



MTM Seminar Notes

# How to Stop or Soften RINGING IN THE EARS!

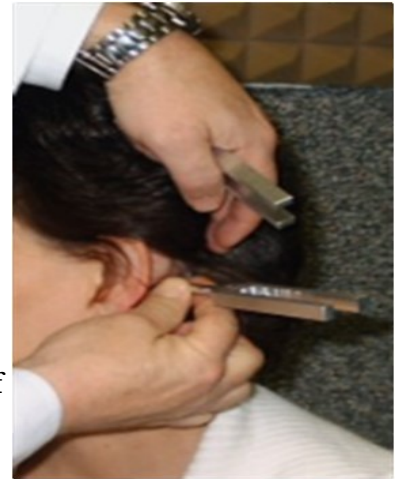
Max Stanley Chartrand, Ph.D.  
Behavioral Medicine

**J**ust a few short decades ago, tinnitus—often described as ringing, buzzing, roaring, crickets, and other noises in one’s head—was medically considered an *auditory hallucination*, or a subcomponent of a psychiatric disorder. Now, zoom forward to the fantastic 2010s and what do we find? Not much change. The routine prognosis for those suffering life-interrupting 24/7 tinnitus are told that “there’s nothing that can be done about it”, and “you just have to learn to live it”. Not very enlightened considering that today few human

maladies have been researched and dissected as much as this still relatively understood condition.

The problem is that tinnitus is not a disease or even an illness in its own right. Nor is it just one thing. It is several underlying issues coalescing at once. It is a symptom, albeit an aggravating one. It is caused principally by advancing hearing loss, starting usually in the high frequencies and progressing backwards into the low frequencies with the passage of time and continued declining hearing acuity. In about 65-70% of cases it usually starts as a high pitch tone at around 4KHz or a multiple of it (6KHz, 8KHz, 12KHz). If one corrects the hearing loss with a wide band hearing device that stimulates the cochlea beyond the center band frequency of

the tinnitus, most of the problem is resolved.



## Contributors of Long-Term Tinnitus re DigiCare Multimodal Management Model

### ■ Auditory deprivation

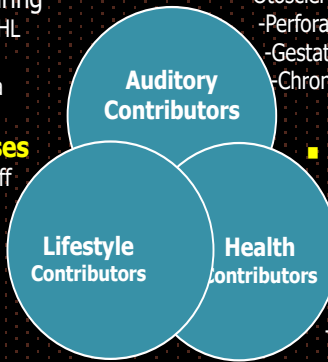
- (“Phantom Hearing”)
- Uncorrected SNHL
- Hyperacusis
- Acoustic Trauma

### ■ TM Artifacts

- Otosclerosis/Tympanosclerosis
- Perforation
- Disarticulation
- Gestation, other TM scarring
- Chronic infection/allergy

### ■ Lifestyle Causes

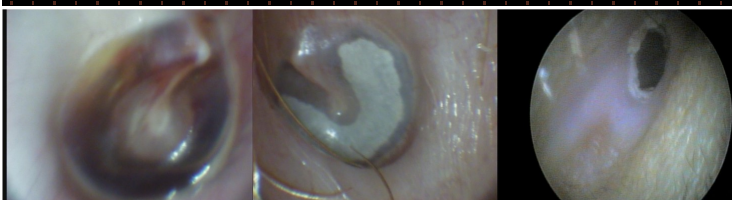
- Tobacco/Alcohol/Caff
- Lack of “R” sleep
- Chron. Dehydration
- Vocational/Recrea
- Food additives
- Nutrient deficiency
- Sedentary Lifestyle



### ■ Medical Causes

- Jaw/Tooth Infection
- Medication effects
- Chronic Disease
- Congenital Mal
- Heavy Metals
- TBI, Stroke, Menieres

Leaving out correction of the hearing loss and other health/lifestyle factors driving it (auditory deprivation, loud noise, chronic dehydration, infection and inflammation, medication side and main effects, and diabetes type 2 and its treatment, to name but a handful) the tinnitus usually becomes more intense, the bandwidth of aggravating sound widens as the hearing loss moves downward in frequency, and tends to recruit more hair cells to make matters worse yet. An irony is that if the hearing loss is left uncorrected, hyperacusis often develops (oversensitivity to sounds), adding an additional aggravating factor. The oversensitivity usually resolves *after* appropriate hearing aid amplification is utilized. While 3-peak (wide-band) devices help, standard, 1-peak devices provide marginal relief, if any.



