DEAFNESS FORUM AUSTRALIA

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17 MAY 2023

A national campaign from the Australian Government.

Deafness Forum is coming to Perth for a Community Forum.

Co-designed partnerships improve First Nations peoples' hearing health.

How does hearing work?

Corporate awareness training a smart move.

Canberra's Stephen Musgrove has encountered a spectrum of understanding in workplaces.

"I have worked at places that have told me, in no uncertain terms, that when my hearing loss became severe, I'd be out of a job," he said.

"Strictly speaking, no, I don't think that's legal, but it does happen."

On the other end of the spectrum is his current workplace, Canberra consultancy firm Parbery, which brought in the ACT Deafness Resource Centre (DRC) to do a workplace assessment.

The DRC identified several opportunities to improve Stephen's capacity to participate fully in the workplace and arranged for him to trial assistive technology which Parbery then installed.

Parbery also folded DRC's corporate awareness training into its mandatory training program for staff.

It meant a great deal to Stephen, whose hearing loss stemmed from a genetic condition.

"My mum had to leave the workforce because she went deaf," he said. "She worked in an environment where people decided it wasn't worth their time to try a bit harder. Having a company that does has changed my outlook."

"I've been at workplaces where people aren't aware either through me not wanting to speak up or others not wanting to change how they work, which has led to confrontation or disengagement," he said.

"At Parbery people have actively tried to make sure I can follow and contribute to discussions. For example, by changing the location where things take place to a room with less background noise. Or stopping workshops to remind people to speak one at a time. Or even just ensuring they don't start speaking to me when my back is turned.

The training is delivered by ACT Deafness Resource Centre's Joe Symons, who lives with severe hearing loss.

"When workmates undergo this training, it flicks a switch in their brain. And if companies can make these changes, they can unlock a pool of capable and gifted employees."

Joe said these days hearing loss shouldn't affect a person's work performance.

"There are ways to get around it, and it's an important factor of inclusion and job satisfaction in the workplace for a person with hearing loss. It sends a powerful message to all employees and prospective employees about the kind of workplace you strive to be."

For more information contact ACT Deafness Resource Centre. From an article by Dione David writing for RiotACT. Photo of Stephen Musgrove by Parbery.

Co-designed partnerships improve the hearing health of First Nations peoples.

Hearing Australia is working closely with the Orange Aboriginal Medical Service, the Coonamble Aboriginal Health Service and the Katherine West Health Board to redesign its approach to service delivery.

An important milestone in its collaboration with First Nations health and education services was the signing of 4-year Shared Hearing Services Partnership Agreements with the Orange Aboriginal Medical Service, the Coonamble Aboriginal Health Service.

Under the agreements, Hearing Australia will work with the local health services to improve the coordination and impact of hearing services while building the capability of local health staff to manage the hearing needs of the local community. The goal of the partnerships is to increase access to hearing care, improve referral pathways, and ensure continuity of care for our mutual clients.

CEO of Orange Aboriginal Medical Service, Jamie Newman said, "Our people need good healthcare, and through this partnership and our ongoing relationship with Hearing Australia, we have a great opportunity to work closely together to improve access to hearing help. It's very much about shared responsibility and working together to deliver the care our people want and need in community," Jamie Newman said.

Hearing Australia's managing director, Kim Terrell said the organisation remains deeply committed to improving the systems, services and policies that contribute to strong ear health and hearing outcomes for Aboriginal and Torres Strait Islander peoples, particularly children.

"It's not about what we can do for the community; it's about what the community and local services need from us. This new partnership model is an important step in reshaping hearing services so that First Nations communities can really start to experience better health outcomes over time, for which we are all responsible."

Hearing Australia has worked with Aboriginal and Torres Strait Islander clients and communities since the 1950s.

"With the support of government and our many partners, we continue to listen to First Nations peoples and work closely with communities and local services to improve the ear and hearing health of individuals and families," Kim Terrell said.

"This year we will care for 25,000 First Nations children and adults. We currently work with more than 100 Aboriginal community-controlled health services to provide access to ear and hearing health information and services. But we know we need to do things differently to achieve better health and wellbeing outcomes for First Nations peoples."

In the photo: Hearing Australia team with Orange Aboriginal Medical Service team. At right, Jamie Newman CEO of Orange Aboriginal Medical Service and Hearing Australia's Kim Terrell.

Deafness Forum is coming to Perth for a Community Forum.

