



# Canadian Hard of Hearing Association

## North Shore Branch

Published four times a year on the 15th of March, June, September and December by CHHA – North Shore Branch, 600 West Queens Road, North Vancouver, B.C. V7N 2L3.  
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Charitable Registration No. BN 89672 3038 RR0001

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Issue 65 June 2009

## Mountain Ear

### President's Message



#### **The Clock is Ticking!**

**Can you hear your clock ticking?**

On February 25, after having a severe to profound hearing loss for most of my life, I received a cochlear implant at St. Paul's Hospital in Vancouver. Then, after six weeks of waiting for the implant to heal and settle in, I was "hooked

up" to the external speech processor.

And now, I can hear the clock on my desk. It is ticking!

Many people have asked me how I am progressing in my journey back to better hearing. I usually tell them that it is a slow process, that I am learning what sounds belong with what words. I also tell them that it is, as another cochlear implantee has told me, like a fine wine: my hearing will continue to improve as I practice and engage in the world of conversation.

But there are two things I really want to tell them, and I will tell you.

First, I learned to be thankful to those hearing people in my life. They are my heroes. My family lives with

*(Continued on page 2)*

### June Meeting

**Monday, June 15, 2009-7:00 PM**

**At the Summerhill**

**135 West 15th Street, North Vancouver**

#### **Guest Speaker:**

**Glen Grigg, Ph.D.**

**Registered Clinical Counsellor**

**Faculty/Coordinator,**

**Masters of Counselling Program,**

**City University of Seattle**

**In Vancouver**



**Topic:**

**From Distress to Success:  
The Psychology of Adapting to  
Hearing Loss.**

**Hearing loss leaves us with many unique vulnerabilities to psychological stress. When hearing is compromised, our access to the inner lives of other people can be made much more difficult. As well, hearing is a central part of how we check the world for safety and danger. When we have a reliable map of how our minds and bodies can work together to cope with this challenge, new possibilities open up.**

(Continued from page 1)

many “rules” when speaking with me. Lighting, noise, distance, one-at-a-time and endless repeating are factors my husband and two sons have to consider when they converse with me. And during those six weeks of waiting between surgery and hook-up it was especially difficult for them to keep me in the loop.

It is easy to forget that the people in our lives have to change their habits of speaking for our sakes. Yes, we hearing impaired people do carry a loss that is likely permanent, and we are affected by that loss every moment of every day. But do we appreciate what our loved ones need to do for us? Do we thank them?

The ticking clock on my desk taught me the second thing I want to tell you. With this cochlear implant, I am now able to tune my clock out! I can listen for it and there it is, steadily ticking away. Yet, I am able to not hear it at all, and be busy with my thoughts and activity on my computer.

And this is a new challenge for me in my attitude towards people. Before my implant, I usually did not have a choice as to whether I would be part of a group discussion or not. I could only observe people speaking with each other. But now I have a *choice*: I can try and hear or I can simply tune people out. Just like the clock on my desk.

But people are not clocks.

Of course, it is still not easy to understand everyone. However, I now have the *means* to learn to understand them. And while I am making progress towards improved hearing, it is important that I communicate clearly as to how well I am hearing them.

This challenge may be something all of us hard of hearing people experience when we receive new hearing aids or a listening device. Do we try to hear others, now that we have better means to do so? Do we prod our brains to focus and tune in to the new sounds around us and learn what those sounds mean? Do we let the people in our lives know that we want to join in and that we are learning to hear again?

Til next time,

Flo



## April 2009 Meeting “Sound Advice”

By Teresa Hemsing

Our most recent members’ meeting was held on Monday April 20 at the Summerhill in North Vancouver. The sunny spring evening brought out over twenty-five people including several who were attending for the first time. The format of this meeting followed that of the first-Friday-morning-of-each-month “Sound Advice” sessions, where Flo Spratt and Hugh Hetherington facilitate discussions on various hearing loss topics. This evening they were joined by Rick Waters, former head of the Communication Aids Department at WIDHH.

After Hugh introduced the branch and its services, Flo began by relating the fascinating story of her recent cochlear implant surgery, hookup, and subsequent training sessions. Flo received her implant after being on the St. Paul’s Hospital waiting list for a few years. Her surgery lasted 1 1/2 hours and required no overnight hospital stay. A week of headaches and dizziness followed, then she coped with 1 1/2 months of hearing only with her non-operated ear. Her hookup took place only two weeks before this meeting, and since then she has been undergoing training sessions at the hospital. She expects her hearing will improve over time, like a “fine wine”! Flo is most grateful for her family’s support during her recuperation time.

