

IMPACT REPORT 2020



WHY WE DO WHAT WE DO?



EAR SCIENCE INSTITUTE AUSTRALIA WAS ESTABLISHED IN 2001 AS AN INDEPENDENT NOT-FOR-PROFIT RESEARCH INSTITUTE DEDICATED TO IMPROVING THE LIVES OF PEOPLE WITH EAR AND HEARING DISORDERS, THROUGH PATIENT FOCUSED RESEARCH, EDUCATION AND TREATMENT.

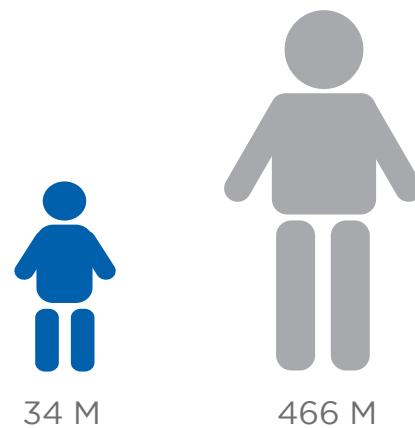
With 1 in 6 Australians experiencing hearing loss, the Ear Science Institute Australia team works to improve the lives of those with hearing impairment, to connect them with their world.

The impact of hearing loss is often hidden but there are many links between hearing and health. Hearing loss affects people of all ages, however the prevalence of hearing loss in the Australian population starts to rise significantly from about 50 years of age. Hearing loss compromises a person's ability to communicate and can cause social and emotional distress with

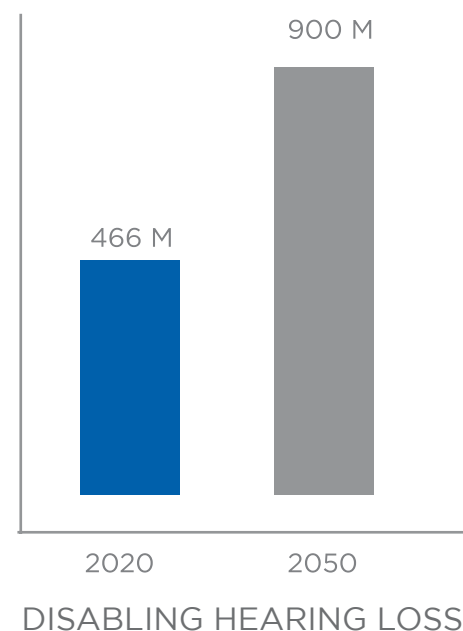
up to 50% of adults with hearing loss reporting feelings of isolation, loneliness, or symptoms of anxiety or depression.

As a centre of excellence, Ear Science Institute Australia brings together a multidisciplinary team of the brightest minds from across the globe including otolaryngology, audiology, engineering, computer science, molecular and cellular sciences. All are working to develop effective treatments for ear and hearing disorders, and eventually to find a cure for hearing loss.

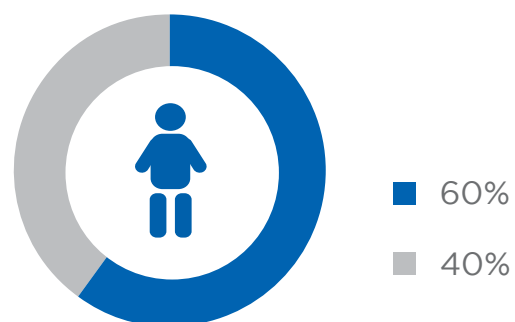
AROUND 466 MILLION
PEOPLE WORLDWIDE HAVE
DISABLING HEARING LOSS¹,
34 MILLION ARE CHILDREN²



IT IS ESTIMATED THAT BY
2050 OVER 900 MILLION
PEOPLE WILL HAVE
DISABLING HEARING LOSS²



60% OF CHILDHOOD
HEARING LOSS IS
PREVENTABLE²



1. Disabling hearing loss refers to hearing loss greater than 40dB in the better hearing ear in adults and a hearing loss greater than 30dB in the better hearing ear in children.
2. According to the World Health Organization



Vision

A centre of excellence, enhancing the lives of people with ear and hearing disorders.



Mission

We are dedicated to helping people with ear and hearing disorders, through research, education, prevention and treatment

THE IMPACT OF OUR WORK IN 2020



29,045

Calls to our Hearing and Tinnitus Help Line



50

Number of published peer reviewed articles in 2020



50

Institute hIndex



113

Number of implant recipients



1259

Children managed in our Paediatric Clinic



168

Number of hearing aids donated



266

Medical students attended our professional development

MESSAGE FROM THE FOUNDING DIRECTOR



It is with great pride that I deliver the Founding Director's Report for 2020 for Ear Science Institute Australia.

I would like to highlight the many successes that we have had throughout the year and acknowledge our team's efforts in adhering to the strategic plan for both the Institute as a whole and for translational ear research.

It is with a focus on our strategic objectives that has made the past 12 months yet another one of outstanding achievements on the local, national and global stages. Our key opinion status continues to grow apace. Our ability to pivot and continue to develop and thrive during the pandemic year of COVID-19 are just some of the many achievements that I am proud of.

Professor Michael Quinlan, our admired medical leader and previous Board member, passed away on October 2nd. I miss his gentleness, kindness and unrelenting pursuit of excellence. He taught us to always care for our community and his legacy continues for all of us who were privileged to have spent time with him and draw from his wisdom.

Our Chairman, John Schaffer, and Board should be commended on its continued and dedicated leadership and strong governance.

With another sound financial result, we can be confident in our abilities to deliver on our vision and mission well into the future.

A handwritten signature in dark ink that reads "Marcus Atlas". The script is fluid and cursive, with the first letters of the first and last names being capitalized and prominent.

Professor Marcus Atlas
Founding Director,
Ear Science Institute Australia

MESSAGE FROM THE CHIEF EXECUTIVE OFFICER



At Christmas time in 2019, our Ear Science team agreed that we would make 2020 a year of consolidation. The team had worked hard to ensure that our research, clinical services, education and advocacy all had solid foundations and we were poised to focus on further growth in these key areas on our return to work in 2020. Little did we know that these preparations would hold us in such good stead when we had to pivot and navigate our way through the disruption of COVID-19.

Despite 2020 being such a difficult year, we look back on it now with a great sense of achievement and relief and somewhat with astonishment. We ploughed through the crisis and opened new hearing clinics, launched exciting joint ventures and made headway with international breakthroughs in our research projects - all the while keeping our doors open to serve our community.

