

## Discovery Research Grants Call and guidelines – 2023 scheme

RNID funds research into hearing loss and tinnitus to speed up the discovery and development of medical treatments to protect and restore hearing and silence tinnitus.

Our Discovery Research Grants support projects that will generate knowledge to underpin the discovery of treatments for hearing loss or tinnitus or improve how treatments are developed and tested.

This year, we are continuing our partnership with Alzheimer's Research UK to co-fund research that will increase our understanding of the common biological mechanisms underlying hearing loss and dementia.

We would also like to particularly encourage research this year that will lead to improvements in medical devices for hearing or improvements in diagnosing hearing loss and measuring outcomes when testing new treatments for hearing loss, whether biological- or device-based.

### 1. Background

#### **Why encouraging research into common mechanisms underlying hearing loss and dementia is important**

In recent years, increasing evidence has suggested a link between dementia and hearing loss. There is strong evidence that mild hearing loss doubles the risk of a person developing dementia, with moderate hearing loss leading to three times the risk, and severe hearing loss five times the risk. Hearing loss can be misdiagnosed as dementia or make the symptoms of dementia appear worse.

People with dementia may have difficulty communicating with others, or have difficulty in processing what they hear, particularly if there are distractions, such as background noise. This difficulty in processing information (when there is competing information, whether auditory or otherwise) may be one of the first signs of cognitive impairment.

Further evidence shows an association between hearing loss and decline in memory skills. More research is therefore needed to clarify whether proper diagnosis and management of hearing loss, including provision of hearing aids, may reduce the risk and impact of dementia.

In addition, little is understood about the link between dementia and hearing loss, and the processes underlying both conditions. It is therefore important to investigate these processes in more detail, to determine how the conditions are linked, whether via common pathological processes, by common functions or both, and how they impact upon each other. This will be important in developing interventions that can delay or prevent the progression of both dementia and hearing loss.

### **Why encouraging research to improve treatments for hearing loss, including medical devices, is important**

Hearing loss is a major public health issue, affecting over 12 million people in the UK – around one out of every five people. Globally, around 466 million people have disabling hearing loss, requiring rehabilitation to be able to hear well.

Current medical interventions are largely limited to hearing aids and cochlear implants. While these devices benefit many, they do not reproduce the clarity and richness of natural hearing and can perform poorly when there is a high level of background noise, or when listening to music. There is an urgent need to improve existing technologies, and to develop new interventions to prevent hearing loss and restore natural hearing.

There is also a need to improve the way in which new and existing treatments are developed and tested, whether biological- or device-based. The field needs

better diagnostics that can identify the site of damage in the auditory system more precisely to ensure that treatments are tested on and administered to the people most likely to benefit from them; it also needs better ways to measure if a treatment is working to improve hearing or prevent hearing loss. There is also a need for improved experimental models that are more relevant to human hearing disorders to allow new treatment approaches to be developed more quickly and efficiently.

## **2. Call for Proposals**

**We request research projects in the following areas:**

### **1) Research to understand the links between dementia and hearing loss**

Original research that will:

- identify common biological mechanisms that underlie dementia and hearing loss, and how they lead to both conditions
- advance our knowledge of any causal link between hearing loss and dementia
- lead to the development of interventions that can delay or prevent the progression of both conditions, or prevent one condition from exacerbating the other

**Projects submitted under this category will be considered for joint funding with Alzheimer's Research UK.**

### **2) Research to underpin the development of treatments for hearing disorders, including tinnitus**

Any research that underpins the development of treatments, including but not limited to medical devices, pharmacological treatments, genetic or cellular therapies, will be considered under this category.

Treatments should aim to prevent hearing loss, restore auditory function or silence tinnitus.

Examples of research topics included in this category:

- identifying the causes of hearing loss, including central auditory processing disorders
- improving understanding of the molecular and/or cellular changes associated with different types of hearing disorders
- improving the interface between a cochlear implant and the auditory nerve
- catalysing the development of novel medical devices to aid or restore auditory function
- contributing towards the development of therapies to prevent loss of auditory function
- identifying biological pathways that could be targeted to trigger the regeneration of damaged cell types in the auditory system
- advancing drug or gene-based approaches to restore hearing function or trigger cell regeneration
- advancing cell-based therapies to repair damage to the auditory system
- identifying the causes of tinnitus
- improving understanding of the biological basis of tinnitus
- contributing towards the development of treatments to silence or alleviate tinnitus

### **3) Research to improve how new treatments for hearing loss and tinnitus are developed and tested**

Any research that improves how new treatments are developed or tested is encouraged under this category.

