# The Listener

Accent Hearing
EXCELLENCE IN LISTENING

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## Spring Edition - 2025



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## An Unforgettable Afternoon of Music for a Great Cause!

Come and experience the magnificent **Clarence Valley Orchestra & Chorus**, led by our very own Audiologist, **Dr. Greg Butcher**. This year, we're thrilled to feature the internationally acclaimed opera singer, **Mirusia Louwerse**, renowned for her extensive global tours with Maestro André Rieu's orchestra. This special concert marks the **third year** the orchestra has proudly supported the **University of Wollongong's Rural Doctors Program**. Our goal is to help secure a **full-time GP for the Clarence Valley** by providing a **$5,000 scholarship** ($15,000 over three years) to a medical student who completes a 6-12 month in-house placement at Graton or Maclean Hospitals. Don't miss this incredible opportunity to enjoy world-class music while contributing to a vital local initiative!

**Tickets are available at the Saraton Theatre, or by calling 6642 1633.** You can also scan the QR code below to purchase your tickets.

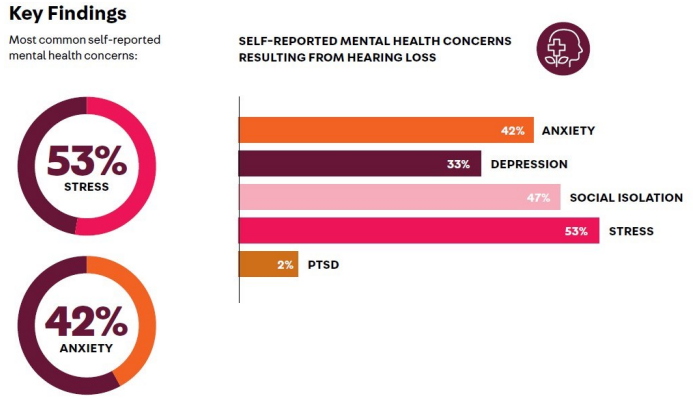

## Spring is Lawn Mowing Time!


Time to get the mower & chain saw out for a Spring clean? Don't destroy any more of your delicate hair cells in your inner ears, as they don't grow back! Excessive noise is the fastest way to destroy your hearing when not using proper hearing protection. Noise can damage your hearing if it's too loud. Both sudden, loud noises and constant, loud noise, like working near industrial machinery or mowing lawns can damage your hearing. Hearing damage includes permanent or temporary hearing loss and tinnitus (ringing in the ears).

### 3.6 million NUMBER OF AUSTRALIANS AFFECTED BY HEARING LOSS

Hearing loss has been linked to increased psychological distress, and poorer mental health outcomes.

Australian Government Department of Health and Aged Care. (n.d.). Ear health. Retrieved April 2025 from https://www.health.gov.au/topics/ear-health/about




# What Is Ototoxicity?

Ototoxicity is an adverse reaction affecting the inner ear or auditory nerve. It manifests in two primary forms:

- **Cochleotoxicity:** Partial or complete hearing loss
- **Vestibulotoxicity:** Causes vertigo or dizziness

***It literally means "Poisonous to the Ears"***

These reactions occur when medications cross the blood-labyrinth barrier and damage hair cells in the inner ear. Think of this barrier as similar to the placental barrier during pregnancy—the inner ear is highly protected, but once certain drugs enter, they can damage sensitive cells. While the exact mechanisms vary and are still being studied, many ototoxic medications cause oxidative stress and inflammation in the cochlea, ultimately leading to the tiny hair cell death.

## Key Medications Associated with Ototoxicity

**Aminoglycoside Antibiotics** - Powerful antibiotics i.e. entamycin, tobramycin, amikacin, neomycin, streptomycin pose the highest risk among antibiotics.

**Platinum Chemotherapy Agents** - Of these cancer-fighting compounds, cisplatin is the most ototoxic, affecting 30-60% of patients with cumulative and irreversible effects ranging from tinnitus to severe hearing loss.

