

CICADA BUZZ

Fathers Day BBQ 6th September 2015

Bart Cavalletto Director of Clinical Services, Royal Institute for Deaf and Blind Children (RIDBC) is a Registered Nurse and Graduate in Paediatric Management. Bart joined RIDBC in 2013 with over ten years experience in large government agencies, notably NSW Health including complex state-wide paediatric services and clinical practice guidelines. He has substantial knowledge of the workings of government service strategy, policy and implementation. Bart will be enabling the integration of cochlear implant services for children and adults with the wider range of services offered by RIDBC.

Bart presented on the **National Disability Insurance Scheme (NDIS)** and helped to clarify how it works. NDIS is the Medicare equivalent for disability services which will provide "individualised support for eligible people with permanent and significant disability under the age of 65". Currently the NDIS is operating in a range of trial sites, but from 2016, there will be a broad roll out across Australia. The NDIS could assist those with hearing loss and associated issues such as speech and balance problems. RIDBC and SCIC, as Service Providers, are committed to providing support in whatever ways they can.

The **National Disability Insurance Agency (NDIA)**, which is the management entity of the scheme, will meet with individuals with disabilities to discuss goals and develop an individual plan. The Plan contains the agreed supports that the NDIA will fund, but it is up to you to decide how you will spend them and who you will spend them with. You will need to articulate what you want to achieve from this support, so discussion with others is important to ensure you find the right services for you or your child. **Community connectors**, (individual advisors or organisations such as Anglicare who assist people work out their needs and prepare for planning) are critical to connecting people to the right services. For children, the plan may be about accessing early intervention supports e.g. speech and language. For adults and teenagers, it may be about employment access or increased involvement in sport, social

groups etc. Some of the categories that the NDIS will support are: assistance with daily life in the community, education and work; supported independent living; transport to access daily activities; improved daily living skills; improved health, wellbeing and learning; getting and keeping a job; assistive technology, vehicle and home modifications.

If you are an existing client of a disability service, the NDIA will contact you about transitioning into the scheme.

Current clients of the Australian Hearing Community Service Obligation will still be able to access free parts, batteries and repairs through Australian Hearing until the government makes further decisions. According to the NDIS website, "a person with an impairment that is likely to be permanent and the impairment makes it difficult to take part in everyday activities can access the Scheme." As the NDIS becomes more widely available across new regions, hearing impaired clients may be able to apply for funding for hearing aids and cochlear implants through the Scheme.



Bart Cavalletto

ANNOUNCEMENT FROM RIDBC 16TH September 2015 LATEST UPDATE ON NDIS ROLLOUT

Today the Government announced the intended roll out of NDIS throughout NSW and Victoria.

This announcement provides us with information specifically on how NDIS will be rolled out across the states and confirmation of the age groups that will be targeted.

We can now advise that the transition in NSW will begin from July 2016 and will cover all eligible people under 65. The roll out will initially commence within the Central Coast, Hunter-New England, Nepean-Blue Mountains, Northern Sydney, South-Western Sydney, Western Sydney and Southern New South Wales regions.

From July 2017, the roll out will continue and include Illawarra-Shoalhaven, Mid North Coast, Murrumbidgee, Northern New South Wales, South-Eastern Sydney, Sydney, Western New South Wales and the Far West regions.

Implications for the RIDBC -SCIC service

Based on the number of children, adults and families in these roll out areas, 2016-2017 will be very busy. Based on our trial successes in the Hunter region and more recently Canberra and Nepean-Blue Mountains and Teleschool, we expect to make these transitions for our clients seamless and smooth. This is an exciting time for RIDBC as we continue to deliver under the NDIS model and we are delighted to have a rollout schedule that our teams can work towards.

More information on this announcement can be found at

<http://www.ndis.gov.au/news-bilats-nsw-vic>

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Please visit us at www.cicada.org.au
Or our Facebook page Cicada Australia Inc.
Darwin friends now have their own
Facebook page Cicada Northern Territory

If you would prefer to receive this newsletter by email, please send your details to suewalters@cicada.org.au

Donations over \$2 to CICADA are tax-deductible.

