

Cochlear Implant Referral Pathway

Jody French
Ronel Chester-Browne



Learning Objectives



- Confidently discuss the referral pathway
- Describe the cochlear implant journey and candidacy assessment
- Relay the funding options available in WA
- Recount feedback/information received from the implant Audiologist report & meaning for you & your patient



Hearing Implant Client Support Officer

- First point of contact for clients
- Support clients through the journey
- Process all referrals
- Book implant assessments
- Support & training for referring audiologists



How to Refer

Call Jody 0427 384 989

Email client referral form along with a copy of the audiogram to

hello@earsceince.org.au

Online via Audiologist Implant Hub



Audiologist Implant Hub

All the information you need to confidently *identify candidates* and *refer*

- Hearing implant journey
- Implant candidacy
- Cochlear Implant FAQs
- Support events for candidates
- Referral forms

[Audiologist Implant Hub](#)



We're here to help

You and your client
will be supported
each step of the
way



Client Supports

- Mentor program
- CI information evenings
- 1:1 information sessions with Jody



Clinician Resource Toolkit

Cochlear Implants
Refer with Confidence

Clinician resource toolkit

Read, Watch, Learn More & Refer
Audiologist Hearing Implant Hub

Speak to an Expert & Ask Questions
Hearing Implant Client Support Officer
Senior Implant Audiologists &
Cochlear Engagement Team

Ear Science

Clinician resource toolkit

Read More
Hearing Implant Referral Guide | For Clinicians
Cochlear Implants | Answers to Your Questions

Ear Science



Implant Clinic Team



Jody French
Hearing Implant Client Support
Officer



Katie Devlin
Intake Manager



Implant Clinic Team



Dr Cathy Sucher
CI Research Lead
Senior Implant
Audiologist



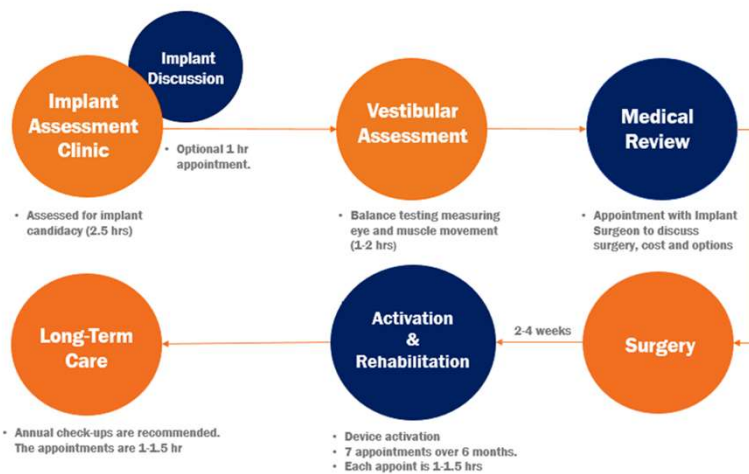
Ronel Chester-Browne
Implant Coordinator
Senior Implant
Audiologist



Elle Statham
Senior Implant
Audiologist



Candidacy Assessment



What to include in your referral

- Reason for referral
- Most recent audiogram (within last 12 months)
- AB words scores (masked if appropriate)
- Hearing aid history and compliance
- Simple explanation to the client on why they are being referred



Explanation...

"Your hearing is at a point that hearing aids are only making things louder and not clearer.

A cochlear implant has the potential to provide more speech understanding than your hearing aid can.

