Research Impact Report

The impact of our research funding so far

Foreword

Our vision is of a future where there are treatments to prevent the onset of hearing loss, enable people to regain their hearing and silence tinnitus.

Our research is making a significant contribution towards bringing about these treatments that will transform the quality of life for deaf people and people who have hearing loss or tinnitus around the world.

Here we report on the impact of our research funding, focussing on 141 awards with a funding value of over £12 million.

They have:

- **Generated new knowledge** such as the discovery of genes linked to age-related hearing loss that could lead to ways of preventing hearing loss
- **Advanced the development of new treatments and diagnostics,** including a stem cell therapy to repair damage to the auditory nerve and a point of care diagnostic able to identify new-born babies at risk of hearing loss as a result of treatment with certain life-saving antibiotics
- **Influenced clinical guidelines** meaning that over 890 more people in the UK can now benefit from cochlear implants every year
- **Stimulated £27 million** of further investment in hearing research, and
- **Launched the careers** of internationally respected research leaders.

The scientific advances now being made, coupled with increasing interest from the pharmaceutical sector, means the prospect of treatments emerging over the next 5-10 years is real. There has never been a more promising time to invest in research.

Dr Ralph Holme
Executive Director of Research, RNID

Acknowledgement
We thank Sir Peter Job for generously funding this impact analysis.

Contents

01 About hearing loss and tinnitus

12 Million

12 million people in the UK with a hearing loss, estimated to rise to 15.6 million in 2035.

10 Years

People wait on average 10 years before seeking help for their hearing loss

900,000

900,000 people in the UK are severely or profoundly deaf

2 in 5

2 in 5 people over 50 have hearing loss, rising to 7 in 10 people over 70.

Hearing Loss And Dementia

Hearing loss in mid -life is a risk factor for dementia later in life – the risk is double for mild hearing loss, triple for moderate hearing loss and five times for severe or profound hearing loss

6.7 Million

6.7 million people in the UK could benefit from using hearing aids, but only around 40% of those people currently wear them.

£30 Billion

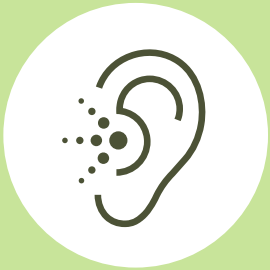
Hearing loss is estimated to cost the economy £4 billion a year in lost earnings, and £24.8 billion in potential economic output i.e. nearly £30 billion a year.

50,000

There are 50,000 children in the UK with hearing loss – half are born with it, half lose their hearing during childhood.

1 in 900

1 in every 900 children in the UK is born with severe or profound hearing loss



1 in 8

1 in 8 people – or 7.1 million people – have tinnitus in the UK. For 1 in 10 of those, their tinnitus causes serious anxiety and stress, in some cases leading to depression and sleep disorders.

16%

According to the World Health Organisation, 16% of hearing loss is caused through exposure to damaging levels of loud noise. It's the major avoidable cause of hearing loss worldwide.

02 Why we fund research

There are currently no treatments to restore lost hearing, or prevent it from being lost in the first place. There are also no treatments to silence tinnitus.

While there are hearing aids and cochlear implants, and they bring benefit to people who use them, they're not perfect. One of the main complaints about them is that they don't work well when there's a lot of background noise, or when listening to music. Neither device restores a natural sensation of hearing, nor do they address other problems that people with hearing loss tend to have, like finding it harder to pick out a particular sound from background noise, or to discriminate between different pitches of sound, which is important for understanding speech and appreciating music.

There is no cure for tinnitus – no way to silence it. There are ways to help someone cope with their tinnitus, but they don't work for everyone.

And these are growing problems. There are around 12 million people in the UK with hearing loss today. The majority is related to ageing, and with a population that's getting older, by 2035, that figure will be more than 15 and a half million people. In addition, more and more young people are putting their hearing at risk by exposing themselves to damaging levels of loud noise, such as by listening to music too loudly through headphones.

Around 1 in 8 people in the UK have tinnitus, and for 1 in 10 of those people, their tinnitus is so bad that it significantly impacts upon their life.

This number is also increasing with an ageing population and more young people being exposed to loud noise. So there is an unmet, growing need for new and better treatments for both hearing loss and tinnitus.

Our supporters tell us that finding better treatments is what would make the biggest difference to their lives. And research can do something about this. Research can help find those new and better treatments – treatments that can restore natural hearing, that can protect hearing and prevent it from being lost in the first place, or that can silence tinnitus. Research like this can and will change people's lives for the better. That's why we fund it.

Research can and will change people's lives for the better.

02

How do we fund research?

We run one of the world's largest donor-funded research programmes dedicated to finding treatments for hearing loss and tinnitus.

We fund grants to support researchers at universities, research institutes, hospitals and companies around the world:

Supporting future research leaders

Training the next generation of UK hearing researchers, to increase the number of talented scientists working in the field

Making discoveries

Supporting innovative projects around the world to generate discoveries that will lead to new treatments

Turning discoveries into treatments

Working with industry and clinicians to support the translation of promising discoveries into treatments ready to be used in the clinic

Treatments for all types of hearing loss and tinnitus

02

We fund research to:

Prevent hearing loss

While we know many causes of hearing loss, such as ageing, loud noise, genetics, and medicines that can damage hearing as a side-effect, there's still a lot we don't know about how exactly they cause this damage. We support researchers who are trying to find out more about the biological processes that underlie this damage, which is crucial for developing treatments to prevent it.

Restore or improve hearing

Most hearing loss is caused by damage to either the sound-sensing hair cells in the inner ear, or the nerve cells which connect the inner ear to the brain. Damage at any point along this pathway from ear to brain can lead to permanent and irreversible hearing loss. Currently, there's no way to restore these cells once they're gone – so we support researchers to find ways to regrow them.

But until effective treatments to restore hearing are developed, hearing aids and cochlear implants remain the best way of improving hearing. We're funding research to improve these devices, so that people can hear better using them.

Silence tinnitus

Tinnitus has a number of possible causes, but is most frequently associated with exposure to loud sounds that damage the ear, and ultimately cause changes to the brain. But we still don't fully understand how this happens, or how to stop it. So we support researchers to understand more about tinnitus, and to find treatments to silence it.

03 Our research impact

Our research funding

Grants included in this analysis are all RNID grants that ended after September 2012 – a total of 141 grants.

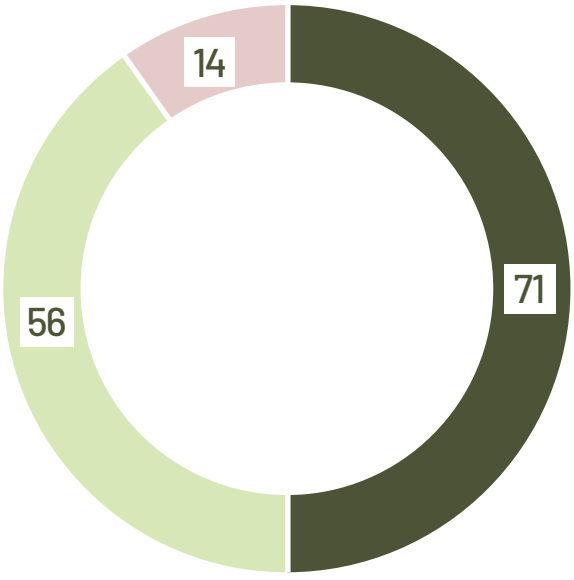
Please see the Appendix for information on how we analysed our impact data.

