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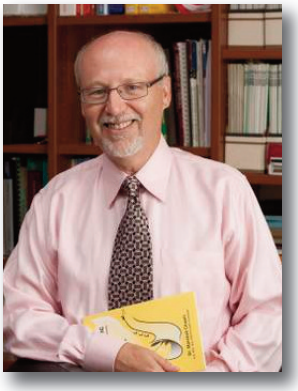

Way back in 1981 my first audiology job was at the Canadian Hearing Society in Toronto. It was located in the old Finnish embassy and the sound booths were located in what was once, the garage. The Canadian Hearing Society was considered a non-profit agency where the bottom line of expenses had to equal the bottom line of income. But like most non-profits, the financial structure is not easy to follow. Parts of the agency at that time were non-profit, and other parts were for profit. After five years of working there I must admit that by the end, I still didn't have it figured out. I recall that the executive director at that time impressed on all employees the need to be involved at all levels of the agency – whether it was a fundraiser or to represent the agency at government hearings. And we did just that – it seemed that as a clinical audiologist I spent more time in Ottawa at CRTC meetings or addressing provincial government committees on the reallocation of health resources. One thing that I do remember fondly is the dedication of everyone that worked there. There is something about working at a non-profit agency that you just don't get anywhere else.

This issue of *The Canadian Hearing Report* has been guest edited by Rex Banks. Rex is a long-time audiologist (and previous president of the Canadian Academy of Audiology) who has been with the Canadian Hearing Society since I had more hair (see picture of me) and has put together a very nice overview of the available non-profit agencies in Canada that touch upon the field of hearing health care. I would like to thank Rex for all of his hard work, but I suspect that it was more of a work of love.

I hope you all have a pleasant summer, and hopefully you can enjoy reading this issue under an umbrella in your back yard or at a beach. My only sage advice to you is wear a hat.

Have a nice summer.

Marshall Chasin, AuD, M.Sc., Aud(C), Reg. CASLPO
Editor in Chief
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Il y a très longtemps, en 1982, mon premier emploi était à la société canadienne de l'ouïe. Celle-ci était située dans ce qui a été l'ambassade de la Finlande et les cabines de sons étaient dans ce qui a été autrefois le garage. La société Canadienne de l'ouïe était considérée une agence sans but lucratif et les dépenses de bases devaient être égales aux revenus. Mais à l'instar de la plupart des organisations sans but lucratif, la structure financière n'est facile à suivre. Certaines activités de l'agence en ce temps était sans but lucratif tandis que d'autres étaient pour le profit. Cinq ans après avoir intégré l'agence, je continuais à ne pas en saisir le fonctionnement. Je me souviens que le directeur exécutif du moment insistait sur la nécessité de l'implication de tous les employés à tous les niveaux de l'agence, serait-ce pour les levées de fonds ou pour représenter l'agence aux audiences du gouvernement. Nous avions justement fait ça, il semblait qu'en tant qu'audiologiste clinicien, j'ai passé plus de temps à Ottawa aux réunions du CRTC ou plaidant pour la réallocation des ressources des soins de santé auprès des comités du gouvernement provincial. Je me rappelle avec émotion le dévouement de tous et toutes qui y ont travaillé. Travailler dans le secteur du sans but lucratif vous procure quelque chose que vous ne trouverez nulle part ailleurs.

Ce numéro de la *Revue Canadienne d'audition* a un éditeur invité, Rex Banks. Rex est un audiologiste de longue date (ancien président de l'académie canadienne d'audiologie) et travaille pour la société canadienne de l'ouïe du temps où j'avais plus de cheveux (voir ma photo) et a assemblé un très bel aperçu des agences sans but lucratif disponibles au Canada qui opèrent dans le domaine des soins de santé auditifs. J'aimerai remercier Rex for pour sa tâche ardue, mais je présume que ce fut plus par amour qu'il l'a fait.

J`espère que vous aurez un agréable été, et espérons que vous allez lire ce numéro sous un parasol dans votre cour arrière ou à la plage. Mon seul conseil sage est de mettre un chapeau.

Je vous souhaite de passer un bel été.

Marshall Chasin, AuD, M.Sc., Aud(C), Reg. CASLPO
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Canadian Hearing Report 2012;7(3):3.

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PEOPLE FIRST

Audiologists and the Non-Profit World

"Can you help me find a support group for my hearing loss?" "I need real-time captioning for a meeting – who provides that service?" "What about accommodation for my hearing loss on the job?" "Where can I take an ASL or speech reading class?" "My baby has just been diagnosed with hearing loss – are there other parents I can talk to? "Where can I find a Deaf mentor?" "Are there groups interested in noise pollution?"

As audiologists, we are very familiar with how to answer questions about hearing loss and/or how to refer our clients to other medical professionals when needed. But what about when our clients ask for extra support beyond what we can or traditionally provide? Knowing more about non-profit organizations can help you support your clients as much as possible.

As an audiologist in the non-profit sector for the past 17 years, it was a pleasure to serve as guest editor for this very special edition of *The Canadian Hearing Report*. I hope by reading the articles that you gain a sense and sampling of the passion, commitment and work that is carried out every day across Canada by these groups. Each has a noble cause and distinction that warrants us knowing more about them.

To all of the non-profits featured in this edition and to the others out there, I want to thank you for your unfailing and selfless dedication to support and advocate for those who need you the most. And to our very own extraordinary non-profit – The Canadian Academy of Audiology – thank you as well!

Enjoy the issue!
Rex Banks
Past President, CAA
Chief Audiologist, The Canadian Hearing Society
Canadian Hearing Report 2012;7(3):5.

Audiologistes et le monde du sans but lucratif

"Pouvez-vous m'aider à trouver un groupe de soutien pour ma perte auditive?" "J'ai besoin de sous-titrage en temps réel pour une réunion – qui fournit ce service?" "Qu'en est-il des accommodements pour ma perte auditive sur le lieu de travail?" " Où puis-je apprendre ASL ou la lecture labiale?" "Mon bébé vient tout juste d'être diagnostiqué avec une perte auditive – y'a-t-il d'autres parents auxquels je peux parler? " Où puis-je trouver un mentor sourd?" "Y'a-t-il des groupes intéressés par l'enjeu de la pollution par le bruit?"
En tant qu'audiologistes, nous sommes très familiers avec la manière de répondre aux questions au sujet de la perte auditive et/ou de l'aiguillage de nos clients vers d'autres professionnels quand le besoin se fait sentir. Mais que se passe-t-il quand nos clients demandent un soutien supplémentaire au-delà de ce que nous offrons normalement ? En savoir plus sur les organisations sans but lucratif peut vous aider à soutenir vos clients autant que possible.

Je suis un audiologiste opérant dans le secteur du sans but lucratif depuis 17 ans et en tant que tel, quel fut mon plaisir de servir comme éditeur invité pour ce numéro très spécial de la Revue canadienne d'audition. J'espère qu'en lisant ces articles, vous allez saisir la passion, l'engagement et le travail qui est entrepris chaque jour à travers le Canada par ces groupes. Chaque groupe a sa propre cause et différence, ce qui nous incite à vouloir en savoir plus sur eux.

A tous les organismes sans but lucratifs présentés dans cette édition et à tous les autres, je voudrai vous remercier pour votre dévouement sans faille pour soutenir et défendre ceux qui ont besoin de vous le plus. Pour notre extraordinaire organisme sans but lucratif – L'académie canadienne d'audiologie – merci aussi!

Savourez ce numéro!
Rex Banks
Président sortant, ACA
Audiologiste en chef, La société canadienne de l'ouïe
Canadian Hearing Report 2012;7(3):5.

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Hearing Loss Non-Profits Changed My Life

By Gael Hannan
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With this issue, this column changes its name. "From the Consumer" is now "The Happy HoH."

In my sandbox, those of us who identify as Hard of Hearing, often shorten the term, especially in written media, to HoH. When we use HoH, we know to whom we're referring – and you as hearing health professionals most likely do too.

The HoH goal is to achieve optimal communication – whatever that may look like for individual people with hearing loss – and to enjoy a quality of life that is characterized by access, accommodation, and acceptance of our needs.

I want to enjoy life like any person, hard of hearing or not. I am the Happy HoH.

I had an epiphany when I met other people with hearing loss for the first time. Attending my first Canadian Hard of Hearing Association (CHHA) conference, having no idea of what to expect, I was brought almost to my knees by a tidal wave of information and emotion. Even now, 17 years later, I thrill at the poignant memory of those three days in May. I returned home empowered, but also sad that I had never known about this source of support. How might my life have progressed, differently, if I had connected earlier with peers to help me along the way?

Growing up in a generation where there were no education supports for children with mild to moderate losses (as mine was at the time), I was dumfounded to realize that my hearing service providers had not told me about CHHA. (To be fair, CHHA is only 30 years old, formed in 1982 by and for hard of hearing Canadians.) Then, through CHHA, I discovered the almost 70-year-old Canadian Hearing Society (CHS) and its candy shop of fantastic assistive listening devices.

Times have changed. Today there are many organizations that support people with hearing loss, either through direct services or who advocate on their behalf, promote research or provide basic information.

Little has changed. Hard of hearing people and their families are seldom told about these charitable organizations by their hearing health care providers.

In this issue, the *Canadian Hearing Report* profiles the world of hearing and deafness-related non-profit and charitable organizations – an astounding array of consumer associations, service agencies, advocacy groups, professional organizations, and international foundations that offer technology to those who can't afford it. It has been exciting to connect with many of these organizations over the past 17 years, learning about their individual niches and their essential roles under "the big top" of hearing health in Canada. Mind you, it took me awhile to figure out the differences between the organizations, as many of their names are combinations of the words "Canadian" and "Hearing."

Some organizations are province-based, such as the Western Institute of Deaf and Hard of Hearing People, which works on the health, education and employment needs of BC's people with hearing loss. Some groups are national such as CHHA and the Hearing Foundation of Canada which educates elementary students about hearing protection. Others, such as VOICE for Hearing Impaired Children, work with the needs of a specific demographic. Some degree of overlap in the missions and activities of these groups is inevitable, but is a benefit by enabling them to intersect and become a collective, powerful voice for change – should they so choose.

Driving the admirable mandates of these non-profits are staff and volunteers who can only be described as inspirational. People connect with people and often it's that certain staff person or volunteer who takes you by the hand and welcomes you. Here are some of the comments, both positive and negative, that I've collected from individuals about their involvement with their respective hearing loss non-profits.

Well, we're sure not in it for the money!

Volunteering is a great way to eat up any spare time you might have left over from raising a family, running a home, or conducting a career.

If I don't do this, who will? I almost fell through the cracks when I lost my hearing, and this organization saved me.

I want to raise awareness of hearing loss, because the general public doesn't get it. Hearing loss is seen as part of life, non-life threatening. The true impact of hearing loss is difficult to imagine who hear well – until the day it happens to them.

I want to make a difference.

All non-profits are feeling the funding squeeze and many are struggling to survive. Governments do not view hearing as a priority health issue, evidenced by low financial support for hearing assessments and hearing aids. Therefore, we need to ensure that our non-profits and charitable organizations continue to survive. They fill the gap created by lack of health funding and services, and go where the *business* of hearing health cannot go. They provide consumers with qualified information, research, emotional support, counselling, guides for healthy hearing and hearing safety. They advocate to governments and organizations on behalf of the public with hearing loss.

Hearing health non-profits have changed my life. I know hard of hearing people who say that CHHA, or CHS, or VOICE, or WIDHH actually *saved* their life. We can tell you, with simple emotion, that these organizations give us:

- Shoulders to cry on
- Strong backs to lean on
- Ears that listen
- Voices to speak on our behalf
- Hands to hold
- Brains to pick
- The ability to create strategies for change
- Feet that have walked miles in our moccasins
- Legs that go the distance in the fight for accessibility, awareness and advocacy
- Feelings that understand our fears, frustrations, and barriers
- The desire and the will to make a difference in the lives of other peo ple with hearing loss
- Arms that wave in jubilation at our successes

A call-out to hearing health professionals: support non-profit hearing loss organizations! Work with us, partner with us.

