



# Canadian Hard of Hearing Association

## North Shore Branch

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Editor: Hugh Hetherington

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## Mountain Ear

### President's Message Can't Do Without It!

Has anyone ever said to you something like this: "I can't live without my cell phone. I don't know how I managed without it!" Then he or she goes on to tell you how it has made a tremendous difference in his or her life. Well, I don't own a cell phone, so I don't have any stories to share along that line. However, as I cope with a severe to profound hearing loss I do have something else that has made a tremendous difference in my life. It is my assistive listening device. To tell you the truth, I really don't know how I managed without it.

Hearing aids have improved over the forty years or so that I have worn them. However, so far, none of them have helped me cope well in places such as restaurants, meetings, large crowds, and when I cannot see the speaker. In such situations, my hearing aids have not helped me filter out the unwanted sounds. But my assistive listening device (ALD) has addressed that problem beautifully. Let me tell you a story or two.

Before we bought my ALD a year and a half ago, my husband, Doug, and I rarely went out for dinner or coffee. Of course we tried to find quiet places to eat, but the music and background noise usually would get louder as the evening wore on. It just wasn't fun for either of us!

That has all changed now. We go out often. Doug wears my ALD's remote microphone around his neck and I can hear him distinctly while the background noise is radically diminished. If I happen to forget to bring it, like I did for our anniversary dinner in January, Doug will drive home to retrieve it. Recently, I visited my family in Ontario for my mother's 80<sup>th</sup> birthday. In that one weekend, I used my ALD for at least five social events! Not once did I retreat to simply watch the rest of my relatives enjoy a conversation without me.

There are many different types of assistive listening devices available including Pocket Talkers and personal FM systems all of which come in various price ranges. These can be of great benefit to hard of hearing persons who need additional help in various situations.

If you think you might benefit from such a system and would like to know more about them, please feel free to attend one of our Sound Advice meeting at the West Vancouver Seniors' Activity Centre where you can find out more about these units and where they can be purchased. (*See the meeting notice on page 6 in this newsletter.*)

Flo Spratt



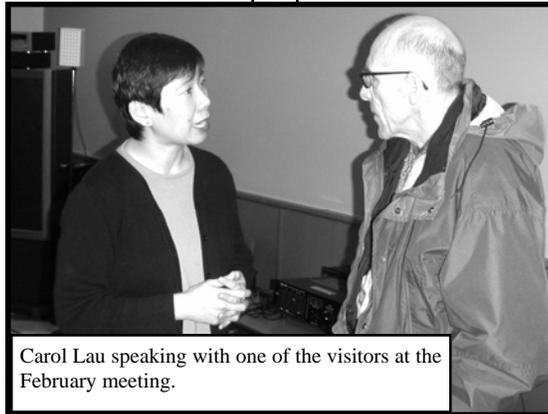
## Tinnitus – What We Know Now

This was the topic of a presentation given at our February 23<sup>rd</sup> meeting by Carol A. Lau, BA(H & Sp Th), MA(Aud), Aud-C. Carol Lau is an audiologist and speech language pathologist who has been in practice for 17 years. In 1999 she was trained in Tinnitus Retraining Therapy (TRT) at the Emory University in Atlanta and is the owner of the Vancouver Tinnitus and Hyperacusis Clinic at Sound idEARS, Inc.

TRT, about which Carol spoke, uses a combination of sound therapy and informational counseling and directions on how to return to normal life without provoking the symptoms of tinnitus, hyperacusis or misophonia. In her brochure, she describes these three conditions as follows:

- Tinnitus: a condition where a noise heard in the ears or head. It is frequently described as a ringing, buzzing, humming or hissing sound.
- Hyperacusis: a sensitivity to everyday environmental sounds as a result of over-amplification in the auditory pathways.
- Misphonia: often accompanies hyperacusis and refers to a strong dislike of certain environmental sounds.

Carol started her presentation by dispelling some of the myths about tinnitus. Tinnitus is not a sound. A microphone placed in the ear would not pick it up, nor can anyone else hear it. It is also not a disease, and as such, is not a condition that needs to be cured. It is not something that is in the mind. It is not imaginary, but it is in the brain. In reviewing the mechanics of hearing, she described how the sound enters the ear and vibrates the eardrum that in turn transfers these vibrations to the cochlea via the three small bones in the inner ear. In the cochlea, hair cells are washed over by the vibrating fluid in the cochlea and as these hair cells bend back and forth they send messages to the brain. She explained that these messages are what we were going to be looking at in her talk.



Carol Lau speaking with one of the visitors at the February meeting.