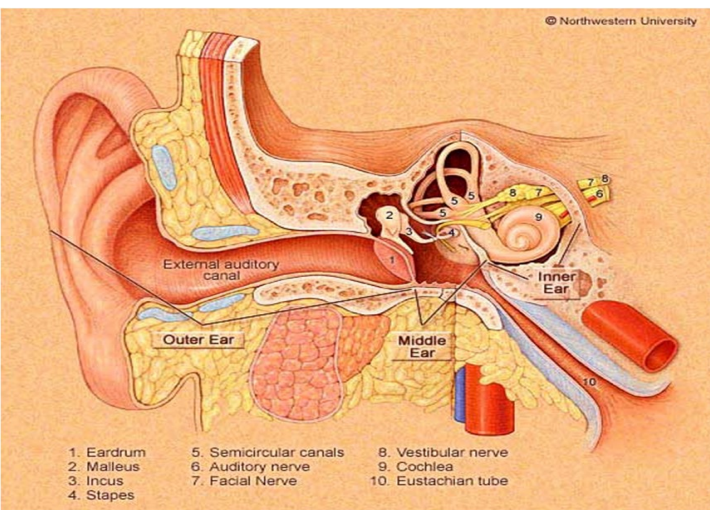
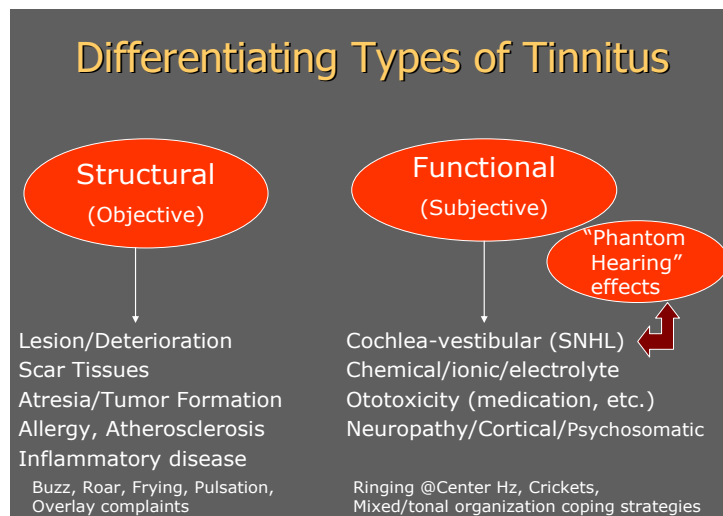
*\*Note: The material and presentation of this seminar is for consumer education, and is not to be construed as medical diagnosis or treatment for individual*

**Prevalence & Aggravation.** For an idea of how aggravating and relevant tinnitus has become in today's society: According the American Tinnitus Association (ATA), at least 50 million Americans suffer from it, with 12 million suffering enough to lower quality of life and even driving some to suicide. A recent tinnitus sleep-study suggests that the effect of relentless tinnitus on the amount of glucose burned in the brain during sleep is akin that used while reading a book all night long! A mind that would prefer to drift and rest is instead processing at a clip.

