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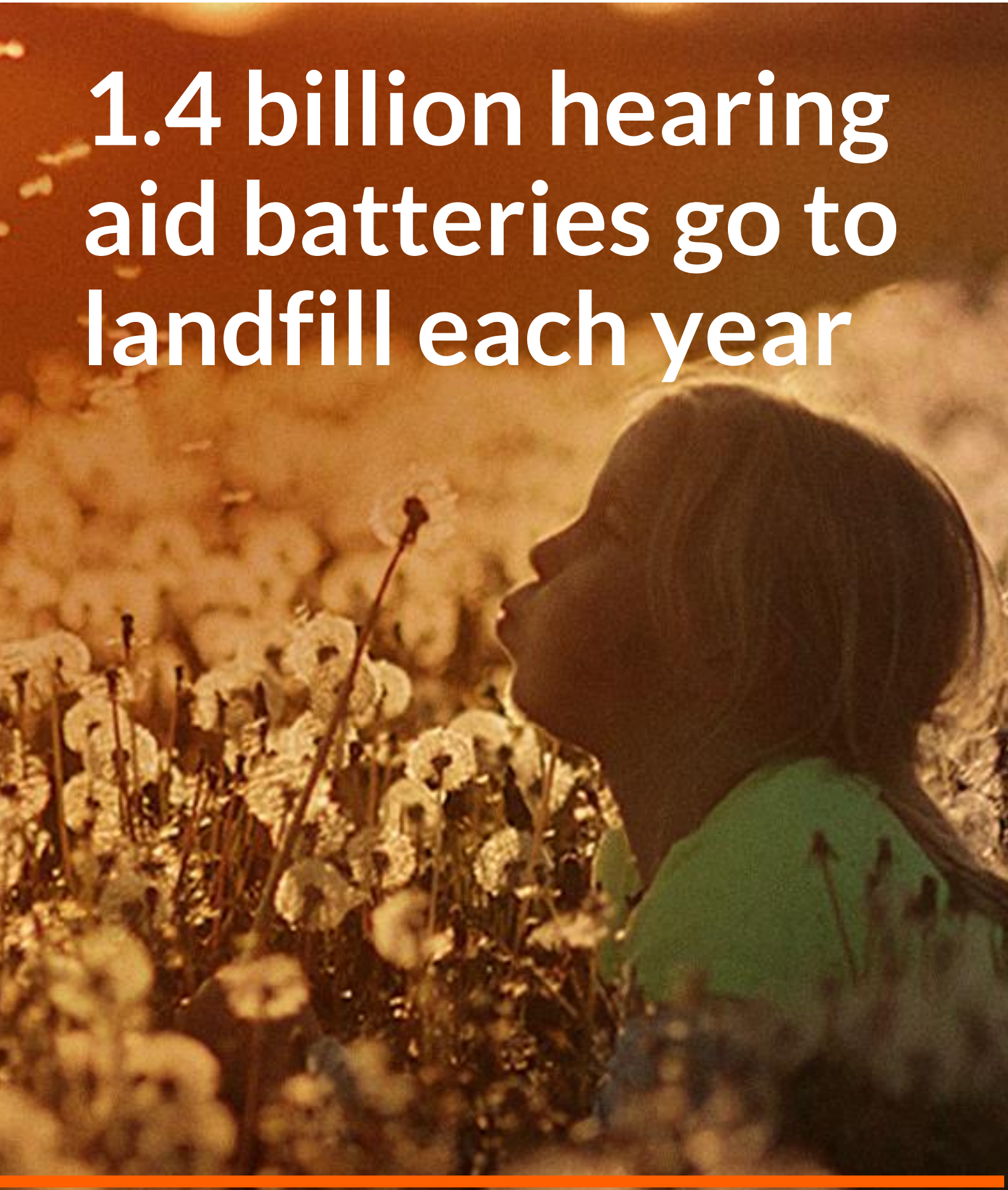

