

# Sound Matters

NCIP

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Northern Cochlear Implant Programme

## Introducing Silvia Rosioru, Coordinator



### Silvia Rosioru

Originally from Romania, Silvia Rosioru moved to New Zealand in 2002 after she graduated from Bucharest University of Economic Studies, with a double major in IT and Economics. She joined the Cochlear Implant Team in 2004 as Team Support/Administrator. Since 2010, she has been the Coordinator of the Cochlear Implant Adult Programme.

She is very passionate about her job and loves to help people easily access cochlear implant services. Over the last few years, she has been actively involved in quality improvement projects to develop the processes involved in the care of the adult cochlear implant users and monitoring related outcomes. Outside of work she enjoys being a mum, travelling, and reading.

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## Introducing Gurdeep Singh, Clinical Services Coordinator

Previously, Gurdeep worked as the administrator for the Kidz First Child Development Team, a service of Counties Manukau District Health Board which works with children with disabilities in the community. From there, Gurdeep moved to the Cochlear Implant Programme as Clinical Services Coordinator for both the Paediatric and Adult programmes. Since 2010, this role has changed to Clinical Services Coordinator for the paediatric programme only, and is based at The Hearing House in Greenlane, Auckland.



## Upcoming Changes to CIPAC

A prioritising template (CIPAC) has been used for many years to identify the urgency with which adults need a cochlear implant. The most urgent cases go to the top of the waiting list and are funded ahead of other adults who can possibly manage a little longer with their hearing aids. The template has been revised with input from clinicians in the Northern and Southern regions so that adults throughout NZ will be prioritised on the same criteria. This will be implemented later in 2014.

## Who's on the NCIP Audiological Team?

### ADULT

Ellen Giles - CI Rehabilitationist  
Gayle Watson - Hearing Therapist  
Caroline Selvaratnam - Audiologist  
Derek Hadfield - Audiologist

### PAEDIATRIC

Leigh Martelli - Audiologist  
Ruth Lin - Audiologist  
Claire Spence - Audiologist

## Paediatric & Adult Programme Updates

### UPDATE ON PAEDIATRIC NUMBERS

Age (years)	Implants received in the past 6 months (01/10/13 - 31/03/14)			
	Public	Private	Re-implant	Total
0-2	4	1	0	5
3-5	6	0	0	6
6-12	2	2	0	4
13-19	4	0	1	5

Twenty children have received cochlear implants since Sound Matters was last published in November. Three of these implants were second-side implantations for families who have fundraised for their child's second ear. All of these second-side implants were done sequentially; one a few months after the first one, and the others around two years after their first implantation. The number of ears implanted are slightly less than the last six months; which may be a reflection of the quieter period over the Christmas break. There are still 14 children in assessment for a cochlear implant at the time of this publication of Sound Matters.

### UPDATE ON ADULT NUMBERS

The financial year commenced (July 2013) with 20 implants being allocated for the year. A further 20 implants were made available in March. Progress to date is detailed below:

Implants completed (01/07/13 - 31/08/13)	
Number of adults implanted with full funding	21
Number of adults scheduled for surgery with full funding	17
Still to allocate	2

Please note that the subsidised cochlear implants scheme is no longer being offered.

Adult numbers 2013-2014 year (as of 8/04/14)	
Number of adults in assessment	14
Number of adults referred but not yet ready to start the assessment (referred to Hearing Therapists or ENT departments in the local area for further testing)	13
Number of adults on the eligibility list	61
Number of adults 'on review' - not in criteria but close to meeting the criteria	26

The new adult referral template continues to work well; this enables adults to be booked for assessment within a few weeks of the completed referral being received. It would be appreciated if the complete diagnostic information being submitted included the Real-Ear Measurements (REMs).

The **referral rate** for the July 2013 to March 2014 period is an average of seven adults per month; this is in line with our usual rate in 2012-13 year.

### ADULTS WITH COCHLEAR IMPLANTS

Young people transfer to the adult programme from the paediatric programme when they turn 19, and it is anticipated that 13 young adults with CIs are anticipated to join the adult programme in this financial year. Last year, five people transferred across to the adult programme.

A total of 303 publicly-funded adults are being supported by the programme as of 8/4/2014.

### THE COCHLEAR N6 PROCESSOR

Mid 2013, Cochlear launched its new N6 processor in New Zealand. Since then many adult and child CI recipients have been switched on with the new technology. The Nucleus 6 processor offers many advantages over its predecessor, thus giving CI recipients better quality of sound and increased flexibility.

#### Automation

For the first time, automated programs are now an option with cochlear implants. The N6 processor makes use of an advanced environmental analyser called Scan which detects noise, speech, music and wind in the environment: this measures relative levels of each sound input before determining the most appropriate setting for optimal hearing. This feature also allows clinicians to collect data on processor use, preferred settings and environmental experiences. In the same way that data logging on aids is useful to set up programs or with counselling, this tool can provide important insight into a user's switch on experiences.