Looking at it through different perspectives, chronic health conditions known to contribute to tinnitus aggravation and to which tinnitus is known to contribute in the literature involve the following Mind-Body/Body-Mind conditions:

### Mind/Body Relationships

- Cardiovascular inflammation/Immunological Compromise
- Hypertension/Palpitations/Arrhythmias
- Transient Ischemic Attacks (TIAs)
- Chronic Adrenal Fatigue Syndrome
- Abnormal weight gain/weight loss
- Insomnia/Sleeplessness/Sleep Apnea
- Allergy/Hypoxia/COPD/Asthma
- Cortical Inflammation/Ideopathic Tremors
- Dyspepsia/Acid Reflux/Colitis
- Vertigo/Vestibular Dysfunction/Meniere's
- Blurred Vision/Visual Problems
- Headaches (migraines etc.)



### Body/Mind Relationships

- Inability to focus/Attentional Deficit Disorder (ADD)
- Social/Occupational/Educational loss
- Clinical Depression/Suicide Ideation/Suicide
- Anxiety/Panic Disorders
- Exaggerated Startle Reflex
- Explosive Anger/Emotional Disorders
- Memory disorders
- Obsessive Compulsive Disorder (OCD)
- Personality Disorders
- Factitious Disorders (Hypochondria, etc.)
- Accident Prone Behaviors

Viewed through “the chicken and egg” conundrum, the lists go on and on, negatively impacting quality of life and happiness that would be difficult for those not suffering from relentless tinnitus to understand. But the toll is *real*, the physical reactions as strong as the mental ones. *Now, let's look at the cascade of physiological and psychological behaviors that can occur over time:*

- Progressive high frequency sensorineural hearing loss causes a high pitch tinnitus at 4KHz
- Tinnitus grows louder as hearing loss worsens, reducing cellular oxygen & bringing sleep apnea
- Sleep apnea brings sleeplessness and lethargy, bringing inflammation & attentional difficulties
- Hypoxia brings depression, anxiety, and, over time, mild pseudo pericarditis around the heart
- This progresses over time, raising blood pressure, and bringing edema to lower extremities
- Ultimately disruption of quality of life result from uncorrected hearing impairment & tinnitus

***Now, let's reverse the process by correction and note the cascade back to homeostasis:***

- Correction of hearing loss (re F2 >10K-12KHz) *inhibits* tinnitus annoyance by about 80%
- Other lifestyle/nutritional/medical issues resolve concurrent with optimized hearing acuity



- Cardiovascular tension reduces, lowering blood pressure
- Depression/anxiety lifts, attentional deficit resolves, cellular oxygen returns @99-100% @55-65 bpm
- Back pain, headaches, sleep apnea, psychosocial issues ease over time as normal quality of life is restored

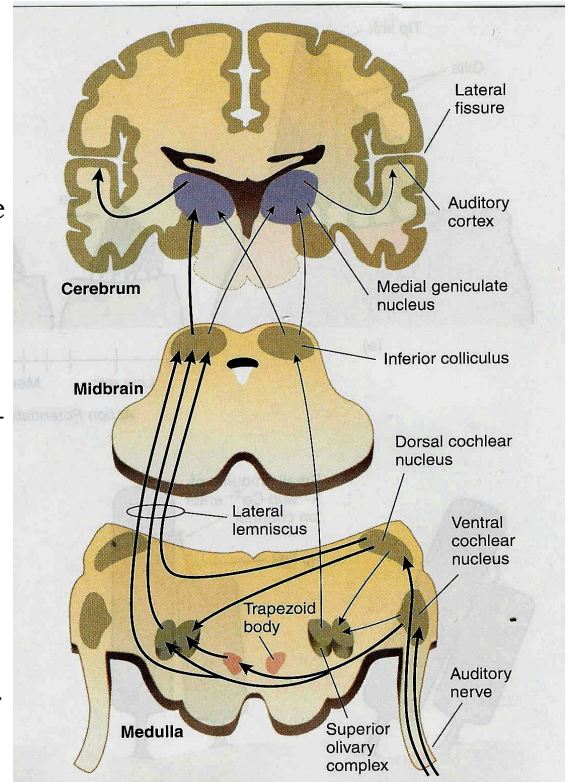
Your instructor has been on the forefront of applied research in tinnitus for more than 37 years. He was one of the professional members at the founding of the American Tinnitus Association (ATA) in 1978, and today is on its Advisory Committee as well as that of the Better Hearing Institute. His work has led to major inroads into understanding the relationships between tinnitus & chronic health conditions.