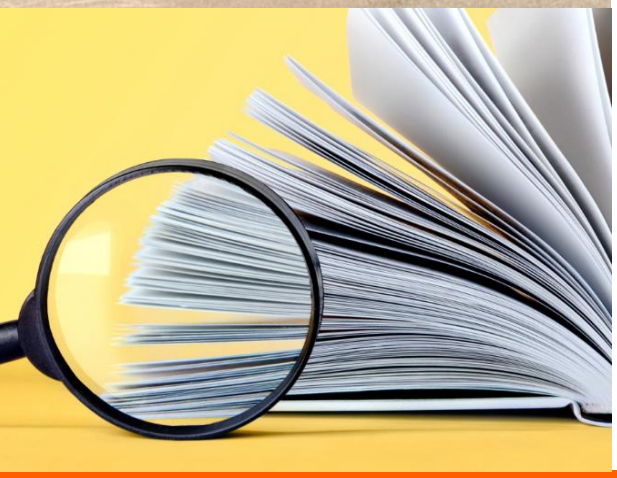

The carbon footprint of hearing healthcare and how we can reduce it

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When a person's hearing loss isn't treated, or when providers fail to communicate effectively with us, confusion and misdiagnoses occur. Issues like higher healthcare costs and our number of ER visits, when taken out of context, place the blame where it simply doesn't belong.

Mobile hearing healthcare

Meet two audiologists who use their clinics on wheels to reach people who have unaddressed hearing loss. Brandi Smiley, owner of Onsite Audiology in the U.S has created an inviting atmosphere in her unusual tiny house-inspired clinic.

New research

The purpose of a new study was to determine the auditory and language outcome of children with a cochlear implant and additional disabilities, and to analyse their daily device use. Although assessment in children with AD is a major challenge for professionals, comprehensive assessment is needed to improve cochlear implant services.

Cognitive impairment screening and hearing care

Audiologists are in a good position to have an in-depth conversation about hearing health and cognition since they encounter clients most vulnerable for mild cognitive impairment.

One in six Australians live with some form of hearing loss. This may increase to one in four by 2050.

Hearing health is absolutely essential for general health.

Deafness Forum Australia is the peak body representing the views and interests of citizens who live with hearing loss, have ear or balance disorders, people who also communicate using Australian Sign Language, and their families and supporters. Our mission is to make hearing health & wellbeing a National Priority.

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The Carbon Footprint of hearing healthcare and how to reduce it

Choosing rechargeable hearing aids over those with disposable batteries, recycling and refurbishing devices and other actions can help reduce their environmental impact.

By Jan-Willem Wasmann and Jan de Laat for HearingTracker

The global carbon footprint of health services is about 5% of global CO2 emissions. This is quite a chunk of our carbon budget to stay within 1.5° C of global warming, especially when many people globally have only limited access to healthcare. For that reason, countries have pledged to decrease the carbon footprint of their healthcare systems.

More than 1.4 billion disposable hearing aid batteries disappear in landfill around the world each year, and this number at the time was expected to double every 9 years.

The environmental footprint of disposable hearing aid batteries.

While there are several reasons why disposable batteries will remain a practical choice in hearing aids for some time to come, we can try to reduce their environmental impact. Theoretically, if before 2024, all new hearing aids were to become rechargeable, there would be no demand for disposable hearing aid batteries by 2030.

The hearing aid industry is known for fast and efficient computing, and cramming as many features as possible into a tiny personal electronic device worn in or at the ear. Specifically designed internal circuits (mini-computers), Low Energy (LE) Bluetooth, and algorithms designed for speed with low computational budget have always played an important role given the limited power allowance and room for electronics available in modern hearing aids.

In recent years, batteries have been replaced by superior rechargeable Lithium-ion batteries. Research showed that the relative environmental impact (use of resources, toxic substances, energy use, etc.) was 65% lower for the rechargeable hearing aids.

We might also opt for other business models in hearing aid service delivery to decrease our carbon footprint.

Another point to consider is that if you now buy a new pair of hearing aids, you will in most cases also need to replace your existing accessories including TV-streamer or wireless microphones, since almost every new generation of hearing aid uses new communication protocols sometimes including new connectivity applications.

Can't we go back to the time of universal solutions such as loop systems that were compatible with any brand of hearing aids?

Another point to discuss among hearing aid manufacturers is a standard charger for rechargeable hearing aids. Best to agree upon an industry-standard early on, instead of waiting until regulators declare a standard as

recently happened with the USB-c connector in Europe.

Rechargeable hearing aid solutions for lower- and middle-income countries

Ideally, lower-priced hearing aids will offer rechargeable options as soon as possible. In low- and middle-income countries, rechargeable hearing aids might reduce overall costs of use and stimulate sustainable long-term use.