I think it would be worthwhile having further testing to see if an implant is an option for you"



Candidacy Assessment

CI Audiological testing (1hour)

- Full Audiogram (including AB words)
- Hearing aid optimization or fitting of clinic hearing aids
- FF Aided speech testing
- Additional testing for SSD and EAS



Cochlear Implant Discussion

- **Hearing History**
 - **COSI Goals**
 - **Explanation of their results**
 - **How a CI works and how its different to a hearing aid**
 - **Realistic expectations**
 - **Surgical process and risks**
- Post op Rehabilitation process and commitment
 - Cost
 - Device Choice
 - Mentor Program and support groups
 - ENT Referral



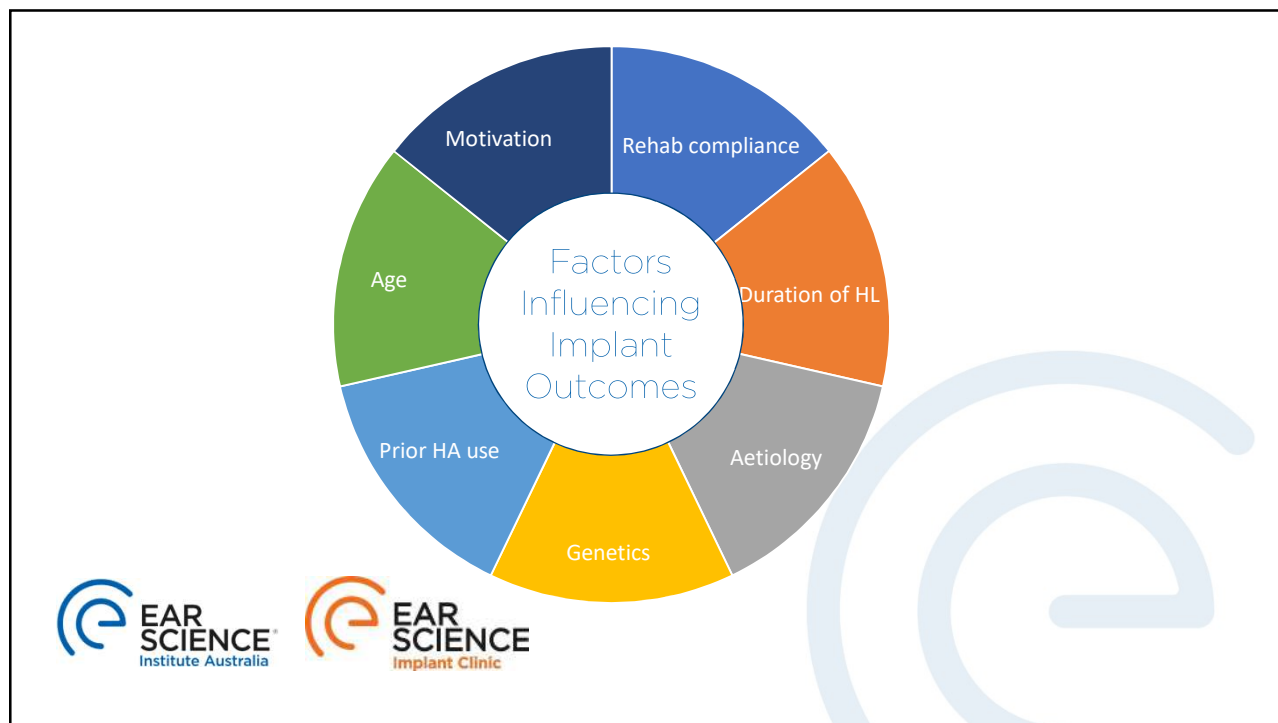
Cochlear Implant vs Hearing aid

Cochlear Implant	Hearing Aid
Replaces the function of the damaged hair cells	Provides amplification and relies on the hair cells to be functioning
Progress can be slow	Outcome is relatively quick
Electrical signal	Acoustic signal



What will a cochlear implant sound like?

