Specialists
in Invisible Hearing

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Victorian Hearing
Independent Audiology Practice

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Quote of the Month

Welcome to 2019.

We wish all our valued clients a very Merry Christmas and Happy New Year!
In our latest news we are sorry to announce that Michael Polkinghorne has decided to leave us to expand his horizons as the NSW representative for Cochlear Ltd. He will be greatly missed, but we wish him and his family very well.
We welcome Maryam as our newest audiologist, who comes to us with much valuable experience. You may meet her at our CBD, Geelong and Clayton sites so please say hello!

In November, Victorian Hearing Audiologists Nicole and Michael volunteered their time and clinical skills to join the Starkey Hearing Foundation mission to the Philippines. It was both a humbling and rewarding experience. As a team 2000 people were fitted with hearing aids, from age 4 to 96, many having travelled up to 10 hours for the service. Life changing for all involved.

Joke of the Month

Victorian Hearing are now accepting any old, unused hearing aids to be sent to the Starkey Hearing Foundation that can be recycled and used in these missions.

<u>Christmas Closure dates:</u> Please note Victorian Hearing will be closed from Monday 24th December and re-open on Monday 7th January, 2019. For any enquiries please email info@victorianhearing.com.au. In case of emergency, please contact the Royal Victorian Eye and Ear Hospital (ph) 9929 8666 or your nearest hospital emergency department.

Feature:

There have been some new outcomes from research into hearing loss in the news recently – these are two articles you may find interesting and inspiring.

Maybe there are new hearing loss treatment using nanoparticles

By Jessica Longbottom for ABC News

Jim Findley says potential nanoparticle treatment for his hearing loss would be a boon.

Scientists from Melbourne's Bionics Institute at the University of Melbourne believe they can use nanotechnology to deliver restorative drugs to deep within the ear to sufferers of neural hearing loss.

It is the most common form of deafness, affecting people as they age, or if they've been exposed to prolonged periods of loud noise in industries such as music, mining, construction, manufacturing or the military.

Jim Findley is one of millions who could benefit from the research. When the former US Army infantry officer's ears started ringing for three days straight, he knew something was seriously wrong. He had just completed a period of combat in Afghanistan, and he thought the cacophony of sounds on the battlefield — including gunfire, artillery and his comrades shouting at one another — had taken their toll.

"When the action starts, it's overwhelming to the senses. The light can be blinding, the noise can be deafening, and then everything breaks loose," he said.

Like many defence force personnel around the world, it was his hearing that was damaged. Permanently. He has had partial hearing loss in his left ear for about a decade.

Isolation of hearing loss

Lead medical researcher Andrew Wise said the nanoparticle treatment currently being tested on animals would especially help people suffering from sensory hearing loss, which occurs when the nerve connections to the inner ear become damaged. It is the most common disability in developed nations according to the Bionics Institute, and is on track to affect one billion people worldwide by 2050. Sufferers wear hearing aids and there is no treatment.

Melbourne's Epworth Hospital ear, nose and throat surgeon, Sherryl Wagstaff, said hearing loss makes people isolate themselves.

"They don't want to go out, they don't want to socialise and as we know there are now links to dementia as a result of it," Dr Wagstaff said.

Putting a sprinkle into a nanoparticle

The researchers believe restorative drugs can be "loaded" into the nanoparticles, about half a millimetre in diameter and smaller than a cake sprinkle, or a "hundred and thousand", and delivered to the inner ear.

Associate Professor Wise said the properties of the particles were "remarkable" and he likened then to volcanic rock.

"They're very porous, and that property enables us to load very high levels of the growth factors (or drugs) into these particles, and then these growth factors come out of the particles quite slowly after many months," he said.

Although drugs that can repair inner-ear nerve damage are already available, no-one has yet been able to find a way to get them to the inner ear in the quantity required to work. If trials are successful, researchers said the technique could eventually replace hearing aids in millions of people around the world.

"People (who) have problems with hearing, problems with processing sound, information, in challenging environments … where they can hear but have difficulty interpreting speech, that population is probably the target population, at least initially," Associate Professor Wise said.

The treatment is still a few years away from human trials, but the US Department of Defence is so excited by the prospect it has committed $1.1 million to the research.
Like many defence forces around the world, payouts to servicemen and women who have suffered hearing loss due to exposure to noise make-up the majority of compensation payouts.
For veteran Jim Findley, it offers new hope. "Mate, it would be brilliant," he said with a smile.
https://www.abc.net.au/news/2018-11-08/nanoparticle-treatment-possible-for-common-form-of-hearing-loss/10477498

New Research Uncovers Function of Inner Ear Involved in Speech Processing

November 16, 2018HHTM Leave a comment

SOMERSET, NEW JERSEY – Research recently published in Science Communications, by an international team of researchers from Oticon and Interacoustics, has revealed a previously undiscovered function in the inner ear that detects the acoustic details in speech before it is converted into information for the brain.
The findings may help professionals learn more about individual hearing loss, lead to more precise diagnostic equipment and improve the personalization of hearing aids.

A Deeper Understanding of How the Ear Processes Speech

To understand speech, vital acoustic details enable us to distinguish words. Only a small amount of this detail is needed for speech recognition but to date, the mechanism used by the auditory system to extract the detail was not known. The new revelation is an important addition to understanding how the inner ear and our sense of hearing work.

The new discovery may allow professionals to more precisely individualize hearing loss diagnosis and could spearhead the development of better, more personalized hearing aids.

The paper, entitled *'A mechanoelectrical mechanism for detection of sound envelopes in the hearing organ'*, is the result of a study spanning nine years. The research was initiated in 2009 by three principal researchers, including Thomas Lunner, PhD, professor and Research Area Manager, Cognitive Hearing Science, Eriksholm Research Centre, part of Oticon. James Harte, PhD, Director, Interacoustics Research Unit, part of William Demant, quickly became involved in the study, which concluded as a collaboration among no fewer than 13 prominent physicists and inner ear researchers from five countries.
"We are now able to better understand a part of the hearing system that was not known before. Sound travels through the ear as mechanical waves, which is then translated into electrical pulses for the brain by the outer and inner hair cells. To date, it has only been possible to diagnose the health of outer hair cells, for example, in newborn screening. This research could make the first methods to diagnose the health of inner hair cells possible, which has the potential to improve individualized hearing aid processing to better support brain functions, ultimately reducing the effort placed on the brain to understand sound." – ***Thomas Lunner, PhD***

The new research may pave the way for exciting, completely original tools for diagnosis of hearing loss.

Reference: Nuttall AL, Ricci AJ, Burwood G, et al. A mechanoelectrical mechanism for detection of sound envelopes in the hearing organ. *Nature Communications.* 2018; 9:4175.