#### *Improving measurement of auditory function or tinnitus*

Research to improve how hearing or tinnitus is measured or monitored:

- to improve diagnosis or prognosis
- to identify the type and location of damage underlying a person's hearing difficulty or tinnitus
- to provide new and robust measures for use as clinical trial endpoints to evaluate interventions
- to allow for patient stratification into clinical trials
- to help select the most appropriate treatment

Such measures include, but are not limited to, genetic, physiological, or behavioural approaches.

### *Developing models of human hearing disorders, including tinnitus*

Research to develop models of human hearing disorders, including tinnitus, to allow for robust pre-clinical validation of treatments:

- *in vivo* animal models
- *in vitro* animal or human cellular models
- computer models of human hearing loss or tinnitus

## **Additional notes for applicants**

- Please note that you may only submit **one** preliminary application as the lead applicant. You may be named as a co-applicant or collaborator on other applications.
- **We particularly encourage applications in the area of medical devices for hearing, as they are currently under-represented in our portfolio.**
- Projects must be defined pieces of research with clearly stated objectives, experimental plan and expected outcomes. Applications to cover solely, or mainly, equipment costs, will **not** be accepted.
- Projects should be able to demonstrate a route by which outcomes could be exploited for the benefit of people with hearing loss or tinnitus, and, where relevant, people with dementia.
- **Resubmissions:** we accept resubmissions of previously unfunded projects through this scheme – no invitation to resubmit is required. The resubmission must be updated to take into account any feedback given (or to provide any additional data). **You may only resubmit a substantially similar application up to two times ie three submissions total.**
- **Please note that we do not fund social research, or research focussed on the design or evaluation of healthcare services.**

## **Summary of grant:**

|                     |  |
|---------------------|--|
| <b>Duration:</b>    | Up to 3 years.   |
| <b>Eligibility:</b> | Applicants can be from any university or research institute in any country |
| <b>Value:</b>       | Up to £200K in total, funding will not exceed £67K in any one year         |

## Application procedure:

There is a two-stage application process for the Discovery Research Grant (an overview of the process, and timings, is shown at the end):

- 1. Preliminary application** – All applicants are required to submit a preliminary application. Preliminary applications will be considered by our Discovery Research Grant review panel<sup>1</sup>, who will rank them, and identify the best proposals to take forward to the full application stage.
- 2. Full application** - Successful applicants will be invited to submit a full application. This application will be subject to external peer review, and final consideration by our Discovery Research Grant review panel. Applicants will be given the opportunity to respond to external peer review feedback in advance of the final review panel meeting.

The process of selecting preliminary applications to move forward to the full application stage is very competitive, and we therefore ask that you do not submit speculative applications. It is important for this process to work and to be fair to other applicants that preliminary outlines accurately reflect any later invited applications. As such, all full applications will be checked against preliminary applications.

### Submitting an application:

Preliminary and full applications must be submitted through our online grants management system, [Flexi-Grant](#), before the deadline. There is further guidance on Flexi-Grant about how to complete your application.

**Please note that your application will have to be approved by an authorised representative from your institution before you can submit it – ensure you allow enough time for this before the deadline.**

**All preliminary applications must be received on or before  
Wednesday 19 April 2023.**

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<sup>1</sup> The Discovery Research Grant review panel is comprised of Professor Cynthia Morton (University of Manchester/Harvard Medical School), Professor Graham Naylor (University of Nottingham), Professor René Gifford (Vanderbilt University), Dr Gwenaëlle Géléoc (Boston Children's Hospital), Dr Sally Dawson (University College London), Dr Conny Kopp-Scheinflug (Ludwig-Maximilians University, Munich), Dr Zoe Mann (King's College London), Professor Berthold Langguth (University Hospital of Regensburg), Dr Mahmood Bhutta (Brighton and Sussex Medical School) and 1 additional member to be recruited. In addition, members of the Alzheimer's Research UK Grant Review Board will join the panel for the 2023 round of funding.

For further details:

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### **Deadlines**

Preliminary applications: 19 April 2023  
Full applications: 12 July 2023  
Final decision: January/February 2024

A summary of our current terms and conditions is included on our website for your reference – please note that these are subject to change.

## **2023 round**