The Board of Deafness Forum invites members & friends to lunch and an afternoon of great presentations about the brilliant work in WA that is supporting people who are deaf or hard of hearing to live well in the community.

Saturday 27 May 2023

1.pm for a buffet lunch

1.30pm to 4pm for the presentations

At **Telethon Speech and Hearing, 36 Dodd St Wembley.**

You will hear from:

- Martin Pritchard MLA, Convener of the WA Parliamentary Friends of Hard of Hearing, Deaf and Deafblind people.
- Paul Higginbotham from the fantastic Earbus Foundation of WA.
- Deafness Forum's national board members, especially local directors Rae Walker and Barry MacKinnon.

Eminent researchers will brief you on their latest investigations:

- Ass. Prof. Mel Ferguson, Brain and Hearing at Curtin University.
- Ass. Prof Dayse Tavora, University of Western Australia.
- Professor David McAlpine, Academic Director Macquarie University Hearing.

Afterwards, there'll be refreshments. The mood will be friendly and relaxed. Captions and Auslan interpreters will be provided.

Everyone is welcome so if you haven't received an invitation, here is the place to RSVP: https://forms.office.com/r/3mwhfU3ucg

Improving access to Auslan interpreting services in primary care.

The Commonwealth Department of Health and Aged Care is exploring how to improve access to Auslan interpreting services in primary care settings - general practice, physiotherapy, psychology.

An important part of this project is understanding what it is like to organise and use an interpreter for a primary care appointment.

If you are over 18 and use Auslan to communicate or have a role in organising interpreters for an Auslan user in your family, you can help.

We invite you to share your experience in Auslan or English, in a short online survey or an interview (the interview part is optional).

If you would like to participate you can do so until 30 June 2023 and you will be offered a gift card as a thank you.

For more information visit https://bit.ly/3JeqJ7I or email auslan.review@ahaconsulting.com.au.

Watch the video in Auslan (sorry, not captioned).

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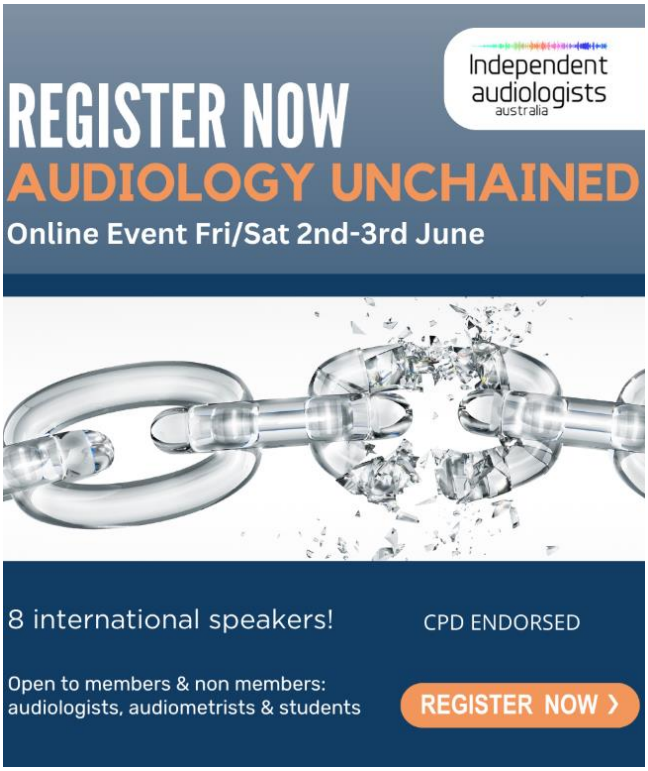

Join Independent Audiologists Australia for two jam-packed days of quality content, with a total of 14.5 endorsed CPD points available. Fresh, engaging local and international speakers bring you the latest learnings and the most practical applications to get you inspired and ready to take your clinical work and business practices to new heights.

Friday 2 June - business focused content 12-5pm. Learn from our respected industry experts in HR, business negotiations, practice management and psychology, along with exclusive members-only bonus session in the evening.

Saturday 3 June - a full day of clinical content featuring vibrant, respected local and international presenters along with some new favourites. Full program available including 8 international speakers.

All from the comfort of your own home. Masters of Audiology students attend FREE as guests of Independent Audiologists Australia - register using your university email. All sessions will be recorded and available to registrants for a limited time after the event.

