

Tinnitus or “Ear Ringing”: Causes and Remedies

More details can be found at the Blog Site: [randallfong.blogspot.com/tinnitus causes and tx](http://randallfong.blogspot.com/tinnitus-causes-and-tx)

Tinnitus is a sound generated by your inner ear. The quality and intensity of the sound often varies amongst people with this problem. The tinnitus is described in a variety of ways: a persistent ringing; a hiss like air leaking from a tire; like the sound of overhead power lines; like “crickets” or “cicada”; like the ocean sound of a seashell held up to the ear; or for those old enough to remember the cathode-ray television sets, the “sssss” noise when the television station went off the air. The intensity or loudness also varies from very light and barely noticeable to very loud as happens with me, particularly if I concentrate on it. For some the tinnitus comes and goes; for others, it is constant, like mine. Most tinnitus is a level, persistent noise, though at times can be louder or have a change in pitch for no rhyme or reason.

What causes tinnitus?

Tinnitus occurs when those tiny receptor cell in your inner ear (the *cochlea*) decline in function or there is a problem with nerve that connects the cochlea to the brain. These *hair cells* normally convert sound into electrical energy that is transmitted along the cochlear nerve to your brain; this is how we hear. However, as the cells decline or die off (often as a natural process as we age) the neuron connected to that hair cell may continue sending electrical signals to the brain for reasons not completely understood. This is perceived as tinnitus. Also if the neuron itself is not properly functioning or is damaged, it can still create a neural impulse and send it to the brain. This also creates tinnitus. And when both ears are involved equally, it often feels the noise is generated right there inside your head.

A common cause of a decline of cochlear function is a natural process of aging (called *presbycusis*). Another common cause is a past insult to the ear such as noise exposure (sudden loud noise or long-term exposure to noise). Your doctor can check for other, less common causes, and determine the proper treatment depending on what is found (ie, such as an ear infection, ear wax, side effects of medications, etc).

Treatments, remedies

Barring any unusual or serious findings, the cause of tinnitus is often benign. Unfortunately, there is not a cure per se, and some patients find this disappointing. However, there are some remedies that may help. Again, these won't resolve the tinnitus completely, but should help reduce its intensity and loudness and allow you to adapt to it, such that it becomes less of an annoyance.

Avoid loud noise or use maximal hearing protection when potentially exposed to excessive noise. When shooting firearms, I advocate double hearing protection with ear plugs (preferably custom-fitted plugs) AND ear muffs that cover the ears completely. For hunting, I recommend electronic ear muffs which allows the hunter to hear environmental sounds but activates immediately to attenuate sound when the gun is fired. Also, caution with those earbuds used for music, especially in young kids. Long-term use can cause noise-induced hearing loss and subsequently tinnitus.

Avoid medications that can affect the cochlea, such as aspirin (i.e., dose higher than an 81mg baby-size or regular-sized 325mg once a day dose) and too much NSAID use (i.e., ibuprofen, naproxen). If you're using NSAIDS multiple times a day on a chronic basis, you should see your doctor to see what ails you as there might be other effective therapies to keep you off long-term NSAID use, which has potential adverse side-effects.

Tinnitus

Avoid too much caffeine. We live in a highly-caffeinated society. Kids are drinking energy drinks and sweet, super-sized coffee drinks loaded with caffeine. Generally, one or two (8 ounce cups) is O.K. Tinnitus might not resolve with caffeine cessation, but higher doses can make it worse (I've suffered the same when overloading on the coffee at work).

Masking techniques: *Masking* is a technique where a competing noise is created to counteract the tinnitus. Many people with tinnitus already experience masking during the day: the ambient noise of their environment during their routine day at work or school is a natural masker for tinnitus. Some people need masking at bedtime given the lack of ambient noise, which is the time tinnitus can be most distracting. Masking devices create a phenomenon called *residual inhibition*. For instance, you can play an FM radio between stations to create the constant "sssss" sound. Play it for about 15-20 minutes or go to sleep with it. After you turn it off, you may notice a reduction in the level of your tinnitus. Other techniques are to run a fan or play environment CDs or cellphone apps to play sounds found in nature, such as ocean waves or falling rain. The sounds of the natural world have an odd way not only of masking tinnitus, but in calming our minds and lowering levels of anxiety and depression.

Lipoflavonoids might also help, which are over-the-counter supplements made to reduce tinnitus. These can be found in pharmacies (i.e., Walgreens, CVS). These non-prescription tablets are derived from flavonoids, naturally occurring phytochemicals found in almost all plant foods thought to have protective effects on the cardiovascular and neurologic systems. Early studies using lipoflavonoids for Meniere's disease (a condition of vertigo, hearing loss and tinnitus) found that many people reported improvement in their Meniere's symptoms. Lipoflavonoids were then suggested for tinnitus in general, though there is not convincing research showing an obvious beneficial effect. I have many patients who swear by lipoflavonoids, experiencing a marked improvement and in some cases complete resolution of their tinnitus. However, this is anecdotal and not scientific proof of its usefulness. I typically tell patients wanting to try lipoflavonoids that the results are "hit-or-miss"--they might or might not notice an improvement.

Hearing aids can help but again will not resolve the problem entirely. For those with hearing loss who could benefit from aids, the amplification itself can mask the tinnitus, making it less noticeable. A *tinnitus masker* also can be programmed into the hearing aid device if needed. Sometimes those patients with tinnitus but normal hearing, a masking device in the form of a hearing aid often is helpful.

Stress-relief often helps a great deal. Relaxation techniques, meditation (though be careful not to perseverate on your tinnitus in those quiet moments). Many find exercise very helpful either be actually reducing the tinnitus or distracting attention from to where it is not bothersome. Likewise, leading a productive life and engaging with family and friends is one of the best therapies, keeping your mind off

your tinnitus and onto more important matters.

