

What's New at McNeill Audiology

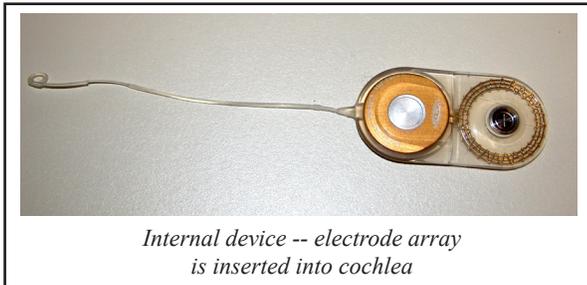
Twenty-Fourth Edition / Summer 2009

Cochlear Implants

by Kristina Plewes M. Sc., Aud. (C)

Imagine a world of deafening silence, only to one day hear your child or grandchild for the first time, the song of birds or rain pounding on the window. This can be possible with a device called a cochlear implant -- an electronic device that is surgically implanted in the skull bone behind the ear.

The cochlear implant consists of two parts; a surgically implanted internal component and external



equipment. The external equipment consists of a headpiece which is attached to the internal device



by magnetic attraction, a cable and a processor worn either behind the ear or 'pager style' on your belt. The implanted portion has an electrode array attached which travels through the middle ear space and is inserted into the cochlea, the snail shaped structure in the inner part of the ear. The implant works when sound enters the headpiece and travels along a cable to the processor where the sound is changed to an electronic code.

The electronic code is then sent back up the cable to the headpiece and across the skin by Radio Frequency (RF) to the internal device implanted in the skull. The internal device then sends the electronic code along the electrode array and directly stimulates the auditory nerve. The auditory nerve sends the code to the auditory cortex in the brain where it is interpreted as sound.

There are several factors which help to determine if someone is a cochlear implant candidate. One audiological factor to consider is the degree and type of hearing loss. Potential candidates include adults with severe to profound hearing loss in both ears and children with profound hearing loss in both ears. A second factor is extremely poor discrimination ability despite properly fitted hearing aids. The cochlear implant is only for hearing loss that occurs due to hair cell damage in the cochlea in the inner ear (sensorineural hearing loss) and not for hearing loss due to middle ear factors (conductive hearing loss).

Unlike a hearing aid which amplifies sound loud enough to help compensate for damaged hair cells in the cochlea, a cochlear implant acts to bypass the damaged hair cells to stimulate the auditory nerve directly. Only a small number of people have hearing loss significant enough to warrant a cochlear implant assessment. Some of the cochlear implant testing is conducted at McNeill Audiology (plus we carry the batteries required) but the main assessment happens at St. Paul's Hospital and Children's Hospital in Vancouver. For further information regarding cochlear implants, please contact McNeill Audiology. □

Ear Wax

by Edward Storzer, M. Sc., Aud. (C)

A couple of newsletters ago we included an article about cleaning ear wax from your hearing aids. We mentioned that many hearing aids have built in 'wax guards' that can be changed and other instruments require the use of cleaning tools such as a pick or a brush. Whereas that article was focused on keeping hearing aids clean, this current article is about **what you can do to help prevent the buildup of too much ear wax in the canal.**

Ear wax is a normal product of a healthy ear canal, and is made up of a secretion (called cerumen) from glands in the outer part of the ear canal mixed with dead skin, oils and perspiration. It serves to lubricate our ear canals, and is anti-bacterial, helping to prevent infection. Normally, ear wax will migrate to the outside of the canal and flake away, unnoticed. Sometimes, if one has narrow or bendy ear canals, the ear wax will build up and require a cleaning. Also if one uses a hearing aid, this can push the ear wax on the outside of the canal further in, also causing it to build up.

