



Canadian Hard of Hearing Association

North Shore Branch

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Mountain Ear

2009 Annual General Meeting

On September 21st 2009 the North Shore Branch held its AGM at the Summerhill in North Vancouver. 27 members and a number of guests were in attendance. During the AGM the members approved the president's annual report, financial statements and the proposed budget for 2009-2010. There were also a number of changes to the Board of Directors elected at the meeting. Flo Spratt, who has served on the Board for ten years, stepped down as president and was replaced by Teresa Hemsing who is serving for her second year on the Board. Birgit Cook also stepped down. Two new members have joined the Board this year as replacements. They are Lauren Cotterall and Mike Hocesvar who are serving as Members-at-large. Continuing on the Board in their current positions are: Karen Hunter, Vice President; Rosalie Williams, Secretary; Hugh Hetherington, Treasurer; and Henry Romain, Member-at-large. We would all like to thank Birgit and Flo for their service on the Board. Both will be remaining active, Flo as Past President this year and who will continue to co-host our Sound Advice sessions and give talks in the community. Flo will also continue to be a frequent contributor to our newsletter with her "Diary of a Cochlear Implant". Birgit will continue as our speechreading instructor. She will also be available for counselling and assistance to individuals and groups on hearing loss issues.

The pleasant evening closed off with a presentation by Dan Paccioretti, Western Canada FM Sales Manager, Phonak Canada. The report on his talk follows later in this newsletter on page 3.

Diary of a Cochlear Implant

By: Flo Spratt

Many of our readers have asked me, "How is your hearing coming along?" My responses are usually in the "Very well!" category, with a beaming smile to express my appreciation that they are happy with me. There is rarely time to tell all that this wonderful surgery has done for me.

Hugh, our editor, has offered some space in each newsletter for me to share what my cochlear implant has done for me. It is my hope that many readers who are benefitting from hearing aid technology will be able to relate to my experiences. For those who no longer benefit from hearing aids and assistive listening devices, perhaps my stories will encourage them to consider a cochlear implant. It is never too late!

It has been eight months now since I have been "hooked up" to the implant in my cochlea. For the first few months I have been marveling over all the new sounds I could hear. My computer now hums quietly, the clock I used to have on my desk was moved to another room as it was too loud, the birds outside my window sing many lovely songs for me, and my dog laps her water like a water fountain in the other room.

The best news is how well I hear people. They don't mumble like they used to! Their voices are crisp and clear, even when there is noise around me. Sometimes I just sit back and listen to the discussion and simply marvel at the fact that I can hear. What an

awesome gift is hearing!

It is becoming difficult for me to remember just how bad my hearing was. While at a concert, my husband asked me, “Well, how much better can you hear now?” It was only when I turned the implant’s speech processor off and kept the remaining hearing aid turned on that I was able to remember. It was like going from a dull and narrow band of sounds to a lively variety and harmony of many beautiful sounds. So this is what music is all about!

There are areas that I still need to work on. For example, I find it difficult to hear voices when loud music is played in the background. Perhaps my brain isn’t sure what I am to pay attention to! I am not sure I will ever master this area. Nevertheless, it is comforting to know that my hearing friends and family also find this skill a challenge.

Perhaps my ears have finally caught up to them.

NOVEMBER 2009 CHHA-NSB Evening Presentation

“A Funny Thing Happened on the Way to the Audiologist”

Report by: Teresa Hemsing

Guest speaker: Rick Waters -- “A Funny Thing Happened on the Way to the Audiologist: Growing Up with Hearing Loss and What I Learned Along the Way”

Rick Waters is a well-known and valuable member of the CHHA North Shore branch. A few years ago, he retired from an impressive work life (he has taught school, worked for the federal government, and was most recently Manager of the Communication Aids Department at WIDHH). He currently continues to help the hard of hearing community by serving as a board member of WIDHH and by sharing his technical expertise and knowledge with the CHHA North Shore Branch.