He has long maintained that appropriately fitted amplification, recognizing loudness growth and distortion idiosyncrasies, which define every sufferer of tinnitus and hearing loss, is the place to start in cases where hearing loss also exists, especially in cases of high-frequency loss.

Any other approach—psychotropic, neuroleptic, CNS depressant medications not only prolong the problem but add new health challenges in the long-term. It can be a challenge to resolve threshold losses that are caused by aminoglycoside antibiotics and other toxic medications, amplification correction can still provide significant improvement in the resulting tinnitus and hyperacusis cases.

In recent years, uncountable sufferers have enjoyed significant relief from the aggravation of tinnitus and hyperacusis by using the author's approach that is trademarked **Multimodal Tinnitus Management (MTM)**. MTM involves addressing the three contributive factors: 1) wide-band devices to correct the hearing loss, 2) improvements in lifestyle, nutrition, sleep, and hydration, and 3) use of MiraCell® (ProEar®) botanical solution applied to both eardrums daily for 30 days, once per week thereafter, and 4) receiving appropriate medical/health attention, as indicated.

***“It is a futile effort trying to find a single remedy that does not first consider and address these three contributing factors,” asserted Dr. Chartrand. “My advice is to start with a hearing test and a trial on wide-band (open) amplification. Then, you can address each issue as they present from there.”***



## ***A Special Invitation to You and Your Family...***

It was not but a short few decades ago that medical practice treated tinnitus as an hallucinogenic aberration—it was *all in your head!* Today, we understand the profound neurophysiological mechanisms and immunological cascades that cause and, when ameliorated, optimally resolve tinnitus and hearing loss.

Before you leave this seminar, set an appointment to have your hearing and tinnitus assessed. The assessment will be unlike anything you've experienced to-date. Yet it could easily mark the turning point in resolving the aggravation and health deterioration you've suffered all these years. The aggravation of tinnitus affects everyone around us, so this will be a time of healing for everyone!



**Contact Info: SIRCLE® Pain Clinic, 820 W Cottonwood Lane, Suite #6, Casa Grande, AZ 85122, (520)509-6380, [chartrandmax@aol.com](mailto:chartrandmax@aol.com)**



## Improving Your Health: One Tinnitus Case History

Max Stanley Chartrand, Ph.D.  
(Behavioral Medicine)

One of the ongoing mysteries in healthcare today is the condition called tinnitus or ringing of the ears. Indeed, more than 50 million Americans complain of chronic tinnitus, about 12 million of which experience it so severely that it interferes with their quality of life. Will there ever be a "cure" for tinnitus?

As a result of more than 30 years' research, we at DigiCare® Behavioral Research have concluded that, because there are myriad underlying causes for tinnitus, there will never be a single cure for tinnitus.

It is more accurate to understand tinnitus, not as a stand-alone condition, but as a symptom of other things gone wrong in the body. The single most common thing wrong in least 90% of cases of long-term tinnitus, is that of uncorrected hearing loss.

But the mystery deepens. Other underlying contributors involve: noise trauma, past and present ear infections, chronic inhalant allergy, diabetes mellitus II, cardiovascular disease, depression, hyperlipidemia, arthritis, chronic dehydration, and underlying infection, to name but a few. Finally, the terrible side- and interaction-effects of many prescription medications coupled with any of the above are also *causes* of hearing loss and tinnitus.

Look at the photo above. It is a video otoscopy view of one patient's eardrum or tympanic membrane (TM). Note the following biomarkers, which are indicators of underlying causes of tinnitus & hearing loss:

- Cone of light distortion indicates inhalant allergy contributor.
- White scar tissue on TM indicates past mid-

dle ear infections.

