



# TINNITUS

## Understanding And Managing Tinnitus

**Tinnitus** – **persistent ringing or buzzing sounds in the ears** – can be distressing, frustrating and even incapacitating. More than 25 million Americans suffer from some form of tinnitus, 5 million refer to it as “burdensome” and 2 million call it “debilitating.”<sup>1</sup> Veterans are particularly at risk – tinnitus is the number one service-connected disability, according to the U.S. Dept. of Veterans Affairs.<sup>2</sup> This infographic provides more information about the condition and its causes, dispels common myths, and offers evidence-based strategies for managing Tinnitus effectively.

Tinnitus is described as a ringing in the ears while no external sound exists. It can also present as other phantom noises like buzzing or clicking. There are two main types of tinnitus<sup>3</sup>:

### Subjective Tinnitus

A persistent sound only the patient can hear in one or both ears. It may be temporary, recurring or chronic. This is the most common form.

### Objective Tinnitus

In rare cases, tinnitus may present as a rhythmic pulsing or whooshing sound, often in time with your heartbeat, also called pulsatile tinnitus. A doctor may be able to hear your tinnitus when conducting an examination.

### Symptoms of tinnitus

Tinnitus can present with any of these sounds in one or both of the patient's ears.<sup>4</sup>



RINGING



BUZZING



ROARING



CLICKING



HUMMING



HISSING



WHOOSHING

### What causes tinnitus?

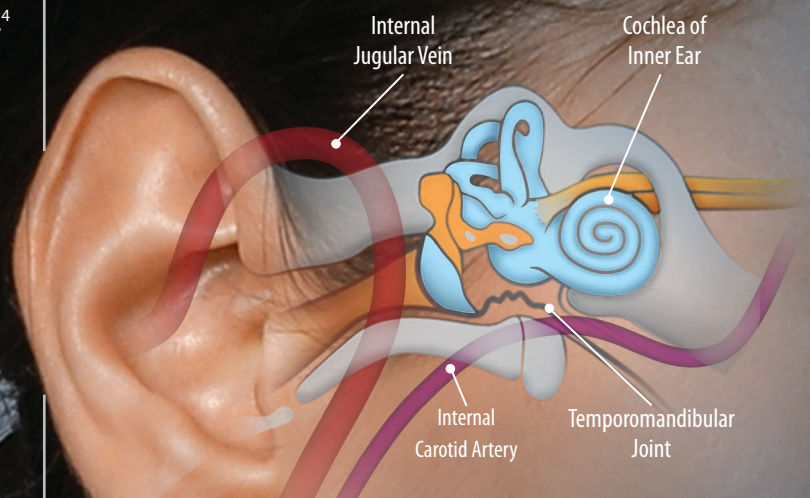
There can be many different root causes of tinnitus.<sup>4</sup>

#### Common causes may include:

- Hearing Loss
- Ear Infection or ear canal blockage
- Head or neck injuries
- Some medications

#### Other causes may include:

- Ménière's disease
- Problems with the joint of the jawbone (Temporomandibular joint)
- Other chronic conditions including diabetes, thyroid problems, migraines, anemia and autoimmune disorders



Tinnitus Severity (THI)	<40 Years	40 - 60 Years	>60 Years
Slight (0 - 16)	11 (13.75%)	34 (20.61%)	37 (25.17%)
Mild (18 - 36)	26 (32.5%)	47 (28.48%)	41 (27.89%)
Moderate (38 - 56)	30 (37.5%)	35 (21.21%)	30 (20.41%)
Severe (58 - 76)	10 (12.5%)	32 (19.39%)	18 (12.24%)
Catastrophic (78 - 100)	3 (3.75%)	17 (10.3%)	21 (14.29%)

Tinnitus and its severity are also correlated with age.<sup>5</sup>

## How to prevent tinnitus

While tinnitus can't always be prevented, certain precautions can lower the risk of experiencing it and also reduce the severity of tinnitus if you have it.<sup>10</sup>



**Use hearing protection:** Over time, sustained or repeated loud sounds frequently cause tinnitus. Using hearing protection can have a significant impact on reducing the risk.



**Improve cardiovascular health:** Keeping blood vessels healthy via diet and exercise can reduce tinnitus risk.



**Reduce intake of alcohol, caffeine and nicotine:** These substances can impact blood flow and increase the risk of tinnitus.



About 90% of people who have tinnitus also have hearing loss.<sup>6</sup>

Occupations at higher risk for tinnitus include:

**7%** Construction<sup>7</sup>   **11%** Manufacturing<sup>8</sup>   **40-50%** Musicians<sup>9</sup>

**Veterans are an overrepresented demographic for people suffering from tinnitus.<sup>11</sup>**

- Tinnitus affects 30% of military veterans – twice the rate of the non-veteran population
- Tinnitus is the most common service-connected disability for veterans
- More than 1.6 million veterans reported service-connected tinnitus – most commonly due to noise exposure



## 5 common myths about tinnitus<sup>12</sup>:

### Myth

### Fact

**1**

Tinnitus is a disease.