A call-out to the non-profits: reach out to hearing professionals in the same spirit. They are our natural, caring partners in our drive for an accessible life.

I'm happy to see that meaningful partnerships *are* starting to form – partnerships that have vision and "teeth" and movement. And not a moment too soon, because we all need each other, now more than ever.

Canadian Hearing Report 2012;7(3):8-9.

Western Institute for
THE DEAF AND HARD OF HEARING

"Good morning, Western Institute for the Deaf and Hard of Hearing."

By Grace Shyng, MSc, Aud(C), RAUD, RHIP
Head of Audiology, UBC Clinical Assistant Professor | gshyng@widhh.com | www.widhh.ca

It's late morning and the phone has been steadily ringing since the start of the business day. Incoming calls through voice, TTY and e-mail have kept the bilingual (English and American Sign Language – ASL) front desk staff busy. Both deaf and hard of hearing clients have been arriving for their morning appointments, using spoken and/or sign language to communicate with staff.

Such is a typical morning at the Western Institute for the Deaf and Hard of Hearing (WIDHH). The head office facility is a 15,000 sq. foot humble brick building located in a quiet residential Vancouver neighbourhood. From the outside, the facility looks like an ordinary four-storey apartment on calm tree-lined street. Inside though, it's a beehive of communicative activity.

Clients have access to a variety of programs at WIDHH. As Western Canada's largest non-profit hearing health services Agency, WIDHH is a multi-service organization that is passionately committed to empowering Deaf, Deafblind, Deafened, Hard of Hearing individuals through the delivery of unique services and solutions.

WIDHH was established in 1956 by three grassroots organizations: The Vancouver Association of Adult Deaf (VADA), the Vancouver League for the Hard of Hearing (VLHH), and the Jericho Hill Parent's Association. At that time, its core mission was to serve and support deaf and hard of hearing individuals and to educate the public on hearing and hearing loss issues.

Fifty-six years later, the agency continues to hold these core values to heart and our programs have expanded to provide a wide range of services and products. Funding for programs are provided through various grants from local, provincial and national government ministries, the United Way, and productive income from private hearing aid sales.

The agency now consists of the main office in Vancouver, plus three additional satellite offices in Metro Vancouver and Kelowna. Governed by a volunteer board of directors, the 35-member staff provides services through four main areas:

AUDIOLOGY

The largest department at WIDHH offers hearing clinic services in three Metro Vancouver locations: two in Vancouver, one in the Tri-cities area. The department is staffed by eight audiologists who hold both national and provincial certification and registration with the College of Speech and Hearing Professionals of BC. The four support staff include one audiometric technician and four administrative assistants.

SERVICES

Offered services include

- Diagnostic audiological assessments.
- Hearing aid evaluations, trials and sales of new digital technology, from basic to advanced, from all major brands. The hearing clinic's private hearing aid dispensing program fits hearing aids the same way as a private clinic, but all profits are returned to the agency to support WIDHH's many programs.
- Cerumen management services.
- Fitting of assistive technology including FM equipment.
- Aural rehabilitation classes in group and individual settings, taught by a staff audiologist. New classes start every month, and run 2 hrs/week for 4 weeks.
- Drop-in hearing aid service program available 3 days/week where clients can have their aids cleaned and serviced.
- Active network with several consumer support groups including CHHA, the Late-Deafened Support Group, the Greater Vancouver Association for the Deaf, and the BC Balance and Dizziness Disorders Society.
- Regular information services and

presentations, including a one-day hearing health fair that promotes knowledge translation of hearing health issues between university researchers, clinicians and the public.
- Services offered in English, French, Cantonese, Mandarin, and American Sign Language.
- Clinical research and externship site for UBC School of Audiology and Speech Sciences (UBC-SASS). All the audiologists are members of the UBC-SASS Clinical Faculty and have been active participants in clinical research project development and data collection.

Lend an Ear Program

The department is also proud to offer a unique "Lend An Ear" hearing aid program which provides refurbished hearing aids for those on limited income. The hearing aids are donated by the community and hearing aid manufacturers. The aids are cleaned and repaired as needed. The aids are verified and validated the same way as new aids would be fit. The hearing testing and hearing aid evaluation are all provided for a nominal fee.

Currently, there is a 6-month waitlist for this program due to the limited supply of hearing aids and staff resources to provide this program. In 2010 and 2011, with the help of graduate students of UBC-SASS, the program's waitlist was reduced by several months. Given the success of this joint WIDHH/UBC pilot project, the Lend an Ear program will continue to grow with support from UBC.

EMPLOYMENT COUNSELLING

The Employment Counselling Services department is staffed by four employment counsellors who are certified Career Development Practitioners (CCDP). The department provides a wide variety of services, including the new Government Employment Program of BC. Services include the following:

- Career planning and vocational assessments
- Resume and interview preparation
- On-site employment resource room
- Funding applications for training and equipment
- Job development programs through employer training and outreach
- Interactive bilingual (English and ASL) counselling and job skills website for clients and employers (www.learning-for-life.ca)

The department offers services at the main Vancouver office and in 2 satellite locations (Kelowna and Tri-cities).

COMMUNICATION AIDS DEPARTMENT

Staffed by two long-time WIDHH technical specialists, who are fluent in both English and ASL, the Communication Aids Department has a main showroom that demonstrates and sells alerting, amplifying and assistive listening devices for the home and office. The staff also provide in-home services, presentations, and attend many trade fairs to raise awareness of hearing accessibility for personal, work and/or community situations.

INTERPRETING

The Interpreting Department provides sign language interpreting services for both medical and community events. The three-person bilingual (English/ASL) staff dispatch interpreters for various situations required by deaf, deaf/blind, and hard of hearing clients. The department also offers drop-in services to help clients interpret English-based documents, videophone interpretation, presentations, and community outreach. In 2011, the department was pleased to establish a successful and ongoing partnership with the Vancouver Police Department to offer on-call interpreting services for police situations.

Over the Years, WIDHH has helped clients

- hear what they've been missing with new hearing aids,
- feel safe with the fitting of a home alerting system,
- wake up on time with a vibrating alarm clock,
- learn ways to cope with hearing loss through communication strategies classes,
- access low cost refurbished aids through our "Lend an Ear" program
- find a job and get hired through the help of an employment counsellor,
- learn job interview techniques with our successful job clubs,
- obtain counselling assistance for employment and personal crisis situations,
- understand a lecture with the help of a sign language interpreter, and
- communicate successfully with their doctor through an interpreter.

In 1956, WIDHH was formed as a grassroots organization with big dreams. Today, through strategic board/staff planning initiatives and with regular input from our community, we strive to ensure the agency's goals continue to meet and exceed the ever-changing needs and expectations of our community. WIDHH has been recognized on several occasions by numerous consumer organizations for our outstanding client care, and professional, unbiased services.

As the sun starts to settle on another busy day, the last client leaves the building after having his hearing aid repaired. As he exits, he signs and speaks a friendly "Good Night!"

Canadian Hearing Report 2012;7(3):10-11.

Acoustic Neuroma Association of Canada: 30 Year Anniversary of Caring! Sharing! Supporting!

By Dr. Carol-Anne Sullivan, President, Acoustic Neuroma Association of Canada; Adjunct Professor, Lakehead University, Thunder Bay, Ontario, Canada.

The Acoustic Neuroma Association of Canada (ANAC) is the only organization in Canada serving the needs of patients with an acoustic neuroma. An acoustic neuorma (sometimes termed a vestibular schwannoma or neurilemmoma) is a benign tumour that arises on the eighth cranial nerve leading from the brain to the inner ear. This nerve has two distinct parts, one part associated with transmitting sound and the other with sending balance information to the brain from the inner ear. Early warning signs of an acoustic neuroma include: loss of balance, one-sided deafness, ear noise or tinnitus and dizziness – all which demand careful attention. All too often physicians are not aware of the possibility of acoustic neuroma, and vital years go by before actual diagnosis is made. The incidence of acoustic neuromas (ANs) has significantly increased over the years and has become the subject of many scholarly journal articles and publications in Canada (and internationally). Treatment options for AN are: observation, watch-and-wait, microsurgery, and radiosurgery. If the tumour is removed while still small, patients often recover with few deficits. However, once the tumour has become large, results can be devastating since much nerve damage can occur. Damage to the facial nerve is particularly traumatic since it causes facial paralysis and a totally altered appearance, with accompanying emotional and psychological problems.

ANAC is a patient-headed, peer-support group. Many individuals who face and undergo removal of ANs have questions, concerns and, physical and emotional adjustments. ANAC was formed to give moral support. The association is an incorporated, registered, not-for-profit organization recognized as such by the Canada Revenue Agency. We are operationally sustained by donations. ANAC was founded in 1983 when Virginia Garossino, Linda Gray, and Velma Campbell met for the first time. They had had AN surgery within a year of each other and had encountered individual sets of difficulties and recoveries. They discovered early in their search that there wasn't a support or information system in place for Canadians dealing with this unique tumour. Along with their husbands, the three women agreed to establish a charitable organization to meet those needs and allow others across the country to share experiences and information. Local chapter support groups of ANAC are active in several cities across Canada (although there were more chapters in the past than there are now). They are led by chapter leaders who offer support and the opportunity for patients to communicate and network with others.

The vision was of an organization of national scope with a distinguished medical advisory board. The mission was to decrease diagnostic time and improve treatment. The focus was simple and succinct: give others what had not been available for them (relieve the pain, the anxiety, and the tumultuous search for answers and information). The founders realized that success would be totally dependent on enthusiastic, knowledgeable volunteer work from those recovering from an acoustic neuroma and their families and health professionals.

AN survivors who are registered on ANAC's data base registry have agreed to share their personal experience with others for support and information purposes. This "Sharing Programme" has been invaluable to help support people and offer this organization the opportunity to assist them. Peer Database Registry is by choice and each person's AN experience is unique and important. By registering, AN patients can be part of the future of ANAC together we can help the lives of future AN people.

To reach and maintain national recognition, ANAC volunteers organized a wide range of activities which include: information symposiums, participation in research projects, representation at medical conferences, lobbying for payment of out-of-country treatments, press and TV interviews, guest appearances on open-line shows, and workshops for volunteers. As a result of this work, and with the help of the medical advisory board, other dedicated medical professionals, and increased public awareness over the years, acoustic neuromas have become better recognized, and treatment and the quality of life after treatment have improved greatly. However, more work needs to be done.

ANAC is committed to keeping members informed with medical information and self-help aids, personal accounts from AN patients and chapter support group updates. *The Connection*, ANAC's newsletter, is included with regular membership. Our 2012 Symposium will be held in Waterloo on Saturday, September 29, 2012. ANAC extends an invitation to all.

ANAC realized speaking as one voice has a greater impact. For this reason ANAC became a founding member of the Canadian Alliance of Brain Tumour Organizations (CABTO). CABTO is an alliance of volunteer organizations dedicated to enhancing the quality of life of brain tumour patients and their families. Its vision is to advocate, both politically and publicly, for better patient care and increased government funding for brain tumour research. I represent ANAC by attending their monthly meetings. CABTO are in the initial stages of developing the framework for a **Benign Brain Tumours Action Plan**. CABTO is also a member of National Health Charities Canada (NHCC); a coalition of over 30 neurological health charities who are actively engaged in driving policy at all levels of government. ANAC is represented under CABTO at NHCC.

More recently, the Canadian Medical Association (CMA) held a meeting in December 2011(Toronto, Ontario) on **Transforming Health Care: A Shared Responsibility**. The purpose was to connect with organizations such as ANAC and have an informed conversation on the need to improve our health care system. Our contributions added great value. Events like this serve as an essential instrument for sharing ideas that will lead to meaningful policy reforms. Decision makers are reluctant to engage in a public debate on health care. The CMA proposed beginning with a set of principles to guide transformation – ones that would apply across the continuum of care. Earlier this year, the CMA and the Canadian Nurses Association (CNA) developed a set of principles that, to date, have been endorsed by more than 60 medical and health care organizations. ANAC has also endorsed these principles.