Next, those attending for the first time had the opportunity to describe their hearing losses and ask questions that were answered by the panel and other audience members. (Earlier in the day, a number of them had attended the first class of this term’s “Managing Your Hearing Loss” course.) Issues raised included:

- how to go about getting a hearing aid
- finding and choosing an audiologist
- what is the price range for a hearing aid (starts at \$1000)
- what solutions exist for middle ear hearing loss (surgery, bone-anchored hearing aid [BAHA])
- steps to accepting one’s hearing loss
- how family members and friends help a person with hearing loss to cope
- living and working with hearing loss in addition to another health condition

(Continued on page 3)

*(Continued from page 2)*

Participants learned much in this evening's Sound Advice meeting. A social followed, with refreshments provided by Marion Ladkin and Joan Gouws. Thank you very much Flo, Hugh, Rick, Joan and Marion for another successful "Sound Advice" meeting!

## Our Magical Sense of Hearing

By Hugh Hetherington

Yes, magical! When I started to think about what I wanted to write about in this article, I began to see just how phenomenal our sense of hearing really is. I also realized that very little, if anything has been written about how we actually hear. The ear and how it works has been well documented but still leaves some mysteries about how the cochlea is able to decode the sound we hear so exquisitely and pass it on to the brain, via the auditory nerve, where it is assumed that hearing takes place.

This leaves the question, how do we hear? I hope that this article will shed a bit of light on the subject, but I must point out that it is only from my own observations and understanding. In a sense, I believe we hear by virtue of the perception of our consciousness. I leave it up to you to interpret consciousness.

The ear is a very exquisite instrument for the detection of sound, but that is it. It is a complex instrument that detects sound, but the actual hearing is done within our consciousness and the brain plays a very big part. Many parts of the ear are fully understood by science, but the one elusive part, the cochlea, still remains much of a mystery. Yes, we know about the hair cells but we still do not have a full understanding of how it allows us to hear and understand.

I will briefly touch on the parts of the ear later, but first we cannot begin to understand how we hear unless we first take a look at the nature of sound. I have always been fascinated with sound and perhaps in the last few years have given a lot of thought and study to the subject. This is perhaps largely due to my work with the Canadian Hard of Hearing Association and my involvement with Hard of Hearing people and their problems on an almost daily basis.

Everyone has perhaps heard the riddle, "If a tree falls in the forest and there is no one there to hear it, did it make a sound?" Why is this so much of a riddle? The sound that humans perceive is the movement of air

molecules and the vibratory effect they have on the eardrum resulting in our perception of the sound. I guess you could say that the falling tree caused a movement of the surrounding air molecules but unless there is something to detect the sound, someone might argue that there was just movement of air. Let's just leave the philosophers to argue about that while we look at the subject in more detail.

Sound has to have a medium to travel through. For humans and most land animals, that medium is air. Perhaps you remember the science experiment in school where an electric bell is placed under a bell jar and the air is pumped out creating a vacuum. When the air is gone, you were no longer able to hear the bell ringing. When something emits a sound, it disturbs the surrounding air molecules and they vibrate in sympathy with the frequencies of the sound being emitted. They bump into other molecules of air and the vibrations are propagated outwards in all directions as waves, similar to when a stone is dropped in a body of water. When the vibrating molecules of air come in contact with our eardrums, we perceive it as sound. It sounds simple doesn't it?

But, we are not just talking about hearing sound. We are talking about receiving some intelligence from it. For instance, we need to know what the sound represents or understand what the words being spoken mean. This adds a whole different level of complexity. Let's make one thing very clear from the start. Individual sounds do not arrive at the ear separately. The vibrating air molecules collide with other vibrating air molecules and the sound arrives at our ear as a composite wave comprised of a complex mixture of all of the sounds competing at the time. When two sound frequencies intermix, the result is that more frequencies result. I don't want to get too scientific here, but what we end up with are the sum and difference frequencies of the two original frequencies plus the sum and difference frequencies of the newly created harmonics ad infinitum. In complex sounds there are always more than two frequencies present, in fact many. This is why musical instruments differ in sound quality and why people's voices differ even though the same words are spoken. It can also mean that a very complex and messy assortment of sounds can arrive at our ear to be decoded and sorted out by the brain in order for us to have any understanding at all of what we are hearing.

*(Continued on page 4)*

Now let's briefly look at the various parts of the ear and the part they play in receiving and decoding this mess of sound. The ear is divided into three parts, each serving a function.