At the November 2009 evening presentation, Rick shared his story titled “A Funny Thing Happened on the Way to the Audiologist”. Earlier this year, he presented it as the keynote speech at the joint WIDHH and UBC School of Audiology and Speech Sciences’ Hearing Health Fair held at SFU Downtown. We at the branch were so pleased when we learned Rick would come tell his story to us. Below are highlights of Rick’s story, but only Rick can tell

it in his own humorous way.

Rick has had a hearing loss since he was very young. His recollection of his earliest pre-school memories involves missing out on parts of conversation with family and friends. He recalled one memory where he was punished when he did not come when called. His young friends would also play pranks on him that took advantage of his inability to hear. In primary school, he was seated in the back of the class since seating was by alphabetical order and his last name began with “W”. Report card comments mentioned his difficulty paying attention in class. Rick also remembers having problems pronouncing words correctly, and wonders why at that time no one suspected or investigated the possibility that he may have been suffering from a hearing loss.

Then in Grade 2, the school’s itinerant hearing screening staff, who brought a “wooden box with wires” to his school, tested his hearing. For further testing he was sent to an otolaryngologist (an ENT – ear, nose, and throat doctor). The ENT also gave him a hearing test using another “wooden box” and also a “vibrator” machine, which vibrated his head as his hearing was tested. With these devices, the ENT then diagnosed Rick as having a sensorineural hearing loss; that is, he had damaged cochleae. However, Rick would not get a hearing aid until years later.

Eventually, Rick entered a mainstream public high school in the late 1950s, when he finally did get a hearing aid. The first model Rick got was manufactured by Zenith. It resembled a gold-coloured metal box, the size of a slim cigarette package, to be put into a shirt or jacket pocket. A wire connected the box to an ear piece, to be inserted into one ear. The aid was purchased from the local department store, and it was dispensed by a health specialist who was neither an audiologist nor a hearing instrument specialist!

After high school, Rick entered UBC where he found huge classes often numbered 200 students. There was neither accessibility nor accommodation for people with disabilities. Also, Rick held summer jobs that involved working around loud noise for long periods of time. This resulted in additional hearing loss on top of what he already experienced (persons with hearing loss are more susceptible to further hearing damage). Despite difficulties in university, Rick managed to graduate from university

with two degrees (a feat remarkable for anyone -- even with normal hearing, let alone for someone with a hearing loss)!

After graduating, Rick got a job teaching Grade 7. He found the students to be noisy, but noted that the kids who struggled with school did relate to him because of his hearing loss. Next, Rick made a career change from teaching to working for the Government of Canada. Finally in the late 1980s, Rick did eventually make his way to an audiologist. Up until now, he had visited only doctors for his hearing tests. It had taken him over thirty years to visit an audiologist!

For the rest of his presentation, Rick described situations in his everyday life now where he experiences difficulties and the solutions he has for them. At home he uses devices that would alert him to fire alarms while he is sleeping because he is not able to hear a regular alarm with his hearing aids out. In social situations, he finds restaurants with tablecloths, carpet and curtains help dampen the background noise. He does not go to movies because, ironically, the sound is too loud and his hearing aids cannot process. Therefore, he waits for the DVD version to be released and turns the captioning on when viewing the movie. Technology including digital hearing aids with directional microphones, FM systems, and Bluetooth devices are also very useful in Rick's life.

Finally, Rick admits that listening is hard work. He advised the audience: Tell other people to speak clearer and slower, but not necessarily louder. Ask others to help you. Be sure to take time to take a break and relax. He also acknowledged that society has come a long way since he was a child. There are more accommodations for people with disabilities and more social supports.

