



the Trumpeteer

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Managing Tinnitus with Zen Therapy

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Tinnitus (pron.: /tɪˈnɪtəs/ or /ˈtɪnɪtəs/; from the [Latin](#) word [tinnitus](#) meaning “ringing”) is the perception of sound within the human ear in the absence of corresponding external sound

Tinnitus is a very common symptom suffered to some extent by 70 to 85% of people with hearing impairment. Globally, 15% of the world population experiences tinnitus periodically and in the United States an estimated 50 million people are affected. For most it is more of an “irritant” than a major problem. Tinnitus can be perceived as many different sounds, such as humming, ringing, or buzzing; it can be constant or periodic and vary in loudness.

There are many causes of tinnitus. Often the reason is unknown. Frequently it is noise induced, related to medical disorders such as ear infections or Meniere’s disease, or caused by the use of certain drugs. Regardless of the causes, there is a high correlation between the presence of hearing loss and tinnitus. This correlation is probably related to the well-established principle that a peripheral disorder (such as a cochlear loss) produces an increase in brain activity. In other words, the brain tries to compensate for the lack of stimulation from the inner ear by increasing its “attentiveness” to the auditory signals that do reach it. This happens in other parts of the body as well. For example, in the case of “phantom limb syndrome”, a person who has a leg amputated may perceive physical sensation

from the missing limb. This occurs because the neurons and segments of the brain that are responsible for perceiving sensation from the limb are still intact and functioning, in spite of the fact that the limb is missing. The functioning neurons in the brain expect stimulation they are not receiving, and so the brain essentially “turns up” its internal gain to detect stimulation. The same thing can happen with tinnitus patients as the brain misclassifies the tinnitus noises in an effort to receive stimulation from the damaged cochlea.

Often, negative emotion is attached to tinnitus, and increased attention is paid to it – making it difficult for the patient to cope. Fear and uncertainty are factors that can make the tinnitus worse. Studies have shown that the relationship between the loudness of the

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tinnitus and the degree of tinnitus annoyance is fairly weak, and that it is the client's reaction to the tinnitus that is the major issue.

When the brain senses the tinnitus sound, which it cannot relate to a well-known sound source, it may react by producing stress hormones. Stress hormones are released because parts of the brain that control emotions make the assumption that this is something dangerous that requires the client's reaction. Since the tinnitus does not disappear, stress hormones continue to be released, leading to chronic stress. This can have a considerable impact on, for example, the person's ability to fall asleep, mood and physical well-being.

Providing stimulation to the auditory system may help the brain to 'turn down' its sensitivity and cease to seek out the stimulation it is lacking due to hearing loss. The Widex Zen therapy program produces **fractal tones** that are generated in a manner based on the normal rules of music, but which are not predictable. Patients can have access to five different Zen programs plus combinations of other sounds like white noise. The Zen sounds may be described as being self-similar, without ever becoming repetitive. This is a critical issue, because repetitive music while considered pleasant, might induce active listening and elicit certain emotions. Because the Zen tones never repeat themselves, they provide the brain with passive listening. Habituation of the tinnitus can often take place because the brain has been given something else to listen too. The Zen sound stimulation (along with regular amplification if hearing loss exists) can often minimize the contrast between the tinnitus and the surrounding sound environment. The reduction in stress and fatigue can often cause

the limbic system to stop producing the stress hormones in reaction to the tinnitus.

It is recommended that patients with tinnitus have a complete audiological evaluation as well as an examination by an otolaryngologist. It is mandatory to rule out medical issues that could be causing the tinnitus. Once medical clearance is received then, then a complete tinnitus management program can be begun.

CCENT has been conducting clinical trials with the Widex Zen program. Widex claims that 60% of people with hearing loss can have their tinnitus helped with current hearing aids. Zen therapy, along with amplification, may be needed for the other 40%. For those patients who have normal hearing but still suffer from tinnitus, Widex offers Zen2go. It is a new, ready-to-wear device that can be fit in just one visit. You can start getting relief from your tinnitus right away. A successful tinnitus management program uses a combination of counseling and sound stimulation techniques.

Sweetow, RW and Sabes, JH (2010). Effects of Acoustical Stimuli Delivered through Hearing Aids on Tinnitus. Journal of the American Academy of Audiology, 21(7), 461-473.

Widex Zen Therapy, 2012, Widex A/S



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Medications and Tinnitus

BY: Christine Lupiensi, FNP

A number of medications may cause or worsen tinnitus. When I practiced in Family Practice, I saw that for most of my patients, the higher the dose of medications, the worse tinnitus became for the patient. Often the unwanted noise disappears when you stop using these drugs. Medications known to cause or worsen tinnitus include:

- Antibiotics, including polymyxin B, erythromycin, vancomycin and neomycin
- Cancer medications, including mechlorethamine and vincristine
- Water pills (diuretics), such as bumetanide, ethacrynic acid or furosemide
- Quinine medications used for malaria or other health conditions
- Certain antidepressants may worsen tinnitus
- Aspirin taken in uncommonly high doses (usually 12 or more a day)

There's no compelling evidence to recommend the off-label use of antidepressants as a treatment for tinnitus. No drugs have been approved by the Food and Drug Administration for the treatment of tinnitus. However, antidepressants might reduce symptoms in people with accompanying depression, anxiety and/or sleep disturbance. I often tell my patients to consider the use of an antidepressant for severe tinnitus only after contributing causes have been addressed and other therapies have been investigated. Since no treatment is uniformly effective, a strong provider-patient relationship is vital. Education and reassurance are powerful tools for a patient who is suffering from tinnitus. One should be explained the drug's risks and benefits before taking any medications.