CICADA Australia Inc. thanks Cochlear Ltd. for supporting the design, printing and distribution of this newsletter.

Presidents Report

Cicada members Tia Botha, David Romanowski and Sue Walters attended the Inaugural "Hear For You" luncheon at The Mint in Sydney on 26th June. It was a good opportunity to network with other support groups and advocates for the hearing impaired. Special guest was former Prime Minister John Howard, who was interviewed about his own life experience with hearing loss by CI recipient Bettina Liang. Olivia Anderson, founder of the Hear for You mentoring group, spoke with great enthusiasm about her fellow mentors and how the organisation is growing and achieving its aims, giving confidence to young deaf people. Congratulations to Olivia and the Hear For You team!



David Romanowski, Tia Botha, John Howard and Sue Walters at HFY luncheon

August 22nd Open House at the Hearing Hub for Hearing Awareness Week held a very nice surprise for those who attended the opening address. Opera singer, Alex Bond, treated the audience to a magnificent solo performance of 2 songs - "I Am What I Am" and "The Impossible Dream". It seems Alex Bond has achieved his own Impossible Dream, a severely deaf young man who, with the help of hearing aids and Australian Hearing support, has become an opera singer!!

Our September BBQ day was well attended despite a deluge of rain and the fact that we scheduled it on Fathers Day. We extended Happy Fathers Day wishes to Professor Bill Gibson (in his absence) as the "FATHER of SCIC" and he received a heartfelt round of applause. We are grateful to Bart Cavalletto, Director of Clinical Services across RIDBC and SCIC for sharing his time with us on Fathers Day and for his informative presentation on the National Disability Insurance Scheme. See the report in this edition of BUZZ.

Our Annual General Meeting is fast approaching and we would appreciate fresh ideas and faces for the CICADA Committee (to keep us fresh!!), so please do consider how you could help us. We have a lot of jobs to do between very few people. Specifically we would like input for our website and Facebook page, help with technology on BBQ days such as audio recording and filming of presentations, captioning, more young people! We try to find interesting guest speakers for our events, so please help us if you have any recommendations or other ideas for entertainment!

Emma Scanlon from Australian Hearing will be our guest speaker at the AGM and will share her experiences working as an audiologist in remote regions of Australia. Emma is a very engaging speaker with a great sense of humour. Newcomers are always welcome and I think our social network at the BBQ day is always encouraging and reassuring to those who come along with questions about going ahead with a cochlear implant. It is also a good place to learn more about how to use your processor more effectively. Newcastle area is also seeking expressions of interest from volunteers who are willing to help with a support network. Please email Karen Dempsey kaz_dempsey@hotmail.com

I will be participating in the 100th Anniversary re-enactment of the Cooee March, walking from Gilgandra to Sydney during Oct-Nov, passing through a lot of country towns along the way. Please look out for us "Cooee's" if we are passing through your town as I would love to meet up with other recipients in regional NSW. See the itinerary in the link below:

<http://cooemarch2015reenactment.com/itinerary/>

Sue Walters

Hearing Awareness Week

Open House at the Australian Hearing Hub

To celebrate the beginning of Hearing Awareness Week, the Australian Hearing Hub, situated in the grounds of Macquarie University, held Open House on Saturday 22nd August.

The Federal Minister for Human Services, Senator the Hon. Marise Payne was the keynote speaker. (At the time of going to press, most readers will be more familiar with the name, as in the new cabinet under Prime Minister Malcolm Turnbull, Marise Payne has become our first female Defence Minister). The day was well attended and there were a variety of interesting talks and activities to choose from, scheduled throughout the day. Free hearing tests were available for both adults and children and proved to be very popular.

Also popular were the tours of the National Acoustic Laboratories, anechoic chamber and MQ photonics laser micromachining demonstrations. Children were kept entertained on the jumping castle and with craft and art activities.

President Sue Walters and Secretary Judy Cassell, who manned the Cicada stall and fielded answers to questions from interested passers by, represented Cicada.



