

# Has lockdown driven tinnitus sufferers to despair?

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Dr Dee Domingo performing a hearing test on Professor Raj Shakhawat at Flinders Medical Centre's Audiology Department. Credit: Flinders University

This gap in research knowledge has proved enticing for enterprising young scientist Dr. Dee Domingo, who recently joined Flinders

University's fledgling Audiology Department to commence bold new research ideas and analysis of tinnitus—involving brain stimulation trials to manage the condition and examining whether tinnitus suffers fared worse during COVID-19 lockdowns.

It's a timely reminder about hearing awareness, on the eve of [World Hearing Day on March 3](#), which encourages people to have their hearing tested.

"This is a hidden disease—and because it's not visible, many people simply don't know it exists, yet it deserves our full attention and focus," says Dr. Domingo, 27, from Whyalla.

"We're trying to find the [neural networks](#) that underlie tinnitus and use that information to inform new treatments or therapy options. This is the area that hasn't been plumbed enough.

"It's the type of disease that is hard to understand if someone hasn't experienced it, which is why we are going directly to patients for their involvement, to best understand their ongoing problems with tinnitus."

Dr. Domingo is working with Professor Raj Shekhawat, who is currently leading an International Discovery Research Grant funded by the Royal National Institute for the Deaf, United Kingdom. This three-year project—conducted at Flinders University in collaboration with South Australian Health & Medical Research Institute (SAHMRI) - is investigating the use of non-invasive brain stimulation for tinnitus management.

As a prelude to these trials—which are expected to commence in May—Dr. Domingo is preparing a survey to learn how people with tinnitus coped with their condition through COVID-19 lockdowns.

The new survey, being done in conjunction with Professor Bamini Gopinath and collaborators at Macquarie University and expected to be issued in early March, is looking to catalog the experiences of tinnitus sufferers during COVID-19, when lockdown and isolation would have amplified the effects and annoyance of the condition.

"Many people with tinnitus were living alone with this constant audio annoyance, and without other distractions during lockdown it would have been at the forefront of their thinking at every waking moment," says Dr. Domingo. "When you have nothing else to distract you, the noise produced by tinnitus becomes most bothersome, especially when you are attempting to get to sleep. It became their primary focus, and it loomed large as the most upsetting part of their life—at worst, it has developed into a mental health problem. Our survey needs to understand the true depth of this situation."

Dr. Domingo says the key to her tinnitus survey, for which she expects to have completed within a year, is highlighting the voice of patients in the research—and making them active participants in the research process. "We have to have a holistic view to move forward with tinnitus treatment, to stop people from feeling as though they are dealing with this condition in isolation. Information is power."

Professor Raj Shekhawat says it is necessary for his team's research to demonstrate the value of tinnitus solutions, and to send a powerful message that will better inform the general public.

"Tinnitus is not a disease, but an associated symptom—and in 99.9% of circumstances it is inflicted damage that triggers tinnitus. It is not just going to happen of its own accord," says Professor Shekhawat. "It can be self-inflicted, through exposure to extreme loud music, for example, or industrial noise—and that once the tiny hairs on the cochlear in the inner ear are damaged, even the slightest bit, they can never be regenerated. It

is a sense lost forever—and that changes people's perception once they understand that."

Professor Shekhawat says the importance of conquering the tinnitus problem is more fundamental than most people realize. "When a baby is conceived, the first sensory system to develop is hearing. Our abilities with language are all related to our hearing. If your hearing is not functioning, you won't develop speech and language, then think about the implication on your education, your vocation and social development. Yet it's only people who suffer hearing problems ever come to truly understand all this."

Dr. Domingo says the explorations of neural networks she is doing with Professor Shekhawat may provide the key to find new answers and solutions for tinnitus treatment.

"Tracking the neural networks will finally give us a [visual representation](#) of how tinnitus occurs and the damage it inflicts—and these visuals will help more people understand and appreciate the disease," she says. "It will paint a literal picture of what causes it, and that's the first step on the path to finding solutions."

Provided by Flinders University

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