Over 50% of our funding has supported research to restore or improve hearing.

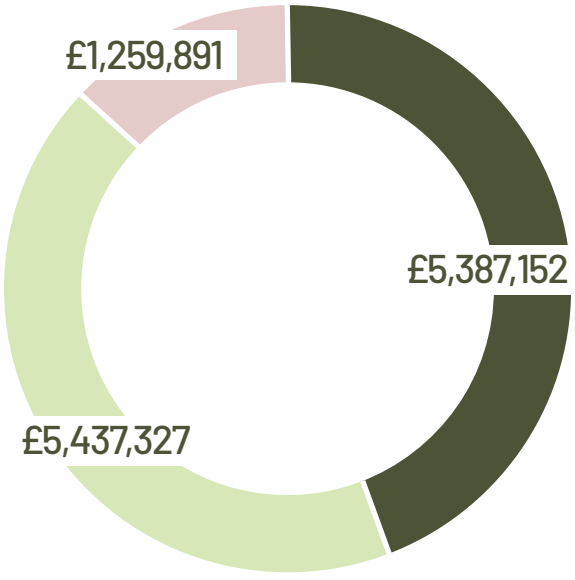
10% of funding supported research to silence tinnitus.

What we've funded

Since 2012, we have funded 141 grants:



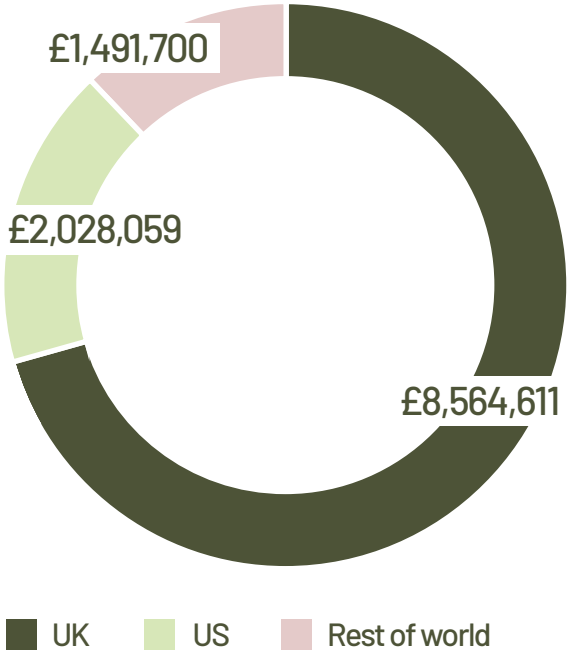
We've invested over £12 million in research:



Preventing hearing loss Restoring hearing Silencing tinnitus

03

Where we have funded research



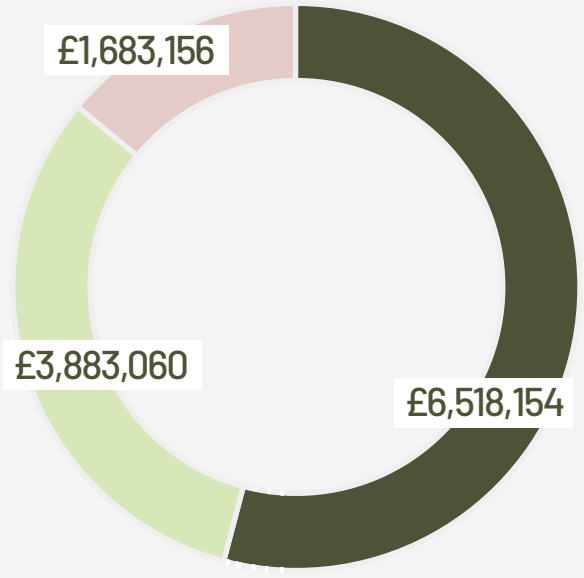
Global Outreach

We have supported 94 researchers at 44 research institutes around the world, spanning 5 continents.

Nearly 4 out of every 5 projects we funded was awarded to a grant-holder in the UK.

The type of funding we've awarded

Over half of our funding supported projects at the 'Discovery' stage of research. Around a third supported early career researchers such as PhD students and research fellows (Future Leaders).



- Discovery Research
- Future Leaders
- Translational Research

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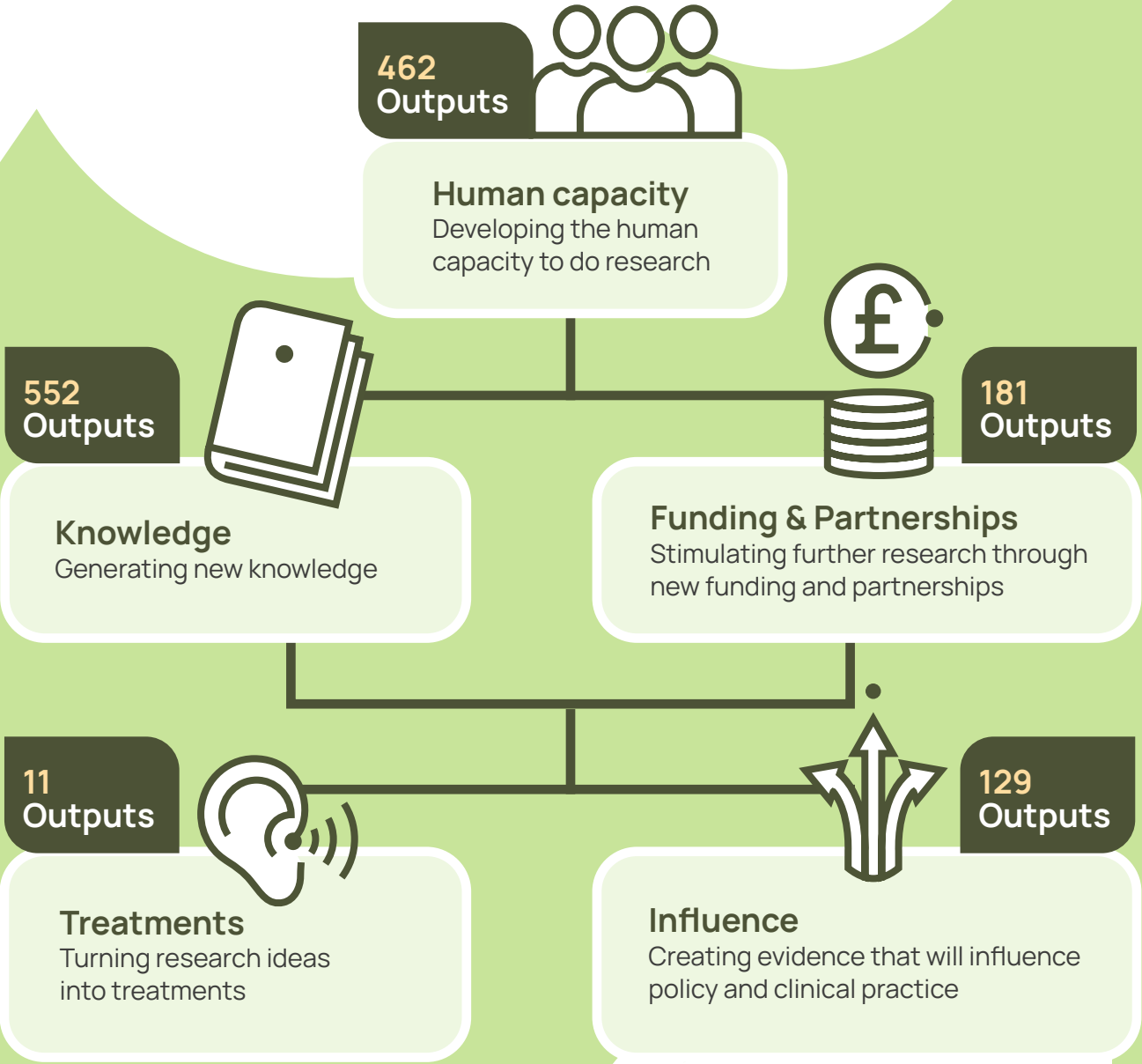
Our research impact

So far, our research has had the following impact:



* We bench marked our impact metrics against a similar analysis carried out by the Association of Medical Research Charities (AMRC) in 2017 of 5,287 awards made by 40 funders. Our impact performance is broadly in line with the sector norm.

