

Tinnitus

- Description
- Diagnosis
- Treatment
- Summary

TINNITUS: FROM THE LATIN WORD TINNIRE MEANING TO RING

Tinnitus is a subjective disorder characterized as chronic ringing, roaring, buzzing, humming, chirping, or hissing in the ears in the absence of environmental noise (ATA 2002). Symptoms of tinnitus are frequently found in elderly persons and are often associated with hearing loss related to the aging process (presbycusis). Although the cause is usually unknown, tinnitus can be a symptom of almost any ear disorder, including infection (otitis media), a blocked ear canal (ear wax) or eustachian tube, otosclerosis (overgrowth of bone in the middle ear), labyrinthitis, and Meniere's disease. Even blast injury from explosions has been known to cause symptoms of tinnitus. Additionally, adverse side effects from some drugs (e.g., aspirin and antibiotics) cause tinnitus symptoms.

Sometimes tinnitus is called "head noise." In tinnitus, the acoustic nerve transmits impulses to the brain that are not the result of vibrations produced by sound waves. Instead the impulses are the result of stimuli that originate inside the head or within the ear. In healthy ears, thousands of auditory cells maintain an electrical charge. There are microscopic hairs on the surface of each auditory cell that move in relation to the pressure of sound waves. Movement of the hairs discharges electrical charges through the hearing nerve to the brain. The brain interprets these electrical signals as sound. If the hairs are damaged, they move erratically and are in a constant state of irritation. As a result, the auditory cells cannot hold their charge and random electrical impulses flow to the brain as noise (MFMER 2001).

In most persons, the noise of tinnitus is present continuously, even if the person is not always aware of it. Tinnitus can change in nature or intensity. Tolerance of tinnitus varies from person to person and is largely determined by personality. Many people accept tinnitus without significant distress, but for some the noise is almost intolerable (ATA 2002).

Tinnitus affects 35-50 million persons in the United States, with 12 million people being severely affected (ATA 2002). Tinnitus may disappear independently or it can disappear when an underlying problem is successfully treated. In cases of chronic tinnitus for which there is no treatable underlying problem, a variety of therapies and suggestions may help to provide substantial relief for persons who suffer from the symptoms.

DIAGNOSIS

See a physician to discuss your symptoms: when they began, their severity, and what seems to make them worse. Be sure to include information about any health conditions you have (e.g., high blood pressure) and what medicines you take. First, any accumulation of earwax or an infection will be eliminated as a possible cause. The physician will also attempt to hear the noise you describe using a stethoscope. If noise can be heard from a vascular condition, you have objective tinnitus. However, if damage to the inner ear is causing your tinnitus, you will be the only person who can hear the noise (subjective tinnitus) (MFMER 2001). Your physician may refer you to other specialists such as an otolaryngologist or audiologist in an attempt to learn more about the cause of your tinnitus.

TREATMENT

- Lifestyle Changes
- Dietary Supplements

The treatment of tinnitus depends on the cause. As noted earlier, if the tinnitus is caused from a health condition, there may be steps your physician can take to eliminate or reduce the noise: removing earwax, treating an ear infection, correcting a vascular condition, changing or discontinuing a medicine, or recommending a hearing aid (MFMER 2001). If tinnitus is caused by age-related hearing loss or damage to your ears from exposure to excessive noise, there is no treatment to reduce the noise (MFMER 2001;

NIH 2001). Instead, treatment consists largely of managing the condition. Not every suggested treatment works for everyone, so you may need to try several to find one that will help. It is important to avoid anything that could make your tinnitus worse, including smoking, alcohol, and loud noises. If you are a construction worker, an airport worker, a hunter, or are often exposed to loud noise at home or at work, you should wear ear plugs or special ear protection (muffs) to protect your hearing (NIH 2001).