Sue Walters and Judy Cassell.
Photo by Paul Wright

Katherine Hepburn Reflects on Deafness

And Howard Hughes

The following passage is taken from "Me: Stories of My Life" by Katherine Hepburn. "Howard Hughes was a curious fellow. He had guts and he had a really fine mind, but he was deaf - quite seriously deaf - and he was apparently incapable of saying, "Please speak up, I'm deaf."

Thus if he was with more than one person, he was apt to miss most of the conversation. This was tragic. But he was absolutely incapable of changing. I had a good friend, Russell Davenport, who was also deaf. But he just said, "Speak up, please --- I'm deaf." This is the real tragedy of any sort of personal defect. Just say it. Admit it. The person you say it to is not at all embarrassed. He or she just speaks up. He's just happy that he himself is not deaf. I think that this weakness went a long way towards ruining Howard's life and making him an oddball."



Billie McKay from Bowraville NSW

Masterchef Winner 2015

Billie's grandmother, Ruth Welsh, lives in Macksville NSW and she is just one of the very proud people to have watched Masterchef from start to finish. As Ruth has a cochlear implant, she was so grateful to be able to listen to and follow Billie's journey on television.

At the end of the show, Billie was offered a job by world-renowned chef Heston Blumenthal at his restaurant, The Fat Duck, which is located in England. His restaurant has been classed as one of the Worlds best. Billie did accept that offer, so with her boyfriend Hadyn, they have been busy getting their passports and visas organised as they leave Australia in September 2015.

Ruth, understandably, is one very proud Grandmother.

What a fantastic opportunity. Cicada wishes Billie all the best in her new exciting venture.



Billie with her grandmother Ruth

NSW Support Groups

Western Sydney

Western Sydney Cicada continues to hold regular BBQs and morning teas. Morning teas are held on the first Tuesday of the month from 10.30 to 12 noon at SCIC Penrith.

The next BBQ will be held on Sunday 22nd November at the **Kookaburra** Picnic area, Nurragingy Reserve, Knox Road, Doonside with a 10.30 am start. All are welcome to attend this Christmas themed gathering.

The first BBQ for 2016 is to be held on Sunday 21st February back at the **Rosella** Picnic area.

You can contact Sean and Margaret Sewell on Mobile +614 2521 5654 or 041 5205 877 Judy Tutty – Co-ordinator 043 704 9452 for more information.



Sean & Margaret Sewell with Geoff Letford holding their new Cicada banner

Illawarra

Sunday 30th August Illawarra Cicada BBQ @ Shellharbour Poolside

Another great day with excellent sun

A total of 21 people enjoyed this day with awesome weather, location, morning tea and the sausage sizzle.

Thank you to everyone who turned up to make this a wonderful day.

Faye has shared some great photos from the day as shown below.

Don't forget to book in the next event at Illawarra Live Steamers on Sunday 25th October!

See you then

David

Stop Press – The Illawarra Group is planning to hold their first BBQ for 2016 at the Illawarra Live Steamers in Wollongong on February 28th.

Please contact David Romanowski for further information
Mobile: 0432 715 691
Email: dr930@uowmail.edu.au



Northern Rivers

The Northern Rivers CICADA group met for Morning Tea at SCIC Lismore on Friday 28th of August, coinciding with Hearing Awareness Week. People came from as far as Yamba to Tweed to share tea, cake, and their experiences. Attendees included people with cochlear implants as well as people considering having a cochlear implant. New connections were made and older ones rediscovered. We are looking forward to our next catch up and welcome suggestions for a date and venue!

Contact person Sheliya Van Buggenum <meerschamvale@yahoo.com>

Cicada Functions at Gladesville

The next and last BBQ for 2015, which is also the AGM will be held on **1st November** at Gladesville. A flyer with details will be included with this edition of the Buzz.

Dates for 2016 BBQs are **13th March, 22nd May, 14th August** and **6th November (AGM)**

The following are the dates for morning teas for 2016, commencing in February and finishing in October.

4th February, 3rd March, 7th April, 5th May, 2nd June, 7th July, 4th August, 1st September and 6th October

Information can also be checked on the Cicada Website www.cicada.org.au or by contacting the secretary, Judy Cassell judycassell@cicada.org.au



Secondhand books for sale at our BBQs

25th Annual General Meeting of Cicada Australia Inc.