03

Human Capacity

For the hearing research field to be successful in developing effective treatments for hearing loss and tinnitus, there needs to be a sufficient number of trained and engaged researchers to do the work, and the right facilities and resources to allow their research to progress.

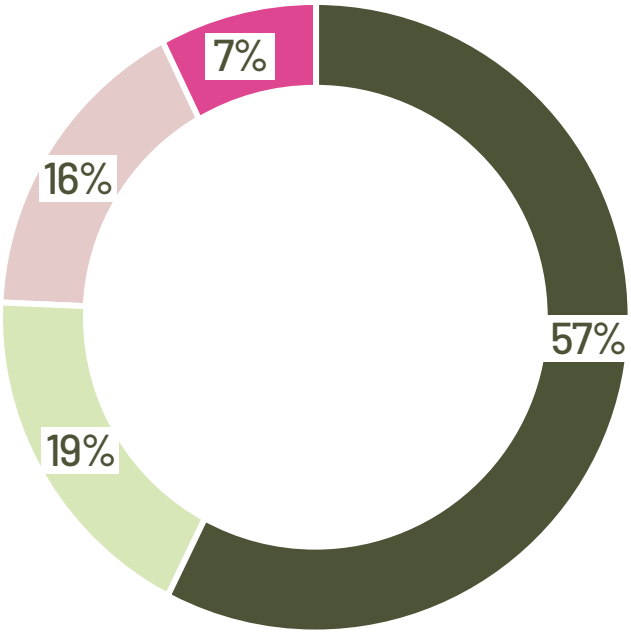
Supporting the career development of hearing researchers is therefore a vital part of the treatment development process we hope to encourage.

Our funded grants have been linked to 122 awards or other forms of recognition.

More than half were invitations to speak at a research conference (1 in 5 of these as a keynote speaker).

The types of recognition or awards our funded researchers have received:

- Invited to speak at a research conference
- Research prize or medal
- Membership of a learned society or external body
- Other



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Supporting junior researchers towards independent research careers

Dr Morag Lewis was the first recipient of our Pauline Ashley grant, an award which supports the career development and progression to independence of the UK's most talented hearing scientists. She investigated the genes that maintain and coordinate the development of the sensory cells in the inner ear, which are required for hearing.

Following on from her first grant, we subsequently awarded Morag a Discovery Research Grant. Her new study aims to shed light on what goes wrong as hearing loss progresses. She is investigating a gene called *Mir96*, which is necessary for hearing in both mice and humans. She is studying how it controls and co-ordinates the activity of other genes during inner ear development.

Morag aims to find out more about the genes which are controlled by *Mir96* and how they interact with each other. She is currently carrying out experiments to collect genetic data for analysis. Discovering genes involved in deafness will help to identify target genes for drugs in order to treat hearing loss. It will also hopefully help Morag to develop her own independent research career in the hearing field, and increase the number of dedicated hearing scientists in the UK.

Support from RNID has been really important for this project, which aims to understand a gene which controls maturation of the sensory hair cells in the inner ear.

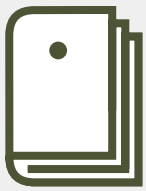
Such a complex process requires complicated regulation, but we are beginning to understand the mechanisms involved, and that wouldn't have happened without the grants from RNID.

Dr Morag Lewis,
King's College London

03

Generating new knowledge

One of the most immediate outcomes of a research project is the generation of new knowledge and resources to support further research, such as journal publications (papers), or tools, methods or databases for the wider research community to use.



430 Publications

Our grants have so far led to 430 published original research papers.

2.69 Papers

59% of all grants published at least one paper. Of those, each grant published, on average, 2.69 papers.

5 Years

50% of all grants published their first paper within 5 years of the grant starting.

03

Stimulating further research

For the hearing research field to successfully develop treatments, it needs support from multiple funders.

It also needs to be conducted in an environment that encourages the development of partnerships between researchers, or with companies and patient groups.

By leveraging further funding and working with partners, the research we fund has led to further research and the generation of partnerships to push the field forward.

£6.05 for every £1

On average, each grant we support that goes on to obtain further funding generates £6.05 per £1 that we invested.

81% public sources

81% of all further funding obtained from our grants came from public sources (such as government, NHS).

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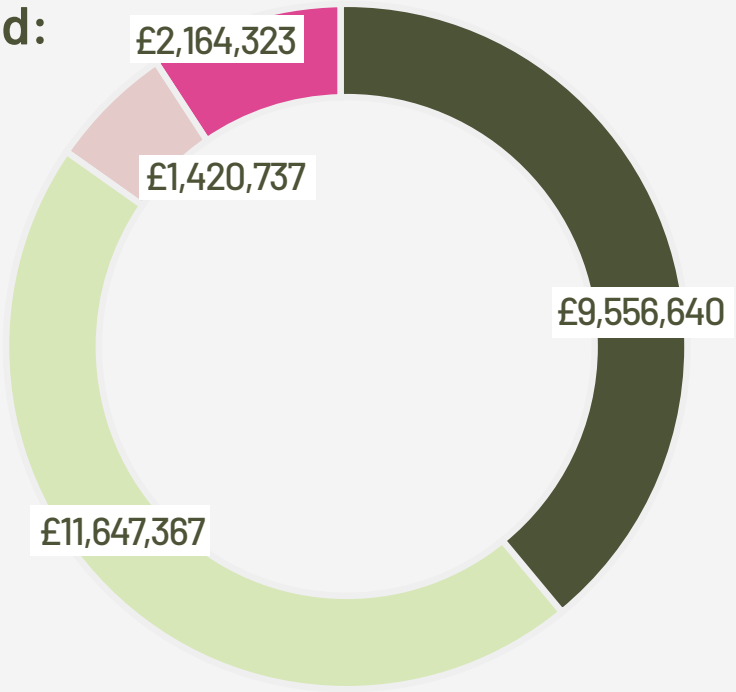
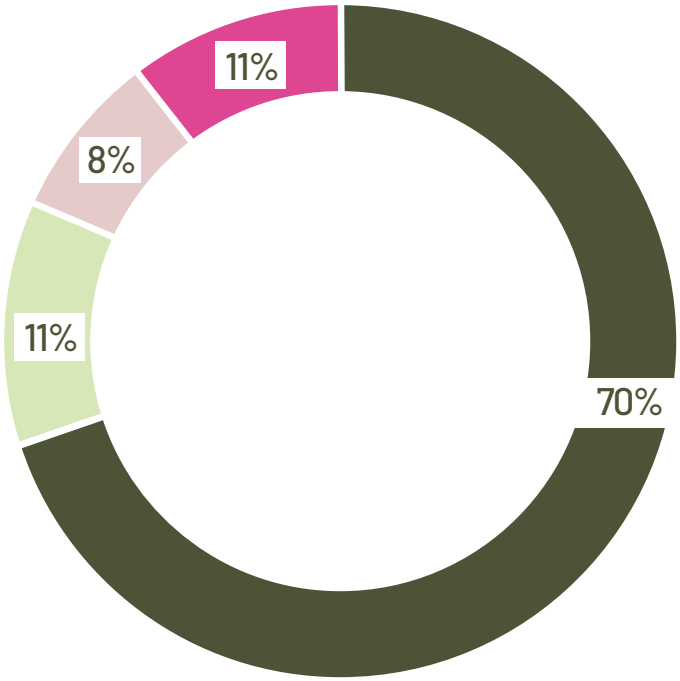
Further funding was obtained from funders across the world:

- UK
- US
- European Commission
- Rest of the world



Of the partnerships formed with support from our grants, 70% were with other academic groups:

- Academic group
- Clinical partner
- Private company
- Public institution



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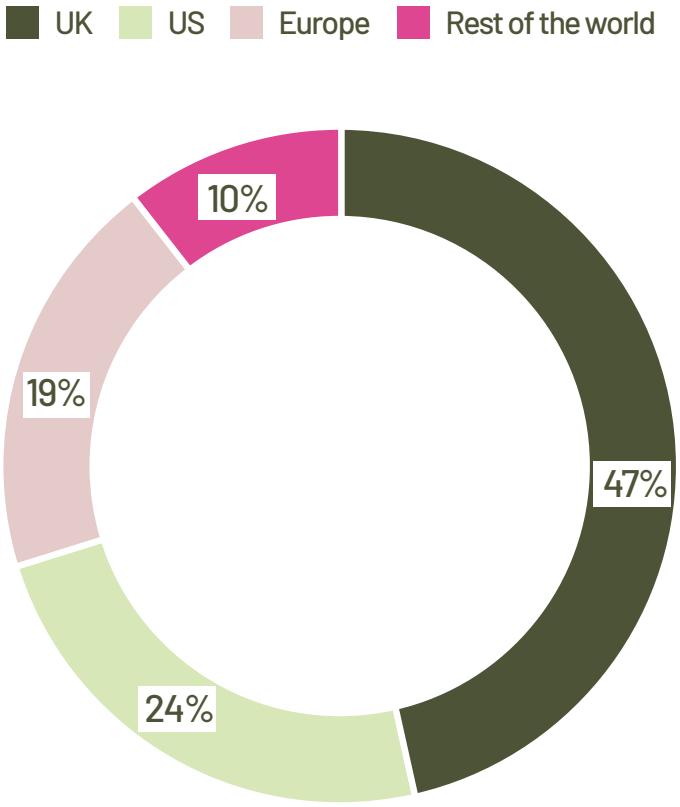
Where are the partnerships?



Our grants led to the formation of 79 new collaborations or partnerships, and supported an additional 11 partnerships that already existed.

UK Partnerships

Nearly half of all partnerships were formed with collaborators in the UK.

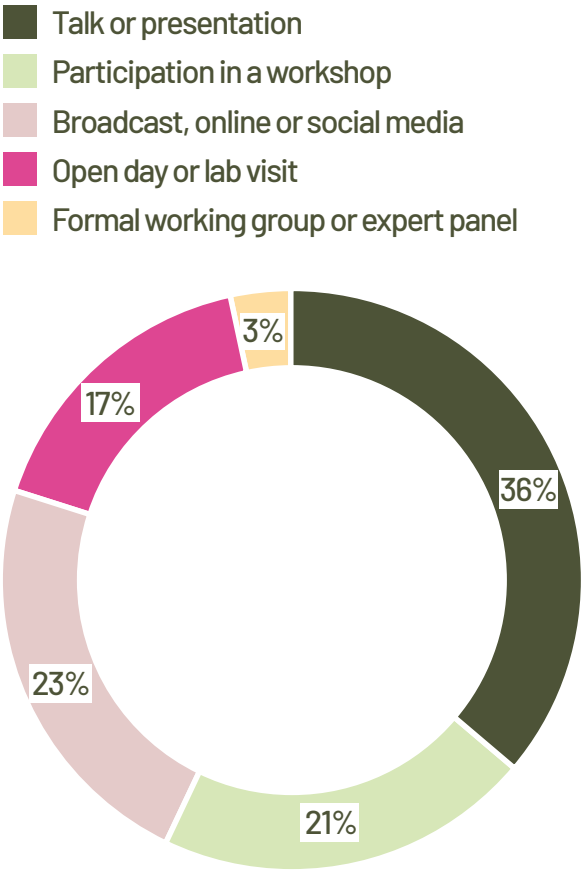
03

Creating evidence to influence policy or clinical practice

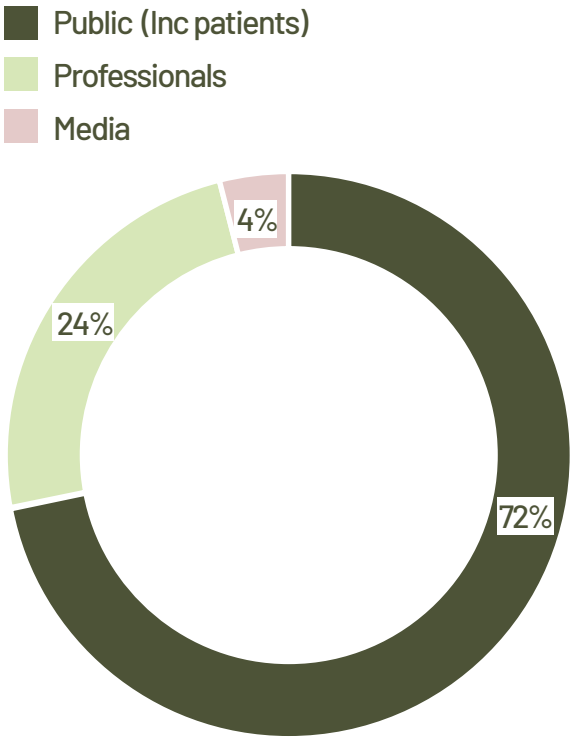
For research to be able to make a difference, results and findings must be shared with a wider audience, to inform the public and influence policy and clinical practice.

Our grant funding led to 153 engagement activities to influence policy-makers, clinical practitioners, patients and the public.

Researchers we funded shared their findings through the following types of activity:



Our researchers shared their findings with the following audiences:



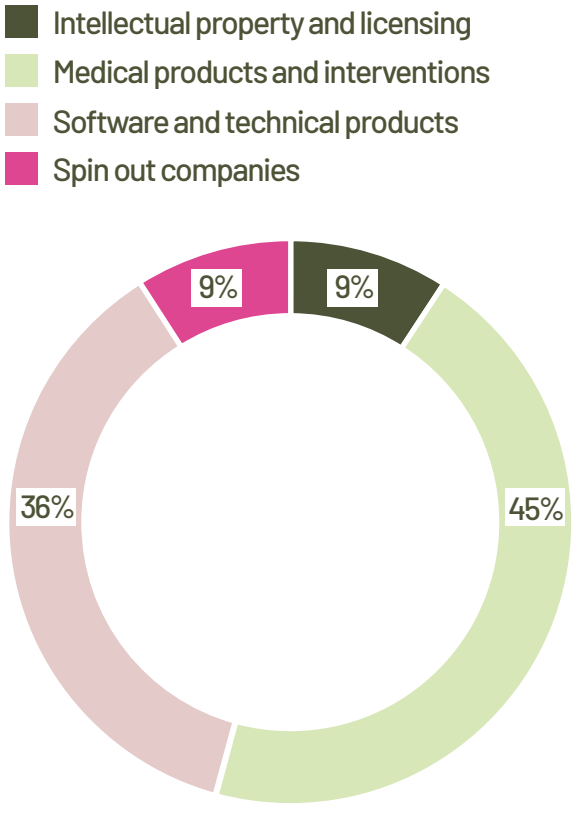
Nearly three-quarters of all engagement activities linked to our grants were aimed at the general public (including people with hearing loss or tinnitus).

