

Audiology Newsletter

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Issue 10

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Supercharged Hearing

The world's first hearing aid that uses a rechargeable battery has recently been launched.

The *ReSound Pulse* is a miniature, extremely discrete Behind-The-Ear (BTE) hearing aid that comes with a recharger. The recharger means the hearing aid is more convenient to use because wearers no longer have to fiddle with batteries. Each battery takes only five hours to charge, providing the wearer with 24 hours of use. Two batteries cost \$60 and with each battery providing 500 charges, this equates to a cost of \$60 every 18 months.

The *ReSound Pulse* aid is also packed with technology, delivering performance levels not seen before in the industry for users with mild to moderate high frequency hearing loss. The technology in this aid makes it the leader in enhancing *speech intelligibility* even in noisy environments. The aid also uses new technology known as *Virtual Windshield* that suppresses wind noise, making it ideal for people who enjoy outdoor activities. The aid has been developed by GN ReSound, one of the leading hearing aid manufacturers.

Advancements in hearing aid technology are rapidly happening and it is very reassuring to see the high quality of research and outcome measures keeping pace with the launching of products to the market.

Hear the World

Phonak (a leading hearing aid manufacturer) has partnered with tenor and conductor Placido Domingo and the Vienna Philharmonic Orchestra to launch *Hear the World*, a global initiative aimed at raising awareness about the importance of hearing and the impact of hearing loss.

Hearing loss is one of the world's most common disabilities, with more than ten percent of the world's population being hearing impaired. The consequences of hearing loss can be severe and greatly affect the quality of life. The goal of *Hear the World* initiative is to educate the public about the social and emotional implications of hearing loss and the available solutions for those with hearing impairment. As Valentin Chaperro, CEO of the Phonak Group explained, "today hearing is not perceived as an important topic. With *Hear the World*, we want to put hearing on the agenda and start a social dialogue. *Hear the World* wants to activate people to think about what it means not to be able to hear well, and what can be done to minimise its social and personal impact." Music is a universal language that goes beyond geographical, social and linguistic boundaries. It is the ideal medium to spread the message of *Hear the World*. Dr Clemens Hellsberg, president of the first violin of the Vienna Philharmonic says "we are very proud to be involved. After all, our world revolves around the sense of hearing."

To launch *Hear the World* results from a survey Phonak had commissioned were released, detailing more than 3000 American, French and German respondents' views about hearing loss. Highlights from this survey include:

- **What would people miss the most if they could not hear?** Germans ranked music first, the French valued conversation over music, and Americans showed a primary attachment to the sound of familiar voices.
- **Why won't people use hearing aids?** A majority (40%) felt the aesthetics and design of the aids dissuaded use. Another reason are the negative impressions that they believed the aids conveyed to others, such as advanced age and the fear they would appear handicapped.

These results confirm that people need education about hearing. Hearing loss and hearing aids continue to be stigmatised and both these issues aim to be addressed with *Hear the World*.

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Cochlear Limited Wins Gold in New York

Cochlear, the world leader in implantable hearing solutions, has been awarded Gold for the Nucleus Freedom cochlear implant system at the prestigious international Medical Design Excellence Awards (MDEA). The MDEA is the premier awards program for the international medical technology community, recognizing the achievements of medical product manufacturers and the many people behind the scenes—engineers, scientists, designers and clinicians—who are responsible for the groundbreaking innovations that are changing the face of healthcare. MDEA winning entries excel in the areas of product innovation, design and engineering achievement, end-user benefit, and cost effectiveness in manufacturing and healthcare delivery.

Cochlear's *Freedom* system was launched in 2005 with a number of breakthroughs in hearing technology and has since become the number one selling cochlear implant system worldwide. Some of the major new innovations include the first custom designed programmable DSP chip for an ear level speech processor; a splash proof membrane that enables the external electronics to withstand water; new sound pre-processing algorithms which improve hearing in previously challenging environments; and a unique modular design enabling the user to change in seconds the configuration of the device to wear behind the ear or on the body.

Cochlear implants are a routine treatment for adults and children with moderate-to-profound hearing loss. A cochlear implant is a technological device that bypasses the damaged inner ear hair cells and stimulates the hearing nerve directly, providing useful hearing and improved communication abilities to the implant user.

Cochlear Limited is publicly listed on the Australian Stock Exchange and pioneered the modern day cochlear implant. With its global headquarters in Sydney, Australia, Cochlear today operates in more than 70 countries supporting more than 100,000 recipients of its cochlear and bone conduction implant technology.