In 1953, two gentlemen, Heller and Bergman conducted an experiment that proved tinnitus was an almost universal experience. Although conducted 50 years ago, this research has become very important in the last five years based on what we know now. The experiment took 80 healthy university students with no hearing problems or tinnitus. He asked them to go into a quiet room without explaining why. They were asked to jot down what they heard while in the quiet surroundings. They heard ringing, shushing, waves, hissing, etc. and 93% of those students came out with tinnitus after 5 minutes of silence.

The research concluded that anyone, and probably everyone given the right circumstances can experience tinnitus. The interpretation given this research at the present time based on what we know now is that we are able to hear the activity of the auditory nerve. In essence, it is the mechanics of the auditory system that in silence tends to increase the amplification of the auditory

nerve. She likened this to the basis for the “Chinese water torture” where the sound of water dripping with no other sounds present can become unbearably loud due to this tendency of the auditory nerve to keep increasing its amplification in silence.

An analogy which helps to put this in perspective is what happens with the eye when we walk into a room and turn out the light. At first it is dark and we can’t see anything. The eye gradually opens up to take in more and more light until we can start to see more and more. It is a similar activity with the auditory nerve. It gradually increases amplification more and more when we are in silent surroundings. At a certain point we hear the activity of the auditory nerve and that is tinnitus. Later in her talk she explained why not everyone is aware of this auditory nerve activity.

Carol showed pictures of a healthy cochlea and one with damaged and missing hair cells. She explained that when hair cells are damaged, adjacent hair cells tend to over-amplify to compensate for those that are damaged or missing. Tinnitus is, therefore, a natural, normal and healthy thing because the ear is only compensating. This is a normal function of the auditory system.

As well as this compensating activity, there are also various triggers that can make someone hear the tinnitus. In the case of the university students the trigger was silence. Other triggers like increased hearing loss or a traumatic event like an automobile accident can make a person become aware of tinnitus. Actually, what is happening is that the sound is being brought from the unconscious to the conscious. Health related events, such as the flu or blocked sinuses can trigger tinnitus. In one case recently, she found that it was triggered by impacted earwax. Any condition which blocks the ears causes more quiet and your ears turn up more and more. Another cause can be stress or anxiety. Although the conditions causing tinnitus cannot yet be predicted, patterns are slowly emerging.

The second part of the story is that you are hearing the sound, but it is what the brain does with it that determines who suffers from tinnitus and who doesn't hear it at all. The brain has an auditory filter. That filter is different in each of us. Carol gave an example of her filter. When her baby was newborn her husband was able to sleep through the baby crying, but she was immediately awakened and the crying appeared so loud she couldn't understand how her husband couldn't hear it. In another case, the sound of glass breaking outside awakened her husband who quickly got up to look out the window. She wondered what was going on because she didn't hear the sound at all. The reason is, her husband's filter is set differently to hers. It is like this with each of us. Our filters are different. We could also say that our brain is selective. By being selective it is preventing us from going crazy by hearing every sound around us. It also allows us to focus on what is important. For instance, the audience is focusing on what Carol is saying and not hearing the sound of the traffic outside, the fan in the projector or other sounds in the room.

When someone is suffering from tinnitus, what is happening is that the auditory activity sound is going right through that filter. In someone with a hearing loss without tinnitus, the sound is being blocked by the filter.

What happens to cause this filter to open up or shut down? A lot of it has to do with our understanding of what we are hearing. There are a lot of conflicting views on this subject. The medical profession doesn't completely understand it. You may be told to try not to listen to it or just ignore it. If you try to

research it in the library or on the internet, you end up with more questions than answers. When you have something in your mind that is not fully explained you tend to think it is important and that causes the filter to open up. The reason it opens up is that because the sound is unexplained, you may feel it is dangerous, perhaps a serious medical condition, and your brain is trying to protect you from it by listening for it. It is a natural protective mechanism. Carol explained that she now sees a lot of patients who come in with tinnitus that they have had for maybe a month or two. In a counseling session she is able to close their filters down almost immediately. However, in long standing tinnitus, the brain has been wired to hear the sound over a longer term and she needs to teach the brain to be wired in another way so that the sound is no longer heard.

We now know that tinnitus is not imaginary or psychosomatic. This has been proven with the use of functional PET scans. By using a special group of people who were able to control their tinnitus by various means, the scans were able to show increased activity and blood flow in the part of the brain that controls the auditory filter while tinnitus was audible to the person. When the tinnitus wasn't present, the activity ceased.

Carol went on to explain the components of the Tinnitus Retraining Therapy that they offer at their clinic. The first is the retraining counseling or teaching the person how to retrain the brain to shut down that auditory filter. The way we shut down the filter is to give some good information about tinnitus so that it is not feared or a cause of worry to the person, to let them understand what is really going on.