Hearing care is scarce in many low- and mid-income regions of the world and procuring hearing aid batteries can prove to be extremely difficult.

Charity organisations often provide refurbished hearing aids (i.e., cleaned and serviced devices intended for re-use), meaning those devices do not end on the ever-growing garbage piles but might benefit new users once the original wearer has upgraded to a new device.

This raises the question of what the carbon footprint of refurbished hearing aids is (and how rechargeability might affect the equation), as well as the travels abroad associated with donation programs to bring experts to local communities. The carbon footprint of refurbishing a hearing aid was unknown to us at the time of writing.

Recommendations for reducing carbon footprint in hearing healthcare

- Hearing aid users can check the warranty of rechargeable hearing aids to make sure they start with ample battery capacity to use the hearing aids including streaming for at least 2 days (the number of hours one can use a rechargeable hearing aid on a single charge depends on the user profile).

It is estimated that battery capacity reduces 10% every year, so after 5 years you may end up with less than 50% of the original capacity.

- Audiologists and professionals who dispense hearing aids may decide to prescribe rechargeable hearing aids by default except when battery capacity is too low or when a model is not available. Not all hearing aid models offer a rechargeable option.
- Hearing aid manufacturers may consider recycling of batteries and old hearing aids as a next step. The overall environmental impact of rechargeables might be even lower if batteries and other materials are re-used for new products. What about standard connection ports?

Individual carbon footprint

How do you calculate the approximate overall carbon footprint of the hearing healthcare industry? One way is by estimating the CO_2 impact over the entire lifecycle of one hearing aid (5-10 kg CO_2-eq) or Cochlear implant (40-68 kg CO_2-eq)20 times the number of devices sold worldwide (18 million).

Assuming that hearing aids are used approximately 5.5 years, the total estimate of in-use hearing aids amounts to 100 million, meaning that only 1 in 4 persons with disabling hearing loss receives personal amplification. From this, a ballpark figure for the total annual direct carbon footprint of the hearing aid industry, excluding bone conduction devices

Hearing care is scarce in many low- and mid-income regions and procuring hearing aid batteries can be very difficult.

Assuming that hearing aids are used approximately 5.5 years, the total estimate of in-use hearing aids amounts to 100 million, meaning that only 1 in 4 persons with disabling hearing loss receives personal amplification.

From this, a ballpark figure for the total annual direct carbon footprint of the hearing aid industry, excluding bone conduction devices and cochlear implants, is 100-150,000 ton CO^2-eq.

For the individual bilateral hearing aid user, the carbon footprint amounts to 10-20 kg CO^2-eq and is equivalent to 40-80 kilometers driving a medium-sized gasoline internal combustion engine.

So, driving a car to visit an audiologist may have a higher CO^2 impact than purchasing hearing aids. And choosing public transport might be more impactful than choosing rechargeable hearing aids.

Collective carbon footprint

Alternatively, one can estimate the total scope 1+2+3 CO^2 emissions over the entire value chain of the biggest corporations within the hearing healthcare industry.

Scope 1 includes all direct emission from an organisation's core activities, Scope 2 includes indirect emissions that result from the generation of purchased or acquired electricity, heating, cooling, and steam consumed by an organisation, and Scope 3 includes indirect emissions not included in Scope 2 that occur outside of the organisation in the supply chain.

Using the data reported by the seven largest corporations we get an estimated total yearly emission of 1.9-2.3 million ton CO^2-eq. For the hearing healthcare industry, it would cost around $190-230 million to compensate for the CO^2 emissions by buying CO^2 allowances (current market price $100 per ton) in a gap and trade system.

How can we reduce the environmental impact of hearing healthcare?

We hope that soon every hearing aid manufacturer performs lifecycle assessments on their products and even employs a Sustainability Officer, as WSA/Signia and Sonova have done.

Besides the carbon footprint, we should not forget other environmental factors such as use of raw materials, toxic waste, rate of refurbishments (re-use), recycling rate, packaging, and transport.

New hearing aids will not only be praised in marketing for their better performance compared to previous generations, but also for their reduced environmental impact.

As a consumer, you can consider rechargeable hearing aids.