Register here.

Use Live Captions to Add Subtitles to Any Device's Audio and Video

Captions on services like Netflix or YouTube are essential for those with hearing issues and they're a handy option for everyone when in loud environments or have to watch videos in silence. Now our phones and laptops have grown smart enough to start captioning both audio and video streams automatically.

That means, no matter where you're watching or listening to something, whether it's on social media or in a podcast app, you can get access to captions. The development of this feature is at different stages on different platforms, and the AI behind the technology isn't always reliable, but it's now something you can access on just about every device.

Generally, you just go to your phone's Settings, and then Accessibility.

From Gizmodo Australia

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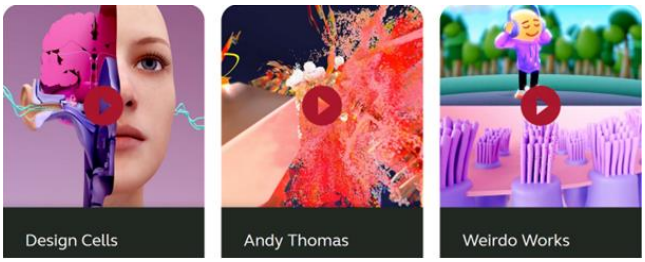


Sound can connect us, move us or cause us harm.

What would it look like if you could see sound? Three acclaimed international artists were asked to visualise sound and how it can impact our overall health.

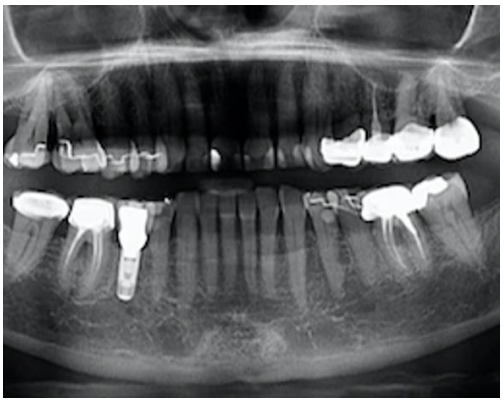
Three artists with three distinct styles shared their perspective on sound.

Andy Thomas is an Australian multi-disciplinary artist. Andy dramatised three soundscapes using colours and shapes to bring sound to life visually.

Visit Resound GN.

Prosthetic teeth make great hearing aids.

Vibrations applied to replacements for lost teeth can travel well through jawbones to the inner ear. Researchers believe this finding could lead to alternatives to conventional hearing aids and cochlear implants.



Previous tooth-based hearing aids designs clipped onto molars and received sound wirelessly from a microphone placed behind the ear. Dental researcher Jianxiang Tao and colleagues want to take the concept a step further, turning tooth implants into hearing aids. The electronics that impart sound vibrations would be built into the portion of a false tooth anchored into the jawbone, says Tao, of Tongji University in Shanghai.

But first, the team had to determine how well dental implants transmit sound compared with natural teeth and the mastoid bone behind the ear, which other types of hearing aids rely on to work. For a wide range of frequencies, the sounds through implants could be heard just as well as, or better than, through natural teeth or mastoid bones, the team reports.

Front-tooth implants appeared to work slightly better than dental implants toward the back of the jaw. That may be because jawbone at the front of the mouth is harder than jawbone at the back, the team speculates. Lower teeth and implants worked as well as uppers for transmitting sound.

By James R. Riordon for Science News.

Keep up with the latest research on older people with disability.

Accessing the latest research about the prevention and response to abuse, neglect and exploitation of older people and adults with disability is now easier with the NSW Ageing and Disability Commission's **Knowledge Hub**.

The Hub houses the latest in research, evidence and peer reviewed articles to further the development of policies, programs or campaigns aimed at improving safeguards for older people and adults with disability, as well as children and young people in care.

It's free for anyone to use and is a unique platform connecting researchers and policymakers in government and industry.

See at a glance the **full list of topics** on the Knowledge Hub.

Hearing over distance or in reverberant places is challenging.

The effect of distance from a sound source is intensified for hearing aid users. Think of input to the hearing aid microphone as an ever-expanding funnel. As one moves further and further away from the sound source, the "funnel" in effect, becomes wider and wider and gathers in more and more sounds, wanted and unwanted sounds, and mixes them all together – making understanding increasingly difficult.

