

# EAR AND HEARING HEALTH

DEPARTMENT OF AUDIOLOGY

## Tinnitus: When Quiet is No Longer Silent

Tinnitus is the perception of sounds heard in one or both ears or within your head that are not present in the environment. Tinnitus varies greatly between individuals with descriptions including ringing, buzzing, hissing, clicking, chirping, ocean waves, or cicadas. It can be intermittent or constant, high or low pitched, steady or pulsing, a single sound or multiple sounds together. Tinnitus can also vary greatly in both loudness as well as annoyance between patients.

Due to the invisible nature of tinnitus, family and friends often cannot relate to the annoyance and difficulties that can be associated with tinnitus. Sound files demonstrating the various ways that tinnitus is perceived can be found at [www.neuromonics.com](http://www.neuromonics.com) under the "About Tinnitus" section.

Not a disease or disorder itself, tinnitus is a symptom of other conditions. The causes of tinnitus are numerous and often difficult to precisely determine in many patients. Most commonly, tinnitus is a result of the onset of high frequency hearing loss, often so mild that it may not yet be perceived by the patient. It is quite common to experience tinnitus for brief periods of time following exposure to loud noise including concerts, sporting events, using power tools, attending races, etc. In this case, tinnitus is a symptom of a temporary shift in your hearing induced by that loud noise. Medical ear concerns including ear infections, excessive ear wax near the ear drum, Meniere's disease, Eustachian tube dysfunction, and otosclerosis can result in the development of tinnitus. Many other conditions not directly related to your ears have also been correlated with tinnitus as well including hypothyroidism, hyperthyroidism, jaw misalignment (TMJ), cardiovascular disease, benign tumors, head trauma, lyme disease, migraine headaches, strokes, and fibromyalgia. Tinnitus can also be a side effect of over 200 prescriptive medications and chemotherapy drugs, as well as excessive caffeine intake.

Due to the multitude of causes, management of tinnitus differs depending on the underlying cause. For the majority of our patients, tinnitus is associated with the onset of a permanent sensori-neural hearing loss related to structural changes within the sense organ of hearing, the cochlea. This damage and the associated tinnitus are irreversible, however, that does not mean that the tinnitus symptoms are untreatable. If other medical concerns can be identified, treatment of the underlying condition may result in tinnitus improvement. A thorough audiological assessment and case history with your Audiologist is the first step to determining proper management for your tinnitus.

*For further information on tinnitus, visit the American Tinnitus Association at [www.ata.org](http://www.ata.org).*

## Home at Last

2008 has been a year of change for our Audiology Department. Our Glen Ellyn office relocated to our new facility at 430 Pennsylvania Avenue in March. Early this summer, our Naperville office moved to a brand new medical facility located at 808 Rickert Drive, conveniently located at the corner of Ogden Avenue and Rickert Drive just one stop light south of the Naperville post office.

This new office location has allowed us to expand services to our area patients to include more extensive balance assessments, sound booths recessed into the floor for easier access for our patients with physical challenges, and perhaps best of all, much easier parking than our previous location.

Please note that our new office also has a new direct telephone number to the Audiology Department: 630 364 7410. We are looking forward to seeing you at our new facility!



### Department of Audiology

Linda Berry, M.S., CCC-A  
 Kristen Evans Davia, Au.D.  
 Stacy Michels, M.A., CCC-A  
 Mary Theiler, Au.D.



# Tinnitus Management

It is estimated that 50 million Americans experience tinnitus with 12 million affected significantly enough to seek medical attention.

Most of our patients with long-standing tinnitus report habituation to their tinnitus over the years; simply put, they have “tuned it out.” Two million tinnitus patients, however, are so severely affected that the tinnitus impacts their daily activities and quality of life. These patients are in need of management strategies to better cope with the challenges that their tinnitus presents.

All patients should seek a medical evaluation of their tinnitus to rule out treatable medical causes prior to seeking other forms of tinnitus management or treatment. Although there is no “cure” for tinnitus, various treatments, counseling and lifestyle modifications can allow patients much improved control over their tinnitus disturbance.

## Education

It is important to first understand what tinnitus represents, the underlying cause of your symptoms and factors that can further aggravate tinnitus. Once patients understand that tinnitus is not fearful, many are able to relax allowing the tinnitus to drift off into the background, much like your heart beat or breathing.

## Masking

Many patients with tinnitus are most aware of it when in quieter environments or when their attention is drawn to their tinnitus. Typical environmental sounds and conversation provide enough external noise to at least partly “cover up” or mask the tinnitus. In absence of these sounds, patients are typically aware and more bothered by the noises in their ears. Avoidance of quiet situations and addition of background noise such as a fan, a soft playing radio tuned between stations, or use of a relaxation sound machine can provide relief for many patients. Treatment of significant hearing loss with hearing aids can also provide some degree of masking and relief.

