Shore Branch

When we meet, we discuss topics and issues dealing with hearing loss.

Subjects to be addressed include:

- Technology;
- Speech Reading;
- Coping Strategies;
- Improving Hearing Environments

We have 2 locations:

**West Vancouver Seniors' Centre** at 695 21<sup>st</sup> St, West Vancouver. These sessions will be held as **Hybrid** meetings to accommodate both in-person and Zoom attendees on the first Friday of each month at 10am.

In-person attendees must register at the front desk of the centre or by phone at 604-925-7280

To receive an invitation to join the Zoom meetings, please send an email to [chhansb475@gmail.com](mailto:chhansb475@gmail.com) to be added to the list.

**Silver Harbour sessions** at 144 East 22<sup>nd</sup> St, North Vancouver. These sessions will be held as **in-person** meetings on the last Monday of each month at 10am.

There are no meetings in July & August

For Information call:

604-926-5222

We look forward to seeing you.

All opinions expressed in this newsletter are those of the contributors and not necessarily those of the Canadian Hard of Hearing Association or CHHA-North Shore Branch.