The commitment, hard work and support of our Ear Science team, devoted Board, and steadfast Gift of Hearing donors throughout this period, strongly positioned us to reach some incredible milestones. It has brought us closer together as a team, as the grateful recipients of thanks and gratitude from the hearing-impaired community that we continued to serve as essential workers.

More than ever, the sense of isolation and loneliness that all people felt during the pandemic gave us never-before insights into what life must be like for those with untreated hearing loss. Our campaign for flattening the curve of loneliness attracted a great response and we chose to extend our Client Liaison Centre to isolated clients and their families to give them someone to talk to.

Over the last few years, our researchers have been invited speakers and presenters all over the globe, and the establishment of this solid international network of collaborators and colleagues meant that while we could not travel we could continue many of our research projects by leveraging technology.

It was with great pride that we launched our first Ambassador for Ear Science with Australian media icon, businesswoman and spokesperson for healthy ageing, Ms Ita Buttrose AM OBE, with the “Hear Well, Age Well” campaign and leveraging the famous tagline ‘Ita told me’ - urging people to have a hearing check-up.

Whilst 2020 marked the 10th Anniversary of our Gift of Hearing Appeal, we were unable to hold our annual event. However, much to our delight, charitable donations continued

to be received for the purpose of providing life changing devices to those in need and to help grow new areas of ear and hearing research. Following our alternate online event – The Home of Ear Science - our answer to not having the in-person dinner, donations to support our work were a much-welcomed outcome.

Whilst there are so many marvellous achievements throughout 2020, it is the team and the culture of excellence that we have created here at Ear Science that I am most proud of. To create a work place that prizes and celebrates success, is authentic in all that we do and provides the freedom for our people to innovate all the while serving the hearing-impaired community is a gift.



Sandra Bellekom
Chief Executive Officer

2020 MILESTONES & ACHIEVEMENTS



EAR SCIENCE RESEARCH



We bring together some of the most influential academics and clinicians in the world, all with a shared passion to understand hearing and a shared goal to cure hearing loss. Our science continues to set best practice with a fully integrated model of clinical and research activities, allowing us to translate our knowledge into tangible outcomes for our community and beyond.

During 2020 our research projects continued to reach new heights, despite all that 2020 threw our way. Our exclusive Australian partnership with

the World Health Organization, as a Collaborative Centre for ear and hearing care, has given us the opportunity to increase our impact on the global pandemic of hearing loss, expected to affect over a billion people by 2050.

Our 2020 collaborations

At Ear Science Institute Australia, we value teamwork and we have established good practices for valuable partnerships. Laying clear ground rules and having open discussions on research expectations has resulted in powerful collaborations with successful outcomes and breakthrough innovations.

We have embraced multidisciplinary research opportunities and developed strong, intellectually diverse teams that can answer complex research questions.

In 2020 we collaborated with the following organisations and institutes across the globe:

1. Amana Living
2. Amsterdam UMC
3. Better Hearing Australia
4. Brightwater Care Group
5. City University of New York
6. Cochlear Ltd
7. Curtin University
8. Deakin University
9. Denmark Technical University
10. Eriksholm Research Centre
11. Macquarie University
12. MED-EL
13. Mugla Sitki Kocman University
14. Murdoch University
15. National Acoustic Laboratories
16. National University of Ireland
17. Oticon and Oticon Medical
18. Ryerson University
19. Sengkang General Hospital
20. Sonova AG
21. Telethon Kids Institute
22. The University of Manchester
23. The University of Western Australia
24. UMC Utrecht Medical Centre
25. University of Louisville
26. University of Melbourne
27. University of Pretoria
28. University of Queensland
29. University of Toronto
30. Utrecht Medical Centre
31. VU Medical Center Amsterdam
32. Weill Cornell Medical College
33. Western Australian Centre for Health & Aging
34. William Demant Foundation
35. World Health Organization

RESEARCH PROJECTS:

HEARING THERAPEUTICS



ClearDrum® implant

In 2020 Dr Filippo Valente reached a milestone in the ClearDrum® project, securing a Medtech grant for medical technology development from the Australian Government's BioMedTech Horizons Program to aid in the development and commercialisation of ClearDrum®.

With the support of a Wellcome Trust Grant and developed in conjunction with Deakin University, ClearDrum® is a prosthetic device designed for those with chronic middle ear disease, leading to perforation.



Chronic perforations lead to significant disabling hearing loss, and is particularly prevalent in indigenous populations in Australia.

This ground-breaking device, which acts as a full or partial artificial eardrum, will increase the success rate of surgery for patients and optimise healing.

Genetics of hearing loss

Dr Elaine Wong leads a research program focusing on the genetics of hearing loss and better understanding of the potential of inner ear 'hair cell' regeneration. The current focus is to address hearing impairment in Usher Syndrome, a genetic disorder leading to both deafness and blindness.



The research could lead to the development of new therapeutic treatments for deafness.

Specifically, Dr Wong and her team are investigating new ways to restore hearing through the repair and regeneration of lost or damaged hair cells. Her team have converted human skin cells into induced pluripotent stem (iPS) cells and reprogrammed them to become hair cell-containing inner ear organoids (a group of cells that resembles an organ). Our laboratory is only one of a few in the world which have generated 3D inner ear organoids in culture. Dr Wong is currently investigating the influence of genetics on hair cell development in this 3D inner ear organoid model, and whether we can enhance cell repair using a gene therapy approach.

Tissue repair and regeneration

Our research also concentrates on understanding the mechanisms driving tissue repair and regeneration in the ear. This knowledge informs future therapeutic approaches.



We have a strong focus on chronic middle ear disease and have initiated a program investigating a drug targeted for the treatment of tissue fibrosis in the ear.

Tympanic Membrane (TM) Repair

Chronic ear infections are common and affect up to 330 million worldwide. In some patients where ear drums rupture (perforate), they most often heal on their own, but in some cases, they require surgery to heal. Mr Lawrence Liew's PhD studies has identified a cell junction protein as a target for gene therapy. Studies have reported improved healing in chronic skin ulcers of diabetic patients by blocking the local activity of this protein at the genetic level. Using a rat model of chronic ear drum perforation, Lawrence is testing the effectiveness of gene therapy to improve TM repair.

Ms Huan Ting Ong's PHD study has investigated stem cell therapy for human TM wound repair. Using human mesenchymal stem cells (MSC), she has examined the molecular and cellular changes that occur in MSC behaviour under different culture conditions. She has identified the growth factors secreted by MSC that help promote a healthy wound healing response. The aim is to harness these growth factors for cell-free therapy approach.

Intracochlear fibrosis

Associate Professor Cecilia Prêle works across a number of research projects, applying her expertise in the area of tissue repair and regenerative medicine.