Agenda

- * Welcome to members and guests
- * Apologies
- * Acceptance of the AGM minutes from the 2nd November 2014
- * Matters Arising
- * President's Report
- * Treasurers Report - Chris Boyce

Office Bearers and Committee Members to vacate their positions

- * Ratification of Office Bearers and Committee members for 2015/16 (if nominations received are not in excess of vacancies available, no election is required)

Elected President takes the Chair

- * Vote of thanks to committee
- * New committee and year ahead
- * Other Business
- * Close of meeting and welcome to guest speaker Emma Scanlan

Cicada Annual Raffle

Keep sending them in

Thanks to everyone who has responded by purchasing raffle tickets, or those who have given money in lieu of. There is still time to support Cicada by purchasing and returning the tickets if you have not already done so. The money raised helps Cicada keep in touch with its members and carry out its other support activities. This years raffle will be drawn at the AGM on 1st November.

Father's tattoo tribute to six-year-old daughter who has two hearing implants

Daily Mail Australia August 2015
DAILYMAIL.COM

A father has tattooed an image of a hearing implant on to his head in support of his daughter who has two of the devices fitted to combat her profound deafness.

Alistair Campbell, from New Zealand, got the artwork done to show six-year-old daughter Charlotte that he supports her. Charlotte had her first cochlear implant fitted aged just four on the left side of her head, and was due to have another fitted when Mr Campbell decided to get the tattoo done.



An image of him sitting next to his daughter with his inking and her implant visible has since gone viral online, where it has been shared tens of thousands of times.

Speaking to the New Zealand Herald, Mr Campbell said he got the tattoo 'out of love' for his daughter, and to show her he could take a bit of pain on her behalf. He told the paper that he has no other tattoos, and will now let his hair grow back to cover this one. However, he added that he can always shave it again on 'special occasions' or if Charlotte ever becomes worried about fitting in, or wants to see it. He said that when Charlotte saw the drawing she said it was 'cool' before giggling and touching it. However, mother Anita believes the full significance of the inking hasn't sunk in yet, and that her daughter will likely appreciate it more as she gets older.



Mrs Campbell said that hearing loss runs in the family. Her mother had a hearing implant, while her second son Lewis, eight, has hearing aids. Mrs Campbell said her daughter gradually became quieter and more withdrawn until she got the first implant, at which point she became 'a social butterfly'.

From the isolation of deafness to a new sonic world

August 2015 ABC Radio National

What does being deaf sound like? And how does a cochlear implant change the nature of sound? 'I once had a girlfriend with a bladder infection. She said, "It's like peeing razor blades." Straight away you can imagine the feeling. But I can't find words anywhere near as good as that to describe what it's like to be deaf.' Catherine Pile is an artist who lives in the peaceful Huon Valley south of Hobart with her husband Stephen. Her world as a deaf person is anything but silent, as she suffers from a painful condition called recruitment, which amplifies and distorts sound. 'Recruitment involves the cilia in your hearing system trying to deliver the sounds that you've lost and it comes across then as loudness but it's not just loudness, it's scrambled,' she says. 'The background noise dominates, it's overwhelmingly loud.'

An extrovert by nature, her gradual hearing loss has changed the way she can interact with people and the wider world.



Catherine and Stephen with grandchildren Abbie & Archie

Over the past 20 years, she's learned to lip read and tried hearing aid after hearing aid, but as her deafness has become more profound, her sense of isolation has grown. "It can just make you depressed that you can see everyone, they're happily exchanging stories and you can't get it". 'She's nothing like she was five, 10 years ago,' says her husband Stephen. 'Even talking one to one over the dinner table now, it's hard. Everything has to be repeated. You can't have any music playing in the house, no background noise at all.'