As a field, professionals and companies may set an example within medicine by phasing out disposable batteries, increasing the overall recycling rate to 70% by 2025, and striving for carbon neutrality of scope 1+2 emissions before 2030, while serving more hearing impaired people.

Deafness isn't a threat to health. Ableism is.

Instead of assuming deafness is the problem, it's time to look at the systemic issues that impact our wellbeing and quality of life.

Issues like higher healthcare costs and our number of ER visits, when taken out of context, place the blame where it simply doesn't belong.

Institutions make general care and technology like hearing aids inaccessible to many.

Rampant employment discrimination means many d/Deaf people have sub-standard health insurance, though even well-reputed insurance coverage often won't cover hearing aids. Those who do get aids must pay thousands of dollars out of pocket — hence our higher healthcare costs.

Deaf people's above-average visits to the ER are also no surprise when compared to any marginalised population. Disparities in healthcare based on race, class, gender, and ability are well-documented, as are doctors' implicit biases.

Deaf people, and especially those at the intersection of these identities, face these barriers at all levels of healthcare access.

When a person's hearing loss isn't treated, or when providers fail to communicate effectively with us, confusion and misdiagnoses occur. And hospitals are notorious for not providing interpreters though they're required to by law.

Those elderly deaf and hard-of-hearing patients who do know about their hearing loss may not know how to advocate for live-captioner, or FM system or an interpreter.

Meanwhile, for culturally Deaf people, seeking medical attention often means wasting time defending our identity. When I go to the doctor, no matter what for, physicians, gynecologists, even dentists want to discuss my deafness rather than the reason for my visit.

It's unsurprising, then, that d/Deaf and hard-of-hearing people report a higher level of mistrust in healthcare providers. Combined with the economic factors, means many of us avoid going at all, end up in the ER only when symptoms become life-threatening, and endure repeated hospitalisations because doctors don't listen to us.

And that's the root of the problem, really: an unwillingness to centre the experiences and voices of d/Deaf people.

Read the full article by Sara Nović here.

Illustration by Brittany England.

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Hearing care access with mobile audiology

Meet two audiologists who use their clinics on wheels to reach people who have unaddressed hearing loss.

Audiologist Brandi Murphy, owner of West Texas Mobile Audiology, says she delivers services across 70,000 square miles.

Because of the long distances she travels, Murphy ensures there are patients to see on her stops by making appointments at least two weeks in advance. She uses social media and mailed advertisements to find more people in the area.

“We really try to make the schedule full, that way it's worth everybody's time and we can continue to provide services in that town,” Murphy says. “It's really a learning curve to determine what works best in these specific towns. I could do one town and then turn around and do the next town, and it's 100% different.”

Brandi Smiley, owner of Onsite Audiology, and her unusual tiny house-inspired design. She has created an inviting atmosphere in her clinic.

“I've always liked intimate clinics that were open and bright,” Smiley says.

“I really wanted to bring that type of aesthetic to those who were in underserved regions.”

“I look at myself as a community partner, so I wanted to look at the areas that really had either very little resources or access available—or had absolutely none.”

By J.D. Gray for AshaWire

New Deafblind resource centre

The National Deafblind Training Working Group, coordinated by Able Australia are delighted to announce the launch of a new Deafblind Resources site.

This site forms a repository of resources related to deafblindness and was established through the National Deafblind Training Working Group with generous in kind support from NextSense.

It is free to access the site and you can engage with the site by going to the NextSense Course page - https://courses.nextsense.org.au/

Select the Deafblind Resources page and choose Guest Access. This will take you to the site, and you may visit as often as needed.

It is called a 'course', but it is self-guided and essentially a repository of resources split into sections to meet individual learning needs.

Please complete the Deafblind Resources Page Introductory Survey when you first enter the page, and complete the Site Evaluation Survey when you complete your review to provide the site managers with advice about your experience.

These surveys are the first and last items on the page.

EarGenie hearing test for babies

Researchers at the Bionics Institute in Melbourne are developing a new hearing test that will give babies the best chance of hearing clearly and learning to speak.

Babies learn to speak by hearing speech. So, not hearing vital sounds needed in the early months of life means that speech development in babies can be delayed or permanently affected.

For many babies, the current newborn hearing tests can indicate how severe the hearing issue is, but not give key information about whether the brain can discriminate between sounds.