Today, ANAC continues to move forward. ANAC held a Strategic Planning Meeting (Moving ANAC Forward: Priority Setting 2011 – 2013) on Tuesday November 29, 2011, at the Canadian Hearing Society (CHS) in Toronto, Ontario. Organizational planning is a critical component of good management and governance. It helps assure that ANAC remains relevant and contributes to its stability and growth. Location and site arrangements were impressively led by Lynda Nash (Chapter Lead), Kathryn Harrod (Chapter Lead), and Rex Banks (Director, Hearing Health Care and Chief Audiologist, The Canadian Hearing Society) from the ANAC Toronto Chapter.

ANAC is excited and privileged to have Dr. Gelareh Zadeh, neurosurgeon and AN specialist at the Toronto Western Hospital, join the board of directors in the capacity of chair of the medical advisory committee. She has developed the infrastructure for an AN Care Pathway that will ultimately provide detailed guidance for each stage in the management of a patient (such as treatments, interventions) over a given time period. ANAC's goal is to make the AN Care Pathway available on our website in the near future.

2013 will mark the 30th anniversary of the Acoustic Neuroma Association of Canada. ANAC's purpose is as important today as it was in 1983. The association's greatest success is the continuing belief of a dedicated membership that the need is still relevant, and that the volunteered time, information and support gives hope, education and friendship to others searching for it. This open, supportive style of sharing, giving and receiving has developed a wonderful network of members, medical professionals and connections. Join us! New members and stakeholders are warmly welcomed.

For more information and/or referrals please contact National Office:
Telephone: 1-800-561-266
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Canadian Hearing Report 2012;7(3):12-13.

CADA
ACAF
Canadian Assistive Devices Association
Association Canadienne d'Appareils Fonctionnels

Your Canadian Assistive Devices Association

Over 10 years ago the senior managers of the manufacturers of assistive devices in Canada came to the realization that it was important for their companies to meet to discuss business issues of common concern to them. These issues often surrounded actions by the provincial and federal governments that were impacting their businesses. Even though these companies were arch rivals in the marketplace they recognized the importance of working together to tackle issues and look at ways they could work together to put forward one voice on issues with governments. These founding members recognized that governments wanted to hear from a representative of the industry that spoke for all of them on public policy issues. Obviously working together the industry had a much stronger position with governments than being fractured. The new association also had opportunities to network and exchange industry information in a non threatening manner. Speakers on topics of interest also spoke regularly to the association.

As time progressed the manufacturers of assistive devices recognized that the dealers and distributors of assistive devices would benefit from becoming members of the association and the association would be stronger with their addition. The major dealers were approached and they agreed to join the association making it a stronger organization.

Manufacturers of ostomy products, diabetes equipment and supplies, enteral feeding devices, hearing aids, home oxygen, communication devices, prosthetic devices, visual aids, insulin pumps and supplies, orthodic devices and respiratory supplies and equipment also realized the benefits and joined the organization.

With the addition of other manufacturers came other dealers and distributors representing locations across Canada. As the decade progressed the Canadian Assistive Devices Association became a national organization with manufacturers, dealers and distributors of assistive devices throughout Canada.

CADA is a not-for-profit trade association with its head office in Burlington, Ontario. The executive director is Bill Laidlaw. The CADA board consists of 10 board members representing a crossection of the membership in Canada. The current chair is Michel Papillon, president of Sunrise Medical. There are committees of the board that deal with the major issues of the association. These committees chaired by an individual board member include finance, government relations, communications, membership, strategic planning and dealer issues. Interested members sit on these committees and meet quarterly.

Each autumn there is an annual general meeting which is combined with a day at the Legislature. In the past two years the AGM has been held at the Legislature in Ontario where after the AGM the CADA members hear from speakers, attend Question Period, visit legislators in teams in the afternoon followed by a cocktail reception where legislators and political staff meet with CADA members and view many of our various products being used.

CADA members receive regular updates on issues impacting their industry. For those members working in southern Ontario CADA has quarterly breakfast meetings held in Toronto where speakers address our membership on issues of relevance to our industry. Past speakers have included provincial cabinet ministers, provincial opposition critics, heads of ADP, the chair of WSIB, economists, representatives of CRA, federal members, private plan payers to mention a few. All of our presentations are on our CADA website at www.cadaonline.ca

Our association also lobbies on behalf of our members at the federal and provincial levels of government. At the federal level our association regularly

journeys to Ottawa to work on issues impacting our industry with Revenue Canada, Aboriginal affairs and their NIHB program, Veterans affairs, Ministry of Health and the Medical Device unit, Seniors and the Ministry of Defence.

On the provincial level CADA works in Ontario with the Assistive Devices program at the Ontario Ministry of Health. Our issues there are similar to the ones that we work on in other provinces. CADA does the same type of lobbying in other provinces across Canada.

The first issue deals with lengthy wait times for products for patients to be approved for reimbursement and for payments to be made by ADP. These lengthy delays are a hardship for patients, dealers and manufacturers.

The other issue deals with the process by which products are approved to be listed for reimbursement by ADP. This is a very lengthy process. There are two centres in Ontario in London and Ottawa that require an enormous amount of documentation on products and do not factor in prior approvals from other countries.

Lastly the current program in Ontario does not cover devices used for patient transfer, toileting aids, and bathroom safety that are covered in other provinces. If the province wants to encourage seniors and those with disabilities to stay at home than products like these should be approved for reimbursement.

The challenge for our industry association is one of communication. All of our members and CADA have to do a better job of letting government officials, policy makers and the general public know of the important role that our sector plays in the health and well being of Canadians. When our products are provided to Canadians in need they improve health outcomes, they save health care dollars and they allow Canadians to stay in their homes longer and enjoy their lives.

The demographics indicate that more Canadians will be using the many products and services that our industry manufacturers and services. Payers both in the public and the private insurer sector must make a greater effort to see the important role we play in the lives of Canadians.

I have provided you with a brief history of our history and our issues. If you wish to learn more about CADA visit our website at www.cadonline.ca or contact us at 905 333 8888. For those companies wishing to join CADA please see the application on our website and complete it and send your membership payment to my attention. We also accept Visa, MC, and Amex.

Canadian Hearing Report 2012;7(3):14-15.

voice
for hearing impaired children

VOICE Then and Now

By Norah-Lynn McIntyre, Executive Director

It was the kitchen table conversations of parents of profoundly deaf children in the early 1960s that planted the seed for an organization that would come to be known as **VOICE for Hearing Impaired Children "VOICE"**. These parents wanted their children to learn to talk and to attend their neighbourhood schools in an age when such an option for the education of children with hearing loss was radical. Today, thanks to early detection of hearing loss through infant hearing screening programs in most (but not all!) provinces of Canada, and with access to enabling hearing technologies like cochlear implants, digital hearing aids, sound field and F.M. systems, the vast majority of children born deaf or hard of hearing are learning to talk and will integrate into mainstream society.

The VOICE Mission is "to ensure that all children with hearing loss have their rights upheld with access to services for developing their abilities to learn to HEAR, LISTEN and SPEAK." The organization partners with parents and professionals from across Canada and beyond our national borders. Stay abreast of our updates and join VOICE @www.voicefordeafkids.com. First year membership is free!

While parent support remains fundamental to VOICE; advocacy, public information and auditory-verbal training programs are other key programs. The VOICE parent mentor program, coordinated by a parent/social worker, matches families, regardless of the degree of a child's hearing loss, location, language or culture, with other families. VOICE utilize social media to connect instantly through Linkedin, Facebook, a yahoo chat group, and Twitter feed. The annual VOICE Conference, held for over 20 years on the first weekend in May, is the largest of its kind for parents, professionals, and teens. Follow us #IBELIEVE@VOICE4Deafkids. The VOICE family summer camp too has a long-standing reputation for building lasting friendships and is held at Bark Lake Camp each August.

VOICE was proudly awarded the CASLPA Consumer Advocacy Award in recognition of its successes over many years. Although there have been celebratory inroads achieved on behalf of children who are deaf or hard of hearing, with a current climate of political fiscal restraint, there is heightened concern for changes in program delivery models in schools and other infant programs that will have an adverse affect on future outcomes for children. The important roles of specialists like educational audiologists, speech pathologists, and teachers of the deaf are threatened. Please join in the discussion and follow VOICE's advocacy initiatives on twitter @ VOICE4DEAFKIDS.

The VOICE Auditory-Verbal Therapy Program, in partnership with Canadian academic institutions, researchers, and the AG Bell Academy for Listening and Spoken Language, is arguably the largest of its kind worldwide with 18 certified auditory-verbal professionals and a training mentorship program that has over the past three years trained over 22 professionals in the auditory-verbal approach. The VOICE evidenced-based position paper on auditory-verbal therapy can be found on the VOICE website. Advice on future professional development opportunities are frequently posted to www.voicefordeafkids.com

During Speech and Hearing Month in May please plan to participate in a DRESS LOUD DAY at your place of employment!

Contact Katie@VOICEfordeafkids.com for posters and other materials.

By working together, partnering with professionals and parents, we CAN give children with hearing loss a VOICE for life!

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The Canadian Association of the Deaf

By Jim Roots, Executive Director

The Canadian Association of the Deaf is the nation's oldest national-level disabled consumer organization. It was founded in 1940 and federally incorporated in 1948.

The CAD is the information, research, and community action organization of Deaf Canadians. Its mandate is to promote and protect the rights, needs, and concerns of Deaf people in Canada. There are an estimated 310,000 profoundly deaf Canadians whose first language and culture is Sign – American Sign Language (ASL) and Langue des Sourds du Quebec (LSQ). In addition, there are 2.7 million other Canadians who have a hearing loss but who are not considered linguistically/culturally "Deaf" (We do not accept Statistics Canada's data on deafness, hearing loss, or use of Sign language for reasons articulated in our Position Paper on Statistics, available on our website at: www.cad.ca/en/issues/statistics_on_deaf_canadians.asp). The capitalized "D" indicates those who use sign language; we generally use the term "non-Deaf" to refer to all others, including people who are medically deaf but do not use Sign language.

The CAD provides information on Deaf interests to the public, business, media, educators, and governments. We provide expertise, conduct research, collect data, and publish research on a broad range of topics.

The CAD has carried out hundreds of projects covering an astounding range of topics: employment/employability, demographics and statistics, health care and health services, housing, child care programs, special education, literacy, political socialization, transportation, legal and human rights, citizenship, telecommunications, immigration, voice-recognition text creation, fetal alcohol spectrum disorder, television technology and regulation, taxation and social supports, video production training, hospice and palliative care, abuse of senior citizens, mental health, multiculturalism, and many international concerns (we are the Canadian representative to the World Federation of the Deaf).

The CAD is responsible for the introduction of closed captioning in this country, and for the legal requirement (via Supreme Court decision in August 2007) that government information and services must be accessible to Deaf people. We have fought successfully for countless accessibility and equality measures in telecommunications, education, employment, and citizenship. The CAD has been the leader in the fight to bring Video Relay Service (VRS) to Canada, beginning eight years ago and continuing relentlessly today!

Our 5-year National Deaf Jobs Strategy created more than 200 new jobs and training opportunities for unemployed Deaf people. The Canadian Deaf Education Fund, which we established in the 1940s, raised funds to send more than 100 Deaf students to Gallaudet University, the world's only Deaf liberal arts university. In 2003, we hosted the World Congress of the World Federation of the Deaf, attended by 3,000 Deaf people from 101 countries, using more than 130 different Sign languages.