Her current research focus is on devising new preventative treatments for tissue fibrosis and scarring that can be directly applied to our work in the ear, including cochlear implantation and tympanic membrane repair. In collaboration with Associate Prof Wilhelmina Mulders and Dr Jafri Kuthubutheen, and using a guinea pig model of implant-induced fibrosis, she is testing a number of pharmacological agents that may protect the inner ear during implantation, and reduce fibrosis.

The team has recruited a PhD student, Ms Farah Amat who will continue these studies.

RESEARCH PROJECTS:

BRAIN AND HEARING



Hearing loss and cognition

Dr Dona Jayakody leads a team of researchers investigating the association between hearing and cognitive memory and processing skills. A key study is to determine whether the use of hearing aids can improve cognition.



It is important to maintain cognitive skills as we age as a decline of these is an important risk factor for dementia.

In 2020 we received grants from the Royal Perth Hospital Research Foundation, the William Demant Foundation (in 2019) and the Rebecca L Cooper Medical Research Foundation which will facilitate the randomised, controlled clinical trial which underpins

this study. It is being conducted in our Lions Hearing Clinic aimed at determining whether hearing loss intervention can delay or arrest cognitive decline.

Ms Hadeel Tarawneh is undertaking a PhD to determine whether electro-physiology tests (brain electrical signals) of hearing can be important markers for the progression of cognitive decline or early stage dementia.

Mr Xinxing Fu is focussing his research on the relationship between hearing loss, cognition and mental health in tonal language speakers. Tonal languages, such as Mandarin and Cantonese, are processed differently in the brain to English and it is possible that tonal languages offer some protection to cognitive decline.

Social and emotional (psychosocial) impacts of hearing loss

Untreated hearing loss compromises a person's ability to communicate effectively, which can lead them to withdraw from social interactions, and may contribute to the development of anxiety and depression.

This problem often falls 'between the gaps' with hearing healthcare services providing little support and guidance to treat the social and emotional impacts of hearing loss. Dr Rebecca Bennett is leading a team developing interventions for audiologists, other clinicians, and those with hearing loss and their significant others. The interventions will increase the capacity of audiologists to identify and talk about the psychosocial impacts of hearing loss and provide tools and resources for those with hearing loss, and work within a multidisciplinary team where necessary.

Cochlear implants

For those with severe to profound hearing loss, a cochlear implant offers a pathway to lessen the life impact. As one of the largest private implant clinics in Australia, Ear Science Institute Australia is utilising our extensive database to publish research findings on topics such as asymmetrical hearing loss, predicting outcomes after implantation, and the effect of cochlear implants on tinnitus. The team is led by Dr Cathy Sucher, who is also developing new ways to effectively and efficiently provide long-term care to cochlear implant recipients.

Ms Azadeh Ebrahimi-Madiseh's PhD studies are focused on improving service delivery in adult cochlear implantation, identifying factors influencing the uptake, use and maintenance of cochlear implants.



The global uptake of cochlear implants in adults (including Australia) is less than 10%.

This study indicates that many who may benefit from a cochlear implant do not receive one and highlights the importance of identifying factors contributing to the low uptake and successful use of the device. Azadeh's key findings to date have demonstrated the pivotal role of understanding clients' latent needs and re-designing services to accommodate these needs. Azadeh is also developing a new model of care to facilitate the clients' journey by addressing the barriers she has identified.

Tinnitus

Ms Susan Tegg-Quinn is completing her PhD on childhood tinnitus. Susan's research has shown that children and adolescents experience and describe tinnitus differently to adults.

Through her research Susan has developed a framework that will inform and guide clinical decisions about assessing and managing paediatric tinnitus and guide future research. Susan has also constructed a conceptual model that will inform the development of tools to assess tinnitus in children. The model will also provide both intake and outcome measures so that the effects of treatment can be measured. It is envisaged that these assessment tools will be both age and developmentally appropriate.

Population health



Understanding the health of the population is important to understand the causes and progression of diseases, risk factors for disease, and their association with other health conditions.

Professor Rob Eikelboom leads a collaborative team of researchers from around the world, on data produced by the Busselton Healthy Ageing Study and the Raine Cohort Study. In recent years, the team has shown that tinnitus and hyperacusis (heightened sensitivity to some sounds) are associated with mental health in adults, that hearing loss and tinnitus are commonly associated with other health conditions (multi-morbidity) and that otitis media in young children has a longer-term impact on behavioural development.

LIONS HEARING CLINIC



Lions Hearing Clinic continued to expand over the year with growth exceeding our expectations as we welcomed 3 new hearing clinics to the group. We now have 12 permanent clinics and 4 community clinics which are managed by a dedicated team of professional clinicians and support staff.

Our synergistic funding model allows us to utilise the revenue from the clinics to fund Ear Science Institute Australia's activities, including research and education, allowing us to increase the impact of our work in helping people with ear and hearing disorders.



29,045

**CALLS TO OUR HEARING AND
TINNITUS ADVICE LINE**



New technology

Lions Hearing Clinic is independent from any hearing device manufacturers, allowing us to focus on recommending the right hearing solution for our client's individual needs. We consider all the device options available and make our recommendations with our clients' needs in mind.

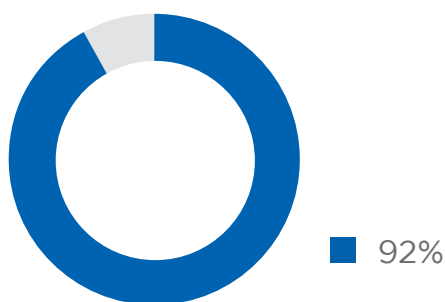
Our product portfolio incorporates the latest in hearing technology and extends beyond hearing aids to assisted listening devices and hearing protection. Our product portfolio currently features devices from Oticon, Phonak, Unitron and GN ReSound.

We are the number one provider for Phonak Lyric™ in Perth and we are committed to offering our clients a comprehensive range of hearing solutions to suit their needs and their budget – all commission free.

New services

With our clients at the heart of all our decisions and as an essential service; we approached COVID-19 with a clear vision of what we needed to provide our community. We kept the clinics safely open, incorporating strict compliance with government regulations, hygiene and infection control procedures and successfully implemented a blended service delivery model – allowing us to provide quality care to our clients either face to face or via video conference.

Our Hearing and Tinnitus Advice Line was launched in response to COVID-19, contributing to the message of #FlatteningTheCurveOnLoneliness for people with hearing loss. With many of our community social distancing they started to notice the effect of hearing issues they had previously ignored. The advice line puts callers in touch with one of our clinicians to discuss their concerns and possible solutions, all from the comfort of their own home. The demand for the advice line led an extension of our Tinnitus service offering from 3 to 6 of our clinics.