Rick states that change, however, is still needed as there is still a stigma about hearing loss. The perception is that hearing loss is equated with old age and somehow it's okay to joke about this disability. But he points out that joking about blindness is not socially acceptable, so why are there jokes about hearing loss? The consequence of this stigma is that people with hearing loss suffer in silence because they are reluctant to admit their condition to others and to make mistakes along the way. Therefore, attitudes -- especially our own -- still must be adjusted. People with hearing loss have to take ownership of

their situation and admit that they are having difficulty hearing. They need to visit the audiologist to discuss their problems and not simply because their spouse told them to go.

Rick then fielded questions and comments from the audience. One audience member suggested that he write a book about his amazing story. Another asked what strategies he used in school; he answered by saying that he had classmates in his MBA program who helped take notes for him. At the graduate level, he worked in small groups and no longer had to attend the huge classes in the large lecture halls as was the case in his first two undergraduate years. Another audience member wondered how many other kids also were not diagnosed back then. Another commented that the negative attitude of a teacher affects a child greatly and can have a profound and lasting impact on the child's success for the rest of his/her life.

Thank you very much Rick for a most inspirational and humorous presentation! It is always a pleasure to have you talk to our branch!

CHHA AGM Presentation September 21, 2009

Report by: Teresa Hemsing

“Recent Developments in Hearing Technology - What's New from Phonak”

Guest speaker: Dan Paccioretti, M.Sc., Aud(C),
Western Canada FM Sales Manager, Phonak Canada

At our AGM in September, Dan Paccioretti of Phonak Canada was our guest speaker. Before joining Phonak, Dan Paccioretti worked in the public health system, for the City of Vancouver, and the Ministry of Education to support children in the schools and in the area of cochlear implants. He told our audience about two new technologies introduced by Phonak: **SoundRecover** sound compression technology, now available in their latest hearing aids, and **Dynamic FM**, now found in their newest FM systems.

1) Phonak's “SoundRecover” technology

Dan reported that Phonak has developed a technology called SoundRecover, where high frequency information is shifted to a range that a hearing-impaired individual can hear. The reason for shifting

the high frequencies stems from the fact that the greatest part of hearing loss is in the high frequency range, at 4000 Hz to 8000 Hz. Also, hearing aids for profound losses are limited in their benefits because the gain (or volume) drops after 4000 Hz and higher. This strategy of shifting of high frequency sounds came from research conducted on process strategies for hearing aids and cochlear implants by Hugh McDermott, PhD, University of Melbourne, who is considered the “father of non-linear frequency compression”.

With sound compression, the high frequency sounds are shifted from a user’s area of inaudible hearing to an area of audible hearing. To demonstrate to the audience what sound compression sounds like, Dan played a sound sample of a piano scale ascending into higher and higher notes. He played the sample two different ways. In the uncompressed version, the last high notes cannot be heard, as a hearing impaired person might experience. In the compressed version, the last higher notes can be heard but they do sound differently than what one would hear with normal hearing or with an aid that does not have sound compression. He also played a sound clip demonstrating how the frequency shifting changed the sound of a voice but made it more intelligible. So, with sound compression technology, the music or voice sounds different, but all the information (notes, words) can be heard.

SoundRecover was first introduced in October 2007, in the Naida hearing aid. It is intended for severe to profound hearing losses. Since then, SoundRecover technology has been introduced to other models of Phonak hearing aids: open, behind-the-ear, and in-the-ear models, with and without T-coil. For example, it is available in the new Exelia Art – Phonak’s top-of-the-line hearing aid that replaces the current Exelia; the Audeo YES, for mild hearing losses; and the Nios micro, for kids and adults.

Dan also briefly mentioned other technologies that are available to augment Phonak hearing aids: Zoom Control with Direct Touch, Duophone, iCOM, iCOM TV package (with Bluetooth transmitter), and Click ‘n Talk.

2) Phonak’s “Dynamic FM” Technology

Found in Phonak’s latest FM systems, it monitors the user’s environment, and if the environment becomes noisier, the transmitter sends a signal to the receiver and makes adjustments so the FM signal remains

strong and clear. This is an improvement over a traditional FM system which does not monitor the environment and dynamically adjust to the noise level.