More recently, we completed the following projects: (1) to assist charities in complying with the rules and regulations of the Canada Revenue Agency and in reviewing their governance and financial management policies; (2) to implement a national leadership training program for Deaf women; (3) to provide Sign language and simple language accessible versions of the United Nations Convention on the Rights of Persons with Disabilities; and (4) to provide Sign language and simple language accessible versions of the Personal Information Protection and Electronic Documents Act (PIPEDA).

We have accomplished all of this with the absolute minimum of human and financial capital – a tribute to our strong, clear sense of mission and our skilled management of limited resources. To learn more about the Canadian Association of the Deaf, check out our website: www.cad.ca.

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Deaf and Hard of Hearing Society: Making a Difference in Alberta

By Christina Smith, Executive Director

It began in 1961 as a small, grassroots, parent-led agency (its original name was the Society for Hearing Handicapped Children). Its focus was on recreational activities and its budget was nil. Today, the Deaf and Hard of Hearing Society (DHHS) is a $1.5 million, multi-service organization reaching out to people who are Deaf, hard of hearing and, increasingly, to the broader community.

Over the past five years – since Christina Smith, executive director of the agency, came aboard – there have been fundamental shifts in operations and philosophy. In 2009, DHHS launched an extensive strategic planning process to guide the agency into the future. There was a community-based needs assessment, focus groups, surveys, and one-on-one interviews both inside the agency and with key stakeholders. "It was an amazing five-day process," says Smith, leafing through the dog-eared, obviously well-used, document.

What has happened as a result? Today, there is a professional infrastructure, proper pay grids for staff, a succession plan, cross-training opportunities, and an ambitious fundraising campaign to raise $1 million for additional community services. There is also double the number of interpreting services, support to people province-wide, a new direction for the equipment department, risk management versus risk aversion policies and an updated organizational brand.

The agency's service has grown to 10 program areas. DHHS provides education, products, information and support to individuals and families affected by deafness or hearing loss. The agency works with over 60 interpreters across the province to provide sign language interpretation in settings ranging from medical and legal to education and employment. A student literacy program provides support and one-on-one tutoring to elementary children.

DHHS's equipment department conducts free site assessments for any public, private or non-profit facility that would like to become more accessible to those with hearing loss and equips them with the appropriate assistive listening devices. The department also helps individuals secure funding to purchase necessary equipment, such as amplified phones, captioning systems (including "real-time captioning" for meetings), and signalling systems to replace the auditory signals of smoke or carbon monoxide alarms, doorbells, and other auditory alerts.

DHHS is Calgary's premier provider of American Sign Language (ASL) classes, giving the general public, corporations, families and anyone who wants to learn ASL an opportunity to improve communication with their family member, co-worker, employee, or the Deaf community. The agency also provides classes designed to help hard of hearing individuals, including courses in speechreading (also known as lip-reading) and communication strategies.

Through its outreach initiatives, the agency aims to educate youth and the broader public about the dangers of excessive noise. Jan Stewart, co-ordinator of the Hearing Loss Prevention Program at DHHS, has been in classrooms talking to elementary-age students about hearing loss since 1993. "The earlier, the better," says Stewart, about educating youth. When she asks these children how many listen to MP3 players, 90% of the hands go up. It is not the technology itself that is dangerous; it is the decibel (dB) level and the length of time young people are exposed to loud music (and other excessive daily noise), warns Stewart. "As little as 30 minutes of exposure to excessive noise five times a week can cause some damage to hearing. It can be prevented, however, by limiting the use of MP3 players and turning down the volume."

A blended service model now highlights the collaborative nature of the agency and recognizes the strength and support that other organizations can contribute when it comes to those impacted by hearing loss, such as mental health (depression is a common result of the isolation and frustration that can accompany hearing loss) and employment services. "Now we're looking forward to the future," says Christina Smith. "It is less about "planning the work" and more about "working the (strategic) plan." We've

really grown into a more professional, formal group."

Agency funding comes largely from fees for services provided (43% of the budget), largely through Interpreting Services. Alberta Health Services (AHS) and Alberta Seniors and Community Supports (ASCS) are examples of government departments that sign contracts with DHHS to provide interpreting services (the Deaf never pay directly for interpreting services; communication access should be granted as a human right). ASCS provides 24% of funding, the United Way of Calgary and Area provides 11%, and equipment sales represent 4%. The rest of the budget is made up of grants, donations, or monies raised through casinos. "We have little core funding," says Smith. "We are a social enterprise."

The Deaf and Hard of Hearing Society is also a dynamic meeting place, allowing the community to come together. "DHHS is an extremely important organization," says Marianne Flanagan, a retired speech pathologist with the Calgary Board of Education. "Getting the current building on Cornell Road in north-west Calgary meant the Deaf and hard of hearing had a place to go, to gather. It has become a focal point for the cultures. If you are new to the city, you can go there to find out what is going on in the community and what services exist. If you want to socialize, that is where they meet. DHHS is an accessible spot," adds Marianne.

Deaf and hard of hearing people need an easy way to find one another because they are a low incidence population. Despite significant changes to the way non-profit organizations are funded, DHHS has grown and progressed. It has helped reduce isolation and the trauma associated with hearing loss. "It has saved the sanity and preserved the joy of many people."

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Nova Scotia Hearing and Speech Centres – Audiology Services and Programs

Greg Noel | VP/Director of Audiology | Nova Scotia Hearing and Speech Centres

BACKGROUND

Nova Scotia Hearing and Speech Centres (NSHSC) was established in 1963 as a program funded by the Nova Scotia Department of Health and Wellness. NSHSC is the health care agency responsible for providing hearing services to Nova Scotians of all ages, and speech-language services to preschool children and adults. Our professionals, including audiologists, speech-language pathologists, and communication disorder technicians, work to enhance the quality of life of Nova Scotians with communication disorders. NSHSC is proud to offer an "open referral policy" which means that we do not require a physician's referral to access our primary services. Last year, the centres' caring and highly trained team of speech language pathologists and audiologist recorded more than 50,000 clinical visits. We have established a toll free number (1-888-780-3330) so clients can access information they need about our services, refer a loved one or family member or seek assistance about one of our many programs.

While NSHSC provides both speech-language services and hearing services, this article will highlight the audiology department.

OVERVIEW OF SERVICES

The Audiology Department within Nova Scotia Hearing and Speech Centres provides a comprehensive array of services for hearing loss, balance and related communication disorders from 15 sites across the province. A typical clinical caseload for one of our 21 audiologists consists of newborns to geriatric populations with a diverse range of disorders, including congenital hearing loss, middle ear infections, noise trauma, neurological diseases (e.g., tumours, head injuries) , and progressive diseases (e.g., multiple sclerosis, some forms of cancer treatment). Our audiologists also screen, diagnose and counsel those with age related hearing loss.

All audiologists have access to a complete range of audiological equipment, including middle ear analyzers, audiometers, otoacoustic emissions, and evoked potential equipment in conjunction with a host of recorded speech materials. All sites have access to real ear verification systems to assist with fitting hearing aids to our pediatric clientele.

While we do not dispense hearing aids, NSHSC staff work closely with the Atlantic Provinces Special Education Authority (APSEA) to support children with hearing impairment and deafness in schools across the province. Adult clients in need of amplification are referred to the private sector. Our audiologists and technicians provide educational sessions to various stakeholders around the province on a number of hearing and balance related topics.

STANDARDS OF CARE

NSHSC audiologists adhere to consistent standards of care across all sites, which means that all clients receive the same quality of service no matter where they access our services in the province. These standards are monitored and reviewed regularly by the Audiology Quality Assurance Committee. One of the many benefits of offering provincial services is the utilization of a "floating clinician." This is a process whereby we temporarily re-assign an audiologist in one part of the province to another community to assist in providing audiological services during vacation, illness or to assist with referral triage.

Nova Scotia Hearing and Speech Centres is committed to excellence in client/family care. We are proud of our accreditation by the Canadian

Accreditation of Service Programs (CASP), the professional Standards Board of the Canadian Association of Speech-Language Pathologists and Audiologists (CASLPA).

NSHSC AUDIOLOGY DEPARTMENT HIGHLIGHTS

Aside from general audiological care, there are a number of specialty services offered that may include: tinnitus (ringing in the ears) and hyperacusis (sensitivity issues to regular sounds) evaluation and therapy, balance testing and rehabilitation, industrial and community audiology, neuroaudiological and auditory processing testing, and cochlear implants.

All infants born in birthing hospitals have access to Newborn Hearing Screening through our program called A Sound Start. A Sound Start is a provincial strategy, on behalf of the Nova Scotia Department of Health, that addresses early identification and early intervention of preschool hearing, speech, and language disorders. A Sound Start includes: access to universal newborn hearing screening for all babies born at birthing hospitals in Nova Scotia and follow-up for those identified with hearing loss; improved access to speech-language services for preschool children; and enhanced community-based prevention and promotion activities in the area of hearing, speech, language, and pre-literacy development. While partial funding was received in 2005/06, full implementation of A Sound Start occurred late in 2008. For the newborn hearing screening program, our target is to screen 90% of the children born in birthing hospitals and for those identified with hearing loss, have the diagnosis in place by 3 months and a rehabilitation plan confirmed within 6 months. For 2010/11, with a huge thanks to our communication disorder technicians, we were successful in screening 95.5% of children born in the province.

Our Cochlear Implant Team is a partnership between the ENT specialists at both the Queen Elizabeth Health Sciences Centre and the Izaak Walton Killam (IWK) Health Centre for Children, along with audiologists and a speech-language pathologist from Nova Scotia Hearing and Speech Centres. Our cochlear implant program has grown significantly since 2001, and we are approaching our 400th surgery. Our program offers clients products from three companies. Audiologists also assist ENT implantable programs such as bone-anchored hearing aids and middle-ear implants.

Our balance centre in Halifax, in collaboration with ENT physicians, is the only centre east of Montreal that offers rotary chair and posturography as well as ENG, VNG, and VEMP testing. Another NSHSC site located in Sydney, offers ENG, VNG, and VEMP testing.

STAKEHOLDERS

Our affiliation with Dalhousie University, School of Human Communication Disorders means that our audiologists and speech language pathologists provide clinical placements for our future generation of communication specialists. NSHSC may have more than 20 audiology and speech-language pathology students in placement during any one semester. Some NSHSC staff lecture on a variety of topics including pediatric audiology, neuroaudiology and advance diagnostics, cochlear implants, vestibular disorders, and tinnitus at the school as well.

Integral to our services is the support we receive from the Nova Scotia Hearing and Speech Foundation. Since its inception, our foundation has reached out to the community for support and has made it possible to deliver important educational programming, purchase essential equipment and expand the services offered by the centres. Working with community volunteer leaders, families and friends of those who are hearing or speech impaired, our partners in government and the medical and academic communities, the foundation seeks to raise funds to support critical centres' needs.

Nova Scotia Hearing and Speech Centres has been successful in building on a solid foundation of hearing and speech services for Nova Scotians. As we approach our 50th year of service in 2013, we are proud of the work of our dedicated staff and look forward to serving Nova Scotia over the next 50 years.

Canadian Hearing Report 2012;7(3):20-21.

Canadian **Hard of Hearing** Association
Association des **malentendants** canadiens

Celebrating 30 Years as the Voice for People with Hearing Loss

By Robert Corbeil, MPM, National Executive Director

Celebrate with us – the Canadian Hard of Hearing Association has turned 30! This May, members from across the country gathered in Ottawa for its annual conference and to honour – with pride and a sense of accomplishment – the organization which has become Canada's voice for hard of hearing and deafened people.

AN EMPOWERING VISION (DR. CHARLES LASZLO – FOUNDER)

Prior to 1982, the hard of hearing community worked through isolated "hard of hearing clubs" scattered throughout the country. In spite of great effort by a few individuals, our hidden disability received little attention. By 1982 it became apparent that we must organize nationally and work together in a disciplined fashion to formulate our needs, and to advocate for action on every level to achieve our aspirations.