In a bid to get her old self back, Catherine finally opted for surgery at the Cochlear Implant Clinic at the Royal Eye and Ear Hospital in Melbourne. Initially, she felt overwhelmed by the sea of beeps the implant produces. As her brain learned to identify and normalise the weird bionic sounds of her new implant, Catherine is overjoyed to discover that little by little, her sonic world is opening up and the sounds she once knew as a hearing person are coming back to greet her. Most surprising of all is her newfound ability to appreciate music again. Another life-changing consequence of the implant is the total disappearance of the recruitment condition, which caused Catherine so much pain when she used hearing aids. The cochlear implant team will continue to monitor Catherine's progress at the three month and twelve month stage. In the meantime, she's keen to explore the possibility of setting up a support group for people in the Hobart area who are considering having an implant and would like to talk to people who have gone through the experience.

Change of Address

Let us know

Each year we have a number of members who change address and forget to let us know. This means that we are no longer able to send out issues of the Buzz and HQ magazine to them. Please send details of address changes to the secretary Judy Cassell PO Box 5028, South Turrumurra, NSW 2074 or email judycassell@cidada.org.au

Check Out Our Website
www.cidada.org.au

After putting together each edition of the Buzz, there are always a few interesting stories and technology articles that cannot fit into the magazine, through lack of space or because the articles are too long. These articles are placed onto our website, so please have a browse and read.

Surgery to improve hearing of Aboriginal children now available in Griffith

August 2015 ABC Online



Three Aboriginal children have become the first patients to undergo surgery to repair hearing loss, as part of a new service on offer in the western Riverina. Ear, nose and throat (ENT) surgery is now available for Indigenous children at the Griffith Base Hospital through a joint agreement of the Griffith Aboriginal Medical Service, New South Wales Rural Doctors Network and Murrumbidgee Local Health District.

The hospital's acting General Manager, Meredith Whittaker, said "unfortunately a lot of families have had to travel to Sydney, which is at a cost to them; a lot of travel and a lot of inconvenience for families, so having this in our town is a great thing for families and children. An ENT doctor visits the Aboriginal Medical Service in Griffith about 11 times a year, so they would like to operate on the children they see who need to be operated on in Griffith, rather than taking them to Sydney".

There is hope Aboriginal children struggling to concentrate at school will benefit from the new service. Ms Whittaker said ENT surgery is extremely important for Aboriginal children, who suffer higher rates of hearing problems than non-Indigenous children. "Their hearing affects all aspects of their life, especially their schooling," she said.

The Wonderful Way One Mum Is Empowering Kids With Hearing Loss

The Huffington Post July 2015

A U.K. mum has figured out a simple way to make hearing aids and cochlear implants fun and empowering for children. Sarah Ivermee's 4-year-old son Freddie is profoundly deaf in one ear and moderately to severely deaf in the other, as a result of a congenital cytomegalovirus at birth. At two months he started wearing a hearing aid, and in February

2014 he received a cochlear implant in his profoundly deaf ear.

While Freddie was happy to wear both of his devices, that's not always the case with children, who face teasing and sometimes feel embarrassed about their "ugly" hearing aids and implants. There were many ways to use crafts to decorate hearing aids and cochlear implants but no pre-made kits specifically for that purpose. So Ivermee created Lugs to fill that void. From butterflies and cars to superheroes and other cartoon characters, the Lugs kits offer adornments for kids with many different interests.



"The feedback has been unbelievable," the mum said, adding that she often receives emails about children who didn't want to wear their hearing devices who are now excited to wear them. "That's the whole reason why we are doing this!" Ivermee's son is an especially big fan. "Freddie loves choosing which Lugs kit to have when it's time to change," she continued. He always tells people what's on his 'trumpets' -- that's what we call them. His peers at school want them and they aren't even deaf!" After an article about Lugs was published, Ivermee says she's been overwhelmed with orders from people all around the world. It's been both "crazy" and "great," as she works tirelessly to get her product to kids near and far.



Ulster University Graduations: Why Lucinda has designs on Technological Success

Belfast Telegraph July 2015

Lucinda Mulholland hasn't let being profoundly deaf become a barrier to her educational success. She achieved first class honours in her product and furniture design degree from Ulster University. Lucinda was diagnosed at the age of one-and-a-half as profoundly deaf and had cochlear implant surgery which she credits as having been truly life-changing. She said "my implant has given me the confidence to be more social and grab opportunities with both hands. Without this groundbreaking technology, I would not be the person I am today. It really sparked my interest in design from a young age and how it can be used to improve people's quality of life".

