MERCOLA
Take Control of Your Health

Thousands Have Developed Tinnitus After COVID Shots

Analysis by Dr. Joseph Mercola ✔ Fact Checked | May 16, 2023

STORY AT-A-GLANCE

- At least 16,183 people say they've developed tinnitus after receiving a COVID-19 shot, and this is likely an underestimate
- Dr. Konstantina Stankovic, director of the Stanford Medicine Molecular Neurotology Laboratory, is leading research to uncover how COVID-19 and COVID-19 shots may be affecting auditory function and triggering tinnitus
- She says her email is bombarded with reports from people who developed tinnitus after getting a COVID-19 shot
- Dr. Gregory Poland, director of the Mayo Clinic's Vaccine Research Group in Rochester, Minnesota, also developed tinnitus after a COVID-19 shot; he's been suffering from tinnitus for two years as a result and says he receives emails nearly every day from people with similar stories
- Molecular mimicry, which occurs when similarities between different antigens confuse the immune system, is one potential mechanism that could explain the link between COVID-19 shots and tinnitus

At least 16,183 people say they've developed tinnitus after receiving a COVID-19 shot.[1,2] The reports were filed with the U.S. Centers for Disease Control and Prevention's Vaccine Adverse Event Reporting System (VAERS) database. But considering only between 1%[3] and 10%[4] of adverse reactions are ever reported to VAERS, the actual number is likely much higher.

Tinnitus causes a perception of sound in the ear without an external source. While the sound is often described as ringing in the ears, it can also be a whistling, buzzing, hissing, clicking, swooshing or roaring sensation. In rare cases, it can even sound like music.[5] An estimated 10% to 25% of adults, as well as children, suffer from tinnitus of varying degrees.[6]

Of the approximately 25 million Americans who live with tinnitus, 5 million have chronic tinnitus that's burdensome while 2 million describe the condition as debilitating.[7] Now, with so many people developing tinnitus after COVID-19 shots, theories have emerged about the possible connection.

Shots May Trigger Chronic Inflammation, Other Risk Factors

Shaowen Bao, an associate professor at the University of Arizona, Tucson, who's also a representative of the American Tinnitus Association's scientific advisory board, has been researching tinnitus for more than 10 years. He's also a tinnitus sufferer. A support group on social media created for people who developed tinnitus after a COVID-19 shot contacted Bao to study the potential link.

He surveyed 398 people from the group, who tended to suffer from severe tinnitus along with symptoms such as headaches, dizziness, vertigo, ear pain, anxiety and depression.[8]

While Bao is still analyzing his findings, he told NBC News that tinnitus tended to develop after the first dose of a COVID-19 shot, suggesting "the vaccine is interacting with preexisting risk factors for tinnitus. If you have the risk factor, you will probably get it from the first dose."[9] He also suggested chronic inflammation in the brain or spinal cord could be involved.

The CDC also looked into a link between COVID-19 shots and tinnitus. The agency said it didn't find any connection, but their review hasn't been made public.[10] Dr. Harlan Krumholz, director of the Center for Outcomes Research and Evaluation at Yale University, is also studying tinnitus as it relates to COVID-19 shots and long COVID, as part of the Yale LISTEN study.[11]

“Tinnitus is a prominent symptom in many people with long COVID and in those with vaccine-associated conditions,” he told USA Today.[12] “We are seeking to bring together many people with this symptom and hope we can learn together what might be the cause — on the path toward evidence-based strategies to help these people.”

Dr. Konstantina Stankovic, an otolaryngologist-head and neck surgeon who directs the Stanford Medicine Molecular Neurotology Laboratory, is also leading research to uncover how COVID-19 and COVID-19 shots may be affecting auditory function — and whether tinnitus is a side effect of the shots.

"My email is being bombarded by people from across the world who really feel that they don't have a voice," she told NBC News. "They feel that they're being dismissed, that people don't take them seriously, and yet they tell me in very moving ways how they can tie it to the vaccine."[13]

Vaccine Proponent Gets Tinnitus After COVID-19 Shot

While media and health officials alike often brush off **anecdotal reports of vaccine reactions**, when Dr. Gregory Poland developed tinnitus after a COVID-19 shot, people took notice.