**92% OF CLIENTS
EXPERIENCED
SIGNIFICANT
IMPROVEMENT IN THEIR
HEARING WITH THEIR
HEARING AID**

Our Rehab Walk-in service was rolled out at all clinics allowing our clients to visit the clinic without an appointment for a device repair or quick hearing aid adjustment.

Where science meets our clients

Supported by the research findings of Dr Cathy Sucher and Ms Azadeh Ebrahimi-Madiseh, we are seeing real value for our client outcomes through the integration of the Lions Hearing Clinic with Ear Science Implant Clinic. Ear Science Implant Clinic supported the Lions Hearing Clinic to confidently recommend a hearing implant for their suitable clients, resulting in a 159% increase in referrals from Lions Hearing Clinic for suitable clients to consider implants as a solution for their increasing hearing loss.

This ongoing focus on integrating our research into clinical practice in 2021 will see our researchers conduct three projects in the Lions Hearing Clinic:

- Dr Dona Jayakody will conduct the HearCog clinical trial to understand the impact of hearing intervention on cognition.
- Dr Rebecca Bennett will implement a framework and tool kit to assist clinicians to support the psychosocial impact of hearing loss for their clients.
- Dr Cathy Sucher with the University of WA will undertake a long-term case study to identify the best speech tests to use for hearing loss.

EAR SCIENCE IMPLANT CLINIC



Ear Science Implant Clinic has continued to build on the achievements of 2019 resulting in an increase in referrals for hearing implant candidates and improving the hearing implant recipient experience. In 2020 we increased the number of implant recipients to 113 even under COVID-19 conditions and decreased the wait time for surgery to fit in with the recipient's needs. Some clients were able to get their implant in as little as a week.

With a focus on delivering a quality and bespoke hearing implant service, we work closely with ENT surgeons to deliver personalised hearing solutions that are client centric. We work with all of the manufacturers and make recommendations based on the medical needs of the candidate.



113
implants in
2020

Ear Science Implant Clinic made its debut on television with the “Could you be a candidate for a Cochlear Implant?” campaign. Our campaign was developed to support and build on a national Cochlear Ltd awareness campaign. The campaign has resulted in an increase in the public's awareness of hearing implants and an increase in direct enquiries.

Where science meets our clients

Ear Science Institute Australia hosted an in-person Audiology Conference held in November 2020, facilitated by Dr Cathy Sucher and PhD candidate Ms Azadah Ebrahimi who conducted a cochlear implant workshop. The workshop helped clinicians understand when an implant should be considered for their clients and what language they should be using with clients and their families to support them in making an informed decision. We have seen a 53% increase in implant referrals from clinicians as a result of this conference.

As part of our Tele-audiology research, Dr Cathy Sucher offered remote check-ups for our recipients. This service allows our busy and/or remote recipients the flexibility for a quick virtual check in and avoid a potentially unnecessary face to face appointment with their clinician. If there are any concerns raised, they are followed up in person.

The project will be successful if it can reduce the cost of unnecessary appointments and save the recipients time and money. This feasibility study will help Dr Sucher in determining the value in these appointments for recipients and if adopted will develop best practice for integration of tele-audiology for cochlear implant check-ups into our clinics.

EAR SCIENCE EDUCATION



In 2020 we continued to utilise, where possible, our world-class education and professional development surgical training lab in Subiaco, Western Australia. Once again, we took the lead in providing innovative and quality ear and hearing health training for local and international surgeons, medical students and clinicians.

Some of our planned education initiatives were put on hold or delivered online, due to COVID-19. However, in February, Oticon Medical, Professor Marcus Atlas and Associate Professor Jafri Kuthubutheen facilitated a surgical training course in Perth for surgeons from Australia and Asia Pacific. Our professional development program included surgical training on cochlear and bone conduction implants.

We completed face to face training for Notre Dame University first year medical students as planned, in March, and delivered the lectures for second year students in September online. Curtin University student training was delivered online in May, complemented by a face-to-face practical session in October.

“This is the best training day I have ever attended. I loved the ENT/Surgical treatment information. It is so relevant to my clinical work. The subjects were so diverse and the opportunity was there to discuss questions with the presenters.”



The science of learning

Having a detailed knowledge of anatomy is an essential part of surgical practice. As an accredited surgical training laboratory, we are very privileged to have access to donated cadaveric material in our surgical training lab which allows us to learn and teach, helping to close the gap between anatomic knowledge and surgical practice.

Working with our research team we supported eight ClearDrum trials in our surgical training lab.

The Audiology Australia accredited Audiology Conference was held in our new ANZAC House Veterans Central location and was a celebration of the latest in WA hearing research, with a strong focus on how to apply this research into clinical practice. With the support of our suppliers, leading researchers, clinicians from

WA's leading Research Institutes and Universities and own team members, we presented a comprehensive professional development conference, with 130 audiologists and audiometrists attending. The conference included a hands-on cochlear implant workshop, panel discussions and a range of hearing therapeutics and cognition presentations.

EAR SCIENCE COMMUNITY



At Ear Science Institute Australia, we are committed to raising the awareness of hearing health in the community.

The Ear Science community team has worked tirelessly to raise awareness of ear and hearing health, through a series of targeted initiatives aimed at general practitioners, allied health professionals and the general population to improve hearing and promote the benefits of early intervention for hearing loss.

We ran a well-received series of presentations to general practitioners, Lions Clubs Australia groups, aged care homes and The Australian Men's Shed Association. These sessions were effective in increasing our community's understanding and knowledge of hearing loss as well as facilitating access to assistance and treatment for attendee's ear and hearing issues.

Our shared origins with the Lions Hearing Foundation was celebrated in 2020 as we invited all Lions Club

members to be ambassadors for ear and hearing health. In particular we encouraged them to start a conversation with their peers and collect unused hearing aids for us to refurbish and donate through our Lions Hearing Aid Bank.

Ita Buttrose AM OBE, Ambassador

One of Australia's leading media icons helped us spread the word on ear and hearing health. Ita's father suffered from hearing loss and as an advocate for seniors in our community she provided a great platform to encourage the older generation to start thinking about how better hearing can improve their quality of life.

World Hearing Day

Along with the World Health Organization, we celebrated World Hearing Day on 3rd March 2020. This year's theme "Don't let Hearing loss limit you. Hearing for life!" gave us the opportunity to communicate the importance of good hearing health to the wider community. For those individuals who experience hearing loss, we highlighted the various interventions that are available to connect them with their community.

As the only World Health Organization Collaborating Centre for ear and hearing care in Australia, we were excited to have Australian icon Ita Buttrose spearheading our 2020 campaign with the tagline 'Ita Told Me', as she urged people to go for a hearing check-up and not let hearing loss limit your life.