With this in mind, a small group established the aims of CHHA:

- To be the vehicle for articulation of concerns and coordination of members' activities on behalf of and in the service of hard of hearing consumers in Canada
- To foster development of social, educational, technical and employment environments which would enable hard of hearing Canadians to achieve their potential
- To encourage people with hearing loss to take individual and collective responsibility for their growth and development
- To support the exploration of the capabilities and the problems of people with hearing loss, and to foster the study of solutions to these problems
- To promote the development of and accessibility to technical aids and to other services and facilities for people who are hard of hearing and deafened
- To promote the education of the general public, social institutions, professionals and the hard of hearing themselves on hearing-related problems and the available solutions

Even today, three decades after a small group gathered in a kitchen, these objectives remain our guide.

CHHA REACHES OUT (LOUISE NORMAND – PRESIDENT)

The inaugural 1982 board of directors, by Charles Laszlo, was determined to create a countrywide force to meet the needs of the hard of hearing community – needs not addressed by any other national organization. The first few years were all about getting started, finding sustainability and building a formidable national network of branches (local) and chapters (provincial), run by members united by hearing loss.

Under the passionate and expert guidance of subsequent presidents and executive directors, CHHA increased its credibility through many programs, including the Employment Project and the Hearing Awareness Project, which focused on building partnerships with hearing health care professionals, and exciting annual national conferences including a renowned international event held in Vancouver.

REFLECTIONS ON FIRE IN THE BELLY (DR. MARILYN DAHL – PAST PRESIDENT)

Zeal, passion, determination, and tenacity. These characteristics defined the people involved in first starting CHHA and pushing it along through its early years. There was an evangelical fervour to promoting our cause – the need was so great – to establish our

hard of hearing identity and to get the decision makers (and indeed everyone) to understand, accept and cooperate in addressing our concerns.

CHHA needs to continue push ahead in so many areas. Communication access is possible, the technology exists, but getting use of it is often difficult – there is not universal access in this society. Hearing aids are wonderful but costly; bilateral cochlear implants are rarely done for adults in Canada. Many cannot afford the purchase of any such devices and gaps in social policies leave them out. And, in spite of our hard won identity, the criteria for the Disability Tax Credit continues to discriminate against hard of hearing people.

We are not through with these issues. Today there is much emphasis on the social media facilitated by the Internet and portable communication devices such as cellular phones. Yes, much of our strength and inspiration lies in meeting together in groups and exchanging information and ideas in dialogue. There is a different dynamic, a certain chemistry to it, compared to meeting via social media.

We must find a healthy balance between on-line communication, meeting face to face in groups, and cementing bonds on the personal level. CHHA will continue to change and evolve to meet changing social trends but one thing which needs to be maintained and nourished is that Fire in the Belly, that passion for our cause, our mandate. Passion, like fire, is judged by the amount of warmth and light it creates. To be useful, fire must be confined. To live passionately, we must develop discipline and act powerfully. We must forge bonds of commitment. Passion involves a growing sensitivity to other people; it is inseparable from compassion. To Hear And To Be Heard.

WHERE CHHA IS HEADED (ROBERT CORBEIL – NATIONAL EXECUTIVE DIRECTOR)

In this anniversary year, looking at the past has helped us focus on a strengthening our foundation to guarantee a promising future! As we move forward, CHHA is focusing on the following goals:

- Inform people who are hard of hearing about their rights so that they advocate for what they need.
- Address the hearing health needs of the aging population.
- Encourage members to become ambassadors in their communities.
- Significantly increase our membership and build relationships with our stakeholders.
- Strengthen our branches and chapters to help increase the visibility of CHHA and awareness of hearing loss issues.
- Make the annual conference a fertile ground for partnerships and networking between individuals and organizations.
- Build our fundraising capacity, and introduce our Walk2Hear in more major Canadian cities.
- Develop media and strategic partnerships with other associations and businesses, including the high-tech sector.
- Enhance support of our Young Adult Network, our leaders of tomorrow, by securing more scholarships, and helping facilitate successful workplace.

At CHHA, we are proud of what we have accomplished in the past – and we are aware of the economic and demographic challenges ahead. But after 30 years of advocacy, we will continue to fight for universal accessibility and high quality of life for Canadians with hearing loss.

Canadian Hearing Report 2012;7(3):22-23.

Fighting Back Against Hearing Loss

By Dino Sophocleous
President | The Hearing Foundation of Canada

As Canadians continue to age and our society gets noisier, hearing loss is one of the most prevalent and life-changing chronic conditions we face today.

Statistics show that a significant percentage of the population is affected: 61% of people over the age of 70 have hearing loss[1] and 16.1% of adults aged 20–69 have speech frequency loss in one or both ears.[2] Most alarming, however, is the fact that 1 in 5 teenagers has some degree of hearing loss, with noise damage identified as a key cause of the 30% increase over the previous 10 years.[3]

In most cases, the hearing loss is permanent and cannot be reversed through surgical and or medicinal intervention.

The Hearing Foundation of Canada (THFC) has a driving mission to help change these statistics through support for medical research and education of the public about safe listening practices.

Formed in 1979, THFC is a national charitable organization dedicated to promoting prevention, early diagnosis, and leading edge medical research. We understand the devastating impact of hearing loss on effective communication, which in turn affects language development, academic and career success, and personal relationships. Our mandate is to educate the public, especially youth, about noise-induced hearing loss to encourage informed decisions and personal responsibility for hearing health. We also support medical research that explores new diagnostic and intervention techniques and treatments and which may, in the longer-term, even restore or reverse some forms of hearing loss. Our third main area of activity is advocacy to governments, media and the public about hearing protection and related issues.

MEDICAL RESEARCH

"While we cannot prevent people from getting older," says Dino Sophocleous, THFC president, "we help drive the search for solutions that will create a better quality of life for people affected by hearing loss."

In the past decade, THFC has partnered with Canadian universities, hospitals and research institutes to award approximately $1.2 million to 50 scientific and clinical research grants, of up to $50,000 each.

Our medical research grants program provides seed funding to Canadian researchers for clinical and biological medical research in hearing-related fields. The grant proposals submitted by researchers and scientists from across Canada are reviewed and ranked by our Medical Research Review Committee and grants are awarded as funding becomes available. This seed funding also helps support science and medical students who are tomorrow's leaders in hearing loss research.

The Hearing Foundation's goal is to build on our strengths and solidify relationships with the country's top researchers. We aim to not only maintain but to increase our support for medical research that is directed to where it can make the most impact. To that end, THFC is working hard to create a national research network that unites donors, educators, researchers and clinicians in Canadian organizations with a stake in hearing health.

SOUND SENSE – PREVENTING NOISE-INDUCED HEARING LOSS

"What sounds would you miss if you couldn't hear them anymore?" The facilitator smiles at the elementary students sitting on the floor around her.
"Music!"
"My cat!"

"Video games!"
"The rain in the puddles!"
"My parents telling me they love me."

The general public has been slow to appreciate the connection between over-exposure to noise and hearing loss; 30 or 40 years ago, there was a similar lack of understanding about the link between smoking and cancer. Children and young people are especially vulnerable to noise damage, yet they are inundated with noisy entertainment choices (digital audio players, smart phones, gaming consoles, car stereos, concerts, dance clubs, etc.) all of which have the potential to cause noise-induced hearing loss, a preventable but permanent and irreversible condition.

To address this urgent health issue, The Hearing Foundation of Canada designed and launched our *Sound Sense* educational program in 2006. This award-winning program teaches children in elementary schools how to avoid noise-induced hearing loss and to "save their hearing for the music." Last year alone, over 15,000 children, plus their parents, siblings and teachers, in 500 schools across the country learned safe listening practices through *Sound Sense*.

The hour-long classroom presentation includes interactive discussions with a trained facilitator, a cutting-edge partially-animated DVD that shows the basics of hearing and hearing loss prevention, and a sound meter exercise that demonstrates to the kids just how loudly they are listening to their music. Teachers and students love the program and an outcomes study by UBC and St. Paul's Hospital revealed that youth receiving Sound Sense retain the prevention messages and increase their use of earplugs.

Both our *Sound Sense* and Medical Research programs are funded by corporations, foundations and individual donors who care about protecting our gift of hearing and expanding the frontiers of hearing science.

At THFC, we are encouraged by the support we receive for *Sound Sense*, but we still have a long way to go. All Canadian parents and the general public need to understand the far-reaching, devastating impact of noise overexposure on quality of life; we believe that effective education requires a partnership between hearing health non-profit organizations and governments, both federal and provincial. An effective collaboration would allow us to reach every child and every parent with the message that hearing is a precious gift that can and should be safeguarded for life.

REFERENCES

1. Thorpe L, Salant G. Hearing Loss Prevalence and Risk Factors among Older Adults in the United States. J Gerontol A Biol Sci Med Sci 2011.. doi:10.1093/gerona/glr002.
2. Agrawal Y, Platz EA, Niparko JK. Prevalence of Hearing Loss and Differences by Demographic Characteristics among US Adults. Arch Intern Med;2008;168 [14]:1522–30.
3. Shargorodsky J, Curhan SG, Curhan GC, Eavey R. Change in Prevalence of Teenage Hearing Loss. JAMA 2010;304(7):772–8.

Canadian Hearing Report 2012;7(3):24-25.

CHS | SCO
CANADIAN HEARING SOCIETY
SOCIÉTÉ CANADIENNE DE L'OUÏE

More Than Just A Pretty New Logo – The Canadian Hearing Society

By Chris Kenopic
CHS President and CEO

You may know us: The Canadian Hearing Society. And perhaps our acronym: CHS? You know we are a trusted name in hearing health care. But what you may not know is the full breadth of our services

We've been around since 1940, responding at that time to veterans with hearing loss looking for hearing health care and employment. Founded as the National Society of the Deaf and Hard of Hearing, The Canadian Hearing Society (CHS) is a not-for-profit organization and the leading provider of **services, products, and information that remove barriers** to communication, for people who are culturally Deaf, oral deaf, deafened, and hard of hearing. CHS offers more than 18 programs and services to accomplish this mission through a network of 28 offices. Here is just a snapshot of our services.

Hearing Health Care
- hearing testing
- hearing aid sales
- speech-language pathology
- aural rehabilitation
- hearing help classes
- communication/assistive listening devices

Counselling Services
- outreach and counselling to older adults
- general and mental health counselling
- addiction and court diversion services
- outreach to children, youth and families

Employment Consulting
- assistance with job search
- employment supports
- employment resources

Education Programs
- sign language instruction
- literacy training
- information and public awareness

Accessibility Services
- American Sign Language (ASL)-English, la langue des signes québécoise (LSQ)-French interpreting (on site and video remote interpreting)
- Communication Access Realtime Translation (CART)
- accessibility consulting
- communication devices
- workplace accessibility
- conference accessibility coordination
- video conferencing

THE CHS HEARING HEALTHCARE INITIATIVE

We are working to move hearing health care onto the agenda of government. In partnership with six other organizations, as well as research representatives from Canadian universities, CHS is dedicated to promoting hearing health.

Our partners include: Association of Hearing Instrument Practitioners (AHIP); Canadian Academy of Audiology (CAA); Canadian Hard of Hearing Association (CHHA); College of Audiologists and Speech-Language Pathologists of Ontario (CASLPO); The Hearing Foundation of Canada (HFC); Ontario Association of Speech-Language Pathologists and Audiologists (OSLA).

From unmanaged hearing loss in older adults, and correlations between hearing loss and other conditions, to noise-induced hearing loss, and "older ears" on younger adults, we are asking government to move towards a hearing healthcare initiative and to integrate hearing loss into existing strategic health programs.

WE HAVE A POSITION

CHS responds to innovative technology, research, and issues in a number of

position papers. You can find the CHS position on the following topics on the CHS website at chs.ca: Accessibility and Accommodation, Discrimination and Audism, Visual Alarms and Notification Systems, Noise Pollution, Disability Tax Credit as it pertains to hearing loss, Access to Language and Language Acquisition for Children who are Deaf and Hard of Hearing, and Continuum of K-12 Educational Placement for Students who are Deaf and Hard of Hearing

REMOVING BARRIERS / BARRIER-FREE EDUCATION

CHS has worked with the Ontario Ministry of Education to provide school facility reviews and awareness training to improve access in the classroom for students who are Deaf and hard of hearing. We do outreach to schools to conduct hearing screenings. We also work with youth with hearing loss to transition them from school to employment.