The outer ear consists of the pinna and the ear canal. The pinna, the outer and largest part collects the sound and directs it into the ear canal. The ear canal has a resonant frequency of around 3 KHz and consequently intensifies the sounds in and around that frequency. These higher frequencies are the ones most critical in understanding speech and the ones that diminish most rapidly with distance.

The middle ear consists of the eardrum and the three smallest bones in the body. These are the hammer, the anvil and the stirrup. The three bones form a lever system that amplify the vibrations arriving at the eardrum by about 15 times and apply this amplified pressure to what is called the oval window of the cochlea.

The inner ear consists of the cochlea and auditory nerve. The cochlea is a small snail like organ about the size of a pea that contains fluid filled chambers surrounding a membrane that is embedded with tiny hair cell receptors. These are arranged to respond to the different frequencies. The fluid waves created within the cochlea by the varying pressure on the oval window trigger the hair cells to send electrical signals to the brain via the auditory nerve. This is what we interpret as sound. The cochlea can be considered to be a prism for sound and works to separate out the multitude of frequencies and trigger appropriate electrical impulses to the brain. It is also interesting to note that the cochlea is the only organ in the body that is full size at birth.

That is all I am going to say about the ear itself. That part of the process is well documented in textbooks and many articles have been written about the ear and appear on the web. What I want to discuss is the hearing process itself. In other words, understanding and making sense of the sounds that the ear detects.

Hearing is very much a learned process. To know what a certain sound is, we must have heard it before and have a record of it in the brain. I remember during the war years when I was growing up in Vancouver hearing a sound I had never heard before. I had only just started school when the city had installed a system of air raid sirens on the fire halls and other buildings throughout the city. It was set up that they would test the system at 2 PM on a certain day each

week. The first time it happened I was out playing. The fire hall was half a block from where we lived and this loud unknown sound frightened me and I remember running home in a fright. It seems, no one would think to tell a small child about the new sound and so the wailing sound not only frightened me, but had an effect on our dog, as well.

We start learning sounds from the time we are still in our mother's womb. We are certainly aware of her heartbeat and probably other sounds that manage to get through. After we are born the learning process starts in for real. The first sound that has meaning is that of our mother's voice. Certainly, other environmental sounds would have little significance until much later when we start to become involved in our surroundings. Over the first few years, the brain builds up a storehouse of sound patterns that are necessary for the learning of speech and understanding the environment in which we live. This process continues on for the rest of our lives and, in fact, is important if our hearing changes in any way over the years.

Speech, of course, represents some of the most complex sounds that we have to interpret. In a quiet environment, this is usually not too difficult. The word memories are stored and the brain knows where each word begins and ends. It is also familiar with the syntax and grammar of the language we speak. When speech sounds arrive at our ear in a background of other competing sound, we have to decode the speech sounds and discard the noise. This can become extremely difficult and even impossible if the noise levels or competing sounds become too great.

There are, of course, other factors at play here. The most important ones are direction and distance or the spatial location of the sound. Because we have two ears, sounds do not necessarily arrive at both of our ears at the same time. This is referred to as spatio-temporal or having a relationship in both space and time. When there is a time difference perceived at the ears, this cues the brain as to the location of a sound or sounds. This is important to our hearing and enhances the ability to separate sounds in our brain and helps immensely in separating speech from other sounds.

When the wave of sound strikes our eardrum, the cochlea decodes the wave pattern and transmits this pattern to the brain via the auditory nerve. Here it is

*(Continued on page 5)*

compared to our stored memory patterns and the time displacement of the sounds arriving at the ears. This process allows us to recognize the sounds for what they are. There are obviously many nuances in the sounds we hear and I am oversimplifying it here for the sake of this article.

At this point you can probably see why I call it magical. There are obviously an infinite number of sound patterns that the brain has to interpret as the neural patterns are constantly changing moment by moment. The same words spoken by two different people sound different to us. We recognize voices of people that we know, even if we can't see them. The notes played on different musical instruments can be recognized even if they are being played in a full symphony orchestra. It is just an absolutely amazing process.

In a future article I want to touch on what happens when hearing impairment is involved. Our hearing ability depends upon having two ears in which all parts are functioning normally. Unfortunately, this is not always the case. There are many types of hearing problems resulting from malfunctions in the various areas involved. To name a few, eardrums can become punctured; the three small bones can become calcified; and most commonly, the hair cells in the cochlea can be damaged or destroyed. When any of these or other problems occur, decoding and separating the sounds we want to understand from the background sounds can become difficult and even impossible. Why is this so? Why is it that hearing aids do not always restore us to normal hearing? Stay tuned, the answer is to come!

