

Centre for Hearing Research (CHEAR)





The Centre for Hearing Research (CHEAR) is a UQ research centre based in the School of Health and Rehabilitation Sciences, with researchers across disciplines including audiology, speech pathology, occupational therapy, physiotherapy, psychology, biostatistics, and health economics with an interest in prevention, identification, and management of hearing loss across the lifespan.

We work closely with people with hearing loss, family members and key stakeholders including clinicians, support groups, government, and industry to improve prevention, identification, and management of hearing loss in Australia and around the world.

CHEAR is a collaborating centre for the World Health Organisation's World Hearing Forum, a global network to promote ear and hearing care worldwide. CHEAR works to develop effective, equitable and sustainable solutions so that everyone can achieve their goals in life without being limited by hearing loss.

Hearing loss

Hearing loss is usually due to damage to the inner ear. It can affect one ear or both ears and leads to difficulty in hearing conversational speech or other sounds. Among children, hearing loss critically impacts social and educational development and limits life opportunities. Among adults, hearing loss is linked to reduced quality of life, under- and un-employment, social isolation, poorer general physical and mental well-being.

One in six people currently live with hearing loss. This is set to increase to one in four by 2050. Hearing loss is the 5th leading cause of years lived with disability internationally. Hearing loss is linked to AUD\$33.3 billion costs per year in Australia (based on 2017 estimates), due to lost productivity, costs of care and impact on quality of life. Australia spends nearly \$7 billion per year on health and medical research. But hearing receives less than 1% of research funds.

At least half the cases of hearing loss in adults and children are potentially preventable (e.g. by addressing noise exposure and ear disease). Effective interventions for hearing loss are available, but many people lack access to hearing services and do not have information to make informed choices.

Hearing care is much more than only the supply and fitting of hearing aids. Other approaches (e.g. communication training) can also effectively reduce the impact of hearing loss.

There are difficulties accessing hearing care in Australia, especially for people from Aboriginal and Torres Strait Islander and culturally and linguistically diverse backgrounds, people living in rural and remote areas and those living in residential aged care facilities. Over 80% of people with hearing loss live in low- and middle-income countries and have little or no access to hearing care at all.

These are the challenges that CHEAR aims to address.

How we plan to tackle hearing loss

Our mission is to

- Work with people with hearing loss in all stages of the research process, to ensure that our work addresses real life problems and delivers relevant solutions for people living with hearing loss.
- Collaborate with hearing care professionals and industry partners to foster mutually beneficial partnerships and delivery of research that is aligned with community priorities and which informs and improves hearing care.
- Reduce impacts of hearing loss via
 - i) timely identification and treatment; addressing stigma; hearing technology and/other communication-focused solutions and developing
 - ii) accessible hearing care solutions, especially for Aboriginal and Torres Strait Islander people, culturally and linguistically diverse communities, people in aged care communities, rural & regional communities, our neighbours in the Indo-Pacific region.
- Work in partnership with Australians who support hearing research via philanthropy and other donations and by participating in hearing research.

Supporting children with hearing loss

Jack* is a 6-year-old boy who lives in a rural town in Queensland. He is studying in grade 1 in a local primary school and is struggling with schoolwork. In view of his poor academic performance and slow speech and language development, he is receiving additional help from remedial teachers and a speech pathologist.

Like his classmates, he has a few colds and flu during winter times which make him sick. Jack's teacher noted that Jack has a short attention span and cannot focus on class activities for too long. Teachers found that Jack does not always follow instructions at school. At a parent-teacher meeting to discuss Jack's behaviour at school, both parent and teacher suspected that Jack may have an underlying health issue that leads to unacceptable behaviour such as talking too loudly and screaming at other children. However, this health issue was not identified until a hearing screening research team from UQ visited the school.

Jack failed the hearing screening and was referred to an audiologist for diagnostic hearing assessment. As audiology services were not available where he

lives, Jack's parent had to bring Jack to Toowoomba to see an audiologist. Jack was later diagnosed to have a moderate, mixed hearing loss in both ears. This means that Jack was suffering from middle ear infection (known as glue ear) on top of an underlining inner ear issue that was not identified at his universal newborn hearing screening. Jack was then referred to his family doctor for treatment. After medical treatment, Jack was referred to Hearing Australia for hearing aids.