First Dan stated that the American Speech-Language-Hearing Association (ASHA) has set a standard for FM systems that an FM advantage be +10 dB. This value represents what additional volume an FM system should provide for a user over wearing a hearing aid only. Using an FM system is very helpful in noisy environments like classrooms. However, with traditional FM systems, two problems happen when a situation becomes noisier. One, the FM advantage diminishes. Two, the FM system then switches to a different program called FM-only where the hearing aid microphone turns off. Kids (and adults) hate this FM-only mode because they cannot hear what is going on around them. Hence a better solution was needed.

Therefore, Phonak developed Dynamic FM, where the FM transmitter and receiver work together. The system will go to FM-only mode when needed and return to regular mode (FM-plus-hearing aid-microphone) when no longer required. The return time is 2 seconds for the hearing aid microphone to switch back on, reconnecting the person to all the sound, even if there is noise, so at least the person does not feel cut off.

The FM advantage is also improved with Dynamic FM. Dan pointed out that research by Linda Thibodeau, PhD, University of Texas at Dallas, supports the reported benefits of Dynamic FM over traditional FM. Below 57 dB of noise, she found no significant difference in performance between the two. Above 57 dB, the difference in performance was significant; there was more than 50% improvement in performance of the Dynamic FM over traditional FM. The performance was measured using a standardized audiology test called HINT (Hearing in Noise Test, a test of hearing aid benefits in background noise).

In addition to Dynamic FM, other technologies are now available in the new Phonak FM systems including: enhanced Bluetooth (allows for connection with cell phones and MP3 players to stream music and audio (but only in mono, not stereo)); greater range (improved antennae); and more adjustable microphone settings (directional and superdirectional mike focus, plus noise cancellation technology).

The following information is for those who are inter-

ested in the model names of the new Phonak FM devices. Their new FM transmitters with Dynamic FM are SmartLink+, Zoomlink+, and Easylink+. To use the new transmitters, users must also acquire the new receivers. The new built-in Phonak FM receivers are the MLxi models. These FM receivers snap onto a hearing aid to receive the signals from the transmitter. The Phonak receivers will also work with any other manufacturer's hearing aid as long as the hearing aid has an "audio shoe" (connector). The alternative to the built-in receivers is a neck loop (MyLink); the Phonak MyLink will work with any manufacturer's hearing aid as long as the hearing aid has a T-coil. Dan also mentioned the iSense FM Receiver, an FM receiver for Normal Hearing Sensitivity, for slight hearing loss, auditory processing disorders (APD), and single sided deafness. This device does not require a hearing aid to work, does not plug up the ear opening, and still offers benefits of FM amplification.

Dan mentioned that research has shown that the best aid for hearing in noisy situations is a remote microphone (which is what an FM system is), where the microphone is placed as close as possible to the source (e.g., other person's voice). Other technology is available but FM systems are still the best because they are practical and user-friendly. Dan noted that hearing aid clinics are prescribing and embracing more FM systems. There is also more accepted use by adults. Hearing aids can help only up to a point, past which an FM system can help more. Other research found that in noisy environments, people with severe to profound hearing losses who were in FM-only mode outperformed people with normal hearing. There is also anecdotal evidence that in a noisy restaurant, a hearing impaired person with an FM system could hear the server recite the daily specials more clearly than a normal hearing person could!

The CHHA North Shore Branch thanks Dan Pacioretti of Phonak Canada for a very information-packed presentation on the latest technology from Phonak. It is wonderful to hear about all the research and practical implications going on in the hearing instruments industry and marketplace to help both hard-of-hearing children and adults. With improved technology used in the classroom and public places by both young and old, there will be more people wearing devices to improve one's hearing and understanding and less stigma attached to having a hearing loss.