## "Seven Myths Hearing People Harbor Concerning Hard of Hearing People"

by Neil Bauman, Ph.D.

Hearing loss is typically misunderstood by the general population. Thus, it is not surprising that many hearing people have bought into the following 7 myths regarding hearing loss and the people with these losses.

**Myth No. 1.** Hard of hearing people are less intelligent than "hearing" people. Thus, they attach this social stigma to having a hearing loss. This myth is so deeply ingrained in the general population that

even today many hard of hearing people refuse to wear hearing aids for fear of being thought stupid. The truth is, hard of hearing people are just like other people. Some are smart and some are not. Don't blame any perceived lack of intelligence on hearing loss. Place the blame where it should be--on communication difficulties.

**Myth No. 2.** Wearing hearing aids returns hearing to normal. Not true. Hearing aids can improve hearing--typically reducing the hearing loss by half--but never bring it up to normal. Thus hard of hearing people still have a hearing loss even when wearing their hearing aids. They often need to supplement what they hear by using assistive devices, by speechreading and by using other effective hearing loss coping strategies.

**Myth No. 3.** Hard of hearing people have selective hearing. They only hear what they want to hear, but they can hear if they really want to. While it is true that hard of hearing people DO indeed have selective hearing, it is not because they don't pay attention. Rather, it is because their ears do not hear certain frequencies of sounds. They have no choice over which sounds they hear and don't hear.

**Myth No. 4.** Only old people have a hearing loss. Not true. Because of excessive noise exposure, taking medications that damage ears, ear infections and other factors, hearing loss affects children, adults and seniors alike. One study showed that on any given day, 15% of the children in elementary schools have a significant hearing loss.

**Myth No. 5.** When you have a hearing loss you somehow (magically) become a good lip reader. Thus, since hard of hearing people can read lips, it doesn't matter whether they hear or not. Fact: lip reading, (now more correctly called speechreading) while invaluable, is far from perfect. Only about 30% of English sounds can be easily read on a person's lips. That leaves the hard of hearing person guessing at the remaining 70%. While a few are remarkably good at this, no one is perfect.

**Myth No. 6.** If a hard of hearing person can't hear you, raise your voice at them. The truth is, most hard of hearing people need you to speak up just a bit, but they really want you to face them, then speak slowly and enunciate clearly. This is because when you lose some of your hearing, you hear people talking, but

*(Continued on page 6)*

often you can't understand much of what they are saying.

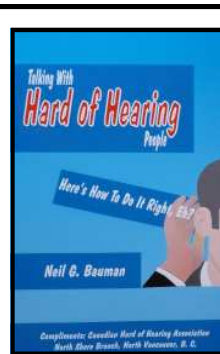
**Myth No. 7.** Hard of hearing people understand sign language. Therefore, in order to accommodate people with hearing loss at meetings, you just need to provide a sign language interpreter. Fact: of the 70 million people with hearing loss, fewer than 1% know how to sign. Hard of hearing people typically need to use, in addition to their hearing aids, various assistive devices and real-time captioning (CART).

**And one bonus myth--Myth No. 8.** If you speak normally, you obviously can't have much of a hearing loss, therefore you are really faking it when you speak properly but say you can't hear. The truth is, the vast majority of hard of hearing people speak normally. Some people that have more severe hearing losses and don't wear hearing aids talk louder than normal. Other people with profound hearing losses speak in a flat tone (deaf speech). And surprise, some people with severe to profound hearing losses speak perfectly normally too. I'm one of them!

*Reprinted from Dr. Neil Bauman's May 11, 2009 E-Zine and reprinted with permission. Dr. Neil is a Hearing Loss Coping Skills Expert and has a website at: [www.hearinglosshelp.com](http://www.hearinglosshelp.com).*

*By visiting his website you can sign up to receive his monthly E-Zine free of charge. It is always filled with many useful articles on hearing loss.*

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.



The North Shore Branch would like to express our sincere thanks to the Kiwanis Club of West Vancouver in making the publication and free distribution of this booklet possible through a generous donation.

The booklet is available free of charge at all of our meetings and workshops.

## 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**

(Holidays excepted) at the West Vancouver  
Seniors' Activity Centre's Learning Studio,  
695 21st Street in West Vancouver.

**(No Meeting in July and August)**

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

We look forward to seeing you there.

Bring a friend, a family member,  
they are welcome too.

Subjects to be addressed will include:

Technology; Coping Strategies;

Improving Relationships;

Improving Hearing Environments

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

CHHA—North Shore Branch Programs are funded in part by Social Service Grants from the City and District of North Vancouver and the District of West Vancouver.



### 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.