**Loop Diuretics** - Medications like furosemide (Lasix) cause ototoxicity in less than 10% of cases, but their widespread use, particularly among older adults with impaired kidney function, makes them significant contributors to hearing loss. Studies show older adults taking loop diuretics have a 40% higher risk of developing hearing loss and 33% higher risk of progressive hearing loss over ten years.

**Analgesics** - Common pain relievers found in most medicine cabinets may contribute to hearing issues, particularly when used frequently:

- **NSAIDs** (ibuprofen, naproxen, aspirin): Can impair outer hair cell function and reduce cochlear blood flow
- **Acetaminophen/Paracetamol:** Research findings are mixed, but some studies suggest regular use (more than twice weekly) may increase hearing loss risk. What makes these medications particularly concerning is their over-the-counter availability, meaning healthcare providers may be unaware of patients' usage patterns. A 2012 study found that women using ibuprofen or acetaminophen two or more days per week had an increased risk of hearing loss, with risk increasing with frequency of use.

# Prevention and Management Strategies

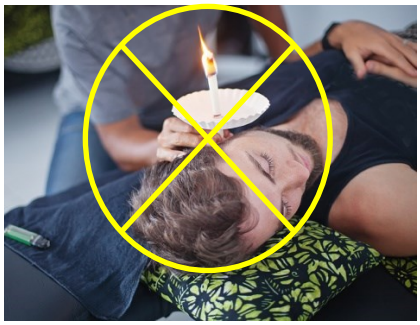
Healthcare professionals can take several steps to address medication-related ototoxicity:

- ☑ **Baseline Assessment:** Conduct comprehensive hearing evaluations before initiating treatment with known ototoxic medications.
- ☑ **Regular Monitoring:** Implement scheduled hearing tests during and after treatment, particularly for high-risk medications.
- ☑ **Dose Adjustments:** Consider modifying dosages or selecting alternative medications when early signs of ototoxicity appear.
- ☑ **Collaborative Care:** Build relationships between audiologists, pharmacists, physicians, and other healthcare providers to create effective referral pathways.
- ☑ **Patient Education:** Inform patients about potential risks and encourage reporting of symptoms like tinnitus, which often precedes measurable hearing loss .
- ☑ **Medication Review:** For patients with hearing loss, a comprehensive medication review may identify contributing factors and alternatives. Ask your GP for more information.

# Are You Doing Dangerous Things to Your Ears?

Our ears may possibly be our most abused body part. We pierce them, subject them to deafening noise, force cotton swabs inside them, and burn them with ear candling. Despite providing us with one of our most vital senses, we never give our ears, or our hearing, much gratitude or consideration.

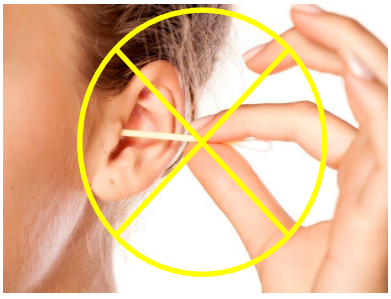
## ~~Ear Candling~~



Ear candling is supposedly a technique of removing earwax, and additionally, as one researcher put it, "the triumph of ignorance over science." Here's how ear candling is performed. One end of a narrow tube composed of cotton and beeswax is placed into the ear. The opposite end is set on fire, which purportedly creates a vacuum of negative pressure that draws earwax up into the tube. Except that it does not, for two reasons. First of all, the ear candle doesn't generate negative pressure. Earwax is sticky, so even if negative pressure was created, the pressure needed to suck up earwax would rupture the eardrum. Second, although the wax and ash resemble earwax, no earwax is actually discovered within the ear candle after the therapy. By burning ear candles the customary way and burning other candles without placing them into the ear, reveals the residue was the same for both groups.