There are safe home methods to help prevent the buildup of ear wax. One is to occasionally place a small amount of oil (mineral oil or olive oil) into the ear canals at bedtime to soften up the ear wax, placing some cotton batten in the ear to help keep the oil in overnight. There are also over-the-counter bulb-type ear syringes that can be used to irrigate the ear canals with water. For some people, just allowing water to run into the ear canal during a shower is enough to prevent a buildup of ear wax.

If ear wax builds up to a point that results in reduced hearing, or causes blockage of your hearing aid, it will be necessary for a professional to have

Hearing Aids Get Better & Better

by Brent McNeill, M.A., Aud. (C)

Our previous newsletter featured the Unitron *Next* hearing aid, an intermediate level aid with a number of features which made it a good value for the dollar. We have continued to be thrilled with the performance and flexibility of this aid. However, Unitron has introduced the **PASSPORT**, an Advanced Technology hearing aid described by the manufacturer as "merging proven technology with revolutionary innovations".

The PASSPORT provides:

- ◆ Advanced technology for success in the most challenging listening environments;
- ◆ A new level of control for the client;
- ◆ Connectivity: The hearing aid can connect to devices such as cell phones, computers, televisions and provide clearer signals from these devices.

There is an automatic program with up to four 'destinations' to adjust to your current environment. In addition, there are up to three manual and two wireless programs available. The automatic program 'learns' the client preferences in the automatic program gradually and intelligently. This means that as the client makes changes, the computer will adjust the hearing aid automatically the next time the client is in this environment.

a look. An audiologist trained in ear wax management will often be able to clear it with an illuminated curette or by water irrigation. In some cases, the ear wax may be deep or impacted such that you will need to see a physician to have it removed. Patients with high risk factors (such as diabetes, outer or middle ear conditions, or use of blood thinning medications) may also be referred to a physician. One should never try to remove ear wax themselves with a cotton-tipped applicator or any other tool, as this will often

The hearing aid uses the same remote control as the Next series which provides flexibility for the client to adjust the hearing aid.

The PASSPORT is an advanced hearing aid particularly beneficial for two types of clients:

1. Active clients who are involved in social, business, and family activities and like to be connected to their computer and cell phone. They will often like to listen to music, television and attend live conferences and shows. To be used in this way, they will need some technological abilities to get the most out of the **PASSPORT** hearing aid. The remote control is used for most of the adjustments in the above situations. Also there is a dedicated device to connect to other technology.

2. In contrast to the above group the **PASSPORT** will benefit individuals that are unable to adjust the hearing aid themselves for whatever reason. The aid will do the adjusting for them and is top of the line for the automatic adjustments.

The aid is on the high end in terms of cost but for those people who need it, it could be of considerable benefit and a boost to those who struggle with the multitude of devices in our lives. □

result in further impaction or even damage to the ear canals or eardrum.

For hearing aid users that produce a lot of ear wax, managing it can be a challenging ongoing process because ear wax can plug a hearing aid such that it does not function effectively. Hearing aid cleanings can be a temporary solution, but in some cases it is advisable to book routine ear cleanings in order to prevent a buildup of ear wax that becomes more difficult to manage. □

Please Join Us In Welcoming Kristina to McNeill Audiology



Hello!

My name is Kristina Plewes and am the newest addition to McNeill Audiology. Some of you might recognize me as I worked behind the front desk in the summer of 1997 and 1998 at the office in Athlone Court. My experience inspired me to pursue a career in Audiology, graduating from the audiology program at the University of British Columbia in 2000. Following graduation, I moved to Edmonton and worked with a mainly pediatric population at the Glenrose Rehabilitation Hospital for five years. At the Glenrose I was involved with the cochlear implant team and in my quest to return to Victoria I accepted a position with one of the cochlear implant manufacturers, Advanced Bionics with whom I have worked for the past four years.

I am thrilled to now be the latest addition at McNeill Audiology and finally feel that I am 'home' and am looking forward to the new adventures ahead. I am primarily in the Oak Bay office and look forward to meeting you! ☐

The High Cost of Hearing Aids

By Andrea Chapin, B.Sc.