Most hearing aid users do best where wanted signals originate less than 2-3 meters from their ears and only in places where it is quieter, reverberation is minimal, and the speakers can be easily seen to aid in lipreading. But what about the - often acoustically unfriendly - public environments we all move around in on a daily basis?

Can something be done to improve communication, to ensure hearing loss is no longer a barrier, and people with hearing loss are not left behind? If wheelchair ramps help people with mobility challenges, is there an equivalent for people with hearing loss and hearing aids that can help them hear with greater ease and put them "on par" with normal hearing folks? The answer is yes! Hearing loops, an assistive technology can be of great benefit.

When a person is within the field of a hearing loop, they switch their hearing aid or cochlear implant to the T-coil or telecoil setting: the sound from the PA system is broadcast directly and wirelessly into their hearing aids. With hearing loops, there is no need for users to pick up a generic receiver from a service desk. In a hearing loop, the hearing aid is the receiver.

The Hearing Loss Association of America raises awareness of the benefits of hearing loops. It advocates for their installation in public venues through their Get in the Hearing Loop initiative.

Having easy access to hearing loop locations will help people with hearing loss find communication access when they venture out in the world.

If you have benefited from a hearing loop, let the facility know. Let's make everyone aware that hearing loops are essential to providing hearing accessibility because they ensure hearing aid users can hear and participate with ease, just like everyone else!

By Juliëtte Sterkens, writing for AccessiBe. Dr Sterkens is a hearing loop advisor to the Hearing Loss Association of America. In this capacity, she advocates for the inclusion of telecoils in hearing aids and cochlear implants, the installation of hearing loop systems that meet the international hearing loop standard, as well as another telecoil compatible assistive technology, to permit universal hearing access for consumers with hearing loss the world over.

Bluetooth technology does not directly connect hearing aids with hearing loops.

A new Bluetooth protocol has been released but it will be some years before most hearing aids are fitted with Bluetooth LE, and many more years before all hearing aids currently in use are replaced with hearing aids with Bluetooth LE.

The International Deafness Symbol shows that a hearing loop has been installed in a public place.

Australian Government 'Hearing Services Program' has a new website.

The new website contains updated content, information and resources.

There are a few changes to let you know about.

The client information booklet has been updated, taking on some of the suggestions made by Deafness Forum Australia expert members,

- ACT Deafness Resource Centre
- Aussie Deaf Kids
- Better Hearing Australia Brisbane, Central Coast and Sydney
- CICADA WA
- CICADA National
- Deafness Council Western Australia
- Hearing Matters Australia
- Parents of Deaf Children
- UsherKids Australia

For service providers:

- forms, publications and factsheets are found in resources for hearing professionals
- factsheets are in the provider handbook
- there is a collection of program statistics
- portal users guides have been updated
- Contracted Service Provider Notices (CSPNs) can be found under latest news and provider notices.

Here is the new address for the Hearing Services Program website. If you have any questions, email the Hearing Services Program people at hearing@health.gov.au

The Hearing Services Program has two parts with different eligibility requirements.

1/.Voucher scheme

To be eligible for the Voucher scheme a person must be an Australian citizen or permanent resident over the age of 21 years and hold a:

- Centrelink Pension Concession Card;
- Centrelink Sickness Allowance;
- DVA Pensioner Concession Card;
- White Health Repatriation Card (for hearing loss);
- Gold Health Repatriation Card;
- be a partner of a person in one of these categories; or
- be referred by the Disability Employment Service.

2/.Community Service Obligations (CSO)

To be eligible for CSO a person must be an Australian citizen or permanent resident, and be either:

- aged under 26 years
- Aboriginal or Torres Strait Islander and either:
  - aged 50 years or over
  - participate in the Community Development Program
  - took part in the Community Development Employment Projects Program from 30 June 2013 and were receiving hearing services from Hearing Australia before you stopped participating
- eligible for the voucher scheme and either:
  - live in a remote area
  - require specialist hearing services.

For more information about the program and the services available for eligible people, visit the website or email hearing@health.gov.au

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Aboriginal and Torres Strait Islander research.

Researchers at the National Acoustic Laboratories work closely with Aboriginal and Torres Strait Islander communities to find better care solutions for children with hearing problems.

Ear disease and hearing loss are more common and severe among Aboriginal and Torres Strait Islander children compared to non-Indigenous children.

National Acoustic Laboratories (aka NAL) has a special research program dedicated to supporting the hearing health of Indigenous children, families, and communities.

