

PART ONE: DEFINING THE PROBLEM

Introduction

While tinnitus is often thought of as “ringing in the ears” it can actually take the form of several different perceived sounds. In addition to ringing, tinnitus might sound like humming, chirping (crickets), buzzing, hissing, whistling, swooshing, and others. Some people even report hearing music!

In general, there are two types of tinnitus. The first is “objective.” Objective tinnitus is present in three to five percent of all tinnitus presentations and originates with a physical problem or condition. Although the potential list of underlying tinnitus-producing physical conditions is lengthy, the most common include excessive cerumen (earwax), middle ear infections (i.e., otitis media), Mènière’s disease, migraines, medications (many medicines can cause tinnitus), noise exposure, tumors impacting the auditory nerve, and more. Of note, when a person complains of tinnitus, it is very important to evaluate its origin as it could be a sign or symptom of an emerging or significant problem, of which early medical detection and intervention is likely to help.

The second type of tinnitus is “subjective.” Subjective tinnitus occurs in approximately 95 to 97 percent of all tinnitus presentations. Beck (2012) defines subjective tinnitus as “a phantom sound or noise perceived in the ears most often described as buzzing, ringing, crickets, whistling, humming, static, or high-pitched tone which occurs in the absence of a known external stimulus.”

Indeed, the attributes of the particular perceived tinnitus sound might not be very important with regard to the level of discomfort the patient experiences. Hoekstra, Wesdrop, and van Zanten (2014) reported loudness and/or pitch of tinnitus does not determine its severity. They stated, “The percentage of tinnitus awareness during the day, self-reported depression and/or anxiety, and subjectively experienced loudness are the most important factors related to the severity of the perceived tinnitus.”

Although we can determine overall trends and statistics for groups, for the vast majority of people with tinnitus we are not sure why it occurs. However, to assume your tinnitus is subjective without a proper evaluation is foolhardy. That is, the person experiencing tinnitus cannot tell whether or not it is objective or subjective, and therefore an audiologic and medical evaluation is strongly recommended.

Curing vs. Managing Tinnitus

For those people whose quality of life is affected by not being able to concentrate, sleep, hear or focus their attention because of tinnitus, there are many things hearing health care professionals can do to help manage it. Management techniques are successful in reducing the impact of tinnitus up to 90 percent of the time (Beck, DePlacido, Paxton, 2014).

However, it is important to understand there is no cure for tinnitus. Moller (2011) reported, “Tinnitus is not one thing, it’s many things, and when people say they want to cure tinnitus, it’s very much like saying you want to cure cancer or cure pain. The problem is cancer, pain, and tinnitus are not single things. They each have many forms, shapes, sizes, manifestations, and perceptions—and it might very well be different in each person who perceives it—so *curing* it with the same treatment is indeed a noble cause and an honorable goal, but remains unlikely.”

We must evaluate each tinnitus patient as an individual. It is important to recognize there are two components to tinnitus: the sound you hear and the way it affects you. Moller noted that two people might perceive the same or similar sound. However, the first person might easily dismiss it whereas the second person might be so adversely affected that he or she cannot go about daily life.

Demographics and Quality of Life

Tinnitus is a reasonably common condition. Indeed, Bhatt, Lin and Bhattacharyya (2016) report that in the U.S., tinnitus is experienced by some 10 percent of the adult population (more than 20 million people). Of note, among all respondents who reported tinnitus, 7.2 percent indicated that it was a big or a very big problem, and 41.6 percent reported it as a small problem.

Among U.S. veterans, tinnitus is the most common service-related disability. Bhatt, Lin and Bhattacharyya report more than 1.1 million veterans received disability payments for intolerable tinnitus in 2013.

Bhatt, Lin and Bhattacharyya (2016) and Kochkin, Tyler and Born (2011) report tinnitus can cause functional impairment in thought processing, emotions, hearing, sleep and concentration, all of which could substantially contribute to a lesser quality of life.