This spring a few letters appeared in the *Victoria Times Colonist* bemoaning the high cost of hearing aids. I would like to address these concerns.

Hearing aid cost is derived from manufactures' expenses and the service requirement from your audiologist. Hearing aids spend their days exposed to moisture and oil from your skin, and your ear is constantly trying to remove this foreign object by producing wax. Also, hearing aid electronics cannot be compared to TV's or other electronics because they must be infinitesimal so they can fit into the hearing aid shell. These factors, along with manufacturers' need to stay viable by constantly conducting new research and developing new technologies contributes to the cost of hearing aids. The manufacturer's also back their product and absorb the cost of full refunds during the trial period of your hearing aid plus repairs during the warranty period.

Even with all the research that goes into making a hearing aid, it cannot be pulled out of its box, put on, and fit to you perfectly. This can be frustrating as some people expect a hearing aid to work like their glasses, when you put them on and vision is restored. Sadly, this is not the case. A sensorineural hearing loss involves damage to the stereriocilia, or "hair cells". Hair cells are stimulated by sound and send the signal to the brain where they are interpreted. An individual with normal hearing has hair cells that resemble a grassy lawn and a sensorineural hearing loss can be

visualized as a desert, where the grass will not grow back.

It takes time to program a hearing aid to directly fit your hearing loss. First a hearing test is required to determine your hearing loss, and then an audiologist must determine what hearing aid will provide you with the greatest benefit. At your fitting the hearing aid is programmed depending on your requirements. Some hearing aids, once programmed will be completely automatic, where the hearing aids adjust as required, and others you can be in charge of program settings and volume control. The hearing aids' performance has to be tested to ensure it functions properly. After the fitting, follow up appointments are required. During these appointments, settings can be changed and in some cases it is necessary to try a different hearing aid. Adjusting to a hearing aid is a process, sometimes requiring many visits to your audiologist.

Hearing aids cannot cure a hearing loss, but they can improve quality of life. The longer a hearing loss is untreated the harder it can be to adjust to hearing aids. Untreated, hearing loss is linked to depression, anxiety, social isolation and less activity, feelings of irritability, insecurity and even dementia.

The initial cost of a hearing aid may seem high, but it is important to consider the service, the technology and the research that goes into your hearing aid. Here at McNeill Audiology we strive to work with you to ensure you receive the optimal benefit from your hearing aid. ☐

Research Assistance

Information about **hearing options, new technology, solutions for wax** and much more.
www.healthyhearing.com

Canadian Academy of Audiology
www.canadianaudiology.ca

Canadian Hard of Hearing Association
www.chha.ca

Consumer Corner of the Canadian Association of Speech-Language Pathologists and Audiologists
www.caslpa.ca/english/resources/consume_info_facts.asp

Widex
www.widex.ca

Phonak Corporation
www.phonak.com

Tinnitus Association of Canada
kadis.com/ta/tinnitus.htm

Unitron Hearing
www.unitron.com

Oticon /Phonic Ear
www.oticon.ca

ReSound
www.gnresound.ca

Island Deaf & Hard of Hearing
www.idhhc.ca

Musicians' Clinics of Canada
www.musiciansclinics.com/home.asp

Bone Anchored Hearing Aids and Cochlear implants
www.cochlear.com
www.advancedbionics.com

Description of the **anatomy of the ear, how sound and the ear interact:**
www.howstuffworks.com/hearing.htm

The Human Auditory Physiology Laboratory, U.B.C., Dr. David Stapells, Director
<http://www.audiospeech.ubc.ca/hap-lab/haplab.htm>

School of Audiology and Speech Sciences, U.B.C.
www.audiospeech.ubc.ca/

Change of Address or Name

I have changed my address my name my e-mail address

Name _____ (previous) _____

New Address _____

New Phone Number _____

New e-mail address _____

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For hearing solutions . . .

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