- Pervasive white plaques over TM indicates arterial deposits from years of acidosis, causing bone loss, hypertension, CVD.
- Dilated synapses (re meds that interfere with mood, & motor function).
- Lack of desquamation lines evidence of serum/cellular pH below 7.0 (acidosis), diabetes mellitus II & CVD.
- (Not visible via otoscopy) Progressive bilateral mild to severe sensorineural (nerve) high frequency hearing loss
- (Not visible via otoscopy) "Phantom hearing" effects, described as frying, hissing, crickets, and high pitch ring.

Here is how this patient worked to reduce his tinnitus *and* hearing loss, and eventually became so healthy he had to come off all medication, including diabetic, hypertension, acid reflux, arthritis, osteoporosis, and cholesterol medications. By doing so, remaining tinnitus became *and* he became immensely more healthy overall:

- Fitted binaurally with wide-band digital amplification for optimal correction of hearing impairment
- MiraCell® Botanical Solution poured on his tympanic membranes (eardrums) twice daily over a period of 30 days
- Increased water intake
- Stopped eating microwaved foods, more organic
- Used extra virgin olive oil in cooking & salads
- Abstinence from caffeine, alcohol, tobacco
- Nutritional supplementation to rectify deficiencies
- Under doctor's guidance & as each biomarker improved, reduced prescription medication

While not all cases of tinnitus and hearing loss line up with the above, a majority of those observed during three studies leading up to the development of the *DigiCare® Multimodal Tinnitus Management* (MTM) program that

most cases of high frequency hearing loss and tinnitus *do* match quite closely. In some cases (about 35%), if caught early, the tinnitus component completely subsided. In yet others, the tinnitus was noticed only in quiet. But in nearly all cases (95%)--even the most severe cases--where all aspects of MTM were faithfully observed, the tinnitus was more easily managed, hearing loss was improved, and quality of life increased significantly\*.

\*Note: Underlying contributors of tinnitus fall basically into three categories: Inflammation, hydration, and low cellular pH (acidosis). Correct these and sensorineural and conductive hearing loss, and the effects of tinnitus and hearing loss are dramatically improved.



### What those patient descriptions mean in terms of possible pathophysiology

Verbal Description	Frequency Band	Mechanism	Explanatory Notes
<b>Steady Ringing</b>	Discrete center band @3KHz-4KHz	Functional	Active cochlear hair cell destruction re progressing sensorineural loss
<b>Ring + pulsation (crickets)</b>	Discrete 2KHz with broadband pulse	Functional & Structural	Microvascular (@TM and/or stria vascularis) w/ sensorineural loss
<b>"Locusts" (Big Crickets)</b>	Discrete 1K-1.5K Hz with broadband pulse	Functional & Structural	Same as above but progressing into lower frequencies
<b>Wavering pitch</b>	Discrete 800Hz-1.2KHz (unstable)	Functional	Same manifestation but loss progressing into mid frequencies
<b>Frying, hissing noise</b>	Broader band 500-1.2Hz (stable)	Functional & Structural	Severe microvascular constrictions with (auditory) hair cell damage
<b>Buzz</b>	Broader band 150-500Hz (DL expand)	Functional/structural	Progression into lower Hz OR microvascular at stria vascularis
<b>Roar</b>	Broadband 60-180 Hz	Structural	Meniere's in cases of HL OR IE Viral Infection in cases of NH
<b>All of the Above</b>	All of the Above	Structural & Functional	All of the above plus!

### Quantifying Verbal Descriptions of Loudness Perception

Verbal Description	dB >Threshold	Explanatory Notes
<b>"Just when I lay my head on my pillow"</b>	1-3dB	Very mild, constant, usually associated with HL >4KHz
<b>"In quiet only"</b>	3-5dB	Mild, constant, usually associated with HL >3KHz
<b>"Most of the time except in noise"</b>	5-8dB	Moderate, constant, but fluctuates re HL >2KHz
<b>"All of the time, distracting"</b>	8-12dB	Moderately severe, constant, larger fluctuations re HL >1KHz
<b>"Very loud, keeps me awake!"</b>	12-15dB+	Severe, constant, very large fluctuations re HL >500Hz