

INFORMATION ABOUT TINNITUS

What is Tinnitus?

Tinnitus is the medical term for the perception of sound in one or both ears, or in the head when no external sound is present. It is often referred to as “ringing in the ears,” although some people hear hissing, roaring, whistling, chirping, or clicking. Tinnitus can be intermittent or constant – with single or multiple tones – and its perceived volume can range from subtle to debilitating.

What does the word “Tinnitus” mean?

The word is of Latin origin. It means “to tinkle or to ring like a bell.” You may hear two pronunciations, both are correct: “tin-NIGHT-us” or TINN-a-tus.”

What Causes Tinnitus?

There are many causes; indeed, almost anything that can go wrong with the ear has tinnitus associated with it as a symptom. Problems ranging in severity from over-production of wax, noise exposure, ear infections, aspirin, a few intravenous antibiotics, a few chemotherapy drugs, some antidepressant medications, stimulants such as caffeine or stress, rare benign tumors on the acoustic nerve can produce tinnitus. One of the most common causes of tinnitus is presbycusis, age related hearing loss. Many patients have been exposed to excessively loud sounds either on the job (musicians, carpenters, pilots, farmers, truck drivers) or recreationally (firearms, chain saws, loud music). Some patients present after an illness (cold or virus), surgery, autoimmune condition, neurological condition like Parkinson’s or dramatic stress on the job or at home.

Tinnitus can sometimes result from problems not associated with the ear, such as head injury, disorders of the neck vertebrae, or the temporomandibular (jaw) joint. It can also be caused by cardiovascular disease, allergies, migraine, Meniere’s disease, thyroid disorders, or degeneration of the bones in the middle ear. In most cases, an exact cause is never found.

Tinnitus is a potential side-effect of many prescription medications. Some drugs can result in a sudden onset of a short-lived tinnitus; if the patient stops taking the medication, the tinnitus symptoms may recede. However, there are some drugs, known to be “ototoxic” (damaging to the ear) that can cause more permanent tinnitus.

Some drugs that may cause problems include:

- *Nonsteroidal anti-inflammatory drugs (NSAIDS): Especially high-dose aspirin*
- *Certain antibiotics: e.g., Gentamicin*
- *Certain cancer medications*
- *Diuretics: Furosemide*
- *Quinine-based medications*
- *Antidepressants: Amitriptyline, Nortriptyline, benzodiazepines*

Do we know what Tinnitus is?

The actual mechanism responsible for tinnitus is not known. We do know that it is a real – not imagined – symptom of something that has gone wrong in the auditory or neural system.

Is Tinnitus associated with Hearing Loss?

In many cases, tinnitus is associated with some hearing loss. For example, those who have been exposed to excessively loud sounds often have a high frequency hearing loss. And if they have tinnitus, it is often identified as a high-pitched tone in the region of the hearing loss. In some cases, tinnitus is present where there is no measured loss of hearing.

What is Hyperacusis?

When a person has hypersensitivity to normal sound, they may be diagnosed with a health condition called hyperacusis.

Tinnitus may or may not be present. These individuals usually have difficulty tolerating everyday sounds and may find levels of sound that are normal to other people unpleasant or painful.

What makes Tinnitus worse?

1. **Loud Noise.** Avoid loud sounds. Wear hearing protection when you operate power tools, guns, motorcycles, lawn mowers and noisy vacuum cleaners.
2. **Stress.** Many people notice a reduction in the volume of their tinnitus when they are able to control their stress levels. Reduce stimulants such as caffeine.
3. **Ototoxic Drugs.** If you are prescribed a new medication, and your tinnitus significantly changes, ask the prescribing physician if this medication can be stopped.

Amplification (Hearing Aids)

Some tinnitus patients with hearing loss experience total or partial tinnitus relief while wearing hearing aids. There are many variables that determine success. However, if a patient has a hearing loss in the frequency range of tinnitus, hearing aids may bring back in the ambient sounds that naturally cover the tinnitus.

Sound Therapy

“Sound therapy” is a broad term that may be used in many ways, depending on the specific product, clinical setting, or individual clinician. In general, sound therapy means the use of pleasant external sound in order to alter a patient’s perception of, or reaction to, tinnitus. Like other tinnitus treatments, sound therapies may not completely eliminate tinnitus, but they may significantly lower the perceived burden and intensity of tinnitus.

Sound-based therapies function on four general mechanisms of action.

- **Masking:** exposing the patient to an external noise at a loud enough volume that it partially or completely covers the sound of their tinnitus.
- **Distraction:** using external sound to divert a patient’s attention from the sound of tinnitus.
- **Habituation:** helping the patient’s brain reclassify tinnitus as an unimportant sound that should and can be consciously ignored.
- **Neuromodulation:** the use of specialized sound to minimize the neural hyperactivity thought to be the underlying cause of tinnitus.

Cochlear Implants/Electrical Stimulation

A cochlear implant has two components: 1) an electrode array that is threaded into the cochlea, and 2) a receiver that is implanted just beneath the skin behind the ear. The electrode array sends electrical sound signals from the ear to the brain. Because electrode implantation destroys whatever healthy hair cells were left inside the cochlea, these implants are prescribed to deaf or near-deaf patients only. In one study, half of those who had tinnitus before their cochlear implants experienced tinnitus relief after their cochlear implants.

TMJ Treatment

Tinnitus can be a symptom of a jaw joint (temporo-mandibular joint or TMJ) dysfunction. Dental treatment or bite realignment can help relieve TMJ pain and associated tinnitus. See your dentist to treat TMJ.

Migraine Management

There is a link between tinnitus and migraine. Patients who have migraine often suffer from tinnitus. Better control of migraines can often improve tinnitus symptoms.

Supplementation with Ginkgo biloba and Riboflavin

These are not proven treatments but anecdotally, some patients find them helpful.

General Wellness

The perceived intensity of tinnitus can fluctuate depending on many factors – including the patient’s overall well-being. Healthy low-salt diet, avoid caffeine and other stimulants, physical exercise, social and recreational activity all provide strong peripheral benefits that make living with tinnitus easier.