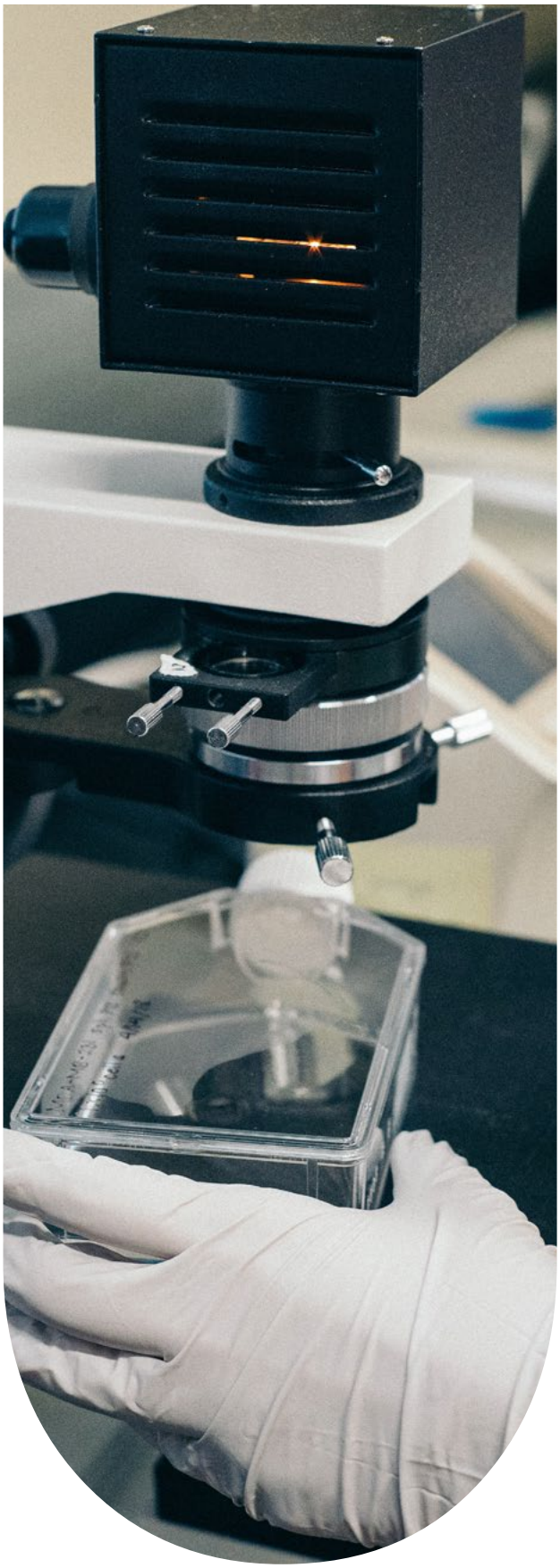
03

Turning research ideas into treatments

For hearing research to progress to benefit people with hearing loss or tinnitus, new ideas need to be translated into new products, protocols or treatments.

Our funded grants have so far generated 11 translational outputs – these are outputs that bring treatments closer to use in the clinic.





04 Preventing hearing loss

Why do we need to find ways to prevent hearing loss?

We know many of the causes of hearing loss, such as ageing and loud noise – but there are other causes yet to be discovered. We also don't fully understand the processes that underlie how hearing is actually damaged – or the genes and proteins involved. We need this knowledge to develop treatments that can prevent this damage from occurring in the first place, and protect people's hearing.

What research do we fund?

We support research that will:

- Identify the causes of hearing loss
- Improve our understanding of the biological changes (at both the molecular and cellular level) associated with hearing loss
- Improve ways to measure and monitor hearing loss so we can diagnose it more accurately
- Develop and test new strategies to prevent hearing loss and protect hearing

What impact have we had?

Developing a new way to deliver drugs to the inner ear

Drug delivery to the inner ear can be challenging – it is hidden behind one of the densest bones in the body, the temporal bone of the skull. Because of this, it is difficult to access from the outer ear, thus hindering the treatment of certain types of hearing loss. To address this problem, in 2013 we awarded a grant to Otomagnetics, a University of Maryland College Park spin-out. Our funding helped their researchers to develop a novel magnetic delivery technology that can efficiently carry drugs into the inner ear.

Currently, the only treatment for a number of hearing conditions is the delivery of steroids to the inner ear. This is an invasive procedure that is often unsuccessful because of the difficulty in accessing the inner ear. Otomagnetics' delivery system uses non-invasive magnetic fields to push drug-covered nanoparticles into the inner ear, where they are needed.

Since our award, Otomagnetics has secured significant additional funding, including a major grant to help prevent cisplatin-induced hearing loss during paediatric chemotherapy.

They have been improving the amount of drug that can be safely and efficiently delivered with their technology. Having validated their technique in animal models of hearing loss, Otomagnetics is now focussed on progressing these studies into people. They are currently working towards completing pre-clinical testing and hope to initiate clinical trials in people in the near future.

Otomagnetics' technology could not only be used to help prevent cisplatin-induced hearing loss in cancer patients, but also to treat middle ear infections in children. In addition, the technology could also revolutionise drug delivery to the eyes or skin.

> **The RNID funding acted as a catalyst to allow us to develop the prototype point of care test.**
>
> This gave other funding bodies the confidence that we could generate a result at the patient bedside, and was key to us securing the funding that has allowed implementation of the test into clinical practice.
>
> **Professor Bill Newman,**
> University of Manchester

Developing a diagnostic test to protect the hearing of premature babies

Aminoglycoside antibiotics are the primary choice of treatment for babies diagnosed with, or at risk of, neonatal sepsis. Each year in the UK alone, around 90,000 babies are treated with these antibiotics. However, hearing loss can be a permanent side effect of these antibiotics, and 1 in every 500 babies, who carry a particular genetic variant, called m.1555A>G, have a higher than normal risk of hearing loss if given these antibiotics.

Despite these known and irreversible side effects, aminoglycoside antibiotics are still commonly used as they are highly effective in treating a wide range of infections. Where there is a high risk of, or presence of, infection, clinical guidelines state that newborn babies must be treated within one hour. Current laboratory tests to determine if babies carry the genetic variant take several days.

In 2016, we awarded Professor Bill Newman, at the University of Manchester, a Flexi Grant to develop a point of care test for the m.1555A>G variant that could be used in clinical settings before administering aminoglycoside antibiotics.

With our funding and in partnership with the company Genedrive, the researchers successfully developed a test that can detect the variant within 40 minutes.

This means that when a newborn baby with this variant is diagnosed with a severe infection, doctors can use an alternative antibiotic. The test is non-invasive and can be performed by trained staff in neonatal units.