NAL collaborates with Aboriginal and Torres Strait Islander community stakeholders and experts to find ways to intervene earlier and provide the best treatment for children.

This research is vital in addressing the specific challenges faced by Indigenous communities in terms of hearing health. NAL's work is guided by its Aboriginal and Torres Strait Islander Research Leadership Group, which helps identify the most important areas to focus on. They work together with communities and services to address shared priorities in the Roadmap for Hearing Health.

NAL's goal is to make a positive impact on the lives of Aboriginal and Torres Strait Islander children and families by improving their hearing health through research and collaboration.

Aboriginal caregivers' perspectives on supporting young children's hearing health and language development.

Caregivers, such as parents and other family members, play a crucial role in identifying ear infections and hearing problems early, seeking treatment, and supporting their children's development.

To ensure that intervention and support services meet the needs of children and families, it is important to understand the perspectives of caregivers. The NAL conducted a study, led by Wiradjuri researcher Michelle Kennedy to learn how caregivers support their children's hearing health and language development.

The study used a method called Yarning, which involves informal conversations that follow cultural protocols, to gather insights from Aboriginal caregivers in both urban areas of NSW and remote communities in the NT.

By understanding caregivers' experiences and gathering their suggestions for improvements, service providers and healthcare professionals can assess how well they are meeting the needs of Aboriginal children and their families. This knowledge can empower and support caregivers in their important role. The findings of the study also contribute to NAL's research efforts to improve ear health and hearing support for Aboriginal and Torres Strait Islander children and families. Ultimately, the goal is to prevent the long-term negative impacts of hearing loss caused by ear infections like otitis media.

Learn more about NAL by reading its Annual Impact Report 2022. In the report you will find future trends in hearing healthcare, featured impact projects delivered with its global collaborators and the research experts who made it possible.

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Hearing devices are subpar for music.

Hearing aids have been mainly designed to improve communication by separating speech from background noise. This approach has been successful in terms of speech, but it has yet to be as effective for music.

According to research in the past two decades, people with hearing loss have been unhappy with the sound quality of music when using their hearing aids. It is a significant problem since music is an essential part of our lives and can be related to our mental and emotional health.

Hearing aid manufacturers have created music programs for their devices to solve this issue. Researchers tested and compared music samples processed by hearing aids from popular manufacturers. The study participants rated the sound quality of these recordings, and the researchers discovered that the hearing aids had lower ratings for music than earbuds designed for music listening. The research also found significant differences in music quality between hearing aid brands.

One factor could be how hearing aids adapt to loud, sudden sounds. When listening to a conversation, you wouldn't want a door slamming amplified too much, but with music, there are loud, sudden sounds that we want to hear, such as percussion instruments. Distortion may also be one of the significant issues as music often has intense low-frequency harmonics.

The researchers found that the brands with the highest rating in music quality processed intense ultralow frequency peaks with less distortion than those with the lowest rating in music quality. This study will help improve future technology and assist audiologists in selecting the best hearing aids for their patients.

From Beyond necessity, hearing aids bring enjoyment through music by Emily Sandgren and Joshua Alexander of Purdue University.

Are dentists ready for their deaf patients?

Deaf people often face communication barriers when getting dental care, which can lead to bad experiences, anxiety and sub-optimal levels of care. A recent study in Australia looked at how prepared dental and oral health students are for treating signing Deaf patients.

The study found that most dental hygiene students had no training in Auslan, the language used by Deaf people in Australia. However, those who did were more knowledgeable about Deaf culture and the language and felt more confident in communicating with patients.

The study also found that most responses from dental professionals identified a communication issue but felt that it was the obligation of the Deaf patient to solve it, not the dentist. For example, the comment "patient unable to lipread due to clinician's mask" suggests that it is the patient's duty to have adequate lipreading skills, in addition to them needing to advocate for the mask removal for them to understand. Those with prior Auslan experience were more likely to phrase this kind of statement as the clinician forgetting to remove their mask.

Healthcare providers have a legal obligation to provide equitable services for people with disability. Language or cultural differences should be a barrier to this standard of care.

Across Australia and indeed the rest of the world, there is a disparity between deaf patient communication preferences and the reality of the services that are available. Changes throughout the clinical environment will vastly improve the deaf patient experience, such as ensuring all staff are aware the patient is deaf, asking the patient what their communication preference is, staff training in Auslan, providing resources in Auslan or basic English and providing an SMS/text or email service.