Lucinda praised her helpers: "At Ulster University I got support to overcome any barriers, including a note-taker for lectures and seminars. My lecturers and classmates were also really supportive and had great deaf awareness, which made the university experience much easier for me."

During her third year Lucinda had a one-year work experience placement with James Leckey Design, a global leader in the development of equipment for children with postural needs. One of the highlights was working on Leckey's Firefly Scoot Seat project, which is designed to help children with mobility problems get about with minimum effort. She said "I was involved in the whole process, right through from concept design to production. As someone whose own life has been transformed by technology, my favourite part of the experience was the clinical trials, when I saw how children interacted with the prototype. The smiles on their faces said it all. It was a real sense of achievement to be part of a team that is touching the lives of so many children worldwide. The product has won the international Red Dot Design Award, which is an amazing achievement. It's always been a dream of mine to receive this award and I never thought I would get it so soon, or even before I graduated!"



Cochlear implants give boy with Down syndrome new lease on life

Stanford Medicine News Centre
March 2015

Born profoundly deaf, Joshua Copen, 5, has learned to hear and talk with the help of cochlear implants, which many doctors would consider an unconventional approach for a child with Down syndrome.

No matter how many times doctors told Lara Peng, Joshua's mother, that her baby with Down syndrome had normal hearing, she knew they were wrong. "I was saying things to him and he wouldn't respond, noises that should have made him react weren't. Sometimes children with Down syndrome respond differently to sounds. But Down syndrome or not, this wasn't right." That was in 2009. Now, Joshua can hear. And talk. And take part in birthday parties. "He can participate in our family," Peng said. "He can participate in school. He can go to the doctor or the dentist and understand what's happening."

Peng said she owes Joshua's new lease on life to Kay Chang, MD, a pediatric otolaryngologist and otologic surgeon at Lucile Packard Children's Hospital Stanford who passionately advocated for cochlear implants for Joshua. "Traditionally, developmentally delayed patients haven't been seen as ideal candidates for cochlear implants, said Chang, as the brain has to adapt itself to learn the electrical patterns. Someone who is developmentally delayed isn't going to progress as fast as a child who is developing normally. However, just because it's a lot tougher to rehabilitate a child with developmental delay doesn't mean they won't benefit from it".

"You don't get the same reception treating a Down syndrome child that you would get with a typical child," said Peng, whose two other children are developmentally normal. "What you get is a lot of pity and low expectations. Doctors will say, 'You're doing too much for him.' It's like they're giving up. Never once did I get the feeling that Dr. Chang was giving up on him." Chang performed the implant surgery in 2011, just before Joshua turned 2. There was a caveat to ensuring the implants' success. Joshua would have to attend a special school to learn how to train his brain to hear and speak. Joshua did so well after the first cochlear implant that six months later, he had the other ear implanted as well. Joshua's life began to drastically change. Now 5 years old, he's in the 50th percentile for learning comprehension of all children his age.

Memory, Music, and the Cochlear Implant

The Commons Online August 2015
by Laura Stevenson, poet and writer.

While for the first 30 years of my life I was a proficient amateur musician, over the next 25 years sensorineural hearing loss deprived me first of the violin and viola, then of the piano and guitar, then of human speech. Deafness eventually became total; when in 2003 I decided to have a cochlear implant (CI), I had heard no recognizable sound for 10 years. The surgeon and the audiologist both warned me not to expect miracles from the CI, for it could not replace the 100,000 hair cells in the cochlea that permit most people to hear. As it materialized, my auditory memory had survived my years of silence. Perhaps because that memory had been stimulated by the phantom speech I had "heard" while lip-reading and the verbal agility required by my job as teacher and writer, I was one of the fortunate CI recipients who could understand speech from the day the processor was switched on.



