



# Vaccine-Induced Tinnitus: A New Consequence of COVID-19

Aiza Fatima Raza<sup>1,✉</sup> Dilli Raj Paudel<sup>1,✉</sup> Prashanth Prabhu<sup>1,✉</sup>

<sup>1</sup>Department of Audiology, All India Institute of Speech and Hearing Mysuru, Mysuru, Karnataka, India

**Address for correspondence** Prashanth Prabhu, PhD, Department of Audiology, All India Institute of Speech and Hearing Mysuru, Naimisham Campus, Road No. 3, TK Layout, Manasagangothri, Mysuru, 570006, Karnataka, India (e-mail: prashanth.audio@gmail.com).

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Side effects of vaccines in the form of tinnitus and hearing loss are not uncommon. Various reports talk about temporary tinnitus and other audio-vestibular effects after taking different types of vaccination shots such as hepatitis B, H1N1, measles, and rabies.<sup>1–3</sup> As the COVID-19 vaccination program continues to be rolled out at pace around the globe, with increasing numbers of people being encouraged to undertake vaccination shots, a similar challenge seems to be on the rising.

Reports of triggering tinnitus in patients who received COVID-19 vaccines have been documented.<sup>4,5</sup> Parrino et al in 2021 reported that two out of three patients in their study had no history of audio-vestibular problems before vaccination.<sup>5</sup> Tinnitus was classified as catastrophic in two and as severe in one of them, according to the Tinnitus Handicap Inventory. Although the tinnitus reduced in severity after drug therapy in two of them, one did not show any significant changes in the perception of tinnitus even after the drug therapy.<sup>5</sup> The vaccine used in the above-reported study were mRNA vaccine injections.

A mixture of people who have received mRNA vaccines (Pfizer/BioNTech and Moderna) and adenovirus-based vaccine (Johnson & Johnson) along with the viral vector vaccine Vaxzevria by Astrazeneca are experiencing the same adverse event of tinnitus.<sup>4</sup> Vaccine Adverse Event Reporting System (VAERS) in the US database also reports of tinnitus among COVID-19 recipients of vaccines from Pfizer-BioNTech and Moderna. Tinnitus has been classified as a “very rare” side effect under the Guidelines for Clinical-Safety Information on Drugs by the Council for International Organizations of Medical Sciences (CIOMS). Although it is very rare, the impact of tinnitus on individuals is severe.

To combat the COVID-19 pandemic, different vaccines are on trial and have been coming up in the market. There is a need to keep surveillance on each of these vaccines to monitor the side effects such as tinnitus and audio-vestibular problems. It would also be interesting to find out how does these vaccines unfolding persons already facing tinnitus problems. Looking at the prevalence of tinnitus worldwide, such a side effect can highly discourage patients to take vaccines. The yellow card scheme of the Medicines and Healthcare Products Regulatory Agency should be adopted everywhere for recording such suspected side effects from vaccines.

One of the aims of this study is to inform the audiologists to be more vigilant with the patients who have received COVID-19 vaccines and come to the clinics with the complaint of tinnitus. As the tinnitus induced is not vaccine-specific, it could be possible that it is an anxiety-related reaction. People are more stressed and anxious in this pandemic, which might be an aggravating factor for the tinnitus symptom they encounter after vaccination as all the vaccines are novel, and people are skeptical about its efficiency and side effects. Thus, thorough counseling about the vaccines should be taken up as a protocol to help them get rid of all the fear and anxiety related to it. Another side of the coin points toward vaccine-induced tinnitus. It could be related to the similarity in composition or its mechanism of action that would potentially be responsible for the development of tinnitus. Tracking down the possible mechanisms and ruling out whether the induced tinnitus vaccine specific or not should be studied. Increased responsibility lies on the shoulders of ENTs and audiologists as the pandemic evolves both in terms of virus variants and upcoming vaccines.

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**Conflict of Interest**

None declared.

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