## Lifestyle Modifications

There are several triggers known to cause increased tinnitus annoyance including loud noise, dietary intake, stimulants, stress, and general medical issues. Many patients find that fairly simple lifestyle modifications allow better control and partial relief from bothersome tinnitus.

## Neuromonics

For those patients who experience significant disturbance from their tinnitus, Neuromonics treatment may be a management possibility in addition to the above options. Patients who are good candidates for Neuromonics treatment often have difficulty falling or staying asleep, difficulty relaxing or concentrating, and/or experience depression or avoid social situations due to their tinnitus.

*Though there is no “cure” for tinnitus, many management options are currently available for patients who are experiencing significant tinnitus disturbance and annoyance.*



## Lifestyle Modifications for Tinnitus Control

Many patients report some fluctuation in the level of their tinnitus annoyance from week to week. Often lifestyle factors can explain these fluctuations. A good understanding of these triggers can assist in better control of your tinnitus.

- Avoid loud noise. Loud noise can cause tinnitus and worsen symptoms in patients who already experience tinnitus.
- Watch your diet. Tinnitus patients often report increased symptoms following eating foods higher in sodium or sugar, containing caffeine, artificial sweeteners or tonic water.
- Limit your intake of nicotine and alcohol.
- Avoid taking high quantities of aspirin and/or acetaminophen. High quantities of these over-the-counter products are known to cause both hearing loss and tinnitus.
- Eliminate or at least reduce your stress. Most patients note their ear noises are worse during periods of high stress. Stress management techniques such as biofeedback, muscle relaxation therapy, yoga, exercise or just a quiet walk may help decrease tinnitus severity. Stress control is an important component of tinnitus management.
- Avoidance of silence. Tinnitus is less noticeable in environments with other sounds. Use of a fan, a soft radio playing tuned between stations, or relaxation sound machines can help patients that are bothered by tinnitus to concentrate, relax or fall asleep.
- General health maintenance including control of high blood pressure and diabetes.
- Exercise. It's good for your ears and helps reduce tinnitus inducing stress too!

## Neuromonics: An Option for Patients Significantly Affected by Tinnitus

Neuromonics was founded in 2001 by Australian Audiologist Paul Davis, Ph.D. following extensive tinnitus research and multiple clinical trials. The Neuromonics Oasis treatment device was released in 2004 and to date, over 3000 patients have been successfully treated worldwide. This treatment, however, has only been available in the U.S. since late 2006 with an official market launch in April 2007. FDA clearance was received in late 2005. Fifteen years of clinical studies have documented that 90% of suitable tinnitus patients experience tinnitus relief and significant benefit from Neuromonics. Many patients express some level of relief nearly immediately after beginning treatment.

The current theory of tinnitus disturbance is that tinnitus, though it may be a symptom of hearing loss, is not an ear problem but rather a neurologically based concern. Following onset of high frequency hearing loss, the brain lacks the stimulation of the high frequency pathways and “searches” for the missing sounds. Neuromonics treatment is centered on promoting the brain's natural capacity to recreate neural connections to better filter out tinnitus awareness. The Neuromonics Oasis device, similar to a MP3 player, is specifically programmed for each individual's hearing loss to provide a spectrally modified neural stimulus embedded within relaxing music tracks. Volume on the device is adjusted to a low level; the intent is not to “listen” to the music but instead to simply provide the desired neural stimulation on a regular basis to encourage the brain's development of tinnitus filtering abilities. Oasis is worn during the times of day when the tinnitus is perceived to be most bothersome and the patient is encouraged to continue with most daily activities while wearing the device.

For those patients with significant hearing loss affecting daily communication, hearing instruments are likely to also be recommended to address your hearing loss, not your tinnitus. The Neuromonics treatment will only address your tinnitus perception, not your communication difficulties.

Not every patient will be an appropriate candidate for Neuromonics treatment. Neuromonics treatment is intended for individuals who experience significant tinnitus disturbance with impact on the overall quality of their lives. Often these patients have difficulty falling or staying asleep, difficulty concentrating or relaxing, experience depression related to their tinnitus, or other significant declines in their overall quality of life. Treatment consists of wearing the Oasis device, similar to a MP3 player, for a minimum of 2 hours daily for 6-8 months, on average during periods when the tinnitus is judged to be most bothersome. Consistent daily use of the device is critical for treatment to be successful requiring serious commitment from the patient. Periodic follow-up appointments with your Neuromonics Audiologist are also needed to adjust your treatment protocol over time.

As this treatment is relatively new to the U.S., most insurance companies have not yet addressed benefits for the device and will deny reimbursement requests. An appeal can be submitted for reconsideration with further documentation that Oasis is a unique device, not a hearing aid or tinnitus masker. The device is also considered eligible for use of medical savings account funds.