Medications for Tinnitus, please use with caution:

Tricyclic antidepressants, such as amitriptyline and nortriptyline, have been used with some success. However, these medications are generally used for only severe tinnitus, as they can cause troublesome side effects, including dry mouth, blurred vision, constipation and heart problems. Alprazolam (Niravam, Xanax) may help reduce tinnitus symptoms, but side effects can include drowsiness and nausea. It can also become habit-forming.

Alternative medicine treatments, including ginkgo biloba, zinc, magnesium, and magnets, in general are believed by the medical establishment to have little benefit for patients suffering from tinnitus. These alternative medicines are controversial, because little solid research has been done on many of these treatments. However, there is no doubt that good general nutrition is important for recovery from any type of injury, including injury that produces tinnitus.



Mrs. Lupiensi is a Family Nurse Practitioner
She began working for CCENT in 2011
She has practiced as a nurse since 1994 and a
Family Nurse Practitioner since 2004



Comments from Zen Therapy Patients

The following are comments from CCENT patients who have completed a trial program with the Widex Zen therapy digital hearing aid devices.

Patient D.G. :

“When asked how I felt on a scale of 1-10, my immediate response was a 10, no hesitation. The ringing in my ears was constant and unbearable. I couldn’t think about anything but the ringing. The hearing loss that went along with it was inconvenient and bothersome. Between the two, I didn’t want to be around people or crowds. I was beginning to shy away from places that would be noisy and didn’t want to socialize in large groups where I was missing more than half of the conversation. It was overwhelming to me. In the evening, all I wanted to do was hide in a quiet room. My husband understood but it was beginning to put a strain on our relationship.

I have had the hearing aids with Zen now for about 3 weeks and they have changed my life dramatically. I can now hear very clearly what people are saying and I am not constantly asking them to repeat themselves. Before I was straining to understand some of the words and now I can easily understand them. This is also very important to my job as I deal with peoples’ finances; I have to get the numbers right! I have been out to eat in noisy restaurants and I have no problem hearing someone across the table. The Zen part is phenomenal. The music is extremely calming to me and I concentrate on that noise now instead of the ringing. At first I could tell I was struggling with which sound to listen to but as time went on, I found I was listening to the music and not the ringing. There is a dramatic difference when I take the hearing aids out. The stress that I felt before is gone when I have the hearing aids in. I feel better knowing that I now have a solution to my problem. After hearing for years that there wasn’t anything that could be done for tinnitus, I am glad to have been shown this product.”

Updated comments on 4-19-13:

I still feel the music helps me tremendously. It helps me to stay relaxed instead of getting uptight because of the loud ringing. The ringing hasn’t gone away or lessened in the least so wearing these devices keeps me sane. I definitely can see the difference also with my hearing as well. I think I am hearing okay until I find myself constantly asking people to repeat themselves. When I have these devices on, I am not doing that. They aren’t as frustrated with me which helps too!

I cannot imagine not having these devices at this point!

Patient L.H. :

Since July 2000, I have had ringing in my ears, and have been aware of some hearing loss.

This February I met Jonathan Miller who confirmed the present status of my hearing loss. After discussing my hearing issues, Mr. Miller explained about the latest advancement in hearing aids available to patients with my hearing loss and tinnitus. His suggestion was that I met with the service representative and himself for a fitting of a certain type of appliance. I began wearing the aids March 1st and immediately noticed an improvement in the ability to hear conversations in a crowd, watching television, etc. As I mentioned, these aids were programmed to help with the tinnitus, by playing musical tones in no particular pattern to give my auditory nerves sounds to process. I have been amazed at the lower stress level in daily living with the “hissing” sound masked by the musical tones. Because my tinnitus can swing from very loud, to just a dull noise it has been difficult for me to determine if the level of tinnitus has changed, however I do know I have experienced times when I listen to hear the “hissing” and it’s not there. I have only been exposed to the aids for five weeks. This past Wednesday I now have my own pair and look forward to continued success.



Mother's Day Specials

Julie Spach "Julie Strickland" is once again providing aesthetic/cosmetic services at the Sanford (919-774-6829) and Apex (919-363-9311) offices. Call her to setup your confidential consultation.

Julie Spach is a licensed medical aesthetician and medical assistant. She completed her aesthetic training and received her license in 2004 and medical aesthetics training in 2005. Julie is trained in intense pulsed light (ILP) therapy, blue peel, chemical peels, facials, laser hair removal and skin tightening, Obagi skin care, and Glo mineral makeup. Her extensive clinical experience enables Julie to perform microdermabrasion, dermaplanning, laser skin resurfacing, as well as treatments for hyperpigmentation, acne scarring, and Rosacea.



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