Risk Factors for Tinnitus

Numerous risk factors have been associated with tinnitus. In relation to hearing loss it is suggested there is an “80/80 rule.” That is, it is estimated that 80 percent of people with hearing loss have tinnitus and 80 percent of people

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Tinnitus Issues and Answers for Consumers

Tinnitus, or “ringing in the ears” as it is commonly known, is the perception of a sound when no external sound is actually present. It is estimated that more than 30 million people in the U.S. experience some form of tinnitus, and of those approximately 80 percent also have hearing loss. While there is no cure for tinnitus, there are many ways to manage it. Dr. Beck helps us better understand tinnitus and looks at some possible solutions for making life with it a little more manageable.



with tinnitus have hearing loss, but it is not a one-to-one correlation (Beck, 2012). Specifically, having hearing loss does not mean one has tinnitus, and likewise, having tinnitus does not mean one has hearing loss. However, people with hearing loss are more likely to have tinnitus than those without hearing loss.

Bhatt, Lin and Bhattacharyya report the risk of tinnitus increases for people who have experienced a head injury, depressive symptoms, or who have had substantial noise exposure (i.e., target shooting). The risk also increases for those who have arthritis, use nonsteroidal anti-inflammatory medications, or who have hypertension. It is also more common in those who smoke. Further, they report people with “intolerable tinnitus” often have higher rates of anxiety, depression, low self-esteem, and poor quality of life as compared to those without tinnitus.

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In 2011, Baigi et al. reported their extensive tinnitus study. In Sweden, 20,100 people received a questionnaire, of which an astonishing 12,166 individuals (61 percent) returned the same response. The authors stated, “Stress is a particularly important risk factor in the transition from mild to severe tinnitus...” Indeed, the authors concluded stress management strategies should be part of hearing conservation programs, and this is even more important for people with mild tinnitus who experience high stress. That is, mild tinnitus added to high stress might result in substantial tinnitus.

The Importance of Objectively Measuring Tinnitus

For the person with tinnitus, rating it on an annoyance scale of 1 to 10, or trying to describe how debilitating it is at a given moment in time, is a frustrating and unnecessary exercise. The experience of tinnitus can be measured objectively using a number of well-researched and validated tools such as the Tinnitus Handicap Inventory (THI), the Tinnitus Primary Function Questionnaire (TPFQ), the Tinnitus Functional Index (TFI), and others. These tools allow the clinician to accurately quantify the patient’s perception of their tinnitus prior to treatment, thus establishing a baseline for post-treatment analysis. For patients and professionals objective measurement tools are of paramount importance, are highly regarded, and their use is advocated here.

PART TWO: EXPLORING SOLUTIONS

Maskers

Maskers are sounds which are used to literally “mask” (hide or cover up) perceived tinnitus sounds. A masker can be as simple as an oscillating fan, a radio, environmental sounds, or perhaps a store-bought device which can be placed on a nightstand to simulate rain, ocean or other environmental sounds.

Maskers operate on the simple premise that the loudest or most prominent sound is the one the person will focus on, thus ignoring or dismissing their tinnitus sounds. Bedside maskers can be purchased through retail stores or online and many hearing aids have built-in masking sounds which the patient can listen to as needed to take the focus off their tinnitus. However, although many people have preferred masking sounds (such as ocean waves, rain, etc.), no masking sound has been shown to be demonstrably better than others for all people. That is, individual preferences are important, they may change over time, and therefore flexibility of the sound generator is important and desirable. Of note, for some people tinnitus is only problematic while trying to go to sleep. For these individuals bedside maskers are available, are inexpensive and are often very effective.

Blakley (2016) reports, “Sound therapies typically have a champion or inventor who more or less proclaims excellent results, and sometimes their protocols are commercialized.” However, he cautions, “The results are often not confirmed by others.”