Our Magical Sense of Hearing Part 3 - What Help is Available

By: Hugh Hetherington

In part 2 of my article that appeared in the September issue of Mountain Ear I talked about the problems that occur within the ear and why hearing aids do not always return our hearing to normal. In part 3 I want to address some of the ways hearing aids and other assistive technology can help us to hear better in difficult situations and thus improve our lives.

Hearing aid technology has improved immensely in the last few years. Digital hearing aids were introduced into the market in the latter half of the 1990s and have continued to improve since then. Keeping it simple, the basic difference between the older analogue and digital hearing aids is in the manner in which the sound is processed.

Analogue hearing aids are basically sound amplifiers. An input signal received by the microphone(s) is increased in sound level and delivered to our ear as a louder version of the original sound. Unfortunately, most hearing losses are not linear. In other words, some portions of the speech spectrum require more amplification than others. As an example, in one of the common types of hearing loss where the loss is mostly in the higher frequencies, the lower frequency sounds may be amplified more than is necessary resulting in distortion, thus sounding unnatural. The hearing aids therefore relied on filtering or other techniques to shape the sound closer to our measured hearing loss. This generally resulted in a compromise because the hearing aid could hardly ever shape the amplified sound to exactly match the hearing loss. Of course some analogue hearing aids did employ sophisticated techniques to try to overcome the problem, but what could be achieved was limited in scope. Directional microphones were available on higher end hearing aids but even so the hearing aid's ability to deal with noise was very limited.

Digital hearing aids came along and changed all that. In digital hearing aids the sound is processed in an entirely different manner. The sound picked up by the microphone(s) is converted to digital signals. Again keeping it simple, this means that the sound is sampled at a very high rate and the individual frequencies are converted to strings of numbers that can be interpreted and processed by computer. The hearing aid has become a tiny computer rather than

an amplifier. These numbers which represent the sound can then be manipulated in the hearing aid in a far more sophisticated and precise manner. The first digital hearing aids to reach the market were relatively simple. The first ones broke the sound down into two or three bands which could be adjusted independently. They have continually improved and now sport multiple bands providing far more selectivity in adjustment. However, in the last two or three years major advances have been made and new or improved features have been added. I will discuss some of these.

Multiple programs are and have been a major feature of many hearing aids. This allows the wearer to select different programs for varied listening situations such as noisy environment, quiet situation, music program, telecoil, or even custom programs to suit a special situation for a particular client. The individual programs can be selected by pressing a button on the hearing aid or through the use of a remote control unit. The remote control may also be used to increase and decrease the volume or mute the hearing aids, etc. Some hearing aids also have the ability to switch between programs automatically by dynamically detecting the type of listening environment.

Directional microphones provide an advantage because they are able to focus the hearing aids on the sounds that you want to hear. While directional microphones were available on the older analogue hearing aids, digital hearing aids have opened up new possibilities through the sound processing capability. Instead of just being able to focus on sound coming from the front, they now have the capability to detect the direction of speech sounds and focusing on them to the exclusion of sounds from other directions. In some makes of hearing aids this is done automatically while in others the wearer has control of the direction through the use of a remote control.

Digital noise reduction is another feature that is now possible. At present no hearing aid can completely eliminate noise. However, digital noise reduction, while not necessarily improving speech understanding, makes it more comfortable to be in a noisy environment by reducing the amplification of noise while preserving the amplification of speech sounds. When coupled with directional microphones, the two features combined make great improvements in being able to understand speech in noise.

Feedback has always been a problem in hearing aids,

especially since ear level hearing aids became the norm. This is where amplified sound escaping from the ear is picked up by the microphone and causes a high pitched squealing noise that can sometimes be heard by the wearer and often by those nearby. Different manufacturers have various algorithms for feedback management that eliminate this problem through cancellation or reduction in amplification of the sound feeding back. This feature also makes it possible for the next feature to be mentioned, "open fittings".