But in the days and years after the initial euphoria, I learned that the connection between hearing and memory was simultaneously miraculous and inexplicable. In the early weeks with the implant my auditory memory performed amazing feats without any effort on my part. Two or three days after my processor was switched on, I walked down the road to a stream that rushed down a hill and flowed through a culvert at my feet. Looking at it, I heard a series of computer noises, beeps and pops that were clearly connected to the sound of the stream. I walked home in some disappointment, consoling myself that at

least I had heard something. Three days later, I walked to the same stream — and I heard the eager mutter of water tumbling downhill over stones. The sound was unmistakable, and try as I might I could not conjure up the computer sounds that I had heard before. Sometime between Monday and Thursday, my auditory memory had taught my brain what to hear when I crossed a stream.

Emboldened by my experiences with the stream and my increasing proficiency in distinguishing phonemes, I turned to music. I had been warned that the technology was simply not up to processing the nuances of musical sound, and yet my improvement in other areas had been so marked that I hoped that determination and repetition, combined with an auditory memory conditioned by years of ear training, would give me something back. I was not entirely wrong. After several weeks of practice with a tuning fork, I could sing the A440 that pulsed beneath my hand. Given a guitar tuner, I could sing in tune with the instrument. Given a piano, I could play the charming, simple pieces that Bartók, Stravinsky, Kabalevsky, and Bach had written for beginning players. Simplicity, however, was essential. The first time I heard an organ, I turned in sudden fear that a truck had driven into the church. The first time I heard a piano quartet, I couldn't tell the sound of a violin or cello from the piano. I couldn't tell on a CD or on the radio whether large music was orchestral or choral.

Now, in my fifth year of wearing a processor — the latest, upgraded version — I no longer know what "real" hearing is. Certainly, my practice with phonemes enables me to look as if I have real hearing; as tested in the perfectly silent room of the audiologist's office, my verbal comprehension of single words out of context hovers around 90 percent.

Yet, suppose I sit down to play the Chopin Prelude in D-flat major on the piano — a piece my fingers recognize instantly. I play the opening bars. I hear it. I am sure. But then my fingers lose their place — and I can't correct them, because I can apparently "hear" only what is right, not what has gone wrong. Or suppose that, frustrated by the obvious problems that attend playing without practicing, I turn to the far-easier Bach Prelude in C major. I play. I delight in Bach's hymn to the tempered scale — but I suddenly realize that I am hearing it in D-flat, not in C. Playing one of the chords again and again will eventually bring me back to the right key — but what was I hearing in the interim? A phantom? A memory? Certainly not the "real" sound.

Bionic ear could harness brain's 'octopus cells' to improve sound

ABC Science June 2015

People who use cochlear implants may one day be able to better understand speech in noise thanks to a new Australian discovery. It is a big challenge to pick out particular speech in the presence of background noise, especially in a room full of other people talking. The worst scenario is called the 'cocktail party situation'.



Current CIs use directional microphones pointing to the front of the head; even then the target speech needs to be 10 to 15 decibels louder than the background sounds in order to be heard properly. Biomedical engineer Professor David Grayden, of the University of Melbourne, and colleagues, tried to figure out how the brain of normal hearing people manages this challenge. They identified neurones called 'octopus cells' that pick up the unique rhythm of someone's speech. The researchers created a computer model of the brain's auditory system and looked at what happened when it processed speech-like sounds and random background noise. The octopus cells respond to the "glottal pulses", which are the loudest part of speech, created by puffs of air passing through our vocal cords. The pattern of these pulses creates a unique signal that a normal hearing system can identify as being speech.

Grayden said "the key is that the 'rhythms' are different for different voices; the glottal pulses for different speakers will rarely occur at the same time, and the rate (frequency) of these pulses will be different (people speak with different pitches)."