Over-the-Counter Tinnitus “Cures”

Unfortunately, many people with tinnitus fall prey to the vast and varied bogus over-the-counter (OTC) and online remedies for tinnitus. Basically, the thing to remember is, if there was a quick and easy cure for tinnitus your hearing care professional would know about it!

DiSogra (2015) addresses these claims and products in detail. He states that OTC products do not work, they are not FDA-approved and indeed, they could be harmful for some people in particular situations. DiSogra reports many of the OTC products contain ingredients which could, in fact, be harmful to patients. He reported 19 products with “ingredients identified as being potentially poisonous to humans.” He found 25 products which are potentially harmful to “patients with cardiac conditions because they might affect blood pressure or might negatively interact with the frequently-prescribed anticoagulant drug Warfarin,” and he further reported 22 products which “should not be used by pregnant women or nursing mothers—by the

manufacturer's own suggestion." Finally, he notes, "Eleven products contain quinine—which can cause tinnitus!"

The bottom line is, many marketers sell potions, lotions, pills and solutions for tinnitus, none of which are FDA-approved, some of which are harmful, and most contain nothing more than snake oil and empty promises designed to separate the desperate tinnitus patient from their money.

Indeed, Blakley (2016) notes that thousands of fake tinnitus cures are available on the internet, and billions of dollars are spent and wasted on these same cures. He notes, "Some scams are blatant or even humorous while others are subtle."

Hearing Aid Amplification for Tinnitus

Arguably, the single most important and successful treatment for tinnitus is hearing aid amplification. As 80 percent of all people who experience tinnitus have hearing loss, hearing aid amplification is beneficial, as hearing aids allow the person with hearing loss to communicate more easily, more efficiently and with less stress. That is, when people are stressed due to an inability to easily communicate because of a hearing loss, well-fitted, high-quality hearing aids ease and generally resolve communication issues, thus helping reduce and resolve stress. Modern hearing aids offer multiple pleasant, alternative masking sounds, such as ocean waves, which could help "de-stress" tinnitus patients while simultaneously masking their tinnitus.

McNeill and colleagues (2012) stated, "Hearing aids have become common therapeutic tools in the audiological management of tinnitus." Indeed, hearing aids combined with counseling are important components of a successful tinnitus management program. McNeill and colleagues studied 70 patients (48 males, 22 female, mean age 55 years) with a complaint of "bothersome chronic tinnitus." Twenty-six patients reported their tinnitus was totally masked while using hearing aids and 28 patients reported partial masking while using hearing aids. The authors suggested that hearing aids "reduce the audibility of tinnitus and hearing aids improve the patient's reaction to tinnitus." Further, they recommend hearing aid fittings to treat tinnitus in patients with hearing loss.

Henry and colleague (2015) investigated and compared the efficacy of hearing aid fittings with and without built-in maskers. Thirty participants were evaluated. Their average age was 67 years and all had similar pure-tone audiograms. Fifteen people were evaluated using standard hearing aids (i.e., the control group) and 15 people wore hearing aids with built-in maskers (i.e., experimental group). The study showed there was no

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statistical difference between the results from the control and experimental treatments. Eighty-seven percent of all participants reported meaningful reductions in their tinnitus using either protocol. The authors concluded hearing aids both with and without sound generators provide significant tinnitus relief.

Hearing Aids for Tinnitus Without Hearing Loss

Sereda, Hoare, Nicholson, Smith and Hall (2015) reported the typical tinnitus management strategy in the U.K. involves education and reassurance, with hearing aids as the most popular choice for patients with tinnitus and hearing loss. Further, they stated that, on occasion, treatments must be supplemented to reduce stress via protocols such as cognitive behavioral therapy.

Importantly, they stated, "Our panelists considered the presence of bothersome tinnitus alone, without reported hearing difficulties, a sufficient criterion for fitting hearing aids..." That is, as hearing aids are accepted as an integral and valuable component in the management of tinnitus, the authors suggest tinnitus management could include hearing aids, given the presence or absence of hearing loss.