Lifestyle Changes

Sometimes symptoms of tinnitus improve with time. However, many people must learn to make adjustments to their lifestyle (coping skills) (MFMER 2001; NIH 2001). Try some of these techniques to help reduce the severity of tinnitus and to increase your tolerance of it:

- *Avoid irritants.* Tinnitus can be aggravated by loud noises, nicotine, caffeine, tonic water containing quinine (used to treat malaria), alcohol, and excessive doses of aspirin. Nicotine and caffeine constrict blood vessels, increasing the force of blood through veins and arteries. Alcohol also increases the force of blood by increasing the speed of blood flow.
- *Mask or cover up noise.* A fan or soft music can help mask the noise of tinnitus. Tinnitus maskers are devices that are similar to hearing aids in appearance, but they produce a pleasant sound. Listening to recordings of soothing music or sounds such as ocean waves may help cover the unwanted noise, especially while sleeping. There are some electronic sound devices that provide several relaxing sounds to facilitate sleep by masking tinnitus.
- *Use a hearing aid.* If you have tinnitus that is accompanied by a loss of hearing, a hearing aid can amplify outside sounds and possibly make tinnitus noise less noticeable.
- *Reduce stress.* Stress seems to make tinnitus worse. Learn how to relax when the noise in your ears is frustrating. Practicing stress management (relaxation therapy, biofeedback, or exercise) may provide some relief. Engaging in regular exercise may also provide relief by increasing blood circulation to the head.
- *Reduce use of salt.* This can increase the buildup of fluid in the ear.

Dietary Supplements

- Ginkgo Biloba
- Melatonin
- B Vitamins
- Zinc
- Magnesium
- Other Supplements

Ginkgo Biloba

A plant extract used to reduce the symptoms of cognitive deficits such as decreased memory function, poor concentration, and reduced alertness, ginkgo biloba has been shown to have positive results in the treatment of tinnitus and dizziness in the scientific literature (Stange et al. 1975; Jung et al. 1998). Studies have shown that 120-240 mg a day of pharmaceutical-grade ginkgo biloba extract can alleviate tinnitus, although some earlier studies failed to show benefits (Burschka et al. 2001). The therapeutic effect of ginkgo biloba is attributed to several active constituents with vasoactive and free-radical-scavenging properties.

In a study conducted in Denmark, tinnitus and dizziness were reduced after a treatment of 4-6 weeks with ginkgo biloba. Researchers also noted that there were minimal side effects in patients who followed the recommended dosage (Soholm 1998).

Another controlled study showed that ginkgo extract caused a statistically significant decrease in behavioral manifestation in the animal model of tinnitus (Jastreboff et al. 1997). In human studies, it was shown in patients who had cerebrovascular insufficiency (a common condition associated with normal aging) that ginkgo extract produced a significant improvement in the symptoms of vertigo, tinnitus, headache, and forgetfulness (Holstein 2001; Morgenstern et al. 2002).

Melatonin

Rosenberg et al. (1998) evaluated a treatment for subjective tinnitus at the Ear Research Foundation in Sarasota, Florida. Patients were given 3 mg of melatonin nightly for 30 days. In patients with difficulty sleeping due to the symptoms of tinnitus, an overall improvement was seen in 46% of the study group as opposed to 20% in the group given placebo. The researchers also concluded that patients with bilateral (two-sided) tinnitus showed significant improvement over those with unilateral (one-sided) tinnitus. Because of the minimal side effects associated with melatonin, it is considered a safe alternative treatment for chronic tinnitus (Rosenberg et al. 1998).

B Vitamins

According to Michael Seidman, M.D. (Tinnitus Center in Bloomfield, Michigan), there are specific nutrients that have been suggested to benefit persons with tinnitus. B-complex supplements lead this category because deficiencies in the B vitamins have been shown to result in tinnitus. The B vitamin complex stabilizes nerves and appears to have a beneficial effect on some tinnitus patients. However, only anecdotal evidence is available on this therapy.

Some patients say vitamin B1 (thiamine) supplemented at 100-500 mg daily has provided them with relief from symptoms. Vitamin B3 (niacin) is the subject of numerous anecdotal reports that purport it to help reduce symptoms. Dr. Seidman usually recommends a starting dosage of 50 mg twice a day of niacin, up to a maximum of 500 mg twice a day, but he believes that if there is no improvement within 3-4 months, it is unlikely to occur.