Their computer model showed that a part of the brain, called the 'ventral nucleus of the lateral lemniscus' (VNLL), integrates signals from octopus cells with other auditory neurones that respond to the volume of each frequency but don't distinguish at all between speech and noise. "The brain uses the actual timing of glottal pulses as a cue to decide the most important time to listen," said Grayden. The researchers tested their model using a 4000 Hertz sound, which was best heard when

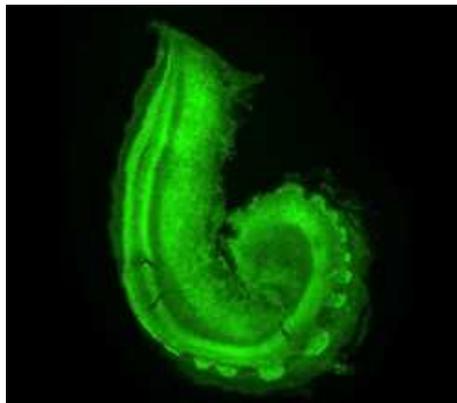
the VNLL played this role. This is the first time that this particular mechanism used by the brain to identify speech rhythms has been revealed, he says. It explains how the brain is able to distinguish speech against background noise that is at the same volume. The findings could one day help refine the bionic ear speech processor. And this could make cocktail parties a more pleasant experience for CI users.

New Findings Hint Toward Reversing Hearing Loss

Washington University August 2015

Senior researcher David Ornitz, Professor of Developmental Biology, noted "if the inner ear in birds or fish is damaged, cells in the inner ear are naturally turned back into progenitor cells that are capable of replacing the sensory cells. But mammals are more complex — with a better sense of hearing over a wider range of sounds. In exchange for this better hearing, we have lost the ability to regenerate sensory hair cells. To eventually be able to restore hearing, we would like to be able to regenerate the sensory hair cells of the cochlea".

Studying mice as the mammal model, the researchers identified two signalling molecules that are required for the proper development of the cochlea. Without both signals, the embryo does not produce enough of the cells that eventually make up the adult cochlea, resulting in a shortened cochlear duct and impaired hearing.



The absence of certain FGF signals during inner ear development results in a shortened cochlea and impaired hearing.

FGF9 and FGF20 send signals to their receptors, which are located in nearby cells that surround the developing sensory cells and promote the growth of the sensory progenitor cells. This signalling activates a feedback loop that helps to direct proper development of the cochlea. Ornitz said "these FGF signals tell the surrounding tissue to make a factor — we don't know yet what that factor is — but we know it regulates progenitor cell growth. And being able to grow progenitor cells, or instruct cells that can become progenitor cells to grow, is one key to restoring hearing."

Future Seminar: Progress Toward a Successor to the Cochlear Implant

10 Nov 2015 The Centre for Research on Brain, Language and Music, McGill University Faculty of Medicine, Montreal, Canada

The efficacy of a neural prosthesis ultimately is limited by the quality of the electrode/neural interface. Present day cochlear implants lie in a separate anatomical compartment from the target neural tissue, behind a bony wall. We are testing the feasibility of an alternative approach, which brings stimulating electrodes in intimate contact with restricted frequency specific populations of auditory-nerve fibers. We employ a multi-electrode array that penetrates the modiolar trunk of the auditory nerve, crossing the array of fibers from the entire tonotopic spiral. By all measures that are possible in anesthetized animals, this intraneural stimulation out-performs conventional cochlear implants. The seminar will review progress to date and will address the challenges of translating this technology to human patients.

Hearing Implants Market: Global Industry Analysis, size, share and Forecast Till 2025

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There are around 360 million people in the world with disabling hearing loss. Hearing loss is one of the six leading global disease burdens. The prevalence of hearing loss increases with age, affecting 42% of people over 50 and more than 70% of people over 70. Rising life expectancy results in increasing numbers of people living with hearing loss. With rapid technological advancement and wide acceptance of hearing implants procedures among patients with hearing problem, the global hearing implants market is expected to have a double digit growth in the forecast period (2015-2025). A factor driving the market is the increased customization. Most of the leading hearing implant device manufacturers have been customizing their product lines to appeal more to consumers and as a result help them to stay ahead of the competition. The major challenges faced by the market is the high cost; various end-users do not have the budget. Hearing implants market segments are:

- Cochlear implants
- Mid-Ear Implants
- Bone Anchored Hearing Aids (BAHA)
- Auditory Brainstem Implant (ABI)

<http://www.futuremarketinsights.com/reports/details/hearing-implants-market>