SAFETY FOR ALL

Two crucial projects of CHS are equitable 9-1-1 services and fire safety for all. Is 911 accessible to you? If you are culturally Deaf, oral deaf, deafened or hard of hearing, the answer is most likely, "No." In 1968 in the United States and in 1972 in Canada, 9-1-1 services were established and designed for oral – aural communication. Work is being done to create Next Generation 9-1-1 (NG-911) and CHS is participating to ensure that Deaf people and people with hearing loss have equitable, accessible NG-911 services. In the meantime, several CHS offices have assisted regional 9-1-1 with a registration process whereby deaf and hard of hearing community members can register with police services, and in the event of a 9-1-1 call, emergency response units will be alerted that the resident is deaf or has a hearing loss.

CHS also continues to be tireless in its fight to have changes made to legislation with regards to visual fire alarms – *accessible* fire alarms that save lives. Through numerous letters to government, full support from fire departments across Ontario, a press conference held at Queen's Park, and a letter-writing campaign, CHS is asking government to expand on its fire safety legislation and mitigate the inequitable costs of installing visually accessible alerting devices.

NOTHING ABOUT US WITHOUT US

CHS is governed by a volunteer board of directors, the majority of whom are Deaf, deafened or hard of hearing. Deaf, deafened, hard of hearing and hearing staff and management work alongside each other to provide services and meet the needs of our communities.

CHS is funded by a combination of government and United Way grants, and fees for service from social enterprise activities, which are reinvested into the society. In addition, we rely on and thank our donors whose generosity and commitment support our services.

JOIN OUR QUEST

From "Friends of CHS" and our butterfly donor societies, to *CHS Quest*, our annual smartphone scavenger hunt and race fundraiser, CHS is grateful to the participation and support of its volunteers, members, and donors.

To learn more about CHS, our services and programs, how to become involved or donate, **visit chs.ca**

Charitable Registration number: 10684 6926 RR0001

Making a difference in the lives of people with hearing loss.

Canadian Hearing Report 2012;7(3):26-27.

Tinnitus Association of Canada

The Tinnitus Association of Canada

By Peter Austen
President, Board of Directors

"The aim of the Tinnitus Association of Canada is a cure for the millions of people worldwide who have this affliction." Peter Austen

The Tinnitus Association of Canada is operated on a voluntary basis, with the guidance of a Board of Scientific Advisors. We have learned about tinnitus from our own experiences and by talking and corresponding with thousands of people who have been in touch with us over the past 20 years. We also publish newsletters and offer personal help with practical advice on ways to modify tinnitus and reduce the distress that it causes.

Additionally, we respond to individual inquires about problems related to tinnitus. As the current president, I respond to these individual inquires personally as soon as possible with all the latest up-to-date information. We receive about 4–10 inquires per week and keep in close touch with people who are suffering badly from this "Devil's symphony." Elizabeth Eayres, former president, also answers some inquiries. This personal touch is our mainstay!

We also exchange information with other national and international tinnitus organizations and keep in touch with the latest research into treatments and a cure for chronic tinnitus. Just talking about it makes it worse! There are self-help groups all across Canada and are listed on the website.

The Tinnitus Association of Canada encourages a much more active interest in tinnitus by health professionals, especially by audiologists and general practitioners as we advocate for an inter-disciplinary approach to its treatment. As well, we are trying to encourage audiologists to better integrate hearing aids with blocking out tinnitus. As well, **research is ongoing into the link between cessation of tinnitus and better hearing.**

We thank you for this opportunity to appear in *The Canadian Hearing Report* and welcome you to visit our website at http://www.kadis.com/ta/tinnitus.htm

Canadian Hearing Report 2012;7(3):28.

CHIP – Communicaid for Hearing Impaired Persons

By Dale Bonnycastle, MSc
Audiologist | Executive Secretary CHIP

CHIP – Communicaid for Hearing Impaired Persons is a Montreal-based group that offers support and educational services to persons who are hard of hearing and their families. Chip has been in existence since 1979 and evolved from a hospital-based aural rehabilitation program. In 1979 I was an audiologist at the Queen Elizabeth Hospital in Montreal. I realized quickly that persons with hearing loss needed more than assessments and the brief counselling that could be done in a hospital appointment. I wanted to organize a group for persons with hearing loss with a self help emphasis. This group would be a place where clients could share their difficulties in an environment where everyone is in the "same boat." The goal of these sessions was to come up with constructive solutions, to support each other and learn from each other. Working with McGill University audiologist Marilyn French St. George and McGill audiology students, and a small group of 14 enthusiastic hard of hearing adults, these meetings morphed into a independent organization for the hard of hearing run by the hard of hearing, with a charter, bylaws , funding, and an executive.

There is an expression "You have come a long way baby." This is certainly the case with CHIP. For over 30 years now they have organized workshops, presentations, lectures, courses, and other events to educate the public about hearing loss and advocate for the hearing impaired community. They have lobbied, lectured and done countless outreach work in the Montreal area. Thanks to them hearing loss has received media attention and is less the invisible handicap.

Since 1982, CHIP has been located at the Mab-Mackay Rehabilitation Center, 3500 Decarie Blvd, soon to be relocated at 7000 Sherbrook St. West .(the Montreal Association for the Blind site). CHIP continues to grow and evolve. Presently the following programs are now offered:

1. Speechreading classes from beginners to advanced levels.
2. A "Hear" program (hearing education for aural rehabilitation.) This is a six session lecture series which covers different aspects of hearing loss, for ex. medical, psychosocial impact, information on amplification, technical aids, and communication strategies.
3. There is a Technical Resource Center where hard of hearing persons can learn about the many different assistive devices available.
4. There is a film program where captioned feature films are screened.

The CHIP publication, the *Communicaider* comes out twice a year, spring and fall, and outlines all programs in detail. Presently CHIP membership has grown to approximately 750 members.

Persons interested in contacting CHIP can do so by phone, (514-488-5552, local 4500) fax (514-482-4536) and e-mail: info@hearhear.org. Their website is www.hearhear.org.

Canadian Hearing Report 2012;7(3):29.

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By Calvin Staples, MSc
CStaples@conestogac.on.ca

I often state I am an audiologist who strives to provide my patients the best support for their hearing health care related needs. Our patients demonstrate a variety of different concerns; hearing loss, tinnitus, auditory processing, balance and dizziness, hearing loss prevention, or all of the above. I try to provide support for all of these areas, but periodically I am stumped. The feeling of being unable to answer a question a patient may have can be frustrating, but I am sure it is not as frustrating as the patient may feel. At these moments I refer or consult with another professional that is more skilled in the area to manage my patients concerns. The blogs presented here are geared towards topics that enhanced my ability to provide greater patient support and provide me a deeper understanding for some of the concerns our patients present clinically that are not directly related to sensorineural hearing loss.

COFFEE AND THE VESTIBULAR PATIENT

By Alan Desmond

A few weeks ago, my friend and blog editor, Dr. Holly Hosford Dunn posted a blog about the pros and cons of drinking coffee. I love my morning home-brewed Starbucks, yet I have told many patients over the years to avoid caffeine if there was any suspicion of Meniere's disease. It got me thinking. Where is the evidence? Is this unfounded conventional wisdom, or can we assure our patients that reducing caffeine will make a positive difference for them? Hmmm… Caffeine is a diuretic, and we recommend diuretics as a treatment for patients with suspected Meniere's disease, yet we tell them to avoid caffeine. I think a little online detective work is in order.

FIRST STOP – HOW EFFECTIVE A DIURETIC IS COFFEE?

I found the following Q and A on the Mayo Clinic website.

Katherine Zeratsky, R.D., L.D. is a registered dietician working at the Mayo Clinic in Rochester, MN Question: Caffeine: Is it dehydrating or not?
I've been seeing ads that say cola and coffee drinks hydrate you as well as water does. Is this true?

Answer: It is true. Researchers used to believe that caffeinated drinks had a diuretic effect. This means that you would urinate more after drinking them, which could increase your risk of becoming dehydrated. Recent research shows that this is not true and that caffeine has a diuretic effect only if you consume large amounts of it – more than 500 to 600 milligrams (the equivalent of 5 to 7 cups of coffee) a day. Still, caffeinated drinks can make you jittery, sleepless, or anxious. Water is probably your best bet to stay hydrated. It's calorie-free, caffeine-free, inexpensive, and readily available.

Okay, so the diuretic effect of coffee is negligible.

SECOND STOP – ARE OTHER VESTIBULAR SPECIALISTS ALSO RECOMMENDING REDUCED CAFFEINE INTAKE FOR SUSPECTED MENIERE'S PATIENTS?

In addition to other sources, I checked on the website of Dr. Tim Hain, A Neurologist at Northwestern University. His website is a major source of well-researched information for both patients and professionals. I found this excerpt regarding a recommended diet:

"Avoid caffeine-containing fluids and foods (such as coffee, tea and chocolate). Caffeine has stimulant properties that may make your symptoms worse. Caffeine also may make tinnitus louder. Large amounts of caffeine may trigger migraine."

Well, I am not tackling tinnitus today, though my other friend and blogger-colleague Bob Traynor has done so in several posts. But I did learn that nearly every source I found recommends reduced caffeine for Meniere's patients.

SO, THE THIRD STOP FOR TODAY ... IS THERE EVIDENCE TO SUPPORT THE WIDELY HELD BELIEF THAT THERE IS A CONNECTION BETWEEN CAFFEINE AND VESTIBULAR PATIENTS?

My background in writing articles and books leads me directly to PubMed, a clearinghouse for professional peer reviewed journal articles. I type in "caffeine" and" Meniere's disease," and

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here is what I found:

Yes, that is two lines of nothing pertinent. But, I did run across an interesting article discussing the differential diagnosis and treatment for both Menieres' disease and migraine.

My thought process then steers towards wondering about migraine patients, who are so often confused with Meniere's patients.

IS THERE ANY EVIDENCE THAT CAFFEINE MIGHT TRIGGER EPISODES OF VERTIGO IN MIGRAINE PATIENTS?

The above mentioned article recommends reduction of caffeine to avoid migraine symptoms. So, this time, I check in with the Cleveland Clinic website to read up on migraine and caffeine. Here is what I found:

"Caffeine: Excessive caffeine consumption or withdrawal from caffeine can cause headaches when the caffeine level abruptly drops. The blood vessels seem to become sensitized to caffeine, and when caffeine is not ingested, a headache may occur. Caffeine itself is often helpful in treating acute migraine attacks."

CONCLUSION?

Both migraine and Meniere's disease treatment falls into the scope of practice of a medical doctor, usually a neurologist or otolaryngologist (ENT). I am neither, so I invite any reader that can offer a clearer explanation and/or some evidence that I have been unable to locate.

http://hearinghealthmatters.org/dizzinessdepot/2012/coffee-and-the-vestibular-patient/

LNAC AND HEARING LOSS PREVENTION FROM LOUD MUSIC

By Marshall Chasin

This week's blog is written in the form of a one page information article that can be given to our patients, or in public education materials about hearing loss prevention. I would suggest leaving out the first paragraph which talks about the recent retirement of Dr. Donald Henderson and start with the paragraph "All cells have a …"

Last week I attended a Noise Induced Hearing Loss Colloquium in honour of Dr. Don Henderson's retirement. A lot of what we know about hearing loss prevention from loud noise (and loud music) comes from Dr. Henderson's work, and that of his many students and colleagues over the past 40 years. Personally I don't think that Don will ever fully retire but who knows? I have been wrong (once or twice before). One of Don's lasting contributions will be his work on antioxidants for the prevention of hearing loss from loud noise and music.