There may also be some correlation between the decline in vitamin B12 levels and the increasing prevalence of tinnitus in the elderly. A study by Shemesh et al. (1993) showed that there was a high prevalence (47%) of vitamin B12 deficiency in patients with chronic tinnitus. This deficiency was more widespread and severe in the tinnitus group that was associated with noise exposure, suggesting a relationship between vitamin B12 deficiency and dysfunction of the auditory pathway. Supplemental cobalamin was found to provide some relief in several patients with severe tinnitus.

Zinc

Studies have shown that there is a high content of zinc in the inner ear. Ochi et al. (1997) demonstrated that patients who had tinnitus had significantly decreased zinc levels and that supplementation with doses of 34-68 mg of zinc for more than 2 weeks significantly improved their tinnitus. Excellent results were also found by combining niacin with 25 mg zinc gluconate twice daily.

Magnesium

People in large cities are exposed to potentially damaging loud noises on a daily basis. Studies have shown that noise exposure causes magnesium to be excreted from the body (Mocci et al. 2001). It is possible that supplementing with magnesium could reduce noise-induced ear damage and thus reduce the likelihood of new-onset tinnitus. Few studies document that magnesium relieves tinnitus symptoms, but many patients have experienced relief by using magnesium (Attias et al. 1994).

Other Supplements

Hydergine, the ergot derivative, at a dosage level of 10-15 mg daily, has been shown to alleviate tinnitus in some people. In one study as little as 4.5 mg a day improved tinnitus by 57.1% (Jimenez-Cervantes et al. 1990). Vinpocetine, the cerebral vasodilator, can also be effective at a dosage of 20-40 mg daily. In one study, after acoustic trauma, tinnitus was improved 66% by using vinpocetine (Konopka et al. 1997).

SUMMARY

1. Obtain a medical workup to rule out other underlying conditions that can cause tinnitus.
2. Make the recommended lifestyle changes.
3. Ginkgo biloba may improve symptoms of tinnitus along with other cerebrovascular symptoms, 120-240 mg daily.
4. Melatonin may relieve symptoms and will help induce sleep, 300-6000 mcg each night for sleep and for symptom relief.
5. The B vitamins have been shown to be deficient in some people with tinnitus. Consider taking:
 - Vitamin B1 (thiamin), 100-500 mg daily
 - Vitamin B3 (niacin), starting dosage of 50 mg twice daily, up to a maximum of 500 mg twice a day, along with 25 mg of zinc twice daily and 2 mg of copper daily
 - Vitamin B12 (methylcobalamin) orally as a lozenge, 5-20 mg daily or intramuscularly as advised by a physician 2 times a week
6. Vinpocetine may improve blood flow and increase oxygen and glucose to the brain, 20-40 mg daily.
7. Magnesium may help noise-induced ear damage, 500-1000 mg of elemental magnesium daily
8. Hydergine, a medication prescribed for memory loss may improve symptoms, 10-15 mg daily

FOR MORE INFORMATION

Contact the American Tinnitus Association, P.O. Box 5, Portland, OR 97207; (503) 248-9985.

PRODUCT AVAILABILITY

Ginkgo biloba extract; melatonin; vitamins B1, B3, and B12 (methylcobalamin); vinpocetine; magnesium citrate; zinc; and copper

are available by calling (800) 544-4440 or by ordering online. Hydergine is available to Americans for personal use from offshore suppliers. Contact the Foundation for a listing.

All Contents Copyright © 1995-2009 Life Extension Foundation All rights reserved.

LifeExtension®

These statements have not been evaluated by the FDA. These products are not intended to diagnose, treat, cure or prevent any disease. The information provided on this site is for informational purposes only and is not intended as a substitute for advice from your physician or other health care professional or any information contained on or in any product label or packaging. You should not use the information on this site for diagnosis or treatment of any health problem or for prescription of any medication or other treatment. You should consult with a healthcare professional before starting any diet, exercise or supplementation program, before taking any medication, or if you have or suspect you might have a health problem. You should not stop taking any medication without first consulting your physician.