Researchers at CHEAR are working at closing the gap in audiology services between Brisbane and rural areas. While there's limited hearing screening service in Brisbane, there's no such service in rural areas. We promote tele-audiology services for rural areas



such that bush-kids like Jack can benefit from such hearing-health services. Further, CHEAR researchers are keen to lobby the Queensland government to provide a hearing screening service for all children living in Queensland. Please support our research that aims to improve the ear and hearing health for children like Jack.

Animal assisted care

Rose* is a 69-year-old widowed lady who lives alone in a townhouse complex in outer Melbourne. A few years ago, she retired from her position as a head chemist, and has been struggling to fill her time lately.

Her family have long moved out or passed on, and her health issues prevent her from participating in many social activities. Since birth, Rose has had a severe hearing loss in both ears and has worn hearing aids, which have allowed her to obtain a university master's degree, long-term employment with an above-average salary, and to enjoy happy family connections. But Rose has not been herself for many years. She lacked the confidence to go out and about, and with very few friends that she could rely on, she was feeling rather lonely and depressed most days. As her mental state deteriorated, so did her general health. The weaker her body became, the worse she felt in herself. It seemed a vicious cycle.

Like many people with significant hearing loss, Rose's physical and socio-emotional health was suffering. Enter Roxy – a tiny 3-year-old Jack Russell, who had been specially trained and sponsored by the Australian Lions to act as Rose's Hearing Dog. Within 6 months of living with this Assistance Dog, Rose reported that

Roxy had become her "best friend, who made her feel safe and connected." Rose had met several neighbours for the very first time, whilst taking Roxy for her daily walk and was so pleased that Roxy "allowed her to hear the doorbell" when one of these neighbours stopped by for a cup of tea. Rose's world was expanding and her wellbeing was blooming again.

Researchers at CHEAR are working to document the benefits of Hearing Dogs, for people like Rose, beyond the assistance that they provide by alerting their owners to sounds in the environment. In particular, we are interested in spreading the news about the physical, social, and emotional advantages offered by Hearing Dogs. Hearing aids and other devices are not a "cure all" for the problems that Rose and others with hearing impairments regularly face. Please support our studies that aim to investigate and outline best practice for the provision of Hearing Dogs to persons in need.

*not their real name





Hearing and vision support for people with dementia

Fatima*, a spirited woman in her 80s, had always been known for her laughter and love for life. However, as the years went by, she stopped doing some of things she loved.

She started avoiding noisy restaurants as she found it hard to join in conversations when she was there. She stopped volunteering at the local community centre because she often misheard what people were saying. And she found herself sitting on the sidelines at family gatherings.

This only got harder when she started experiencing memory loss and later got diagnosed with early stages of dementia. She felt frustrated that she could no longer do the things she once could and was feeling lonely, despite living with her husband and having her children nearby – life just wasn't the same.

It was about 6 years before Fatima visited an audiologist. She nor her family had really thought about getting hearing aids. They didn't realise that the hearing loss was contributing to some of the communication problems Fatima was experiencing – instead assuming it was a sign her dementia was worsening. Fatima received a pair of hearing aids – and although it took some time to adjust – she once again was able to hear. She still found it hard to communicate at times, however it was clear that she was listening and she was now able to join in conversations with family and friends. Her family noticed a dramatic change in her mood, noting how her face lights up now when they come and visit.

Researchers at CHEAR are committed to improving services for people like Fatima and her family by increasing awareness of hearing loss in people with dementia; and by developing novel interventions that address the dual impacts of living with both conditions. We are establishing integrated care pathways for people with dementia and hearing loss who receive residential or home-based care; and exploring how we can best meet the needs of these residents through the provision of hearing aids, other hearing devices, and communication training. Please support our research that aims to improve the lives of all those who live with dementia and hearing loss.

**not their real name*



Research volunteering

Contact

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Give to CHEAR

By supporting the UQ Centre for Hearing Research (CHEAR) you will help to advance the field of hearing research and optimise the lives of people living with hearing loss.

Every gift makes a difference.

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