"Open Fit" hearing aids are one of the newest innovations to come onto the hearing aid market. They have only been around for about 3 to 4 years. They come in two versions, "thin tube" and "receiver in the canal" types. Both of these versions provide a similar result. The main benefits of "open Fit" hearing aids are comfort to the wearer and reduction in the size of hearing aids. They also eliminate the need for custom ear molds. These are replaced by a small soft plastic tip that leaves the ear open and eliminates what is called the occlusion effect. This effect has bugged hearing aid wearers for years and is where your ears feel plugged up and your own voice does not sound natural. Unfortunately, these open hearing aids are not suitable for severe to profound hearing losses but as time has gone on, the fitting range has been improving with advances in feedback management systems.

There are a host of other features too numerous to describe here. They vary from manufacturer to manufacturer and have different names depending upon the make of hearing aid. They include such things as self-learning, data logging, ear to ear communication, wind noise management, compression, clipping, and frequency shifting. Your hearing professional will determine the need for many of these and set them up accordingly. If your hearing aids are several years old or if you have tried hearing aids in the past and were disappointed or rejected them, it may be time to try again because things have certainly changed for the better.

Beyond Hearing Aids.

When all of the above are considered, one would think that hearing aids would provide the complete answer to solving our hearing problems. Unfortunately, this is not always the case. Sometimes the loss of auditory function cannot be resolved with hearing aids alone. If the damage to the cochlea or

auditory system prevents us from hearing the full range of frequencies necessary for speech understanding, then we may have to look for other solutions that take us beyond hearing aids. These can include learning to speechread (lip-read) and/or using an assistive listening device. In extreme cases it may also necessitate the need for considering a cochlear implant.

Add on assistive devices are an important consideration when deciding what type of hearing aid to purchase. While the need may be off in the future, it is important to consider the ease of connecting such devices to a hearing aid before the purchase. There are a number of ways that various devices can connect with hearing aids, each offering their own pros and cons. I will discuss some of these next.

Greater improvement in understanding speech in noise can be achieved by using an assistive listening device or system. The principle involved here is through increasing what we call the signal to noise ratio. In simple terms, this means getting the speech sounds further away from the noise. This is accomplished by getting the speech sounds to the ears by means other than acoustically over distance through the air. A voice spoken into a microphone can artificially bring the speaker's mouth closer to your ears and dramatically improve this signal to noise ratio. The devices and systems listed below accomplish this ideal by various means.

The telecoil has been an optional feature available on hearing aids for decades. A telecoil is a simple and inexpensive feature that provides the hearing aid with the capability to connect wirelessly to external devices. Its primary function is to connect the hearing aid to the telephone through magnetic coupling. This offers the advantage of hearing over the phone without the effects of background sounds while at the same time compensating for the person's hearing loss. Its need is often underestimated or dismissed by many hearing professionals. In older hearing aids it was an option that had to be specified before deciding upon and ordering the hearing aid. While this is still sometimes true, many newer hearing aids are fitted with telecoils as standard and can be turned on through programming, if needed at a later date. What is often overlooked is that it is the simplest and least expensive way to connect the hearing aid wirelessly to a whole host of other devices. These include loop systems, cell phones, personal FM systems, Pockettalkers, etc. to name a few.

It is important to say a bit about loop systems here, as well. A loop system provides a magnetic field that is picked up by the telecoil in the hearing aid and amplified similarly to the sound from the microphone. The advantage to being able to use a loop system is that the hearing aid microphones can be turned off eliminating ambient sounds and background noise while the sound from the loop system is clearly amplified in the wearer's ears. Loop systems are often equipped in some churches and meeting rooms in public buildings. There are also neck loops that can be plugged into various assistive listening devices. These eliminate the need for using earphones or earbuds. These types of assistive listening systems can be used in social situations or with the TV or other audio devices. There are also special neckloops for cell phones and loop systems for the home.