Hearing Aid Bank

As our response to limited access to devices globally the Lions Hearing Aid Bank swung into action and provided 168 refurbished hearing aids to "All Ears Cambodia".

Rural hearing health

With the support of Rural Health West, our commitment to providing quality ear and hearing health once again took us to the very remote Martu communities in the Pilbara – namely Punmu, Parnngurr and Jigalong.

Our service expanded in 2020 to include onsite visits to an additional community, Kunawarritji, in rural Western Australia. Our committed team worked closely with the Puntukurnu Aboriginal Medical Service, which had noted a growing number of residents in Kunawarritji with ear and hearing issues, warranting the addition of another site. Previously, patients would have to travel for a day to see us at one of the other communities.

We had 7 trips planned for the year, and we completed 4, with 3 trips cancelled due to COVID-19 restrictions.



GIFT OF HEARING



The Gift of Hearing is committed to finding and implementing ways to improve the hearing of Australians who are unable to access the treatment needed.

In 2020 we celebrated the Gift of Hearing Appeal's 10th Anniversary. Over the past decade, the appeal has changed the lives of countless grateful people. This would not be possible without our incredible donors, clinicians, researchers and staff members.

These generous donations make a visible impact to the lives of so many and help unlock a world of hearing that was previously unattainable.

Gift of Hearing cochlear implant recipient

Ray Vine is an accomplished musician and music teacher, despite living with a hearing impairment. In August 2020, Ray received a cochlear implant, facilitated by Ear Science Institute Australia and the Gift of Hearing Appeal.

Through teamwork, generosity and medical excellence, Professor Marcus Atlas, St John of God Subiaco Hospital, anaesthetist Dr Richard Bougher, and three of our amazing Gift of Hearing donors, Jim Litis, Dianne Kailis and Theo Kailis, rallied together to donate their time, hospital facilities and funds to give Ray the gift of hearing.

Change a Life hearing device recipients



Jake Higginbottom

At 26 years old, Jake Higginbottom's life was changed when he was told he would be receiving Phonak Audeo Paradise 90 R hearing aids through the Gift of Hearing Appeal. Jake had struggled his whole life to hear, without even realising there was a better way. He leads a very active life and works in a noisy environment as a chef, where hearing well is important. The hearing aids will provide great benefit to him, socially and professionally.



Leslie Sear

Leslie Sear suffered from severe and debilitating tinnitus which was having a significant impact on his health and social life. Through the Gift of Hearing Appeal, Leslie was gifted hearing aids which have improved his communication skills and reduced his tinnitus symptoms.

Swimming the channel for charity

On the tenth anniversary of the Gift of Hearing Appeal, Professor Marcus Atlas teamed up with his good friends, John Harris, Ian Beacham, Rhonda Tuckey, David Tuckey and Brad Same to swim the Rottneest Channel, a huge feat which took many hours of hard training. All to raise funds for the Gift of Hearing Appeal, supporting Ear Science's life-changing work in the community.

Change a Life recipient check-in



Olivia Kilmister was born with severe hearing impairment, receiving her first cochlear implant at 12 months old. In 2015, Olivia received her second cochlear implant, through the Gift of Hearing Appeal. We had the pleasure of catching up with Olivia, now 15-years-old and thriving as a bright confident teenager, thanks in part to her cochlear implants.

“ I think the implant has added to life lots of confidence and it has changed the way I perceive life and nothing can stop me now because I've got them and I'm able to hear. It's given me lots of hope too for the future.”

Olivia Kilmister,
Gift of Hearing Recipient

The team completed the 20 km swim raised over \$25,250 for the Gift of Hearing Appeal.



STRATEGIC DIRECTION



Ear Science Institute Australia aspires to grow and share our clinical knowledge not just locally but with the nation and with the world.

We have embraced consumer engagement in our research initiatives by enhancing the contribution and active involvement of consumers needs at all stages of our research.

Our collaborative approach and consumer-driven research has boosted the outcomes and clinical application of our research findings, creating a more effective translation into patient care.

We are a high performing not for profit research institute, which is financially sustainable, highly regarded and

successful. In pursuing our strategic objectives, in 2020 we focused on the following strategic objectives:

1. Developing and fostering a culture of collaboration to ensure we attract and retain the best people
2. Sustainably increased our commercial revenue in line with our vision and organisation objectives
3. Striving for best practice in people, processes, research and technology, including the continued development of our bespoke practice management software EarSuite
4. Focussing on better applications of our data to improve client insights and organisational performance.

OUR TEAM

Board of Trustees



George Jones AM



John Schaffer AM



Professor Marcus Atlas

Board of Directors



John Schaffer AM
(Chairman)



Professor Marcus Atlas
(Founding Director)



Sandra Bellekom
(CEO)



Jamie Cullen



Peter Millington



Rob Gordon



Liddy McCall

Executive leadership team



Sandra Bellekom (CEO)



Andrew Sturcke (CFO)



Lize Coetzee (COO)



Professor Rob
Eikelboom



Associate Professor
Cecilia Prele

Patrons



Professor
Barry Marshall
AC



The Honourable
Malcolm McCusker
AC CVO QC

Ambassador



Ita Buttrose
AM OBE

THE TEAM

Abbie Francis
Ali Khalil
Amorette Klotz
Amy L O'Neil
Angela Liew
Anita Tran
Anna Kania
Anna Mayall
Anne Courtney
Annette Drenth-Reuhl
Anthony Earle
Antionette Galiffe
Azadeh Ebrahimi Madiseh
Bec Bennett
Benjamin Lake
Ben Upson
Brigitte Burg
Cameron Mead
Catherine O'Leary
Cathy Sucher
Cayla Judd
Cecilia Prele
Charlotte Tenbey
Clarisse Giacobazzi
Clifford Casey
Corinna Conte
Daniel Gerace
Dayle Hensman
Debbie Johns
Dona Jayakody
Eduard Felius
Elena Brand
Elizabeth Park
Ellen Putland
Elle Statham
Emma Evangelista
Emma Ireland
Emma Rodger
Filippo Valente
Fleur Trewavas
Frances Eaton
Hayley Brandreth
Holly Menegola
India Kelsall-Foreman
Jacinta Knight
Jacqueline Whelpdale
Jafri Kuthubutheen
Jaime Benatar
James Thompson
Jeremiah Soo