Tinnitus is a symptom of any number of underlying conditions that include vascular disease, noise-related injury and even Traumatic Brain Injury.

**2**

Only those with hearing loss get tinnitus.

Hearing loss and tinnitus are two separate conditions that can overlap – or may not. Hearing aids can also help both conditions.

**3**

Tinnitus is harmless.

For some, tinnitus can signal a serious medical problem, such as heart disease, high blood pressure, or an acoustic neuroma. It's important to have a hearing healthcare professional evaluate the symptoms.

**4**

Tinnitus is all in your head.

While there are currently no objective tests that show its presence<sup>12</sup>, tinnitus is real. Millions of people worldwide suffer from tinnitus, and it can vary from mild to debilitating. There are experts who can help manage the symptoms and help to improve quality of life.

**5**

There's nothing you can do about tinnitus.

Tinnitus research is ongoing, and treatments are evolving and improving. Whether tinnitus is mild, moderate or severe, a hearing healthcare professional can offer solutions and treatments to help lessen the symptoms and make the condition more manageable. Additionally, other healthcare professionals can diagnose and address health issues that might be causing tinnitus in the first place. There are also many at-home techniques, such as habituation – the process of decreasing a response to a stimulus after repeated exposure – that can provide relief.

# Managing the effects of tinnitus<sup>14</sup>



## Sound therapy

- White noise – Sound generated by fans, humidifiers, air conditioners and similar devices can make tinnitus less noticeable, especially when trying to sleep.
- Sound amplification – Wearing hearing aids can introduce more ambient noise, masking the effects of tinnitus.<sup>15</sup> Music Intervention has also been shown to provide effective therapy.<sup>16</sup>
- Specialized tinnitus masking devices – These can provide more specific audio like nature sounds such as waves crashing on the shore.



## Lifestyle adjustments

- Reduce alcohol and caffeine intake
- Reduce stress
- Reduce carbohydrate and cholesterol intake



## Pharmacologic therapy

- Melatonin supplements have been shown to improve tinnitus symptoms and particularly improve sleep.
- Tinnitus can be experienced as a side effect of certain medications, including aspirin and acetaminophen.<sup>17</sup> It's important to consult a physician if bothersome tinnitus is experienced.
- For patients with pre-existing anxiety and depression, the use of tricyclic antidepressants and selective serotonin reuptake inhibitors have been shown to be effective in managing tinnitus symptoms, decreasing the level of annoyance.



## Rehabilitation therapy

- Tinnitus retraining therapy helps to dissociate tinnitus from a patient's negative response by using a combination of directive counseling and ear-level noise generators. This therapy is notably different from sound therapy because of the inclusion of directive counseling.
- Cognitive-behavioral therapy aims to eliminate the perception of sound and correct one's negative responses to tinnitus, focusing primarily on counseling and relaxation techniques. It has been shown to improve quality of life and decrease depression in sufferers and is recommended for persistent and bothersome tinnitus.
- Transcranial Magnetic Stimulation (TMS) has been investigated as a potential treatment for chronic tinnitus for 20 years. Numerous studies have reported that repetitive TMS (rTMS) has demonstrated efficacy in reducing the severity of tinnitus and its associated co-conditions such as depression, anxiety and insomnia. However, some researchers have reported that active rTMS is no more effective than sham (placebo) rTMS as a tinnitus treatment method.<sup>18</sup>
- A new treatment called Lenire has shown promising results in clinical trials. Lenire pairs tongue and sound stimulation – called bimodal neuromodulation – to help alleviate the effects of tinnitus.<sup>19</sup>
- Surgical management is rarely used in patients with tinnitus and is only used for treatable underlying causes.

While tinnitus can be a significant condition that can impact millions and is often incurable, there are many ways for those suffering from it to manage its effects and reduce the impact it has on the overall quality of life. It's important to be aware of evidence-based treatments that are backed by quality, peer-reviewed scientific studies because there are predatory products on the market that offer no help. Consulting a qualified hearing healthcare professional is the first and most important step to take.