All cells have a metabolic process whereby they take in certain chemicals, and expel other chemicals. Even though the metabolic process is very efficient, it is not perfect, and when the conditions are not optimal for the cell, the entire system degrades. A side effect of non-optimal metabolism is the creation of oxygen molecules that are ions- also known as free radicals or Reactive Oxygen Species (ROS). It is this proliferation of ROS that can damage the structure and chemistry of any bodily system, and this includes the hearing mechanism.

Anti- oxidants are "mops" that can remove many of the ROS molecules from the body. And one whose name has been associated with Donald Henderson is N-acetyl-L-cysteine (L-NAC). L-NAC can effectively undo many of the deleterious effects of an over active metabolism that may be caused by a range of phenomena such as loud noise and loud music.

A "mop" that is only used for kitchen floors will not be useful if it can't be moved over the washroom floor. An anti-oxidant that can't get to where it is required will have no beneficial effect. A "vector" or other mechanism must also be used to direct the anti-oxidant to where it is needed. In the case of L-NAC it does seem that it can get to where it is required but more research is being performed to verify this. Just because a food is high in anti-oxidants does not make it good for us. Caution should be exercised when evaluating whether an anti-oxidant is potentially useful or whether it is merely marketing.

L-NAC is only one of several anti-oxidants that can absorb or mop up many of the free radicals that are the side effect of a cell's normal metabolic requirement. This is not the only anti-oxidant and there are others such as Src

(pronounced 'sarc"). Different research teams are evaluating these different approaches. L-NAC (and many of the other anti-oxidants being studied) have been known for years and had been used quite effectively in hospital emergency departments for people who have overdosed with Tylenol. L-NAC acts to absorb the toxic elements that can accrue in the liver.

Other chemicals and vitamins have also shown to mitigate hearing loss from loud noise or music and this includes vitamins A, C, and E, as well the element magnesium. Each of these vitamins has a slightly different mechanism. Magnesium functions to improve blood supply which may be compromised with a stressed metabolic system. Other chemical, or chemical combinations, have been shown to alter the transport of certain molecules across cell boundaries, thereby altering the susceptibility of the hearing mechanism to acoustic trauma from loud noise or loud music. Although this is currently being studied, there may be a beneficial effect if an anti-oxidant such as L-NAC is combined with certain vitamins and other chemicals.

L-NAC is currently going through the different phases of approval by the FDA and it is estimated that a commercially available pill that can be taken prior to going to a rock concert or any noisy activity will be available with 2 years.

It is to be noted that is not a cure for those with already existing hearing losses; just as one more preventative measure that can be used to minimize the potential of hearing loss.

http://hearinghealthmatters.org/hearthemusic/2012/l-nac-and-hearing-loss-prevention-from-loud-music/

ADDITIONAL READING: REDUCING OTOTOXICITY FROM CANCER TREATMENT IN CHILDREN

By Judy Huch

http://hearinghealthmatters.org/hearinprivatepractice/2012/reducing-ototoxicity-from-cancer-treatment-in-children/

CLASSROOM LISTENING WITH COCHLEAR IMPLANTS

By Jane Madell

http://hearinghealthmatters.org/hearingandkids/2012/classroom-listening-with-cochlear-implants/

CALENDAR OF EVENTS

JUNE 2012

June 21–24
Hearing Loss Association of America (HLAA)
Providence, Rhode Island
http://www.hearingloss.org/content/convention

June 29–July 12
Alexander Graham Bell Association for the Deaf and Hard of Hearing
Scottsdale, Arizona
http://nc.agbell.org//Page.aspx?pid=1338

AUGUST 2012

August 8–12
International Hearing Aid Research Conference 2012
Lake Tahoe, California, USA
http://www.hei.org/ihcon/

August 15–18
SayWhatClub (SWC) - Internet support group for adults with hearing loss:
Salt Lake City, Utah
http://www.saywhatclub.com/events/SLC-con/SLC-con.html

August 19–22
INTER-NOISE 2012
The theme of the congress is Quieting the World's Cities, and we plan to hold special workshops highlighting city noise codes, and the New York City noise code in particular.
New York City, NY • http://www.internoise2012.com/

OCTOBER 2012

October 10–12
Acoustics Week in Canada Banff Conference
http://www.caa-aca.ca/conferences/Banff2012/index_portal.html

October 24–27
Annual Canadian Academy of Audiology (2012 CAA) Conference and Exhibition
Ottawa, ON, Canada
www.canadianaudiology.ca/2012-conference/home.html

FEBRUARY 2013

February 21–23
NCAC 38th Annual Hearing Conference: "The Art of Hearing Conservation"
Call for Papers deadline: July 23, 2012
http://www.hearingconservation.org/displayemailforms.cfm?emailformnbr=177863

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For further information and nomination form visit
www.canadianaudiology.ca/awards

Looking Back on 7 Years with a Cochlear Implant

By Peter Stelmacovich
Peter.Stelmacovich@phonak.com

It has been about 7 years since I received my cochlear implant (CI). As a late deafened adult and audiologist, I frequently get asked many questions such as

1. What does the cochlear implant sound like? How does it compare to a hearing aid?
2. What does music sound like through a CI?
3. Why do you wear a hearing aid on the other side?
4. What can an FM system do for a CI user?

Right now, the CI sounds fairly "normal" to me. But it did not start out this way. When I was first hooked up to the external components, the CI sounded only like beeps and chirps. The best analogy would be that it was like listening to R2D2 from Star Wars. I was completely unprepared for this. I had watched some videos sent to me from various CI manufacturers, some which had CI recipients describing how they "heard their granddaughter" on the first day. Turns out that being able to understand speech on the first day of CI use is the exception and not the norm. Kudos need to be given to Suzanne Stewart and the Cochlear Implant Team at Sunnybrook Hospital for working very hard at keep my expectations realistic. Following a week or two of R2D2 - like sounds, the CI began to sound like "Sammy the Snake" hissing words into my head. Still unpleasant, but it was starting to sound like actual words. This was encouraging.

Over the next 6–8 weeks, the sound continued to improve. Words were starting to emerge, although they all still sounded very cartoon-like. For example, it was sounding like Alvin from the Chipmunks had inhaled a helium balloon, then later like Alvin had ditched the helium. I began to feel more at ease as I could clearly see that we were on the right track. I even found it in me to laugh at the weird way things sounded. I recall listening to the classic Elton John song "Your Song" and wondering when Elton turned into Daffy Duck.

Running parallel to improvements in sound quality were improvements in word identification. This was also very encouraging. After about 6 months post-implantation, I felt I received my money's worth for going through with this. I was clearly hearing and communicating better than I was prior to implantation.

Two areas remained problematic: Music perception and hearing in noise. I was trying, as much as I could, to not use the hearing aid in my non-implanted ear. However, when I listen to music with just my CI, it sounded tinny. Furthermore, as a bass guitar player, the bass guitar sounded completely wrong. Every low pitched note sounded almost the same.

To resolve this, I reprogrammed my hearing aid to just pick up low pitches only. I have little, if any high pitched hearing left in my non-implanted ear. Even the low pitched hearing is not great: 90 dB at 250, dropping down to 120 dB at 1500 Hz. It's practically a left corner audiogram. When I listen to sounds with just a hearing aid, everything sounds really bad including music. Yet when I combine this little bit of acoustic hearing from the hearing aid with the electrical stimulation from the CI, I get what I like to call Gestalt Hearing in which the whole is greater than the sum of the parts.

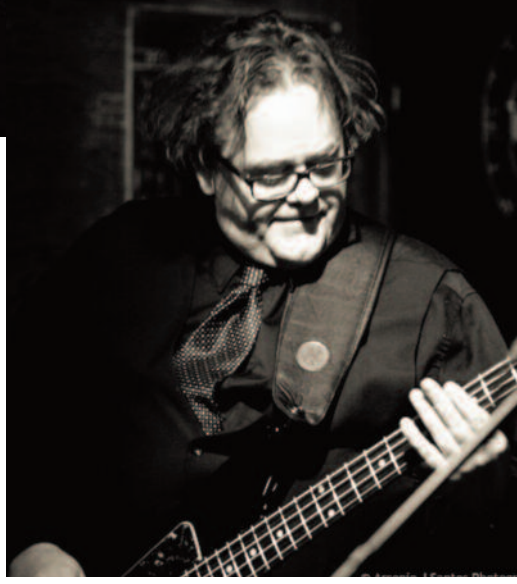
Thus a hearing aid in a non-implanted ear provides additional low frequency cues that significantly enhance music perception. It turns out I am not alone. A study by El Fata et al. looked at 14 adults who continued to use a hearing aid in the non-implanted ear after getting a CI.[1] Subjects were given a music perception task in 3 conditions: CI only,

HA only, and Bimodally CI + HA. Subjects with sufficient low frequency hearing did better in the Bimodal condition. Another study by Gfeller et al. in 2007 compared CI users with electrical only stimulation compared to hybrid CI users, who get both electrical stimulation for the high frequencies and acoustic stimulation for the low pitches.[2] The hybrid CI users clearly outperformed the traditional CI users on pitch perception tasks. Note that not everyone has sufficient low frequency hearing for a hybrid implant, so this is not an option available to everyone.

The hearing in noise issue was more easily addressed. All the CI companies seem to claim good hearing in noise with their respective devices. However, the studies clearly show that using an FM with a CI significantly improves speech understanding in noise. Jace Wolfe at Hearts for Hearing in Oklahoma has done some great work demonstrating this. I very quickly added FM to both my CI and HA and have been enjoying the many benefits from combining these three technologies.

These benefits include:

1. Improved speech understanding in noisy restaurants, bars and cafes.
2. Improved speech understanding on trains, automobiles and other forms of transportation.
3. Listening to music with an iPod. Note the FM system sends a wireless signal to both the CI and the HA.
4. Wireless monitoring for live music when playing bass in my band.
5. Better understanding of coaching during archery, kayaking, skiing and other sports lessons.
6. Better understanding in meetings.
7. Better understanding of tour guides in art galleries and museums.
8. Connecting to laptop computer for internet based learning and meetings.
9. Connectivity to mobile phone.
10. Better enjoyment of television.



REFERENCES

1. Fraysse B. How Much Residual Hearing Is 'Useful' for Music Perception with Cochlear Implants? Audiol Neurootol 2009;14(Suppl 1):14–21. Epub 2009 April 22.
2. Gfeller K, Turner C, Oleson J, et al. Accuracy of Cochlear Implant Recipients on Pitch Perception, Melody Recognition, and Speech Reception in Noise. Ear & Hearing 2007;28(3):412–23.

Canadian Hearing Report 2012;7(3):36-37.

Does Musical Training Help Minimize Age-Related Declines in Auditory Processing?

By Lendra Friesen PhD, and Samidha Joglekar, MClSc (C), Audiologist, Reg. CASLPO
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Auditory processing is a complex brain phenomenon that is essential to us in our everyday lives as communicative beings. The under-standing, application, and appreciation of speech, language, and music are largely dependent on the ability of the auditory system to precisely decode, categorize, and interpret sound. However, it is well-recognized that with age, there is a decline in the auditory processing of spectral and temporal cues necessary for understanding speech in quiet. This processing is even more affected when listening to more complex sounds such as speech in noise or music.[1] Recently, there has been compelling research to show that musical training can influence important changes in the brain, making the musician's brain an exceptional model for studying neuroplasticity.[2,3] Perhaps even more important, from the perspective of someone who is aging, research is suggesting that music can have a, "biologically powerful impact on the aging nervous system"[4] and can modify the system to be more resilient against age-related degeneration in neural timing.[3,4]

Of particular interest is research that delves into the structural and functional changes that are induced in the brain's auditory system with musical training. For example, studies have shown that musicians have a larger volume of grey matter in motor, auditory, and visuo-spatial regions of the brain thought to be important for playing an instrument.[5,6] A musician's brain is also more able to selectively enhance the information-bearing elements of auditory signals, as well as extract regularities of a signal.[5] Musicians also demonstrate more robust evoked potentials in the cortex and brain stem in response to pitch changes during speech processing compared with non-musicians.[7–9] These neural changes have practical implications and provide evidence that people who actively engage in music are able to selectively groom auditory and cognitive skills that support better working-memory, improved music processing, and enhanced performance in the speech and language domain.[3,4,8,10]

Evidence from longitudinal studies in which children have been randomly assigned to musical training and then periodically assessed have revealed that children who receive regular training in music have enhanced brain responses to tenuous pitch changes in musical stimuli.[3,10] Training influences structural changes in auditory and primary motor areas that translate into better auditory and motor skills respectively.[3,10] To sum up, current data suggest that musical training can cause important structural and functional changes in the brain throughout our lifetime, and these changes are significant for the development of auditory skills.[5–7,9,10]

But, what about the aging auditory system? It is well known that aging upsets the synchronous activity of complex neural networks in the auditory system, thereby diminishing the nervous system's precision in encoding sound.[3,4] Can brain changes induced by musical training earlier in the lifespan actually help to mitigate the declines in neural precision and auditory processing that naturally occur with age?