Since our initial support, the researchers have received a significant award from the NIHR (the research funding arm of the NHS) and secured CE accreditation. The test is currently undergoing feasibility and acceptability studies in hospitals in Manchester and Liverpool. It is hoped that this technology can be widely implemented in neonatal units in the near future to avoid the 200 cases per year of aminoglycoside-induced hearing loss in newborn babies.

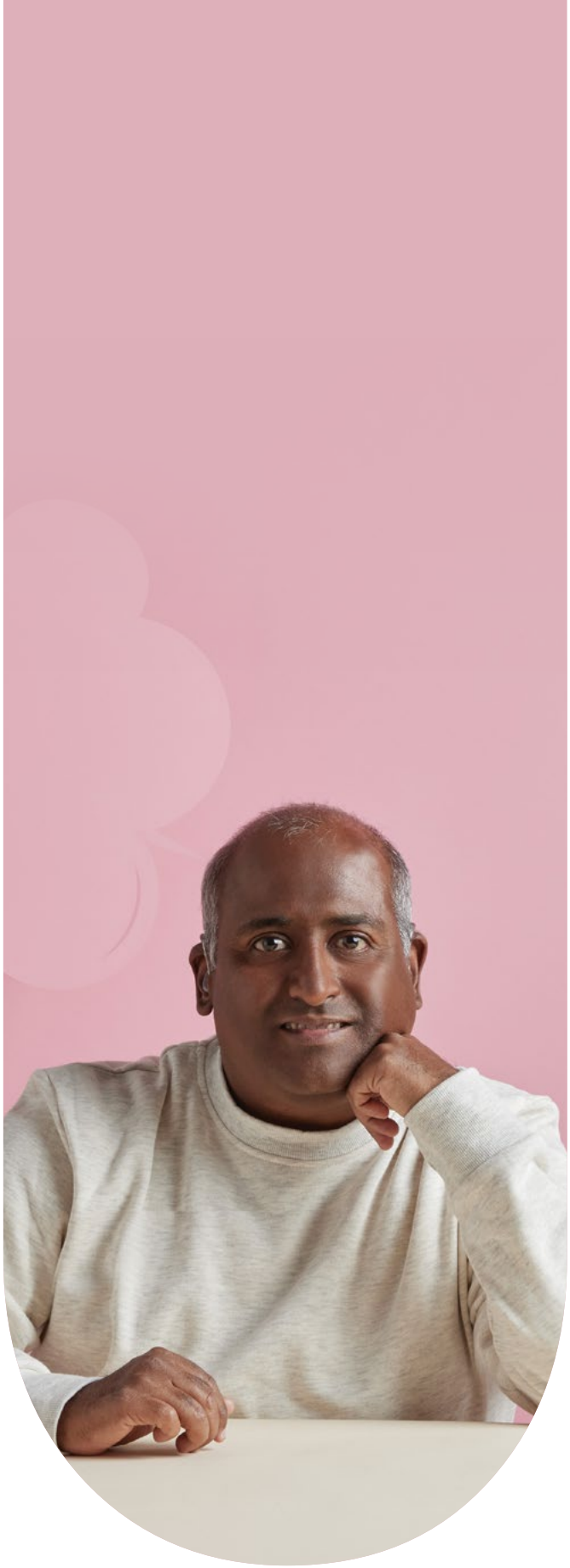
04

Clues to treatments for age-related hearing loss

Our research helped to identify 44 genes linked to age-related hearing loss, knowledge that could lead to treatments to prevent hearing loss.

By the age of 65, one third of people are affected by hearing loss. Genetic and environmental factors are responsible for the loss of hearing as we age, but before our study, knowledge of the actual identity of the genes involved was very limited. We funded a PhD studentship at King's College London and UCL to analyse the genetic data from over 250,000 participants of the UK Biobank, aged between 40-69 years old, to identify changes in genes associated with self-reported hearing problems. It was the largest study of its type. The researchers identified 44 genes and published their findings in The American Journal of Human Genetics.

The discovery of these genes greatly increases our understanding of the biological pathways involved in hearing, opening up many new lines of research that could lead to treatments for this common type of hearing loss. We are now funding a project at UCL to investigate one of the 44 genes in more detail.



We are delighted to provide the hearing research community with these variants identified using UK Biobank, the English Longitudinal Study of Aging and TwinsUK.

The PhD studentship which underpinned this work was funded by RNID and we couldn't have done it without the charity's support.

We are particularly keen to learn more about the genes we identified which have not previously been linked to any form of deafness, and hope their relevance will provide insight beyond age-related hearing loss.

Professor Frances Williams,
King's College London

05

Restoring or improving hearing

Why do we need to find ways to restore or improve hearing?

We know that most hearing loss is caused by damage to either the sensory hair cells in the inner ear, or the nerve cells that connect the inner ear to the brain.

The body can't replace these cells when they die, so damage of this type leads to permanent hearing loss. Finding ways to re-grow (or 'regenerate') these cells is crucial if we are to restore hearing once it is lost.

Currently, hearing loss is treated with devices, such as hearing aids or cochlear implants. Hearing aids amplify all sounds, making sound more audible to the user. Cochlear implants provide a sensation of hearing to people who are severely or profoundly deaf. They take the place of the sound-sensing hair cells in the inner ear, using electrical signals to directly stimulate the auditory nerve.

But both devices struggle when there's a lot of background noise, and neither can restore natural hearing. Improved devices would help millions of people to hear better.

What research do we fund?

We support research that will:

- Develop cell-based therapies to repair damage to the auditory system
- Advance drug- or gene-based approaches to trigger the regeneration of damaged cell types in the inner ear
- Improve the function of medical devices to help people hear better

05

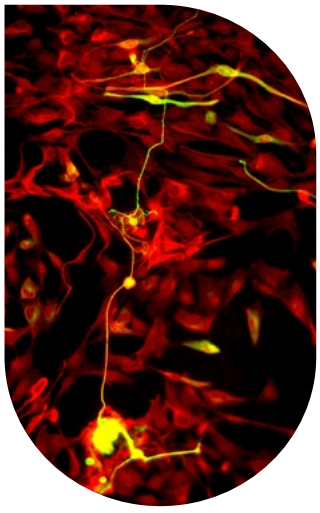
What impact have we had?

Developing a stem cell treatment for hearing loss

A newly-formed company called Rinri Therapeutics is working towards clinically testing a stem cell treatment for hearing loss based on our pioneering research.

In 2003, we began to fund a team of researchers led by Professor Marcelo Rivolta at the University of Sheffield to explore whether stem cells could be used to repair damage to the inner ear and restore hearing. Stem cells can give rise to many of the different types of cell in the body. With our support, the research team discovered how to turn human stem cells into hair cells, which detect sound in the cochlea, and auditory nerve cells that carry information from the cochlea to the brain. Damage to either of these types of cell is a common cause of hearing loss, so finding ways to replace them is vital if people are to regain their hearing.

With further support from us, the team went on to show that these cells could be transplanted into deafened animals to repair damaged auditory nerves, restoring hearing.



This major breakthrough has now led to the formation of a biotechnology company called Rinri Therapeutics. Rinri has raised £1.4 million of private investment to continue the development of this treatment for hearing loss caused by damage to the auditory nerve; they hope to start clinical trials in 3 to 4 years' time.

The early support provided by RNID was fundamental to get the project off the ground, allowing us to obtain great original data.

This was instrumental in leveraging further funding from the Research Councils and other bodies and, more recently, from private investors.

The incorporation of Rinri Therapeutics stems from the conviction that stem cell technologies harbour great potential and it should now transition from the academic lab into becoming a real clinical therapy that would help people with hearing loss.