## ~~Using cotton swabs to clean your ears~~

By inserting any foreign object into your ear only drives the earwax against the eardrum, generating an impaction and potentially a ruptured eardrum and hearing loss. Your earwax contains beneficial antibacterial and lubricating characteristics, and is naturally removed by the regular motions of the jaw (from speaking and chewing).



If you do have trouble with excessive earwax, a professional cleaning service by use of micro-suction is always advisable (available at Accent Hearing). Also, by scratching the ear canal itself, will result in your ears always getting itchy—because you have scraped out all the good bugs, leaving the bad bugs to fester, creating an unhealthy annoying cycle!


# *Crosswords & Hearing Aids*

Most people GP's tell us to do crossword puzzles, learn languages, play brain games etc, meanwhile, over 7 million Americans are living with Alzheimer's. By 2050, this number is projected to rise to nearly 13 million. **Our prevention advice isn't working!**

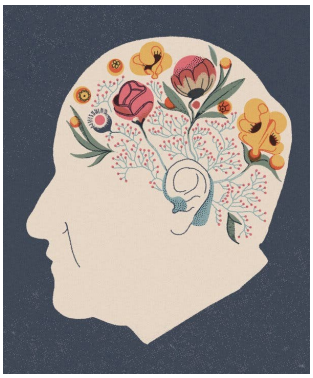
Here's why:

1. Crosswords don't save neurons. They improve crossword skills; the brain adapts to specific tasks; no transfer to daily function; gives false security.

2. The real brain protectors we ignore as treating hearing loss reduces cognitive decline by 18%. Managing blood pressure in midlife; addressing sleep apnea aggressively; social connection (and not Facebook).

3. Exercise beats every brain game; increases BDNF (brain fertilizer); improves vascular health; Reduces inflammation; Actually grows the hippocampus.

4, The prevention parado - What works is boring; what's sexy doesn't work; apps make money, not miracles; simple interventions get ignored.



People proudly show a 500-day brain training streak, but their sleep apnea? Untreated for a decade. Their hearing aids in a drawer? We're playing games while our brains suffocate at night. The unsexy truth about prevention: **Get your hearing checked and USE the aids.** Treat sleep apnea like your life depends on it. Move your body every single day. Maintain in-person relationships, not only online ones. Control your blood pressure starting NOW.

***Your brain doesn't need more puzzles. It needs oxygen, blood flow, and human connection.***

# Study reveals:

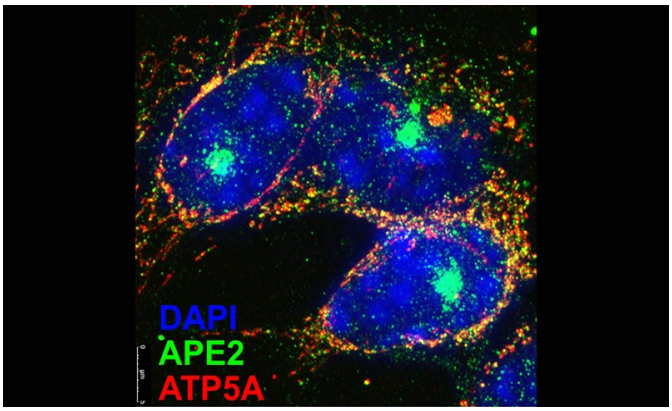
## How chemotherapy drug cisplatin causes hearing loss

**Anyone telling you that Chemotherapy drugs do not affect your hearing, is not up on the research. We hear it so often, oh the doctor said "it won't affect your hearing" WRONG!**

**Cisplatin**, a chemotherapy drug used since the 1970s, is highly effective against several cancers, but often leads to permanent side effects like hearing loss and tinnitus, especially in children.

It has been discovered that Cisplatin abnormally activates a gene producing APE2, a protein usually responsible for DNA repair. In excess, APE2 interacts harmfully with NMHC-IIA, a protein specific to the ear and kidney. This disrupts mitochondrial function in inner ear hair cells, leading to their death and resulting in irreversible hearing damage.