The Pockettalker is what is considered a wired device. In other words, it is connected to the hearing aid wearer by wires. It is therefore only used at short distances. It can be used with earphones or earbuds, or alternatively connected to the hearing aid via a neckloop. It can also be used with DAI which is mentioned next.

Direct Audio Input (DAI) is another option available to connect external assistive devices to some hearing aids. It is not as convenient as a telecoil and requires a special custom boot to connect the wires from the device to the hearing aid. It is only available for some BTE (Behind-the-Ear) hearing aids.

FM (Frequency Modulation) is one of the more modern ways to connect external devices to the hearing aid. This is a radio type system generally used as a personal listening system but also come in wide area systems sometimes used in churches or other large venues. They are not compatible with all makes of hearing aids and should be a consideration when selecting the hearing aid. The older systems consist of two units, a transmitter and a receiver. These are pocket sized units. The transmitter is carried by the person communicating with the hard of hearing person and the receiver is worn by the hearing aid user. The receiver can also be used with earphones. The advantage is that the system is wireless and can operate at distances of 30 feet or more and can transmit through walls. The more modern systems are micro units that are either built into the hearing aid or attached through the use of a special boot. Again, these are only available for BTE hear-

ing aids. The latest and most sophisticated models have various microphone settings on the transmitter and can also connect with your cell phone via Bluetooth. This is discussed next.

Bluetooth is the latest in wireless technology to be used with hearing aids. It is an open wireless system that works over short distances and provides the two connected devices with privacy. It has a variety of uses in the consumer electronics and computer fields. Its use with hearing aids is to provide wireless connectivity to a wide range of electronic devices including, cell phones, home phones, TV sets, iPods, MP3 players, stereo systems, computers and just about any other audio electronic device you can think of. The system requires that the user wears a communication device around the neck that is capable of transmitting signals to the hearing aids via a system known as NFMI (Near Field Magnetic Induction). The neck worn device communicates with the external system or device via Bluetooth and relays the sound to the hearing aids. When used with a cell phone, the hearing aids become the hands free unit and the sound is heard in both ears, a major advantage to the hearing impaired. At the moment there are three major systems available to the hearing aid market; the iCom made by Phonak., the Streamer made by Oticon, and the TEK made by Siemens. They each work with certain models of each manufacturer's hearing aids and are not compatible with each other.

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.

All of the above hearing aid features and devices could be discussed in more detail, however, that is not the purpose of this article. Its purpose is to provide you with information on what is now available in the marketplace and to give you enough information to discuss your own needs with your hearing aid provider. This concludes my series of articles on "Our Magical Sense of Hearing". For more information consider attending one of the North Shore Branch's Sound Advice Sessions at the West Vancouver Seniors' Activity Centre or attending regular branch presentations. (See Below)

Sound Advice

Presented by:

**The Canadian Hard of Hearing Association
North Shore Branch**

**The group meets on the First
Friday of each month from 10:00 AM to 12 Noon
(July and August excepted)
at the West Vancouver**

**Seniors' Activity Centre's Learning Studio,
695 21st Street in West Vancouver.**

Special Note:

**The January 2010 meeting will be
Held on January 8th because
The First Friday is a Holiday.**

CHHA—North Shore Branch gratefully acknowledges the support of the City and District of North Vancouver and the District of West Vancouver through their community grant programs.



**CANADIAN HARD OF HEARING ASSOCIATION
NORTH SHORE BRANCH
MEMBERSHIP APPLICATION**

Name: _____

Address: _____

City: _____ Prov. _____

Postal Code: _____ Phone: _____

Please mail application to:

CHHA—North Shore Branch
Attention: Treasurer
600 West Queens Road
North Vancouver, B.C.
V7N 2L3

Cheque enclosed

Money Order Enclosed

Charitable Registration No.
BN 89672 3038 RR0001

I wish to support the aims of CHHA and the North Shore Branch and enclose my \$35.00 annual membership fee. (National \$25.00, Branch \$10.00). Membership is paid annually from 1 October to 30 September.