Although there is still work to be done, our case illustrates well the impact that underpinning early basic research - as supported by RNID research funding initiatives – can have in the long term.

Professor Marcelo Rivolta,
Professor of Sensory Stem Cell Biology at the University of Sheffield, and Founder of Rinri Therapeutics

05

Developing a gene therapy for hearing loss

The most common cause of genetic hearing loss in people is mutation of the *GJB2* gene. This gene is responsible for the formation of connexin-26, a protein that allows the transport of nutrients and other molecules between cells. This gene is expressed (produces connexin-26 protein) in different cells of the human body, including cells in the inner ear. Mutations in this gene disrupt connexin-26 function, often leading to profound hearing loss.

Professor Karen Avraham's primary research interest is to understand the genetic landscape of hereditary hearing loss and deafness. In 2018, we awarded Professor Avraham a grant to develop novel approaches to treat connexin-related genetic hearing loss. With our funding, the researchers in her group were able to successfully generate a mutant mouse model that develops a similar pattern of hearing loss to people with mutations in the *GJB2* gene. Since then, the researchers have been studying the changes that occur in the cells of the inner ear in these mice compared to mice with no mutations in the gene. As mouse and human inner ear structures are very similar, these studies are very important to understand the effect of genetic mutations on human hearing and how treatments can be developed to treat genetic hearing loss.

Shahar Taiber, an MD-PhD student in Professor Avraham's group, is currently studying different techniques to restore correct protein function to the inner ear of these and other deaf mice using gene therapy. This work could lead to the development of new therapies to restore hearing.

05

Changing clinical candidacy guidelines for cochlear implantation

Trying to establish whether a deaf child will hear better with bilateral (in both ears) cochlear implants or with bilateral hearing aids is not an easy task. Cochlear implants have the potential to damage any residual low frequency hearing, but new advances in surgical techniques and cochlear implant design mean that surgeons are often able to save some of the hearing. For many children, cochlear implants are able to provide benefit for speech understanding in a way that hearing aids do not.

So as to ensure that the right recommendations for each child are followed by clinicians, we funded Dr Debi Vickers at University College London to investigate whether the current criteria for candidacy for bilateral cochlear implantation were accurate. She used a combination of different research methods and speech perception tests to understand the appropriate level of hearing loss that would mean that children would understand speech better with cochlear implants than hearing aids.

At the time of her project, guidelines in the UK stated that a child who could only hear sounds louder than 90dB at high frequencies (2 and 4kHz) would be eligible for cochlear implants. However, Dr Vickers found that it would be appropriate to relax the criteria so that children with a hearing loss who could only hear sounds louder than or equal to 80dB would receive cochlear implants. In March 2019, the clinical recommendations for bilateral cochlear implantation were changed.

This came about as a direct result of studies such as this one that provided clear evidence from a scientifically controlled experiment.

These new evidence-based guidelines will allow 890 more children and adults to be eligible for cochlear implants on the NHS each year. The current requirements state that a child should be able to hear sounds louder than 80dB at 2 or more frequencies (in addition to having speech, language and listening skills appropriate to age, developmental stage and cognitive ability) in order to qualify.

The evidence from this study has also been used to change criteria in other countries, most recently in Belgium.

The funding provided by RNID is critical for supporting the entire research pipeline from basic laboratory investigations to translational research that directly benefits clinical populations. As an organisation, they are actively involved with their researchers to maximise the impact of the results.

Dr Debi Vickers,
University College London.

06

Silencing tinnitus

Why do we need to find ways to silence tinnitus?

Around 1 in 8 people in the UK – more than 7 million people – have tinnitus. Tinnitus is a ringing, hissing, roaring or any other sound in one or both ears or in the head, which has no external source. It is most frequently associated with exposure to loud sounds that damage the ear, and ultimately cause changes to the brain.

Many of us will have experienced temporary tinnitus after a night out at a concert, but for some people, tinnitus is permanent. In the UK, around 700,000 people have tinnitus that causes them serious anxiety and stress, in some cases leading to depression and sleep disorders. Tinnitus is also one of the major disabilities reported by military veterans exposed to explosions and artillery fire.

In spite of this, there are no cures for tinnitus. There are ways to manage it, but these methods don't work for everyone who tries them.

We still don't fully understand what causes tinnitus, or how it can be stopped. We also can't measure tinnitus objectively (that is, in a way that doesn't rely on someone's opinion). This makes it difficult to develop and test treatments for tinnitus, and be sure that they work safely and effectively.

06

What research do we fund?

We support research that will:

- Identify the causes of tinnitus
- Improve our understanding of the biological basis of tinnitus
- Find ways to objectively measure tinnitus
- Develop and evaluate strategies to effectively treat, and silence, tinnitus

What impact have we had?

Gaining a deeper understanding of tinnitus

Over seven million people in the UK have tinnitus (they hear a persistent sound, such as ringing, buzzing or banging, when there is no external source). Our research in this area has increased our understanding of the biological basis of tinnitus, knowledge that is now being used to develop treatments.

To explore how damage to the cochlea causes tinnitus, we funded Professor Helmy Mulders at the University of Western Australia to investigate.

Using an animal model, her group showed that noise trauma can lead to hyperactivity within the auditory system. Moreover, they were able to show that this hyperactivity correlated with tinnitus-like behaviour.

The research we supported in Australia also looked at the effect of blocking signals from the cochlea within six weeks of noise trauma, for example, by cooling the cochlea, applying inhibitory neurotransmitters (chemicals which block signals from passing along nerve cells), or by applying a clinically approved drug called furosemide.

They showed that, in all cases, the tinnitus-related hyperactivity was reduced and, crucially, the animals no longer displayed any behavioural signs of tinnitus. They also found that blocking signals from the cochlea after a longer time period had no effect. This suggests that there are two stages to the development of tinnitus, an initial phase that is dependent on signalling to the brain from the cochlea, and a second phase, where tinnitus becomes fully established within the central auditory system.

With this knowledge, several pharmaceutical companies are now developing tinnitus drug treatments designed to be given to people soon after they acquire tinnitus to prevent it from becoming established.

07 Why we need your help

We've so far committed more than £20 million to hearing research

We're one of the world's leading medical research charities tackling hearing loss and tinnitus. But hearing research is under-funded. Less than 1% of the collective spend on research by the UK's government research councils and the UK's medical research charities was directed at 'ear-related' research in 2018, equivalent to £0.83 per person affected, compared with £16 per person affected with sight loss.

We are determined to put more money into hearing research, so that we can continue to make important scientific advances to prevent hearing loss, restore hearing and silence tinnitus. By training more scientists, by driving forward research to make important discoveries that can lead to treatments, by supporting the translation of this research into the clinic, and by working with other funders to increase how much they spend on hearing research, we are making sure that, one day, and not that far in the future, we will have safe and effective treatments for hearing loss and tinnitus.

And our funding is effective – for every £1 we put into promising research projects, on average we attract another £6.05 from other funders to continue the good work.

The money we spend on funding research comes entirely from voluntary donations; we receive no money from the government for this. Without your generous support, we wouldn't have been able to achieve what we have.

We want to find ways to restore hearing, silence tinnitus and prevent hearing loss; the main obstacle to achieving this remains a lack of funding. With more funding, there will be more scientists and laboratories working in hearing research, which will accelerate the discovery of treatments.