Information about discrimination between sounds is vital for audiologists to tune hearing aids or cochlear implants and optimise early intervention. However, it is often necessary to wait until a baby is 9 months old before audiologists can determine if their hearing devices is helping them to hear the sounds they need. Babies are too young to tell audiologists if their hearing devices are not tuned properly.

Researchers at the Bionics Institute are working on a new system called EarGenie, which will use light (functional near-infrared spectroscopy or fNIRS) to measure the brain's response to sounds. A band wrapped around the baby's head contains small light sources and light detectors. When the brain responds to a sound there is a change in oxygen level which can be recognised using specialised software. These changes indicate whether the baby has heard the sound; and also, whether the baby can tell the difference between two different sounds, known as discrimination.

Eventually this technology will allow audiologists to tune hearing devices accurately from the very start, allowing babies to hear vital sounds and give them the best start in life.

It was announced last week that the project will receive a $1million grant from the National Health and Medical Research Council.

Children with cochlear implant and additional disabilities benefit from consistent device use

Although the prevalence of additional disabilities (AD) in children with a cochlear implant (CI) is high, children with such disabilities are often excluded from clinical studies, or their specific characteristics are only partially included.

The literature shows that several factors need to be considered in evaluating auditory and language development in CI children with AD, including demographic variables as well as the severity and type of disability.

Current findings on device use in children show correlations with auditory and language outcome, but little is known about device use specifically in children with AD.

The purpose of a new study was to determine the auditory and language outcome of CI children with AD and to analyse their daily device use, both 1 year and 2 years after implantation.

The auditory and language outcome in CI children with AD is variable, but it progresses over time. Children benefit from a consistent daily device use as well as from a high exposure to speech-characterised environments.

Although assessment in children with AD is a major challenge for professionals, comprehensive assessment is needed to improve cochlear implant services with special adaption to children with AD, and this should include audiological, development-related and psychosocial information. A unified system to classify types of disabilities could help to improve procedures for analysing different outcomes. Read more.

The role of Care Partners in medical visits of Older Adults with Hearing Loss and Dementia: A national study

Dementia and hearing loss are conditions which restrict communication ability and amplify the difficulty of implementing effective care coordination and communication with medical providers.

Nearly 4 in 10 older adults with dementia also reported hearing loss. Eighty-two percent of older adults with both HL and dementia were accompanied to medical visits by a care partner.

Those with hearing loss and dementia were six times more likely to be accompanied by a care partner to medical visits than those with neither condition.

Care partners of older adults with both (vs neither) hearing loss and dementia were more actively engaged in facilitating understanding between the older adult and doctor; asking or telling the doctor information; and reminding the older adult of their questions.

Care partners have an active role during medical visits of older adults with hearing loss and dementia. Efforts to support care partner engagement and teach advocacy skills may close gaps in care quality for older adults who are living with hearing loss and dementia. Read more.

Kalli gives Margaret a new lease on life

Margaret Watt with her new Hearing Dog Kalli and local Hunter Business Lions volunteers. Photo: Jamie Gilmore, Little Green Frog. By Rod Thompson for the Newcastle Weekly.

Newcastle NSW resident Margaret Watt is set to enjoy a new lease on life, courtesy of an adorable four-legged friend.

The hard-of-hearing local received a fully-trained Australian Lions Hearing Dog named Kalli, which will give her independence, security and confidence.

It's all thanks to Hunter Business Lions Club, which sponsored Kalli's training and placement – a cost close to $40,000.

President Jenny Barrie expressed her gratitude to the region's generosity.

"One in six Australians are suffering from some form of hearing loss," she said. "And this number is on the rise, which is why Lions Hearing Dogs is such an important cause to support.

"From a hard-of-hearing person who takes their aid off at night to a profoundly deaf person, many Australians can't hear important sounds such as the knock at the door, a telephone or, most seriously, a smoke alarm," Lions Australia CEO Rob Oerlemans said.

"Australian Lions Hearing Dog Foundation is the only accredited hearing dog training centre in our country.

"Since it was formed in the 1980s, the organisation has provided hundreds of hearing dogs to deaf or hearing-impaired Australians."

The cost of fully training a Lions Hearing Dog is $37,000. And, each year, Australian Lions Hearing Dogs train and provide anywhere from 25-30 assistance dogs around the country.