Infographic reviewed by Kathleen F. Faulkner, Ph.D., CCC-A, Audiology Consultant

<sup>1,3</sup> "Why Are My Ears Ringing?" American Tinnitus Association, April 2015, [ata.org/about-tinnitus/why-are-my-ears-ringing](http://ata.org/about-tinnitus/why-are-my-ears-ringing)

<sup>2</sup> "VA Research on Hearing Loss," Office of Research and Development, U.S. Dept. of Veterans Affairs, Aug. 2023, <https://www.research.va.gov/topics/hearing.cfm>

<sup>4,10</sup> "Tinnitus," MayoClinic.org, Nov. 2022, [mayoclinic.org/diseases-conditions/tinnitus/symptoms-causes/syc-20350156](https://www.mayoclinic.org/diseases-conditions/tinnitus/symptoms-causes/syc-20350156)

<sup>5</sup> Jamil Al-Swiahb, Shi Nae Park, "Characterization of Tinnitus in Different Age Groups: A Retrospective Review," *Noise & Health Journal*, July-Aug. 2016, [ncbi.nlm.nih.gov/pmc/articles/PMC5187663/?report=printable](https://ncbi.nlm.nih.gov/pmc/articles/PMC5187663/?report=printable)

<sup>6</sup> Temma Ehrenfeld, "Tinnitus and hearing loss: What's the connection?" *HealthyHearing.com*, Nov. 2019, [healthyhearing.com/report/53029-Tinnitus-and-hearing-loss](https://www.healthyhearing.com/report/53029-Tinnitus-and-hearing-loss)

<sup>7</sup> "Noise and Occupational Hearing Loss: Construction," National Institute for Occupational Safety and Health, Jan. 2023, [cdc.gov/niosh/topics/noise/surveillance/construction.html](https://www.cdc.gov/niosh/topics/noise/surveillance/construction.html)

<sup>8</sup> "Noise and Occupational Hearing Loss: Manufacturing," National Institute for Occupational Safety and Health, Jan. 2023, [cdc.gov/niosh/topics/noise/surveillance/manufacturing.html](https://www.cdc.gov/niosh/topics/noise/surveillance/manufacturing.html)

<sup>9</sup> Glenn Schweitzer, "Are you a musician with tinnitus? Why it happens and how to cope," *HealthyHearing.com*, 2021, [healthyhearing.com/report/53196-Musicians-tinnitus-and-hearing-loss](https://www.healthyhearing.com/report/53196-Musicians-tinnitus-and-hearing-loss)

<sup>11</sup> Caroline J. Schmidt, Ph.D., et al., "Cognitive Behavioral Therapy for Veterans With Tinnitus," *Federal Practitioner*, Aug. 2018, [ncbi.nlm.nih.gov/pmc/articles/PMC6263445](https://ncbi.nlm.nih.gov/pmc/articles/PMC6263445)

<sup>12</sup> Joy Victory, "10 common myths about tinnitus," *HealthyHearing.com*, Feb. 2020, [healthyhearing.com/report/52702-Top-10-myths-about-tinnitus](https://www.healthyhearing.com/report/52702-Top-10-myths-about-tinnitus)

<sup>13</sup> Shuwen Fan and Shufeng Li, "Objective Detection of Tinnitus Based on Electrophysiology," *Brain Sciences*, Aug. 2022, [ncbi.nlm.nih.gov/pmc/articles/PMC9406100](https://ncbi.nlm.nih.gov/pmc/articles/PMC9406100)

<sup>14</sup> Vincent Wu, MD, et al., "Approach to tinnitus management," *Canadian Family Physician*, July 2018, [ncbi.nlm.nih.gov/pmc/articles/PMC6042678/pdf/0640491.pdf](https://ncbi.nlm.nih.gov/pmc/articles/PMC6042678/pdf/0640491.pdf)

<sup>15</sup> Philip J. Sanders et al., "Hearing aids with tinnitus sound support reduce tinnitus severity for new and experienced hearing aid users," *Frontiers in Audiology and Otology*, Aug. 2023, [frontiersin.org/articles/10.3389/fgot.2023.1238164/full](https://www.frontiersin.org/articles/10.3389/fgot.2023.1238164/full)

<sup>16</sup> Kira Vibe Jespersen, Line Gebauer and Peter Vuust, "Music Interventions in Health Care," *AARHUS University*, Sept. 2022, [musicinthebrain.au.dk/our-publications/white-paper](https://musicinthebrain.au.dk/our-publications/white-paper)

<sup>17</sup> "Study: Analgesics Linked With Risk of Persistent Tinnitus," *US Pharmacist*, May 2022, [uspharmacist.com/article/study-analgesics-linked-with-risk-of-persistent-tinnitus-1](https://www.uspharmacist.com/article/study-analgesics-linked-with-risk-of-persistent-tinnitus-1)

<sup>18</sup> Robert L. Folmer, "Unresolved Issues Associated with Transcranial Magnetic Stimulation Treatment of Chronic Tinnitus," *Journal of Clinical Medicine*, July 2023, [mdpi.com/2077-0383/12/14/4648](https://www.mdpi.com/2077-0383/12/14/4648)

<sup>19</sup> "What is Dual Mode Stimulation?" *Lenire.com*, Sept. 2019, [lenire.com/what-is-lenire/](https://www.lenire.com/what-is-lenire/)

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