From ScienceDirect, Journal of Dental Sciences.

Get Help With Your Hearing: a national campaign from the Australian Government.

The Australian Government has created a national awareness campaign to encourage people with untreated or developing hearing loss (aged 50–70 years) to proactively manage their hearing health.

Hearing loss is common among Australians, with 1 in 6 people experiencing some form of difficulty hearing. Left untreated, hearing loss can affect mental and physical health and have a big impact on everyday life. That's why it's important to think about hearing in the same way you think about other aspects of your health.

Many Australians with hearing loss do not seek treatment but help is available. Having a hearing test can help to detect the early signs of hearing loss, so you can keep your hearing healthy for longer. Hearing aids are not the only treatment for hearing loss. Following a hearing check, a range of management options may be discussed including communication strategies, assistive listening devices and phone apps.

If you are concerned about your hearing, or the hearing of someone you love, book a hearing check today. Talk to your health professional or visit health.gov.au/hearing for more information.

From the Campaign website.

Watch and download these videos:

Get Help for Your Hearing Health

Having a hearing test helps to detect the early signs of hearing loss, so we can keep our hearing healthy for longer. Get help for your hearing health. Book a hearing check today.

Get Help for Your Hearing Health – Cafe –

Having a hearing test helps to detect the early signs of hearing loss, so we can keep our hearing healthy for longer. Get help for your hearing health. Book a hearing check today.

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- Get Help for Your Hearing Health
- Get Help for Your Hearing Health – Cafe
- Get Help for Your Hearing Health – Birthday

Access resources

- Fact sheets, posters, and videos
- Infographics
    - testing pathways for hearing loss
    - ways to manage hearing loss
- Information on managing hearing loss
- Tips for talking to people with hearing loss
- Tips for communicating when you have hearing loss
- Information for health care settings.

Read about

- Ways to prevent and manage hearing loss
- Supporting people experiencing hearing loss

Book a hearing check

If you are concerned about your hearing or are experiencing hearing loss, a test by a hearing care professional can help determine the type of hearing loss and how much it has progressed.

How does hearing work?

The ears are delicate and sensitive organs. Sounds in the environment produce tiny changes in air pressure.

The ears detect these changes and send the information to the brain for processing. They are also important for maintaining balance.

A person's sense of hearing is incredibly versatile. It can detect extremely quiet sounds, determine whether a noise came from far or near, and isolate a specific sound within dense background noise.

This article explores the anatomy of the ear, describe how hearing works, and investigate common causes of hearing loss.

How does hearing work?

Each section of the ear has a distinct purpose.

The ear has three main sections: the outer, middle, and inner ear. Each section serves a distinct purpose in hearing.

The outer ear is the visible part, also known as the pinna. Its primary job is to collect as much sound from the surrounding area as it can. External sounds then enter a thin passage called the ear canal.

The middle ear amplifies incoming sound with the help of a thin membrane called the eardrum, or tympanic membrane. The eardrum separates the outer ear from the middle ear and helps to transmit sound vibrations to the inner ear. Three tiny bones, called ossicles, amplify the sound. The names of the ossicles are:

- **The malleus, or hammer:** This connects to the eardrum.
- **The incus, or anvil:** This connects to the malleus.
- **The stapes, or stirrup:** This is the smallest bone in the body and links to the incus.

The eardrum vibrates when sound waves reach it. This vibration moves the ossicles, transmitting sound further into the ear.

Meanwhile, the Eustachian tubes are thin, mucus-lined passages that help maintain stable pressure in the middle ear. Stable pressure allows sound waves to transmit correctly.

These tubes connect the middle ear to the back of the throat. A person can "pop" their ears by forcing air into the Eustachian tubes.

Inner ear

After the ossicles amplify the sound waves, the vibrations enter the cochlea.

The cochlea is a small, curled tube full of liquid that sits in the inner ear. It has an internal membrane, called the basilar membrane, which is covered in hair cells. Sound causes the fluid to rise and fall, moving the hair cells up and down as they "ride the wave."

Each hair cell has stereocilia — tiny hair-like projections — along its top. As the hair cells move up and down, the stereocilia bump into the structures above them. The bumping causes them to bend, and this opens up ion channels, creating a signal that the ear delivers to the brain.

Higher and lower pitches of sound activate hairs in different parts of the cochlea. The brain gathers information about pitch from the position of the activated hairs.