Poland is the director of the Mayo Clinic's Vaccine Research Group in Rochester, Minnesota. He’s also a paid scientific adviser for Johnson & Johnson and a vaccine development consultant for Moderna and other pharmaceutical companies.[14] When the tinnitus first struck — on his drive home from his second COVID-19 shot, "It startled me," Poland said. "I thought it was a dog whistle going off right next to me."[15]

Poland has been suffering from tinnitus for two years and says he receives emails nearly every day from people who say they also developed tinnitus after a COVID-19 shot. He says he’s frustrated by the CDC’s lack of action on the issue. "Why has the CDC not done all of the research that they should do on this and published it?" he stated to NBC News.[16]

Some days, he says, the tinnitus is so bad "I could just scream … You don't ever get over tinnitus."[17] It's unusual that a person of Poland's background and close ties to Big Pharma would speak out about vaccine-induced tinnitus. But he told NBC News, "I refuse to be anything less than transparent. I refuse to cherry-pick the information that should be presented to people to make good decisions."[18]

Is Molecular Mimicry Behind Shot-Induced Tinnitus?

A review published in the Annals of Medicine & Surgery looked at the potential mechanisms behind vaccine-associated-tinnitus.[19] Molecular mimicry is one possibility. It occurs when similarities between different antigens confuse the immune system.

There are often significant similarities between elements in the vaccine and human proteins, which can lead to immune cross-reactivity. When this occurs, researchers explained in Cellular & Molecular Immunology, "… the reaction of the immune system towards the pathogenic antigens may harm the similar human proteins, essentially causing autoimmune disease."[20]

In relation to COVID-19 shots, specifically, researchers wrote in the Journal of Autoimmunity, "Indeed, antibodies against the spike protein S1 of SARS-CoV-2 had a high affinity against some human tissue proteins. As vaccine mRNA codes the same viral protein, they can trigger autoimmune diseases in predisposed patients."[21] The Annals of Medicine & Surgery researchers explained:[22]

> *"Based on the mechanisms behind other COVID-19 vaccine-induced disorders and the phenomenon of molecular mimicry, a cross-reactivity between anti-spike SARS-CoV-2 antibodies and otologic antigens is a possibility. The heptapeptide resemblance between coronavirus spike glycoprotein and numerous human proteins further supports molecular mimicry as a potential mechanism behind such vaccine-induced disorders.*
>
> *Several autoimmune conditions, including vaccine-induced thrombotic thrombocytopenia (VITT) and Guillain-Barré syndrome (GBS), have been*

reported following coronavirus vaccination. Anti-spike antibodies may potentially react with antigens anywhere along the auditory pathway and initiate an inflammatory reaction involving the tympanic membrane, ossicular chain, cochlea, cochlear vessels, organ of Corti, etc."

Other Ways COVID-19 Shots May Be Triggering Tinnitus

Autoimmune reactions are another possibility. "Antibodies can form complexes with one or more antigens leading to a type III hypersensitivity reaction. Deposition of circulating immune complexes and vestibule-cochlear antibodies can play a role in autoimmune inner ear disease," according to the review, which also noted, "genetic predisposition and immunologic pathways may play a role in post-vaccination-tinnitus."[23]

The review also raised the possibility that COVID-19 shots could be directly ototoxic, or damaging to the auditory pathway. They may also cause nitric oxide (NO) dysregulation, as inhibition of NO production may underly tinnitus — and glaucoma, which increases tinnitus risk:[24]

"Any potential association between vaccines and NO dysregulation should be investigated. Certain COVID-19 vaccines have been associated with vaccine-induced thrombotic thrombocytopenia.

Developing thrombus can reduce the blood supply to the ear and increase the probability of developing tinnitus. The existing literature lacks articles investigating associations between vaccines and NO levels. Therefore, the association of vaccines with NO deficiency in genetically susceptible patients should be investigated."

Tinnitus Is a Symptom of Long COVID

COVID-19 may also cause tinnitus. A January 2021 systematic review evaluated the effect COVID-19 has on the auditory system.[25] The study looked at 28 case reports or

series and 28 cross-sectional studies that included reports of hearing loss, tinnitus and vertigo.

The researchers pooled estimates of the prevalence of these conditions based on the patient's recall of their symptoms. They discovered that in this patient cohort that had COVID-19, 7.6% reported hearing loss, 14.8% reported tinnitus and 7.2% reported rotary vertigo.

Another study, published in the Indian Journal of Otolaryngology and Head & Neck Surgery in December 2021, assessed hearing in 100 individuals who had a mild to moderate COVID-19 infection.[26] In that group, 22 had received remdesivir for treatment of COVID-19.