In order to investigate this question, researchers at the Auditory Neuroscience Laboratory at Northwestern University examined and compared subcortical speech-evoked responses in groups of young and old musicians and non-musicians.[4] They chose to use the 170-ms-6-formant consonant vowel syllable */da/* as their stimulus, which contains a steady fundamental frequency except for an initial 5 ms onset burst, a 50 ms formant transition (d), and a 120 ms vowel (a). To investigate neural timing, they identified peaks in the measured subcortical responses generated by "synchronous neural firing" to this speech syllable */da/*.

Study results revealed both effects of aging and musical experience on the neural mechanisms responsible for encoding different parts of the stimulus. In both groups aging was found to negatively impact neural responses to noise bursts

(i.e., onset) and transient frequency sweeps (i.e., formant transitions) but not stable frequency components (i.e. vowels).[4] This finding is generally consistent with the observation that older adults have more trouble with stop consonants and less trouble with vowel sounds as their auditory processing changes over time.[4,11] Interestingly, older non-musicians showed significantly more delay in their neural responses to the formant transition compared with older musicians.[4] The study also found that older musicians were performing much like their younger counterparts, whereas older non-musicians had significantly delayed responses compared to younger non-musicians. The data seems to suggest that musical training eases the effects of aging on the neural encoding of formant transitions specifically. Overall, these findings suggest that musicians demonstrate less age-related neural delay than non-musicians, making a strong argument for the potential protective nature of musical training on the aging auditory system.[2–4]

It is suggested that future research continue to explore the neural mechanisms that underlie the brain changes that occur with musical training, as well as consider other forms of auditory training that may support "neural resilience" across the lifespan.[4] Children should be encouraged to participate in musical ventures and efforts should be made to keep music programming in the educational system, for there is no doubt that music influences us in very compelling ways.

For more information about the Auditory Neuroscience Laboratory please visit www.brainvolts.northwestern.edu.

REFERENCES

1. Chandrasekaran B, Kraus N. Music, Noise-Exclusion, and Learning. Music Percept 2010;27:297–306.
2. Gaser C and Schlaug G. Brain Structures Differ between Musicians and Non-musicians. J Neurosci 2003;23:9240–5.
3. Kraus N, Chandrasekaran B. Music Training for the Development of Auditory Skills. Nat Rev Neurosci 2010;11:599–605.
4. Parberry-Clark A, Anderson S, Hittner E, Kraus N. Musical Experience Offsets Age-Related Delays in Neural Timing. Neurobiology of Aging 2012. Article in press.
5. Hyde KL, Lerch J. Norton A, et al. Musical Training Shapes Structural Brain Development. Journal of Neuroscience 2009;29:3019–25.
6. Pantev C, Oostenveld R, Engelien A, et al. Increased Auditory Cortical Representation in Musicians. Nature 1998;392:811–14.
7. Magne C, Schon D, Besson M. Musician Children Detect Pitch Violations in Both Music and Language Better than Nonmusician Children: Behavioural and Electrophysiological Approaches. J Cogn Neurosci 2006;18:199–11.
8. Besson M, Schon D, Moreno S, et al. Influence of Musical Expertise and Musical Training on Pitch Processing in Music and Language. Restor Neurol Neurosci 2007;25:399–10.
9. Musacchia G, Sams M, Skoe E, Kraus N. Musicians Have Enhanced Subcortical Auditory and Audiovisual Processing of Speech and Music. Proc Natl Acad Sci USA 2007;104:15894–898.
10. Moreno S, Marques C, Santos A, et al. Musical Training Influences Linguistic Abilities in 8-Year-Old Children: More Evidence for Brain Plasticity. Cerebral Cortex 2009;19:712–23.
11. Abou-Khalil R. Age Differences for Stop-Consonant And Vowel Perception In Adults. J Acoust Soc Am 2001;110: 2156–66.

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The "Mystery" of the 85

Alberto Behar, PEng, CIH
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INTRODUCTION

Sorry, I forgot to clarify that the 85 meant 85 dBA. And then, why the mystery? Well because it sounds mysterious: above 85 you lose your hearing. Below 85, you are perfectly safe. And why dBA, since most sound level meters allow you to measure in dBC? There are clearly some questions that need to be answered!

dBA AND dBC

Setting the limits for risk from exposure to noise was the result of epidemiological studies examining hundreds of data bases containing data of noise exposures and hearing losses. In addition, many studies were performed to relate the Temporary Threshold Shift (TTS) and noise exposures. In all of them, the spectra of the noises were also looked at to determine if there is something special that influences the progress of the hearing loss.

It was found that there is a remarkable relationship between the hearing loss and the measurements performed using the dBA scale – something valid for most industrial noises. This is the reason why all regulatory documents (from bylaws to municipal regulations, to standards) require measurements to be done in dBA.

It has to be pointed out that measurements using the dBA scale also applies to environmental and office noise. Results are also related to non-occupational noise effects such as annoyance, work interference, sleep interference, etc.

WHAT ABOUT THE "85"?

Here the issue is different. The single number of 85 is a convenient way of assigning a simple, one-number limit. More than "magic" it is a compromise, for the benefit of an easy way of measuring and assessing noise.

Unfortunately, because human beings are not equal, this limit does not apply to all and every one. Below are some of the reasons.

Susceptibility

The organ of hearing is not exactly the same in every person. That is why the hearing of some people is affected more than others when exposed to the same noise. The consequence is that they experience larger hearing losses.

Gender

It has been found that men are more susceptible to noise than women.

Frequency

Hearing loss is not the same at all frequencies. Due to the shape and size of the ear canal, there occurs a resonance phenomenon, where frequencies around the 2700 Hz–3000 Hz are amplified. The result is a major hearing loss at about half an octave above this frequency, which is clearly seen in an audiogram (Figure 1).

Daily/Hourly Variations of the Noise Level

The measurement of noise levels in the workplace is affected by the instrument's error, by the location of the microphone with respect to the head of the exposed person and, most of all, by the variations of the noise level during the workday. When using a dosimeter, the daily variations are taken care of; however there are also the variations of the noise levels between different days – very few industries have identical noise levels days in and days out.

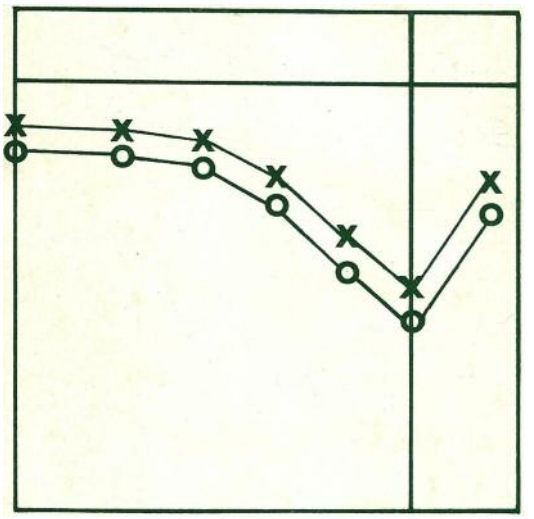

Figure 1. The "notch" typical of a noise-induced hearing loss.

SO, IS THERE A SAFE LIMIT THAT COULD APPLY TO EVERYONE?

Following is a table of projected hearing losses as per three different authorities: the International Organization for Standardization (ISO), the Environmental Protection Agency (EPA) and the National Institute for Occupational Safety and Health (NIOSH).[1]

When looking at the table, the first

question to ask is why such large differences between the projected excess risks that are assigned by the different agencies. For example, as per ISO, 10% of the population exposed to 85 dBA will incur in a hearing loss of 25 dB (average of 500, 1000 and 2000 Hz) after 40 years, while for NIOSH this number is 15 dB and for the EPA, the number is 12 dB. Also, while for ISO and NIOSH, 80 dBA is a safe limit (0% risk), as per the EPA there is still a risk that 5 % of the population will suffer hearing loss.

The answer to that question is that the data in the table are the result of statistical calculations made on different populations. Meaning, that the data basis they were working are different. And that is something we mentioned above: people are not equal. Each data base is based upon noise level measurements at different workplaces and hearing tests performed on different people. To complicate the picture even more, all those data were combined with extensive questionnaires (different or each study) with questions on length of work and information on the workplaces the subjects have been working in.

The bottom line is that the content of the table are result of statistical manipulation of relatively "soft" data that have to be used with care. Most importantly, those ARE NOT data to be used on individual. They apply to group of exposed people and should not be used to predict the hearing loss of a particular person.

DO YOU WANT TO KNOW SOME MORE?

Here is the latest regarding prediction of hearing loss.[2] In this document, hearing losses are presented as a function of the length of exposure, of the frequency and of the percentage of the population that will experience the given hearing loss (in dB).

As an example, Table 1 presents the calculated hearing loss experienced by 5% of a male population (0.5 fractile) after 40 years of exposure to 85 dBA. We can see the following:

Frequency (Hz)	500	1000	2000	3000	4000	6000
H. Loss (dB)	0	0	2	5	7	4

Presenting hearing losses in such a way allows for the calculation of One-Number-Hearing-Loss as a mean value of losses at different frequencies.

Table 1. Noise Induced Hearing Loss from Exposure to 85 dBA

Frequency in Hz	NIPTS, in dB											
	Exposure time, in years											
	10			20			30			40		
	Fractiles											
	0,9	0,5	0,1	0,9	0,5	0,1	0,9	0,5	0,1	0,9	0,5	0,1
500	0	0	0	0	0	0	0	0	0	0	0	0
1000	0	0	0	0	0	0	0	0	0	0	0	0
2000	0	1	1	1	1	2	1	1	2	1	2	2
3000	2	3	5	3	4	6	3	4	7	3	5	7
4000	3	5	7	4	6	8	5	6	9	5	7	9
6000	1	3	4	2	3	5	2	3	6	2	4	6

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Using the above values, the mean hearing loss for the frequencies of 500, 1000, and 2000 Hz, will be (0+0+2)/3 = 0.67 dB. However, if we also take into account the loss at 3,000Hz, then the mean value will be (0+0+2+6)/4 = 2 dB. Finally, if we include the frequencies from 1 KHz through 4 KHz, the loss is 3.5 dB

In summary, the value of the One-Number-Hearing-Loss depends on the frequencies being chosen for the calculation.

CONCLUSION

1. The projected hearing losses are statistical numbers that apply to populations and not to individuals. In other words, don't expect that everyone will get the hearing loss stated in the table.
2. Even at 85 dBA, some people will experience hearing losses. In most cases they will be insignificant.
3. The only way of finding the actual hearing loss of a person is by performing an audiometric test.

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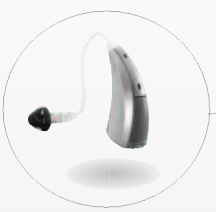

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