"It's the only Australian organisation accredited by Assistance Dogs International to carry out such work, each dog free of charge," Mr Oerlemans said.

"The redevelopment of the National Training Centre in Adelaide will soon have capacity to train up to 120 assistance dogs per year.

"The work of Australian Lions Hearing Dogs is not only helping many Australians live a safer, more secure and confident lifestyle but it's also giving the animals a new home and purpose.

"An Australian Lions Hearing Dog can be any shape or size and the majority of dogs are actually sourced from pounds, rescue organisations and shelters."

For further information and to find out how you can support Lions Australia and Lions Hearing Dogs, visit https://hearingdogs.asn.au

Integrating mild cognitive impairment screening in hearing care

Mild cognitive impairment is a disorder affecting older adults: a cause of growing concern as the population of older adults continues to grow.

Because mild cognitive impairment can masquerade or occur with hearing loss in older adults, researchers have recommended universal cognitive screening of older adults with hearing difficulties, regardless of whether they show signs of cognitive impairment.

Social isolation and loneliness have been proposed as potential factors related to the association between hearing loss and cognitive impairment in older adults.

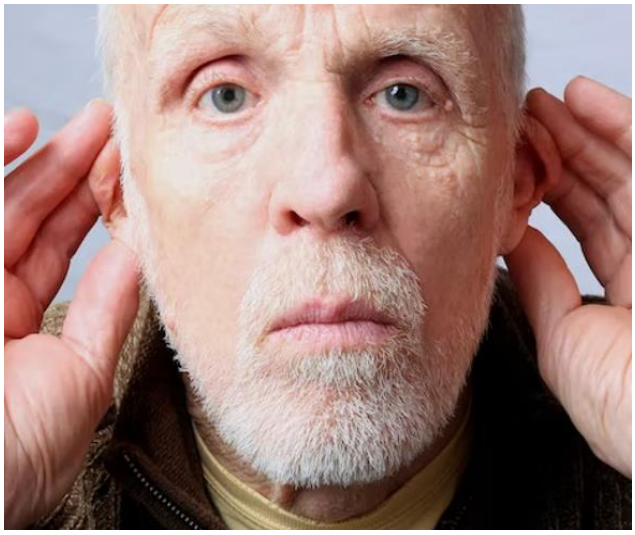
The objective of cognitive screening is to identify individuals who might have a small cognitive decline that does not interfere with independence in daily activities, or dementia, a severe reduction in cognitive functioning that interferes with independence.

The Role of Early Screening for mild cognitive impairment in Improving Aural Rehabilitation

Audiologists are in a good position to have an in-depth conversation about hearing health and cognition since they not only encounter clients most vulnerable for mild cognitive impairment but also spend a considerable amount of time with people as part of their routine clinical interactions.

So, incorporating mild cognitive impairment screening tools as part of the audiologic practice is a logical extension of this idea as audiologists can play a key role in early screening.

Results of the cognitive screening test would be helpful in selecting hearing aid features and settings to reduce cognitive load and improve understanding of speech. For example, hearing aid features such as automatic program change, automatic directionality, frequency modulation, and telecoil activation are known to reduce



cognitive load and might be advantageous for older adults with cognitive decline.

Future Recommendations

Not all audiologists might be comfortable or confident in screening for cognition in their clinical practice, but with adequate training and an appropriate interprofessional referral network, preventive measures for cognition can become an integral part of standard audiologic practice.

Academic institutions and graduate training programs can work toward integrating cognitive health into the training of future audiologists.

Conclusions

It will be important to integrate aspects of early detection and interprofessional management of MCI into the academic and clinical training of future audiologists.

With the continuous increase in the aging population around the world, incidence and prevalence of age-related hearing loss and cognitive decline are projected to increase proportionately among older adults, posing significant public health challenges.

By Nilesh Washnik and Javad Anjum, published by AshaWire

How to Know If Your Restaurant Is Too Loud

Restaurant noise levels can have a huge impact a guest's dining experience.

There's no question that restaurants have grown louder over the past few decades, and people from guests to critics have taken notice. Loud restaurant noise is not only irksome for guests but also dangerous to staff. Let's take a look at some cost-effective ways you can reduce the noise levels in your restaurant.