The researchers found 31 of the 100 participants had ear symptoms, the most common of which was tinnitus, followed closely by new-onset hearing loss. Long COVID, also known as long-haul COVID, chronic COVID or long-haul syndrome, refers to symptoms that persist for four or more weeks after an initial COVID-19 infection.[27] Tinnitus, often severe, and vertigo are common symptoms of long COVID.[28]

It's interesting to note that, in one study from early in the pandemic, more than two-thirds of those reporting long COVID symptoms had negative antibody tests, suggesting at least some of them didn't even have COVID-19.[29] Meanwhile, many COVID jab recipients report long COVID-like symptoms. As reported by Science magazine, "In rare cases, coronavirus vaccines may cause long COVID-like symptoms."[30]

How to Relieve Tinnitus

The Front Line COVID-19 Critical Care Working Group's (FLCCC) I-RECOVER[31] protocol can be downloaded in full,[32] giving you step-by-step instructions on how to treat long COVID[33] and/or reactions from COVID-19 injections.[34] You also can try my **strategies to optimize mitochondrial health** if you're suffering from long COVID and related symptoms like tinnitus, with a focus on boosting mitochondrial health.

It is important you do not overlook any new ringing or buzzing in your ears that lasts more than a day, as starting treatment early can help reduce the effects. An otolaryngologist, more commonly known as an Ear, Nose and Throat (ENT) specialist, may be able to help with symptom relief. Although there is no known cure for tinnitus, it may resolve on its own or become less bothersome.

Cognitive-behavioral therapy helps teach coping strategies and relaxation techniques that can reduce the distress tinnitus triggers. Music therapy[35] is another form of treatment for tinnitus that can help lower the negative reactions a patient has and stimulate the auditory cortex simultaneously.

Other natural options include melatonin, which may help decrease tinnitus intensity,[36] and ginkgo biloba extract, which works as well as the drug pentoxifylline to reduce loudness, "annoyance" and overall suffering in patients with tinnitus.[37]

The University of California San Francisco also uses neuromonics acoustic desensitization protocol.[38] This incorporates a processor connected to earphones that deliver music individualized to the person's hearing loss, as well as counseling. To help prevent and minimize tinnitus, the University of California San Francisco also recommends:[39]

- Exercise
- Reduce fatigue
- Manage stress
- Reduce exposure to extremely loud noise
- Avoid total silence

Sources and References

- [1, 8, 9, 10, 16, 17] NBC News April 23, 2023
- [2] WION April 24, 2023
- [3] The Vaccine Reaction January 9, 2020
- [4] BMJ 2005;330:433
- [5, 7] American Tinnitus Association, About Tinnitus

- [6] National Institute on Deafness and Other Communication Disorders, Tinnitus
- [11] Yale LISTEN Study
- [12] USA Today April 25, 2023
- [13, 14, 15, 18] NBC News March 20, 2022
- [19] Ann Med Surg (Lond). 2022 Mar; 75: 103293
- [20] Cellular & Molecular Immunology volume 15, pages 586–594 (2018)
- [21] Journal of Autoimmunity December 2021, Volume 125
- [22] Ann Med Surg (Lond). 2022 Mar; 75: 103293., 4.1 Molecular Mimicry
- [23] Ann Med Surg (Lond). 2022 Mar; 75: 103293., 4.2 Autoimmune Reactions
- [24] Ann Med Surg (Lond). 2022 Mar; 75: 103293., 4.3 Past medical history
- [25] International Journal of Audiology, 2021; 60(12)
- [26] Indian Journal of Otolaryngology and Head & Neck Surgery, 2021; 73(4)
- [27] CDC, COVID-19, Post-COVID Conditions September 16, 2021
- [28] Front Neurol. 2022; 13: 884002
- [29] TNR December 8, 2022
- [30] Science January 20, 2022
- [31, 32] FLCCC Alliance, I-RECOVER
- [33] FLCCC Alliance, I-RECOVER, Long COVID
- [34] FLCCC Alliance, I-RECOVER, Post-Vaccine Treatment Protocol
- [35] Indian J Otolaryngol Head Neck Surg. 2022 Jun;74(2):185-189. doi: 10.1007/s12070-021-02799-z. Epub 2021 Aug 9
- [36] Ann Otol Rhinol Laryngol. 2011 Jul;120(7):433-40. doi: 10.1177/000348941112000703
- [37] Int J Clin Pharm. 2018 Oct;40(5):1335-1341. doi: 10.1007/s11096-018-0654-4. Epub 2018 Jun 1
- [38, 39] University of California San Francisco Health, Tinnitus Treatments