Cognitive Behavioral Therapy

For the minority of people whose tinnitus cannot be managed with modern hearing aids (with or without maskers), dedicated maskers or alternative sounds, cognitive behavioral therapy (CBT) remains an excellent option. CBT is offered by psychologists, psychiatrists, social workers and other counselors to "retrain the brain" through proven protocols which help the patient reconceptualize their tinnitus perception and often incorporates behavior modification.

CBT is perhaps the single most powerful and effective tool used to help tinnitus patients manage their tinnitus. Indeed, Henry (2014) stated that based on peer-reviewed evidence, CBT remains the primary management tool. Likewise, Cima and colleagues (2014) stated, "CBT is the most evidence-based treatment option with regard to managing tinnitus patients." Fagelson (2014) reported that multiple studies document consistent and substantial benefits associated with CBT for the tinnitus patient.

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Progressive Tinnitus Management

Arguably the most popular, the most effective, and the most proven (i.e., peer reviewed) tinnitus management protocol is referred to as Progressive Tinnitus Management (PTM), developed by the National Center for Rehabilitative Auditory Research.

PTM involves five hierarchical levels of management: Triage, Audiologic Evaluation, Group Education, Tinnitus Evaluation, and Individualized Management. Management and counseling are directed by audiologists and mental health providers as key components of PTM. Indeed, PTM focuses less on didactic informational counseling while exploring and facilitating the patient's ability to "adjust to the disturbing auditory symptom by successfully employing tools from two powerful skill sets for self-management of chronic tinnitus—the therapeutic uses of sound and techniques from cognitive behavioral psychology" (Henry, Zaugg, Myers, Kendall, 2009).

Conclusion

Of the 335 or so million people in the U.S., roughly 10 percent—33 million—report ongoing, chronic tinnitus. And approximately 10 percent of those people (3.3 million) report their tinnitus is bothersome enough to seek help. Given the stress, anxiety, depression and other symptoms experienced by the tinnitus patient, it is important to evaluate and rule out medically treatable causes. After ruling out dangerous and treatable medical and surgical factors, idiopathic (sudden and/or of unknown cause), subjective tinnitus is often the diagnosis. Once the diagnosis is made, quantifying the tinnitus perception and incorporating excellent management protocols (such as the PTM approach) is highly recommended.

The most useful "sound-based" therapy (the typical starting point) is a professionally driven trial with excellent hearing aid amplification. The majority of people with

Let's Settle the Debate

Some say "TINN-a-tus" while others say "ti-NIGHT-us." But which one is correct? Turns out they both are. According to the American Tinnitus Association (ata.org) both pronunciations are correct and interchangeable. However, "ti-NIGHT-us" is more commonly used by patients and laypeople while "TINN-a-tus" is more commonly used by clinicians and researchers. Now you know.



intractable tinnitus (some 80 percent of whom will also have hearing loss) are likely to benefit from the use of hearing aids. In cases where additional management is required, CBT has proven to be extremely successful. Indeed, it is reasonable to say the vast majority of all patients with tinnitus can benefit from professional hearing health care assessment and management, hearing aid amplification, and counseling. **HLM**

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HLAA2017 CONVENTION PRESENTER

Learn How to Manage the Ringing with Dr. Douglas Beck

Tinnitus, also described as "ringing in the ears," affects more than 30 million Americans. Tinnitus will often accompany hearing loss and could be just as unrelenting as the hearing loss itself. Dr. Beck's workshop, *Tinnitus for Consumers: 2017* will include the importance of a proper diagnosis and proven, scientifically-based management strategies for people with tinnitus. Management strategies will include alternative masking sounds, hearing aids, environmental sounds, counseling, cognitive behavioral therapy (CBT) and more.

Dr. Beck's workshop will be on Thursday, June 23 from 1:30 p.m. – 2:30 p.m. Please be sure to check the Convention schedule page on hearingloss.org for location and updates or changes to this information.