- The aim of a cochlear implant is to improve speech discrimination
- It will not restore natural or normal hearing
- Speech may sound artificial
- Hearing in background noise should be better than a hearing aid but can still be difficult



Surgery

- **Duration: 1.5 to 2-hour surgery**
- **General anesthetic**
- **One night in the hospital**
- **1-2 weeks off work**
- **Stiches removed around day 7**
- **Switch on of implant around day 14**



Funding Options

Hearing Implants are *very well* funded in Australia

- **Private Health Insurance**
- **Department of Veteran Affairs (DVA)**
- **Public Health System**
- **Self-Funded**



Ear Science Implant Clinic

Subiaco Clinic

Can see clients with *Private Health Insurance, DVA funding or clients who self-fund*

Bunbury Clinic

Can see clients with *ALL funding options, including public system*

Clients who wish to proceed through the public system can be seen by Dr Latif Kadhim at Bunbury Regional Hospital



Maintenance costs

- CI manufacturer's warranty (around 3 to 5 years)
- Future maintenance costs and upgrades
 - Private Health
 - Hearing Australia
 - NDIS funding
 - DVA Gold Card



Why aren't we talking about Implants?

AudA WA Chapter Meeting Workshop

To: To
ToAddress
To: 402/202A

Re: Marjorie Tester
1 Training Boulevard
Kensington WA 6005
Australia

Addressed To: CCAAddress

DOB: 1/4/1940
Appointment Date: (AppDate)

Dear Audiologist

RE: Implant Assessment Report for Marjorie Tester

Marjorie was seen today for an implant assessment to determine candidacy for a Cochlear implant. She attended the appointment with her husband, Rob. Marjorie reports the onset of a hearing loss at age 14 and was diagnosed and fitted with a hearing aid at age 18. She has a strong family history of hearing loss. Her hearing has deteriorated gradually over time. The last 3 years has been the worst. Bilateral tinnitus is present when not wearing hearing aids. No significant ear infections or vertigo reported.

Marjorie is finding it very difficult to hear in noisy environments, she is becoming isolated and is avoiding social interaction. She reports limited benefit from her hearing aids, although she has tried new hearing aids, well fitted and optimised. Please find the results below.

Hearing Results

Pure Tone Audiometry

Left Ear: revealed a severe sensorineural hearing loss.
Right Ear: revealed a severe sensorineural hearing loss.

Unaided Speech Perception (AB Words)

Left Ear: revealed satisfactory speech perception at appropriately amplified levels
Right Ear: revealed satisfactory speech perception at appropriately amplified levels

Implant Candidacy Results

Aided Speech Perception (in Quiet)

Left Ear: aided speech testing indicated moderate benefit
Right Ear: aided speech testing indicated moderate benefit

Bilateral: aided speech testing indicated significant bilateral benefit

Aided Speech Perception (in Noise)

Bilateral: indicated limited aided benefit.

Aided Speech Tests

CNC Words - In Quiet

Listening Condition Recorded 65 dB SPL	Pre-Op 27/10/2022	
	Words	Phonemes
R + L	48 %	74 %
R	20 %	50 %
L	20 %	53 %

CUNY Sentences - In Quiet

Listening Condition Recorded 65 dB SPL	Pre-Op 27/10/2022	
	R + L	R
R + L	96 %	
R	53 %	
L	85 %	

BKB-SIN - Sentences in Noise (speech and noise to the front)

Condition	Pre-Op (dB SPL) 27/10/2022
Left Device: Hearing Aid (Own)	12 dB S.N
Right Device: Hearing Aid (Own)	

(NB: SNR-50 mean value for a normal hearing adult is -2.5 with SD of 0.8)

Recommendations

Marjorie meets the audiological criteria for a cochlear implant bilaterally. She uses the right ear for the telephone, therefore she would prefer to be implanted on the left side. Device options were discussed and Marjorie is keen to proceed with a Cochlear Ltd cochlear implant (Nucleus 8) for her left ear. This is due to technological features available with this device (i.e. wireless connectivity, direct connectivity to the iPhone).

Marjorie will require a medical review by an ENT Specialist. She would like to see We have requested Marjorie discuss this with you. We would appreciate it if you can please provide a referral letter for this medical review to proceed. A copy of this letter has been provided to Marjorie.