**Within the scan setting, the processor will fluctuate between six "smart sound" programs depending on the environment.**

- (1) **Speech in noise:** combining directionality, noise suppression, and voice enhancement with the goal of enhancing speech over and above the noise floor.
- (2) **Noise:** Microphones become more focussed on sound from the front, and noise suppression is high to maintain comfort in challenging environments while maximising access to front-facing speech sounds.
- (3) **Speech.** Microphones are set to omnidirectional mode to provide maximum audibility, and the relative loudness of softer speech sounds are enhanced for clarity.
- (4) **Quiet.** Soft sounds are artificially lifted to a louder level, assisting with detection of quiet environmental sounds or soft speech.
- (5) **Wind.** The environmental analyser compares the buffeting signal produced by wind at both microphones. When wind is detected the tone of the signal is altered to reduce the impact of the wind on speech understanding.
- (6) **Music.** Microphones are set to omnidirectional and the base/treble balance is altered to enhance music quality.



The Cochlear N6 processor with acoustic receiver component. Printed with permission from Cochlear Ltd.

#### Acoustic and Electric stimulation

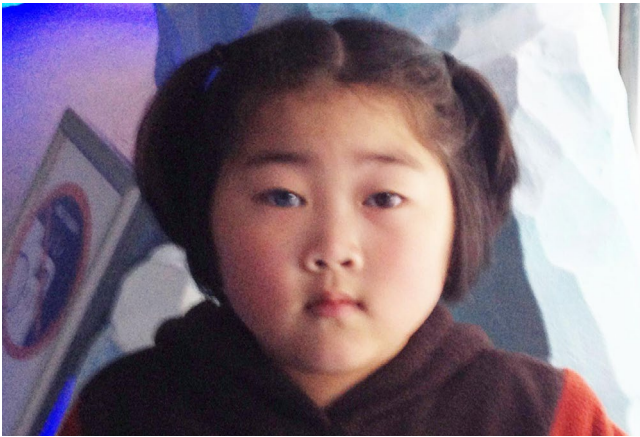
A hybrid processor provides electric stimulation in regions where hearing is unaidable, and acoustic amplification in low frequency regions where a hearing aid may be beneficial. This combination provides much better quality of sound and has been shown to improve a person's ability to hear in noise and process music. Prior to the N6, the decision to fit a hybrid system needed to be made before surgery which meant if residual hearing was lost, clients ended up with an older style of processor with fewer features and lower cosmetic appeal. With the N6 processor, a receiver can be added or removed easily at any time.

#### Wireless Connectivity

Cochlear have been working with Resound to provide a group of wireless accessories (Mini microphone, TV streamer, phone clip). These devices will be available late 2014 and can be linked in with current N6 processors. The wireless systems do not need intermediary devices to function and can be used in conjunction with a Resound hearing aid on the non CI ear.



## Cochlear Implant Recipients



### LUNA XI SUN

Luna was born in China with bilateral profound sensorineural hearing loss related to Waardenburg's Syndrome. Initial tests in China had suspected a hearing loss around 8 months of age. When she arrived in New Zealand with her family, her hearing loss was diagnosed at 11 months old, and she was quickly referred for a cochlear implant assessment. Luna received her first cochlear implant when she was approximately 15 months old and her second CI sequentially about a year later.

Luna's parents, Jacky and Hai, have always wanted Luna to be bilingual. So when Luna started attending weekly Auditory Verbal Therapy sessions at The Hearing House, her parents would engage and translate the tasks in therapy into Mandarin for Luna.

Gradually, Luna began learning her words in Mandarin. This was convenient for the family as Luna was surrounded by Mandarin in her environment at home. Luna's English was also developed along the way through working with different AVT therapists and being immersed in English when she commenced preschool. Luna currently attends Hebron Christian College in a mainstream class where she chats away in English with her classmates. Currently, Jacky considers Luna to be more fluent in Mandarin when she is talking, but more fluent in English for reading and writing at school. Her family is pleased that she has the best of both worlds, and that she is able to maintain both languages so successfully at her age.



### GUIRONG ZHANG

I am 73 this year; when I was 20, I had Streptomycin poisoning which caused my ears to be deaf. I then started to wear cassette behind the ear hearing aids. In 2009, these hearing aids started to have no effect. Then in June 2012, I had my cochlear implant surgery in Auckland

On July 25th, I started to adjust the volume for my new cochlear implant; at first I felt it was too noisy in my ears (all patients will feel the loud noise at the start). Two weeks later, I could already go to church and listen to Sunday service and phone my relatives in China and talk to them. I felt I was the luckiest person in the world. People I know all said I looked different and better.

One year later, after many adjustments with the specialist, Ellen, I have already recovered to the average person's hearing. I want to thank God from my heart and the New Zealand government and the surgeons, specialists and doctors who helped me recover my hearing. Without your help, I wouldn't be as happy as I am now.

## REFERRALS & FEEDBACK

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