Cochlear Limited Announces \$270 million Chinese Order

A major healthcare organization based in Taipei has placed a \$270 million order for cochlear implants to supply in Taiwan and China over the next six years.

These cochlear implants are a donation by the Taiwanese organization and represents a truly great philanthropic gesture that will impact the lives of many thousands of profoundly deaf Chinese people and their families. The focus of the implant recipients will be young children.

In consultation with local hospitals, professional groups and government organizations, Cochlear will support and assist with training and skill development for surgeons, audiologists and speech therapists to help ensure the best possible outcomes.

The New Buzz in Hearing Aids

The *Ormia Ochracea* fly is a supercritter when it comes to hearing. Most flies have no sense of hearing at all, but this one can hone in on the sound of a chirping cricket to within two degrees—a feat unmatched by humans. That knowledge is now being studied for use in a new generation of supersensitive hearing aids.

Research from the University of Toronto suggests the *Ormia*'s ears function precisely the way an ideal hearing aid should, gauging the phase shift between the ears, and using the molecular equivalent of a directional microphone to filter out background noise.

The research team aims to develop a prototype hearing aid that imitates the fly's ears. They plan to build the world's smallest directional microphone and fit it into an In-The-Ear (ITE) hearing aid. The device could be on the market in five years.

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Stem Cell Therapy

Numerous strategies have been developed for the delivery of genes and stem cells into the inner ear in the last decade, and gene and stem cell therapy may soon be utilized in both the protection and treatment of hearing loss. Stem cell transplantation is an attractive future treatment option for deafness as specifically modified stem cells may be introduced into the inner ear directly to replace damaged hair cells. Permanent hearing loss is regarded by most to be a disability. However, it is important to respect a person's attitudes towards genetic and stem cell research and indeed treatments.

Research on gene and stem cell therapy, and especially on human embryonic stem cells, has generated much interest and public debate. As science and technology continue to advance so do ethical viewpoints surrounding these developments. Deafness presents one of the largest global markets for therapeutic development, and basic science research has established many promising aspects of research for preventative and regenerative treatment.

Folic Acid

Taking a supplement of folic acid helps slow the hearing problems associated with ageing, according to a study conducted at the University of Wageningen in the Netherlands. The three-year study looked at 728 people aged between 50 and 70, half of whom were given a daily dose of 0.8mg of folic acid while the others received a placebo. Those taking the folic acid showed more mild degrees of hearing loss.

Stigma—Past, Present and Always?

In 1941, someone was quoted as saying: "With women, it is often vanity that prevents them wearing hearing aids, so it is fortunate that the earpiece and cable can be camouflaged in the hair and the microphone tucked away in a blouse. Men will unfortunately have to use stupidity as an excuse". The fear of being seen to stand out from the crowds because of a hearing aid has existed ever since their invention, and this fear continues today.

Gitte Englund, who is studying for her PhD at Eriksholm University, is currently analyzing the level of intolerance the Danes exhibit towards people who wear hearing aids and the related loss of social status. "Hearing loss affects people's social identity because they get downgraded. People in their surroundings shun them, since their deafness is often equated with dumbness. A hearing aid turns the ageing process into something negative, and people who have hearing loss don't enjoy talking about it. They are shy, embarrassed and often lacking in self-confidence. At work, their colleagues joke about the problem, which makes them do everything in their power to hide their hearing loss," she explains.

In her analysis Gitte points out that the only way to tackle the stigma is through increasing people's understanding of hearing loss: "We have to put a stop to the conscious or subconscious bullying of this group of people, and this requires changing people's attitudes. Since more people are living longer and getting hearing aids, hearing loss will become more legitimate, and people will find it easier to leave the isolation behind."

Gitte's analysis shows that despite significant advances in hearing aid technology and their aesthetics, many of the emotions and experiences that prevailed a century ago still remain today. One way to expel the taboo is to encourage people to talk openly about the problem. As more and more people report being extremely satisfied with their hearing aids and the enormous benefits they and their families receive from the hearing aids, society will eventually view wearing a hearing aid as being as normal as wearing glasses.

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I wish you and your families a very happy and safe Easter.

Warmest Regards,

Bronwen

PLEASE NOTE THE FOLLOWING CLINIC CLOSURES:

EASTER

Thursday 5th April—Monday 9th April, 2007.

APRIL

Due to my attendance at the American Audiology Association (AAA) International Conference in Denver, Colorado, the clinic will be closed Monday 16th April—Wednesday 25th April, 2007.

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