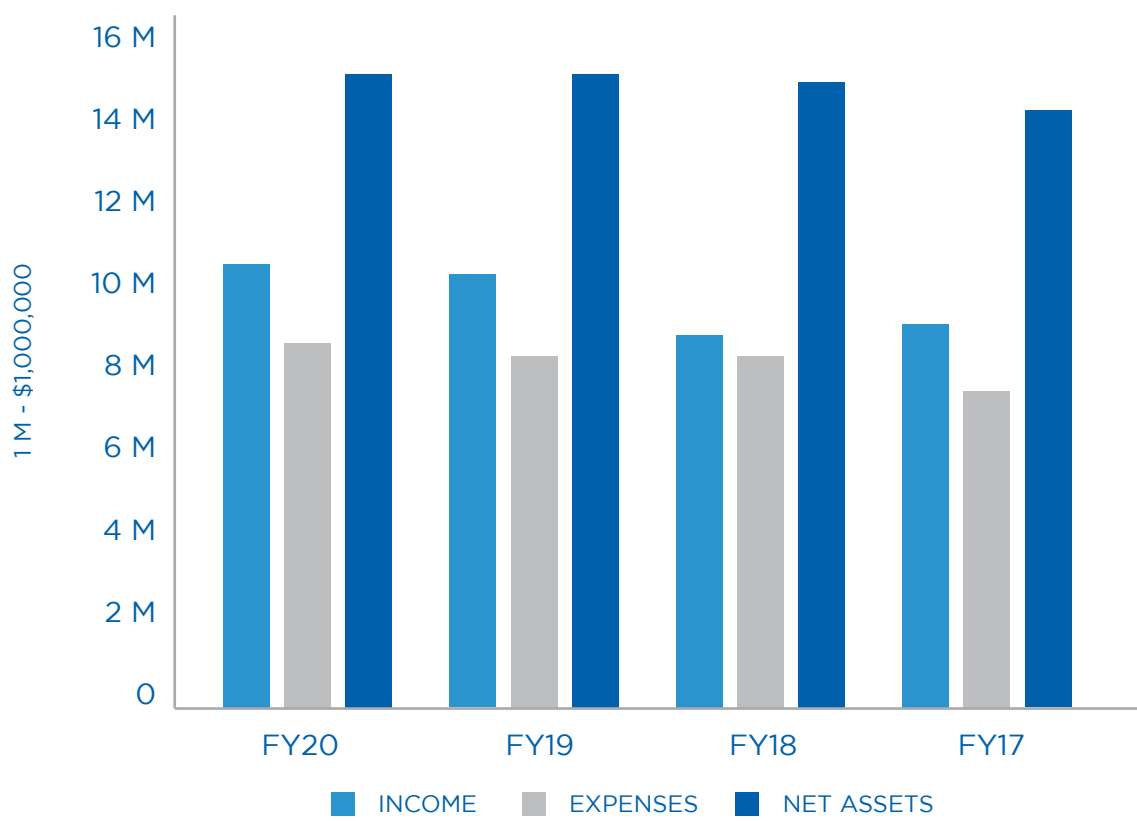
Jerome Aliaga
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Joanne Cook
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Julie Broad
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Katherine Devlin
Kathryn A May
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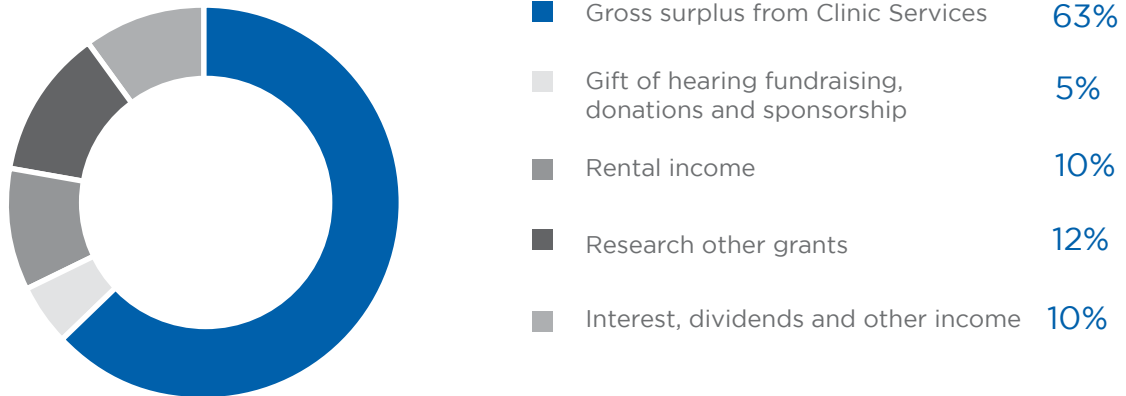
FINANCIALS

Financial year ending 30 June 2020

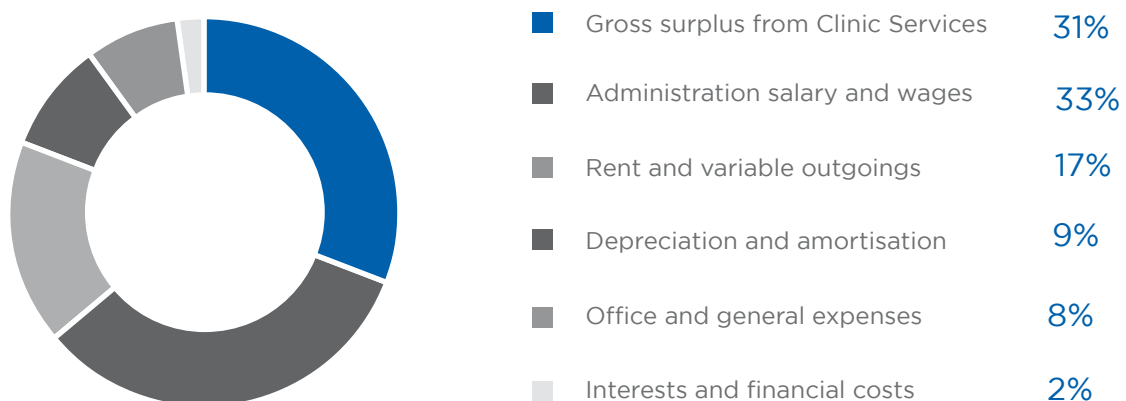
Ear Science Institute Australia Financial Summary



FY20 Operating Income



FY20 Operating Expenses



THANK YOU

Action on Hearing Loss (UK)
Allan Erceg - Erceg
Management Pty Ltd
Amy Tan
Andrew Lomas
Annetta Turner
Anthony Packer
Arron Hartigan
Barbara Gordon
Cecilia Prele
Claire Colliver
Cochlear Ltd (Australia)
Commonwealth's Hearing
Services Program
Danielle Blain
Danny O'Donoghue
Darryl Smalley
David and Rhonda Tuckey
Department of Health -
Research Translation Project
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Edna Westall
Erica Beach
Estate of Peter Fry
Francis Lane
Gregory King- Ascot Captial
Ian and Jillian Green - Emerald
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Ian Mitchell
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Jamie Pasqua
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Michael Gluth
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Vanette Penney
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Wheatley Family
Foundation
William Allen
William Demant
Foundation, Denmark
Wrays