Carol gave this example of how knowledge makes a big difference in our perception of sound. She described a scene where you are travelling away from home very late at night and you stop at a motel. The clerk at the desk relates a story to you about a circus that came to town today and how two snakes escaped that weren't found. When you go to your room you hear a slight hissing sound. She said you would not sleep well that night because of your interpretation of that sound. On the other hand, if the clerk had told you that there was a problem with the radiator in the room and that it was the last room available, hearing that same sound would not have an impact on your sleep that night. So it is not the sound that is important but our reaction and interpretation of that sound that is critical.

The second component of the treatment is called sound therapy. With this, the auditory system is the target. For example, for a person with normal hearing a sound generator that simulates soothing environmental sounds would be used. In the case of a person with hearing loss, hearing aids, or a combination of hearing aids and a sound generator would be used. What we are saying is that silence must be avoided all day and all night. We learned from the university student experiment in 1953 that silence can trigger tinnitus. So noise is used to calm down the cochlea. During the day, hearing aids are used, while at night a bedside sound generator is used to give the soothing and relaxing sounds of nature that continually massage the ear with sound. It is important to use this machine at night because we sleep for 33% of our life. If you don't use the machine, the therapy takes 33% longer to retrain the ear. Most people like the sounds and don't have a problem with this method.

Another analogy that Carol gave to demonstrate the calming down of the cochlea was a candle. In a dark room, the candle looks very bright. Similarly, in a quiet room tinnitus sounds extremely loud. In other words, the contrast between what you are hearing from the outside and what you are hearing in your head is very large. On the other hand, if the candle is placed in a brightly lit room it does not look as bright. By the same token, if a hearing aid is put on to increase the external sound volume, the tinnitus does not seem quite so loud. If the brain hears a soft sound that it is not afraid of, it will block it out. This process is called habituation.

In describing the typical result of the retraining, she explained that the tinnitus doesn't suddenly disappear, what typically happens is that the periods between not hearing tinnitus and hearing tinnitus gradually get longer over time. At first, it may disappear for minutes, then hours, then days. The training, which has an effectiveness rate of 80%, can take from 18 to 24 months with visits to your counselor about every 3 months. Once the retraining therapy is complete and the tinnitus has disappeared, no further treatment is necessary.

Carol's Vancouver Tinnitus and Hyperacusis Centre is one of two registered clinics in Canada, the other being in Whitby, Ontario. To be able to provide the treatment, the clinic must be a member of the Tinnitus Retraining Therapy Association

(TRTA). This association was established by Dr. Pawel Jastreboff and Dr. Jonathan Hazell to provide high standards for the practitioners of TRT. The association requires that the success rate for the clinics practicing TRT is 80% or higher. The Vancouver Tinnitus Clinic is also a member of the International Tinnitus and Hyperacusis Society.

The Clinic is located in the Fairmont Medical Building, #1212 – 750 West Broadway, Vancouver, B.C., V5Z 1J2, 604-708-9780.

Carol spoke to an enthusiastic audience of CHHA members and visitors many of whom had questions for Carol at the end of the presentation. Thank you, Carol, for a most enjoyable and informative presentation.

**Next Meeting Date**  
**Monday April 19, 2004**  
**7:00 PM**

**Seeing and Hearing Speech**  
**Interactive Speech Reading Training**  
**Speaker: Birgit O. Cook**

**Place: The Summerhill**  
**135 West 15th Street**  
**North Vancouver**

**Wellness Show 2004**  
**Vancouver Trade and Convention Centre**  
**February 13,14,15, 2004**

By Lynda Hepworth.

I would like to thank everyone who came out and put in some time at our booth at the 2004 Wellness Show. Maggie and I really needed and appreciate your help.

It may be hard to get tangible evidence that this effort was worthwhile, but our experience there indi-

cates that it definitely was. Those of us who participated can say that we certainly talked to a lot of people and made them aware of CHHA, but we also learned a lot ourselves. For me, it was amazing to see the number of people who are hard of hearing but are in denial about it or acknowledge it but have decided that “they’re just not ready for hearing aids”. When you point out that it is more than just getting a hearing aid, they would either say that it is someone else’s problem that they can’t hear, i.e., their husband/wife or other family members will just have to talk more loudly or clearly or that they doubted if anything could be done for them.

On the brighter side, we had a lot of people very excited to find out that we exist and I feel we will be hearing from these people. Many said they were never told by their audiologist about us.

We also learned that if we do this again we will have to improve our signage, making it more clear just who we are and what we are about. I saw people veering away from our booth because they thought we were selling hearing aids. This is justifiable because most of the booths were selling something, with a few exceptions. However, I hope that the North Shore Branch reaps a much deserved reward for the effort they put in. I hope they will be seeing new members or people visiting their next branch meeting. We certainly saw a lot of interest there. We also talked to a lot of people from Richmond, White Rock, Langley, Coquitlam, Surrey, and, of course, Vancouver. We also saw many Chinese-speaking people from Richmond/Vancouver who are hard of hearing and not coping well with their hearing loss. The fact that they came up to us speaks for itself.