Please do not hesitate to contact the clinic should you have any queries regarding this report.

38 B550 4284-1 | www.earscience.org.au | ABN: 48 804 303 003
World Health Collaborating Centre for Ear and Hearing Care

To: Ms Marjorie Testere
Ms Marjorie T Tester
1 Salvado Road
1 Salvado Road

Re: Marjorie Testere
Ms Marjorie T Tester
Suite 1 | 1 Salvado Road
1 Salvado Road

Date: 14/2/2023

Addressed To: Ms Marjorie Testere
Ms Marjorie T Tester
Suite 1 | 1 Salvado Road
1 Salvado Road

DOB: 11/11/1944
Appointment Date: (AppDate)

Dear Colleagues

Ear Science Clinic pre-implant vestibular screening report for Marjorie Testere

Reported History

Marjorie visited the clinic today for a pre-implant vestibular screening assessment. She reported no history of episodic vertigo and dizziness, and no chronic imbalance.

Assessment Summary

- VNG didn't detect any spontaneous nystagmus.
- vHIT indicated normal function of all six semicircular canals.
- Monothermal caloric screening was normal with equal responsiveness.
- cVEMPs were bilaterally present with symmetrical peak-to-peak amplitudes.
- mCTSIB functional test of static balance was normal.

Otoscopy

Left: otoscopic examination was unremarkable.
Right: otoscopic examination was unremarkable.

Tympanometry

Left: a Type A tympanogram, consistent with normal middle ear pressure and compliance.
Right: a Type A tympanogram, consistent with normal middle ear pressure and compliance.

Spontaneous nystagmus

With Fixation: no nystagmus.
Without Fixation: no nystagmus.

Monothermal caloric screening (Air)

	WARM	COOL
Right Ear	32 deg/sec RB (FI 48%)	NA-DNT
Left Ear	34 deg/sec LB (FI 12%)	NA-DNT

The results meets the monothermal criteria.
Canal Symmetry = 3% to the right (significance \geq 25%).

Fixation suppression values were within normal limits (significance $>$ 50%).

Video Head Impulse Test (vHIT)

	Mean Gain	Catch Up Saccades
Left Lateral (Normal \geq 0.8)	0.95	Nil
Right Lateral (Normal \geq 0.8)	0.93	Nil
Left Anterior (Normal \geq 0.7)	0.94	Nil
Right Posterior (Normal \geq 0.7)	0.95	Nil
Left Posterior (Normal \geq 0.7)	0.99	Nil
Right Anterior (Normal \geq 0.7)	1.00	Nil

vHIT indicated normal function of all six semicircular canals and their nerve innervations.

Cervical Vestibular Evoked Myogenic Potentials (cVEMP)

	Av P1-N1 amplitude @ 97dBnHL (micro volts)	Threshold (dB HL)
Left	102.3 micro volts	NA-DNT
Right	100.5 micro volts	NA-DNT

cVEMP elicits a response from the sternocleidomastoid muscles to indicate Saccular and inferior Vestibular Nerve function.
Peak-to-peak asymmetry ratio: 1% (significance \geq 40%).

Modified Clinical Test of Sensory Interaction in Balance (mCTSIB)

The MCTSIB evaluates balance performance, specifically how sensory inputs are being used when one, two or all sensory systems are removed. An upright standing position should be maintained for 30 seconds. Excessive sway, corrective step or imminent fall is regarded as abnormal.

Condition 1 eyes open firm surface: 30 seconds.
Condition 2 eyes closed firm surface: 30 seconds.
Condition 3 eyes open foam surface: 30 seconds.
Condition 4 eyes closed foam surface: 30 seconds.
These results are consistent with normal static balance.

Please do not hesitate to contact the clinic should you have any queries regarding this report.

Yours sincerely,

Barbara Heinze

Dr Barbara Heinze
B.Communication Pathology (UP), M.ECI (UP), Ph.D Audiology (UP)

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