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PERSONAL HEALTH; New Hopes for Quieting the Roaring in the Ear

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External sounds that disrupt your concentration and your sleep are bad enough. But in most cases they are either short-lived or there is some way to escape them or shut them out. But when the noise is inside your head and continuous or nearly so, it could literally drive you crazy.

Such is the case with a disorder called tinnitus (tin-EYE-tus and TIN-uh-tus are correct), a hissing, roaring or ringing of varying volume in one or both ears or in the head that may be steady or intermittent but persistent.

About 17 percent of the general population and as many as a third of the elderly experience it. For some 10 million Americans, the problem is distressing enough to prompt them to seek medical help, and for at least two million, it is so debilitating that they no longer have any meaningful quality of life.

Tinnitus remains a rather mysterious disorder and can present a challenge even to hearing specialists. But far too many people who complain about tinnitus to their physicians are told, inappropriately, "Just go home and learn to live with it."

A number of possible causes have been discerned, many of them correctable, and treatments have been devised that can minimize or even eliminate the disturbance tinnitus causes.

Even if you have been told that nothing can be done for your tinnitus, it is time to try again. New treatments are continually being developed.

Tinnitus is frequently associated with hearing loss, and treatment with a hearing aid often relieves the problem. But the presence of tinnitus does not necessarily lead to a hearing loss, according to the American Academy of Audiology. Hearing aids can also help those with tinnitus who are excessively sensitive to sounds, with a disorder called hyperacusis; even moderate everyday sounds make them want to cover their ears.

What Causes Tinnitus?

Exactly how tinnitus arises is not yet known and, experts believe, given the variety of possible causes, a number of different mechanisms are probably involved. Tinnitus can result from problems in the outer ear, like excessive ear wax; in the middle ear, like an infection or otosclerosis; or the inner ear, like noise damage or age-related hearing loss.

Getting an accurate diagnosis is a critical first step, and this may require referral to an ear, nose and throat physician who specializes in problems of the ears.

Several causes are reversible, including a buildup of ear wax or a hair or foreign object touching the eardrum. Infections can be treated and even otosclerosis can be corrected surgically.

Also, high doses of certain medications -- including anti-inflammatory drugs like aspirin and ibuprofen, quinine and certain sedatives and antidepressants -- can cause tinnitus that goes away when the medication is discontinued or the dose is lowered. But tinnitus caused by anticancer drugs and certain antibiotics may not disappear when the medication is stopped.

Also potentially reversible is tinnitus caused by treatable disorders like high or low blood pressure, anemia, diabetes and other disorders of glucose metabolism, thyroid disease, acoustic tumors, head or neck aneurysms and hormonal irregularities.

Other possible causes may present more of a challenge, including trauma to the head or neck, misalignment of the jaw, blood vessel disorders and permanent hearing loss caused by noise exposure or aging. But even if the cause cannot be discerned or removed, treatment to relieve tinnitus is still possible.

Tinnitus appears to have both a physiological and psychological component. Different people react differently to the same disorder, and there is often a relationship between the perception of tinnitus and stress.

Onset of the condition frequently coincides with a disruption -- emotional, physical or social -- in a person's life.

There are two main categories of tinnitus, subjective and objective, and each of these may occur either as a pulsating sound synchronized with one's heartbeat or as a steady buzz or tone similar to the hissing of a radiator or crickets, explained Dr. Jack J. Wazen, a hearing specialist at Columbia-Presbyterian Medical Center in New York. Subjective tinnitus, which is much more common, can be heard only by the person who has it. Objective tinnitus can be heard by the examiner.

Getting Relief

Treatment starts with a thorough examination by a physician who is a hearing specialist and correction, if possible, of the underlying cause. But even if the cause cannot be discerned or corrected, tinnitus can be treated.

Most people with tinnitus can experience considerable relief from one or another or a combination of available treatments. Whatever the chosen treatment method, counseling by a hearing professional should be part of it to help control the stress and distress associated with tinnitus.

A simple, effective therapy is the hearing aid. When external sounds are more readily discerned, the loudness of inner sounds is likely to be reduced or even masked. In addition, a hearing aid can make it easier for a person with tinnitus to communicate.

Maskers are external devices that produce sound either to cover up or to alter the sounds of tinnitus and provide temporary, partial or complete relief for some patients. Maskers are worn at ear level like hearing aids or are combined with hearing aids. Tabletop devices can also be used at bedside with speakers or headphones.

One of the newest and most comprehensive approaches, tinnitus retraining therapy, was devised by Dr. Pawel Jastreboff at the University of Maryland Tinnitus and Hyperacusis Center. It involves retraining, or habituating, the brain through counseling and sound therapy to remove the fear and distress associated with tinnitus and to teach the brain to ignore the internal noise. The technique helps patients learn to control their tinnitus rather than have it control them.

Dr. Natan Bauman, director of the New England Tinnitus and Hyperacusis Clinic in New Haven, reports that 80 percent of patients treated with this technique have experienced significant improvement.

Dr. Bauman, himself a sufferer since an accident caused hearing loss and tinnitus, invented an in-the-ear device called the tinnitus retraining instrument to help people adapt to this method.

Many patients are also helped by stress management techniques, including relaxation therapy and biofeedback, but no evidence shows that approaches like acupuncture, hypnosis, dietary supplements or chiropractic manipulation can relieve tinnitus, according to the audiology academy.

But the academy does suggest a number of ways to minimize tinnitus: avoid loud noises, wear proper ear protection in high-noise areas, control stress, avoid fatigue, exercise regularly, maintain good nutrition, lower salt intake and reduce or eliminate consumption of brain-altering substances like caffeine and alcohol.