We referred many people to WIDHH, as well as to the Vancouver Branch. Of course we gave out many copies of our own CHHA-BC brochure as well as the Managing Your Hearing Loss information sheet. It will be interesting to see if some phone calls come in from that.

Many people were impressed with how the loop system worked. Many had a t-switch but only used it for telephone or did not know what it was for.

We had lots of people coming over to say their husband/wife/parent was hard of hearing and asking how they could help them.

So, in summary, a lot more people now know about CHHA-BC and/or methods to cope with hearing loss

and hopefully some of them will either come to one of the branches or contact us in some way.



Lynda Hepworth and Maggie Dodd at the Wellness Booth

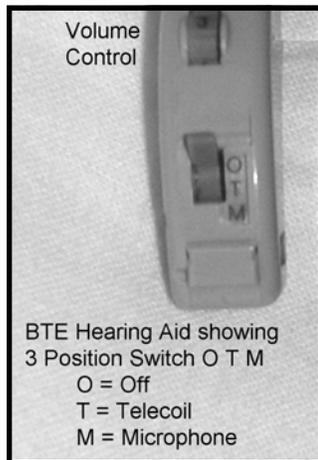
## The Mysterious T-Switch

Although the T-Switch (aka telecoil, t-coil) has been talked about many times previously in our newsletter, I want to come back to it one more time. During recent discussions with hearing aid wearers both at our meetings and at the recent Wellness Show, I was disappointed to hear that many were not told about the T-Switch and its benefits. Some were even provided with a T-Switch on their hearing aid, but were neither advised on its use with the telephone or its use with Assistive Listening Devices (ALD). You would be amazed at the number of times I have been told, “it doesn’t work with my telephone.” These people seem never to have been told to hold the phone up against their BTE hearing aid and NOT against the ear.

Because hearing aids do not always solve all of the hearing problems a hearing impaired person faces, one of the most important features a person can get in a hearing aid is a good telecoil. I have witnessed many times the look of delight on a person’s face when for the first time at one of our meetings they are told to “Switch to T” and suddenly the speakers voice booms in their ear loud and undistorted. (See photo on next page)

What is this mysterious T-coil? Simply, it is an elec-

tro-magnetic pickup in the hearing aid that can be switched in to take the place of the hearing aid microphone when an assistive listening system, such as a loop system is available. The noises of the audience, fan motors, traffic, etc. suddenly disappear and all that is left is the clear voice of the speaker. What is a loop system? It is simply a wire surrounding a specific area into which a signal is transmitted from an appropriate amplifier. In most cases it is a room loop and surrounds the seating area in a theatre or auditorium. Loops can also be installed in the home and be connected to a television set. There are also neck loops which can be plugged into other ALD's, such as, FM or Infrared systems and worn around the neck of an individual. For more information on, or to experience a loop system attend one of our CHHA meetings on the North Shore.



## Ask the Experts

### Your Questions Answered

*Erica Barrett wrote in the following question:*

**Q:** I am concerned for those on low income and also for those with profound hearing loss. Unless the cost of digital hearing aids drops considerably who will be able to afford them? Will the analogue hearing aid go completely off the market? Will digital hearing aids take over listening devices?

Thank you,

Erica Barrett.

*We put the question to Claus Nielsen of Oticon A/S, Eriksholm Research Centre, Denmark who writes:*

**A:** Well, I think that analogue hearing aids will disappear for several reasons. One of the more important reasons is that technology is going in the direction of digital processing. In the future the digital chips in the hearing aids will get cheaper due to the larger number of hearing aids using the chips. My personal guess is that analogue hearing aids will be almost gone in 5 years from now.

Digital technology plays and will play a more and more prominent role in assistive listening devices in the future. The wireless communicator called Lexis is one of the examples of such products.

Claus Nielsen

*(If you have a question that you would like answered in a future issue, send it in to the editor and we will try and find an expert to give you an answer.)*

## Sound Advice

A monthly series of informal workshops and discussions around issues affecting the hard of hearing.

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

Come and join us and other Hard of Hearing people who get together to share and discuss. 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
- Speech Reading
- Behavioural Issues
- Improving Relationships
- Improving Hearing Environments

**For Information call: 604-926-5222  
or Fax: 604-925-2286**

## Donations

The North Shore Branch of CHHA thanks the Howe Sound Lions Club for their generous donation of \$500 to our Branch. This money will be put to good use in helping the Hard of Hearing on the North Shore.