But what's to blame for the increase in restaurant noise? There are a few different factors at play. One is design: Modern restaurant design favours open spaces and hard surfaces amplify sound, while open kitchens only add more noise to a restaurant space. Surfaces like marble countertops, brick walls, and bare table surfaces also reflect sound — these design elements leave nowhere for sound to go.

Another factor is sound's impact on table turn rates and alcohol consumption. Loud music with a faster rhythm can encourage guests to eat faster. There's even some evidence that noisy spaces encourage people to drink more and faster. While these things might be good for your bottom line, it's not worth irritating guests and potentially harming your staff in the long run.

Let's take a look at ways of reducing noise levels.

1. Keep background music in the background

Music is an integral part of your restaurant's atmosphere. Background music should largely remain in the background. Keep an eye on the volume, and leave room for your guests to chat without having to raise their voices.

Always reduce music volume if someone complains, and if you get multiple complaints that music is too loud, reassess your baseline volume and bring it down permanently.

2. Sound-proof your chairs

The sound of chair legs scraping against the floor of your restaurant isn't a pleasant one. You can easily help to eliminate this sound by putting rubber caps or fuzzy floor protector pads on the bottoms of your chair legs.

3. Utilise curtains, area rugs, and tablecloths

Windows and glass reflect sound, and curtains can soften noise levels. Rugs and carpeting in high-traffic areas help absorb the sound of staff and guests moving about. Tablecloths reduce the sound of clattering cutlery and glasses.

4. Keep machinery out of dining areas

Relocate noisy machines away from dining areas or utilise sound-absorbing materials on walls and ceilings.

5. Create a barrier to kitchen noise

If you already have an open kitchen concept, separating kitchen noise from your dining areas will be challenging. Make sure kitchen doors are kept closed when possible; you can even soundproof kitchen doors to muffle loud sounds.

6. Let your walls and ceilings absorb the noise

The walls and ceilings of your restaurant may be the biggest culprits of amplifying sound. Install sound-absorbing ceiling tiles, wall panels or fabric to prevent sounds from bouncing around.

From Toast

You can access a free preview of our Read Our Lips Australia online lipreading course to see what it is all about.

Visit our website and register your details to access Lesson 1 and decide if it is right for you.

Read Our Lips Australia is self-paced learning that is dedicated to supporting those with hearing loss and their families, by improving their quality of life through increased communication skills.

Contact us at support@readourlips.com.au or visit www.readourlips.com.au

The fee is claimable through an individual's National Disability Insurance Scheme plan. How you claim the course fee will depend on your individual goals and how your plan is managed. For example, the fee may be claimed under Capacity Building for improved social and community participation; or alternatively under Core Supports for individual capacity building training.

Read Our Lips Australia is funded by the Department of Social Security and NDIS.

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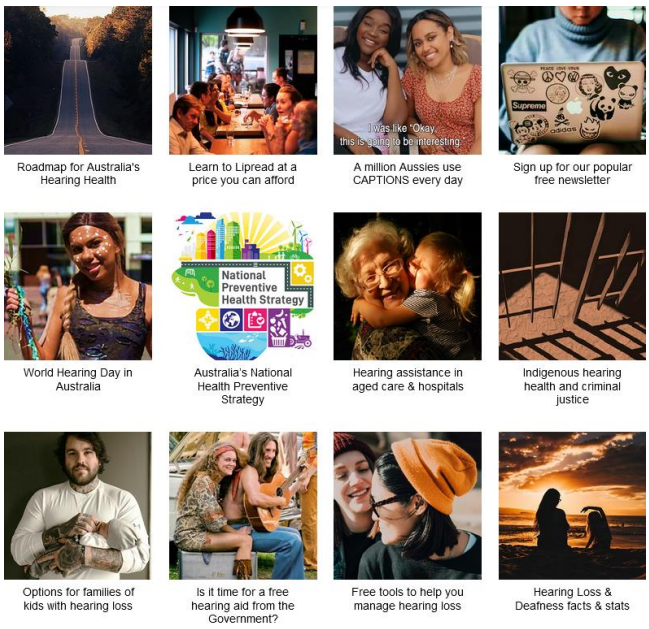
Drop a line to hello@deafnessforum.org.au

And visit our website, a rich source of information and news, www.deafnessforum.org.au



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