EAR SCIENCE INSTITUTE AUSTRALIA

PUBLICATIONS 2020

Aldana AA, Valente F, Dilley R, Doyle B. Development of 3D bioprinted GelMA-alginate hydrogels with tunable mechanical properties. *Bioprinting*. 21: e00105; 2020. 10.1016/j.bprint.2020.e00105

Aazh H, Swanepoel DW, Moore BCJ. Telehealth tinnitus therapy during the COVID-19 outbreak in the UK: uptake and related factors. *International Journal of Audiology*. Published online: 01 Oct 2020. 10.1080/14992027.2020.1822553

Abdoola S, Swanepoel DW, vander Linde J, Glascoe FP. Detecting developmental delays in infants from a low-income South African community: comparing the BSID-III and PEDS tools. *Early Child Development and Care*. Published Online: 12 Jun 2019. 10.1080/03004430.2019.1628027

Bennett RJ, Meyer C, Ryan B, Barr C, Laird E, Eikelboom RH. Knowledge, beliefs and practices of Australian audiologists in addressing the psychological needs of adults with hearing loss. *American Journal of Audiology*. 29(2):129-142. 10.1044/2019_AJA-19-00087

Bennett RJ, Zhang M, Mulders WHAM, Stegeman I, Vagg B, Brennan-Jones CG, Eikelboom RH. Hearing aid review appointment: Clients' reasons for attendance and non-attendance. *International Journal of Audiology*. 59(2):101-108; 2020. 10.1080/14992027.2019.1663373

Bennett RJ, Kosovich EM, Ebrahimi-Madiseh A, Tegg-Quinn S, Eikelboom RH. Investigating the prevalence and impact of device-related problems associated with hearing aid use. *International Journal of Audiology*. 59(8):615-623; 2020. 10.1080/14992027.2020.1731615

Bennett RJ, Conway N, Fletcher S, Barr C. The role of the General Practitioner in managing age related hearing loss: A scoping review. *American Journal of Audiology*. 29(2):265-289; 2020. 10.1044/2020_AJA-19-00090

Bennett RJ, Meyer CJ, Ryan B, Eikelboom RH. How do audiologists respond to emotional and psychological concerns raised in the audiology setting? Three case vignettes. *Ear and Hearing*. 41(6):1675-1683; 2020. 10.1097/AUD.0000000000000887

Bennett RJ, Fletcher S, Conway N, Barr C. The role of the General Practitioner in managing age related hearing loss: Perspectives of General Practitioners, patients and practice staff. *BMC Family Practice*. 21:87; 2020. 10.1186/s12875-020-01157-2

Bennett RJ, Barr C, Montano J, Saunders G, Pronk M, Preminger J, Ferguson M, Heffernan E, Weinstein B, van Leeuwen L, Hickson L, Timmer B, Singh G, Gerace D, Cortis A, Bellekom SR, Eikelboom RH. Identifying the approaches used by audiologists to address the psychosocial needs of their adult clients. *International Journal of Audiology*. 60(2):104-114; 2020. 10.1080/14992027.2020.1817995

Bennett RJ, Barr C, Cortis A, Eikelboom RH, Ferguson M, Gerace D, Heffernan E, Hickson L, van Leeuwen L, Montano J, Preminger J, Pronk M, Saunders G, Singh G, Weinstein B, Timmer B, Bellekom S. Audiological approaches to address the psychosocial needs of adults with hearing loss: Perceived benefit and likelihood of use. *International Journal of Audiology*. Published online: 11 Nov 2020. 10.1080/14992027.2020.1839680

Brennan-Jones CG, Hrehan H, Hakeem HH, Da Costa C, Weng W, Whitehouse A, Jamieson S, Eikelboom RH. Cross-sectional prevalence and risk factors for otitis media and hearing loss in Australian children aged 5 to 7 years: a prospective cohort study. *Australian Journal of Otolaryngology*. 3:8; 2020. 10.21037/ajo.2020.02.02

Brennan-Jones CG, Whitehouse A, Calder SD, da Costa C, Eikelboom RH, Swanepoel DW, Jamieson SE. Does otitis media with effusion affect later language ability? A prospective birth cohort study. *Journal of Speech, Language and Hearing Research*. 63(7):2441-2452; 2020. doi.org/10.1044/2020_JSLHR-19-00005

Chambre L, Parker RN, Allardyce B, Valente F, Rajkhowa R, Dilley RJ, Wang X, Kaplan DL. Tunable Biodegradable Silk-Based Memory Foams with Controlled Release of Antibiotics. *ACS Applied Bio Materials*. 3(4):2466-2472; 2020. 10.1021/acsabm.0c00186

Dawood N, Mahomed Asmail F, Louw C, Swanepoel DW. Mhealth hearing screening for children by non-specialist health workers in communities. *International Journal of Audiology*. Published online: 12 Oct 2020. 10.1080/14992027.2020.1829719

De Sousa KC, Smits C, Moore DR, Myburgh MC, Swanepoel DW. Pure-tone audiometry without bone-conduction thresholds: using the digits-in-noise test to detect conductive hearing loss. *International Journal of Audiology*. 59(10): 801-808; 2020. 10.1080/14992027.2020.1783585

Ebrahimi-Madiseh A, Eikelboom RH, Bennett RJ, Upson GS, Friedland P, Swanepoel DW, Psarros C, Lai WK, Atlas MD. What influences decision-making for cochlear implantation in adults? Exploring barriers and drivers from a multi-stakeholder perspective. *Ear and Hearing*. 41(6):1752-1763; 2020. 10.1097/AUD.0000000000000895

Hou R, Denisenko E, Ong HT, Ramilowski JA, Forrest ARR. Predicting cell-to-cell communication networks using NATMI. *Nature Communications*. 11:5011; 2020. 10.1038/s41467-020-18873-z

Huang J, Teh BM, Chen L, Eikelboom RH, Han L, Xu G, Yao X, Hu Y, Shen Z, Luo L, Zheng M, Shen Y. The Effectiveness of bFGF in the Treatment of Tympanic Membrane Perforations: A Systematic Review and Meta-Analysis. *Otology & Neurotology*. 41(6):782-790; 2020. 10.1097/MAO.0000000000002628