The cochlea sends this information along the auditory, or cochlear, nerve. The signal reaches the medulla, which is part of the brain stem. The brain stem is the area of the brain closest to the back of the neck.

The auditory nerve also carries information from the brain to the cochlea. The fibres of this nerve help suppress distracting sounds, allowing us to concentrate on just one sound among many.

For instance, when we are having a conversation in a busy room, the fibres of the auditory nerve help us focus on hearing one voice while ignoring other sounds.

Pitch and intensity

People refer to pitch as frequency and measure it in hertz. The higher the hertz, the higher the pitch of the sound.

Intensity is another word for loudness, and people measure it in decibels (db).

The human ear usually hears sounds that are 20–20,000 hertz. In perfect lab conditions, some people can hear sounds as low as 12 hertz or as high as 28,000 hertz.

Hearing ability varies significantly from person to person. It tends to decline with age, especially the hearing of higher frequencies.

Most everyday sounds are 250–6,000 hertz. However, the ears are most attuned to sounds of 2,000–5,000 hertz.

As for intensity: Humans can detect sounds of 0–140 db. A whisper is around 25–30 db, and conversations are usually 45–60 db. A chainsaw is about 120 db. The sound of a jet taking off 25 meters away is 150 db and would cause the eardrums to rupture.

The ears and balance

The ears are also vital for maintaining balance. The inner ear contains the vestibular system, a part of the body that is largely responsible for spatial orientation and the coordination of movement as they relate to balance.

Three small, fluid-filled loops, called semicircular canals, sit just above the cochlea. One detects up-and-down movement, the next detects side-to-side movement, and the third detects tilting.

The fluid in the semicircular canals shifts when a person moves their head. These canals also contain thousands of tiny, sensitive hairs, which bend as the fluid flows past them. This bending relays information to the brain about the type of movement.

When a person spins around and stops suddenly, the fluid keeps moving for some time, continuing to push against the hairs. The hairs continue to send messages to the brain, so the brain assumes that the person is still spinning. This is dizziness.

A vestibule joins the semicircular canals and the cochlea. It contains two sacs, called the utricle and the saccule, which send the brain information about how the head is moving in relation to gravity and acceleration.

For instance, the saccule helps a person tell whether they are traveling up or down in an elevator and, more importantly, whether they are lying down or standing up.

Hearing loss

Various health conditions, lifestyle factors, and injuries can cause hearing loss. There are two general types. Conductive hearing loss occurs when sound cannot travel through the outer and middle ear.

Fluid in the middle ear, an ear infection, a tumour, damage to an ossicle, and a build-up of earwax can each cause conductive hearing loss. This type is often treatable.

Meanwhile, damage to the inner ear leads to the most common form of permanent hearing loss: sensorineural hearing loss. Causes include aging, genetic diseases, and drugs that are toxic to hearing, called ototoxic drugs.

Some people have inner ear damage alongside problems with conducting sound. This results in what doctors call "mixed hearing loss".

A doctor may also refer to hearing loss as bilateral, affecting both ears, or single-sided, affecting one ear.

Here are several possible causes of hearing loss:

- **Loud noises in the short term:** Exposure to one extremely loud noise, from an explosion, for example, can reduce the ability to hear.
- **Loud noises in the long term**: Exposure to loud noises over a long period can gradually reduce hearing. This may occur, for instance, in people who regularly use heavy machinery without ear protection.
- **Injury:** Some injuries, such as traumatic brain injuries, can cause hearing loss. An injury may puncture the eardrum or otherwise damage the middle ear.
- **Smoking** is linked with an increased risk of sensorineural hearing loss.
- **Otosclerosis** affects the small bones of the middle ear, preventing the ossicles from moving.
- **Ménière's disease** causes dizziness, sensorineural hearing loss, and tinnitus, or ringing in the ears.
- **Acoustic neuroma** is a type of tumour that can cause tinnitus and a feeling of a blockage in the ear.
- **Cholesteatoma** is a rare build-up of skin cells deep within the ear. Without treatment, it can damage the inner ear.
- **Presbycusis** is natural hearing loss due to aging, and it is the most common cause of sensorineural hearing loss. Sounds may become more muffled and conversations harder to follow.

By Kevin Martinez, M.D. and Tim Newman for Medical News Today.

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Know someone who deserves their own copy of One in Six? Let us know: hello@deafnessforum.org.au