DuPage Medical Group Audiology Department is pleased to announce that two of our Audiologists, Kristen Evans Davia, Au.D. and Mary Theiler, Au.D., have recently completed the additional training required in order to offer this technology to our tinnitus patients. Only a full tinnitus assessment can determine if Neuromonics may be an option for your significant tinnitus annoyance. For more information regarding Neuromonics, please call the Audiology Department or visit [www.neuromonics.org](http://www.neuromonics.org).



OASIS DEVICE



## Exercise is Good for Your Ears Too!

A recent study conducted in the Netherlands found that aerobic exercise increases blood flow to the brain, including the areas responsible for processing auditory messages. Oxygen rich blood supply is not only critical to your brain but also to your cochlea, the sense organ of hearing. Hearing actually takes place within the brain. Our ears are simply the initial detection device for sounds, the sense organ. The auditory nerve is the highway connection between the sense organ and the brain. It isn't until these signals reach the temporal lobe of the brain that sounds are processed into meaningful messages. The brain's involvement in hearing is known as auditory processing.

Auditory processing is known to decrease in mid life; however, this study suggests perhaps we have some choice in this process. Aerobic exercising was also found to improve motor function, visual and auditory attentions, and cognitive processing speed in healthy older individuals.

Yet another reason to keep your New Year's resolution this coming year!

## Year End Reminders

Once again, the end of the year and the holiday season are quickly approaching. Whether it's scheduled time away from the office for the holidays, our pediatric students on winter break, the need to use the remaining funds in your flexible medical spending plan, or simply wrapping up your “to do” list of 2008, December tends to be one of the busiest months for our department.

If you or a loved one are in need of an appointment prior to 2009, please call now for the best availability. Our appointments are already beginning to fill!

Glen Ellyn 630 348 3620  
Lombard 630 873 8720  
Naperville 630 364 7410

## New Ear Resolutions

- 1 I vow to finally have my hearing tested in 2009. With the recent research documenting earlier onset and higher prevalence of hearing loss than previously thought, I understand the importance of early identification is important to allow implementation of preventative measures.
- 2 I will consistently wear hearing protection when involved in loud activities. Research is finding much of our earlier onset of hearing loss is due to the noise levels that we now perceptually judge to be “acceptable.”
- 3 I will set the volume of my MP3 player so that I can hear conversation while wearing the device.
- 4 I will insist on proper use of safety helmets when biking or motorcycle riding to reduce the likelihood of significant head trauma resulting in hearing loss.
- 5 I vow to take better overall care of my general health including regular exercise, smoking cessation, and controlling any chronic medical issues such as high blood pressure and diabetes. I understand that poor overall general health may have detrimental impacts on my hearing as well.



# EAR AND HEARING HEALTH

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## Glen Ellyn

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## Our Staff



Linda Berry, M.S., CCC-A : Ms. Berry earned her Master's degree in Audiology in 1990 from Illinois State University. She worked in a variety of settings before joining DuPage Medical Group in 1994. Ms. Berry enjoys the variety that our department offers while working closely with the physicians in the Otolaryngology Department to provide excellent hearing healthcare to our patients. Her clinical interests include rehabilitation with our senior population and electrophysiology assessments.



Kristen Evans Davia, Au.D. : Dr. Davia recently completed her doctorate degree at A.T. Still University, in addition to her Master's degree from Ohio State University in 2002. She joined DuPage Medical Group in 2002 to complete her clinical fellowship year and stayed on as a licensed and certified clinical audiologist. Her clinical interests include vestibular and electrophysiologic diagnostics. Dr. Davia has a specialty in the area of tinnitus assessment, counseling and management including Neuromonics tinnitus treatment.



Stacy Michels, M.A., CCC-A : Ms. Michels earned her Bachelor's degree in Communicative Disorders as well as her Master's degree in Audiology from Northern Illinois University. She joined DuPage Medical Group in August 2005 after completing her clinical fellowship year as an educational audiologist. Ms. Michels enjoys the full range of diagnostic services our department offers and hopes to contribute her knowledge regarding FM systems and CAPD testing. Her clinical interests include electrophysiologic assessments and hearing conservation.



Mary Theiler, Au.D. : Dr. Theiler completed her doctorate degree at A.T. Still University in 2006 in addition to her Master's degree from Northern Illinois University in 1996. She joined DuPage Medical Group in 2000 with experience in the areas of pediatrics and industrial assessment. Her clinical interests include pediatric assessment and habilitation, digital amplification and hearing assistive technology as well as our BAHA program. Dr. Theiler has a specialty in the area of tinnitus assessment, counseling and management including Neuromonics tinnitus treatment.