Jayakody DMP, Horgan B, Foster E, Tarawneh H, Tarawneh H, Eikelboom RH. The Link between Hearing Loss, Dementia and Mental Health: A Community Conversation. *Australasian Journal on Ageing*. 39(2):87-163; 2021. doi.org/10.1111/ajag.12719

Jayakody DMP, Tarawneh H, Menegola HK, Yiannos JM, Friedland PL, Wilson WJ, Martins RN, Sohrabi HR. A Systematic Review Protocol for Assessing Central Auditory Functions of Alzheimer's disease and its preclinical stages. *BMJ Open*. 10(6):e033342. 10.1136/bmjopen-2019-033342

Jayakody DMP, Almeida OP, Ford AH, Atlas MD, Lautenschlager N, Friedland PL, Robinson S, Makate M, Coetzee L, Liew A, Flicker L. Hearing Aids to Support Cognitive Functions of Older Adults at Risk of Dementia: the HearCog trial. *BMC Geriatrics*. 20:508; 2020. 10.1186/s12877-020-01912-1

Kuschke S, Swanepoel DW, le Roux T, Strauss S. Profile of childhood hearing loss in the Western Cape, South Africa. *International Journal of Pediatric Otorhinolaryngology*. 137:110248; 2020. 10.1016/j.ijporl.2020.110248

Lawrence BJ, Jayakody DMP, Bennett RJ, Eikelboom RH, Gasson N, Friedland PL. Hearing loss and depression in older adults: A systematic review and meta-analysis. *The Gerontologist*. 60(3):e137-154; 2020. 10.1093/geront/gnz009.

Li J, Zhang T, Ramakrishnan A, Fritzsche B, Xu J, Wong EYM, Loh YE, Ding J, Shen L and Xu PX. Dynamic changes in cis-regulatory occupancy by Six1 and its cooperative interactions with distinct cofactors drive lineage-specific gene expression programs during progressive differentiation of the auditory sensory epithelium. *Nucleic Acids Research*. 48(6):2880-2896; 2020. 10.1093/nar/gkaa012.

Liang Y, Allardyce BJ, Kalita S, Remadevi R, Uddin MG, Shafei S, Batchelor W, Dilley RJ, Wang X, Rajkhowa R. Protein paper from exfoliated silk nano fibers. *Biomacromolecules*. 21(3):1303-1314; 2020. 10.1021/acs.biomac.0c00097

Liew LJ, Wang AY, Dilley RJ. Isolation of epidermal progenitor cells from rat tympanic membrane. In: *Progenitor Cells: Methods and Protocols*". This book is part of the lab protocol series "Methods in Molecular Biology", Springer Nature. 10.1007/978-1-4939-9631-5_19; 2020.

Manchaiah V, Swanepoel DW, Fortune N. The International Classification of Health Interventions (ICHI) – a new tool for describing and reporting interventions in audiology. *International Journal of Audiology*. 59(6):403-405; 2020. doi.org/10.1080/14992027.2020.1736344

Miles T, Hoyne GF, Knight DA, Fear M, Mutsaers SE, Prêle CM. The contribution of animal models to understanding the role of the immune system in human idiopathic pulmonary fibrosis. *Clinical Translational Immunology*. 9(7): e1153; 2020. 10.1002/cti2.1153

Opperman E, le Roux TE, Masenge A, Eikelboom RH. The effect of tinnitus on health-related quality of life outcomes in adult cochlear implant recipients. *International Journal of Audiology*. 24:1-9; 2020. 10.1080/14992027.2020.1828633

Prêle CM, Hoyne GF. Immunopathobiology of chronic lung disease. *Clinical Translational Immunology*. 9(8):e1170; 2020. 10.1002/cti2.1170

Ratanjee-Vanmali H, Swanepoel DW, Laplante-Levesque A. Patient Uptake, Experience, and Satisfaction Using Web-Based and Face-to-Face Hearing Health Services: Process Evaluation Study. *Journal of Medical Internet Research*. 22(3):e15875; 2020. 10.2196/15875

Ratanjee-Vanmali H, Swanepoel DW, Laplante-Levesque A. *American Journal of Audiology*. 29(4):785-808; 2020. 10.1044/2020_AJA-19-00117

Schönborn D, Mahomed Asmail F, De Sousa, Laplante-Lévesque A, Moore DR, Smits C, Swanepoel DW. Characteristics and Help-Seeking Behavior of People Failing a Smart Device Self-Test for Hearing. *American Journal of Audiology*. 29(3):365-374; 2020. 10.1044/2020_AJA-19-00098

Sucher CS, Eikelboom RH, Stegeman I, Jayakody DMP, Atlas MD. The Effect of Hearing Loss Configuration on Cochlear Implantation Uptake Rates: An Australian Experience. *International Journal of Audiology*. 59(11):828-834; 2020. 10.1080/14992027.2020.1768445

Swanepoel DW. eHealth Technologies Enable More Accessible Hearing Care. *Seminars in Hearing*. 41(2):133-140; 2020. 10.1055/s-0040-1708510

Tao KFM, Swanepoel DW, Brennan-Jones CG, Jayakody DMP, Moriera TC, Coetzee L, Eikelboom RH. Teleaudiology hearing aid fitting follow-up consultations for adults: a single blinded randomised control trial and cohort study. *International Journal of Audiology*. Published online: 23 Sep 2020. 10.1080/14992027.2020.1805804

Tarawneh H, Mulders WHAM, Sohrabi H, Martins R, Jayakody DMP. Auditory Electrophysiological Assessments of Alzheimer's disease and Pre-clinical Stages: Protocol for a Systematic Review. *BMJ Open*. 10(7):e033308; 2020. 10.1136/bmjopen-2019-033308

Tegg-Quinn S, Bennett R, Eikelboom RH, Brennan-Jones CG, Barabash S, Mulders WHAM. What does chronic tinnitus sound and feel like to children and adolescents who experience it? The lived experience of paediatric tinnitus. *International Journal Paediatric Otolaryngology*. 138:110258; 2020. 10.1016/j.ijporl.2020.110258

Valente F, Allardyce BJ, Hepburn M, Wijesinghe P, Redmond SL, Chen J, Kennedy BF, Rajkhowa R, Atlas MD, Wang X, Dilley RJ. Enhancing resistance of silk fibroin material to enzymatic degradation by cross-linking both crystalline and amorphous domains. *ACS Biomaterials Science & Engineering*. 6(4):2459-2468; 2020. 10.1021/acsbiomaterials.9b00873

Withers S, Plontke SK, Boeddinghaus R, Kuthubutheen J, Atlas M. Bilateral Intracochlear Schwannomas in a Patient with no Genetic or Clinical Features of Neurofibromatosis Type 2. *HNO* 68 (Suppl 1): 60-64; 2020.

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treatments for
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