The damage isn't from typical drug toxicity but from gene dysregulation—a potentially treatable and preventable mechanism. The team is developing a therapy to block this effect, aiming to protect hearing and allow higher, more effective doses of cisplatin. The same mechanism might also explain cisplatin-related kidney damage, and the team is investigating toxicities in the brain and heart from other treatments. As cancer survival rates improve, attention is shifting toward preserving long-term quality of life, especially for young survivors.




Picture: Outer ear hair cells, six hours after treating the sample with more cisplatin. The cells overproduced the protein APE2 (light green), and the protein migrated directly to the mitochondria in the cell (red, overlaps with the green). Further research shows the APE2 protein damages the mitochondria in the outer hair cell, leading to cell death and hearing loss. Cell nuclei are blue. ***Cancer Research Communications.*** 2025 Jun 1;5(6):994-1007. *doi: 10.1158/2767-9764.CRC-24-0506.*

## Causes of tinnitus

**Hearing-Related Causes**
- Age-Related Hearing Loss (Presbycusis)
- Noise-Induced Hearing Loss (NIHL)
- Hidden Hearing Loss (Cochlear Synaptopathy)

**Vascular and Cardiovasular Disorders**
- Pulsatile Tinnitus (Blood Flow Turbulence)
- High Blood Pressure (Hypertension)
- Arteriovenous Malformations (AVMs)
- Venous Sinus Stenosis
- Atherosclerosis
- Glomus Tumours (Paragangliomas)

**Structural Abnormalities**
- Superior Canal Dehiscence (SCD)
- Patulous Eustachian Tube

**Infections**
- Viral Infections (e.g., Herpes, Measles)
- Lyme Disease
- Syphilis
- Meningitis
- Labyrinthitis

**Neoplasms**
- Acoustic Neuroma (Vestibular Schwannoma)
- Meningiomas

**Endocrine and Metabolic Disorders**
- Thyroid Dysfunction (Hypo/Hyperthyroidism)
- Vitamin B12 Deficiency
- Diabetes

**Neurological Disorders**
- Auditory Neuropathy Spectrum Disorder (ANSD)
- Traumatic Brain Injury (TBI)
- Multiple Sclerosis (MS)
- Chiari Malformation
- Epilepsy (as part of aura or post-seizure)

**Drug or Toxic Exposure**

Ototoxic Medications:
- Aminoglycoside Antibiotics
- Chemotherapy Drugs (e.g., Cisplatin)
- Loop Diuretics (e.g., Furosemide)
- High-Dose Aspirin
- NSAIDs (e.g., Ibuprofen)

Heavy Metal Poisoning (e.g., Lead, Mercury)
Recreational Drugs (e.g., Cocaine)

**Trauma**
- Head and Neck Injuries (E.g., Whiplash, Fractures, C1 Subluxation)
- Barotrauma (e.g., Diving or Flying Injuries)

**Ear-Related Conditions**
- Earwax Blockage (Cerumen Impaction)
- Otosclerosis (Abnormal Bone Growth)
- Eustachian Tube Dysfunction
- Meniere's Disease
- Middle Ear Infections (Otitis Media)

**Autoimmune and Systemic Conditions**
- Autoimmune Inner Ear Disease (AIED)
- Lupus (Systemic Lupus Erythematosus)
- Granulomstosis with Polyangiitis (Wegener's)

Idiopathic: In many cases, the cause for tinnitus remains unknown.


## Accent Hearing Clinics - 1300 859 828

- **GRAFTON** | 23 Queen Street, Grafton NSW.
- **GLEN INNES** | Glen Innes Chiropractic Centre, 113 Meade Street, Glen Innes NSW.
- **INVERELL** | Inverell Hospital Community Health, 41 Swanbrook Road, Inverell NSW.

***Accent Hearing is independent and is locally owned. Our clinician Dr Greg Butcher is a University trained Doctor of Audiology; a fully Accredited Member of Audiology Australia and Independent Audiologists Australia; and a qualified Medicare Hearing Services Provider.***