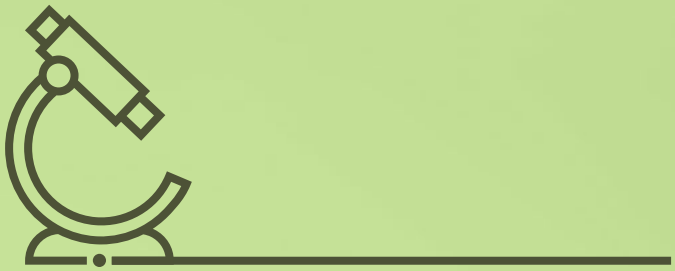
07

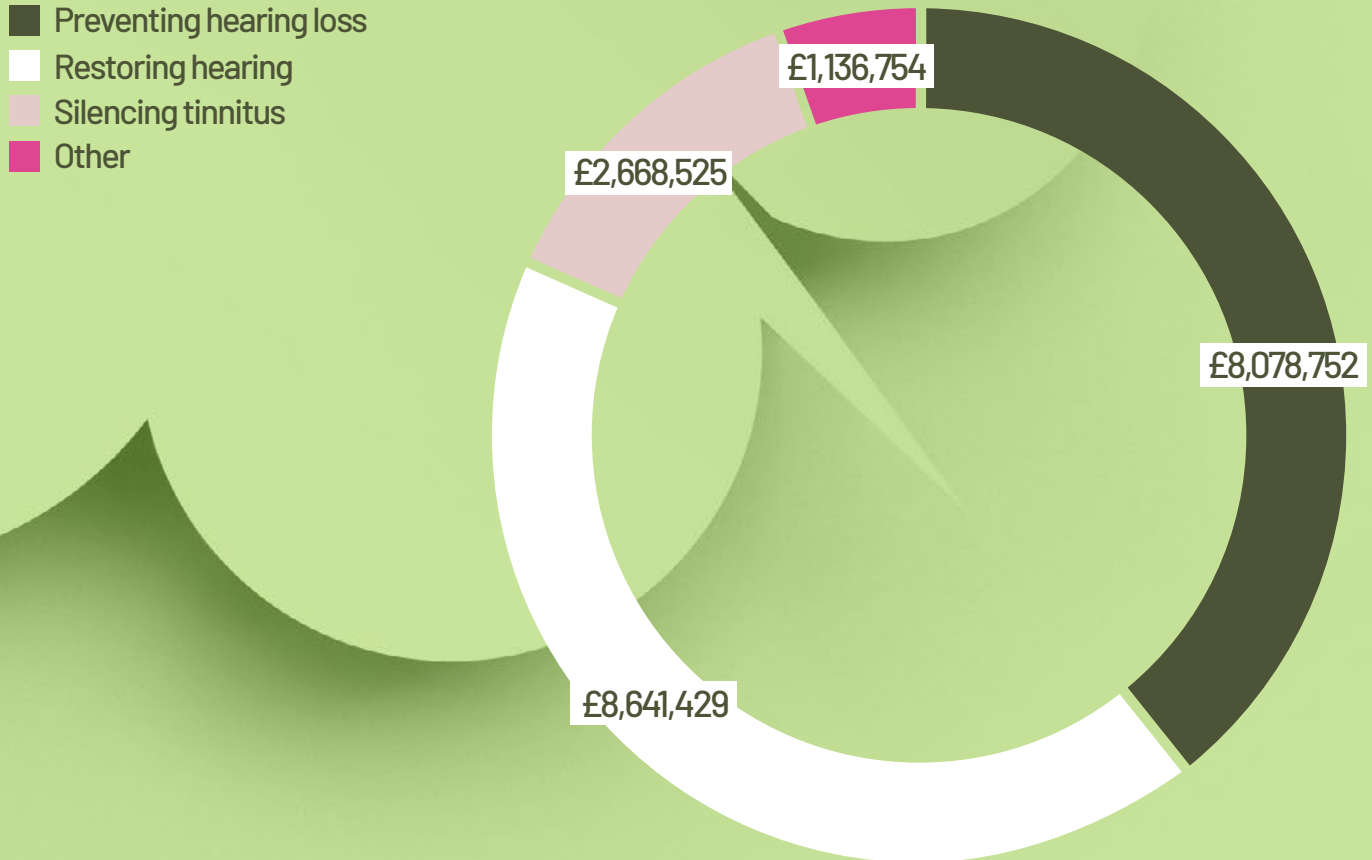
What have we funded so far?

Since we started funding research in 1999, we've invested more than £20million into research happening in labs around the world.

£20m

Over £20 million committed to research funding since 1999





07

We need your support to find treatments for hearing loss and tinnitus

£10	Would pay for a volunteer to take part in a research project to improve how well cochlear implants work in noisy backgrounds.
£25	Would pay for a researcher to use a specialised microscope for one hour to study structures in the inner ear to improve delivery of drugs to treat hearing loss.
£500	Would cover the cost of a brain scan for a person with dementia, helping us understand the link between hearing loss and dementia.
£1,000	Would pay for 1 month of research costs for a project to fully understand the role of two key proteins involved in hearing.
£10,000	Would support a small pilot study to carry out preliminary testing of a potential new treatment for tinnitus.
£25,000	Would fund an RNID PhD student for one year.
£60,000	Would fund one of our early career Fellowships for one year.

07

Want to make a donation?

If you'd like to donate to our research programme, please visit:

Website	rnid.org.uk/get-involved/donate/
Email	supporterservices@rnid.org.uk
Telephone	033 3320 6995
Textphone	020 3227 6185
SMS	Text GIFT to 70099 to make a £3 donation

Want to know more?

If you'd like to find out more about our Biomedical Research programme, and the other exciting research we're funding, please **visit our website.**

Appendix
Our research impact

We monitor the impact of our funded grants through an online reporting platform called Researchfish. Researchfish enables the researchers we support to tell us about the outputs and outcomes of their projects in detail.

Researchfish allows researchers to input data into 15 different categories of output.

We grouped these outputs into five main areas:

- Generating new knowledge
- Translating research ideas into new treatments and services
- Creating evidence that will influence policy or other stakeholders
- Stimulating further research via new funding or partnerships
- Developing the human capacity to do research

How did we analyse the data?

We collected impact outcomes across all our grants which ended after September 2012 through the Researchfish system. Researcher-submitted data was downloaded in April 2019, checked, and analysed.

For the analysis of publications arising from our grants, we analysed data from Europe PMC as well as data from Researchfish. Europe PMC is an open science platform that hosts a worldwide collection of life science publications. It enables us to track publications against all our grants and thus analysis of this specific category of output was carried out across our entire grant portfolio, for all grants starting from 1999.

In total, data from 259 awards was analysed for publication outcomes, representing over £19.3million of funding. For all other outputs, data from 141 awards was analysed, with a funding value of over £12million.

Most of these grants were awarded to universities (92% for publications analysis, 89% for other output analyses).

Researchfish allows researchers to input data into 15 different categories of output. For this analysis, they were grouped into the following five areas, as shown in the following table:

Appendix

Outcome category	Outcome type
Generating new knowledge	Publications
	Research tools and methods
	Research databases and models
Translating research ideas into new treatments and services	Intellectual property and licensing
	Spin out companies
	Medical products, interventions and clinical trials
	Software and technical products
Influencing policy and other stakeholders	Influence on policy, practice, patients and the public
	Engagement activities
Stimulating new research	Further funding
	Collaborations and partnerships
Developing the human capacity to do research	Next destination
	Awards and recognition
	Use of facilities and resources
	Meetings and conference attendance

Research Impact Report

The impact of our research funding so far

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033 3320 6995

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