

WHAT IS THE TRUE NATURE OF TINNITUS? WHERE DOES IT COME FROM? HOW SHOULD WE TREAT IT?

ANSWERS TO THESE QUESTIONS CAN HELP US CHOOSE THERAPIES WITH A GOOD CHANCE OF BEING HELPFUL, AND AVOID THOSE THAT ARE A WASTE OF TIME, HOPE, AND MONEY.

If you have head or ear noises, the first step is to consult your doctor for a diagnosis. Sometimes these sounds are associated with a local problem like impacted earwax, or occasionally with systemic conditions such as kidney or thyroid disorders.

Benign growths on the auditory nerve (acoustic neuromas) can also induce tinnitus. So can blows to the head. However, *in most cases treatment for these conditions has no predictable or beneficial effect on the tinnitus*. This is true of almost all its infinite number of possible triggers.

The source and nature of tinnitus is only partially understood, and doctors are seldom sure what to suggest for relief. Patients are often left on their own to search for solutions, a situation that led a group of patients to form the Tinnitus Association of Canada as a registered charity in 1986.

HOW WE'VE LEARNED

Nearly every day for the past 18 years, our patient-led Association has learned something more about tinnitus, primarily by *careful listening* to those who know about this subjective disorder *from their own experience*. We have also read extensively in the literature on the subject.

WHAT WE'VE LEARNED

We've often been told that subjective sounds are the result of high frequency hearing loss or the aging process. Sometimes they are. But while it's normal for anyone over 35 to have lost some hearing, and we all age, not everyone develops tinnitus. Many people with good hearing are troubled by intrusive, subjective sounds while others with hearing loss, even severe loss, may have no tinnitus at all.

THE MANY SIDES OF TINNITUS

The word ‘*tinnitus*’ is a **general term** for a condition in which *sounds are usually but not always present*. They are only the most common of a number of distressing sensations in or around the head and/or ears, that may include *vibrations, pulsations, feelings of blockage, pressure, fullness, tension, pain, visual disturbance, sound sensitivity, headache, jaw soreness, hearing loss and imbalance*. .

A PRIMAL SOURCE

It’s likely that only a reaction at the primitive level of the nervous system, probably the ‘threat-detecting’ function of the amygdala, can account for the *completely random* nature of tinnitus, its notorious *persistence*, and its *striking ability to arouse the limbic (emotional) system*, in a way that clearly distinguishes it from hearing loss. Tinnitus in its more serious forms is a type of **post-trauma disorder**. It may begin weeks, occasionally months, after an accident or period of unusual stress, or after any disorder or intervention affecting the area of the head and neck.

WHY US?

Everyone hears a few zings or electrical hums from time to time, signifying the constant activity of the hearing system as it seeks out significant sound. So we all have the potential for tinnitus. Susceptibility to noticeable, *persistent* tinnitus appears to be inborn in about 15% to 20% of people. Dr. Hans Greuel, a German ENT specialist with extensive clinical experience, believes that *those who place high demands on themselves are particularly likely to be affected*, pointing to the role of nervous system arousal.

‘TRIGGERS’: A CLOSER LOOK

Tinnitus can be initiated by **anything that upsets the nervous system**. It can be brought on by a **shock** like *an accident, an operation, noise exposure, panic attack, or withdrawal from alcohol, smoking or tranquilizers*; or by the **stress** of *family, personal, or work-related changes and challenges, by health problems, sleep disturbance, and overwork*, among an endless list of factors.

As well, anything that disturbs the *auditory system* and areas nearby are especially likely to provoke tinnitus, because of the unique interaction of *hearing* and the *brain’s instinctual responses*, arising from its protective role in sensing and transmitting danger signals. (Discussed further below)

A MEDICAL MISFIT: THE STORY OF AN ORPHAN

Medicine is organized by *body systems*. But tinnitus is a mixed *mind/body (somatoform)* disorder, and falls into the vacant space between medical specialties.

Though it may seem to be an ‘*ear*’ problem, serious cases involve feelings that closely resemble those of *emotional disturbance*: anxiety, sleep disruption, and difficulty concentrating. (Tinnitus is a common symptom of undiagnosed depression, affecting about half of those with the disorder.)

Tinnitus patients can be the unintended victims of a medical impasse. *Family doctors* see the condition as a problem for *ear specialists* to investigate and resolve, while the latter know their surgical skills and expertise in physical medicine, though sometimes required to deal with conditions that may have triggered the tinnitus, can almost never reduce its sounds or relieve its distress. They rarely venture to suggest therapies.

So people with tinnitus, often given the injunction to “live with” tinnitus, *but not told how*, may be driven to further, usually fruitless medical appointments, or to ‘*alternative*’ practitioners and products that extract money with next to no chance of providing relief.

The orphan, unfostered status of tinnitus is clearly demonstrated by the fact that nowhere in this country is there a medical doctor or a medical clinic devoted primarily to the treatment of tinnitus.

That doesn’t mean help can’t be found. It does mean you have to take the initiative.

PUTTING IT IN THE RIGHT BOX

Medical professionals can be understandably reluctant to suggest treatment when faced with the challenge of banishing subjective noises. They may initially accept the standard classification of tinnitus as restricted to auditory symptoms.

However, if the problem is presented *as a consequence* of nervous system arousal, our own family doctors, as well as and psychiatrists and psychologists can be alerted to the presence of treatable symptoms like sleep disruption, anxiety and/or depression.

Because significant tinnitus is never simply an ‘ear’ problem, *emotional support* and is essential. Trivializing or dismissing the disturbing nature of the condition intensifies patients’ frustration and distress. Unfortunately, the nature of tinnitus, its invisibility and persistence, make it difficult and demanding for those close to us to be always understanding and sympathetic.

WHERE DOES IT COME FROM?

As it goes about its work, every cell in the body creates a sound, detectible by special instruments. *It’s possible* that what we hear as ‘tinnitus’ consists of the intrusion into conscious awareness, because of nervous system stimulus, of the sounds made by the brain’s own nerve cells.

THE REASON WHY

Any disturbance of the auditory system, and to a lesser extent the head and neck, can readily initiate tinnitus. The reason is the crucial ‘*alarm*’ role of hearing to the survival of humans, almost blind in darkness and highly vulnerable to danger. Even by daylight, hearing must alert us to unseen hazards beside and behind us, freeing our eyes to scan ahead for food and shelter.

To compel *instantaneous evasive action at the sound of danger*, hearing has been endowed with powerful connections to our deepest emotions and instinctive reactions. We recognize this in the depth, range and richness of our response to music. We feel it in the unmistakable jolt of the ‘*startle reflex*’, the unpleasant shock delivered by sudden, unanticipated sound, so essential to self-protection that it begins by the 24th to 28th week of gestation, and continues on in the brainstem’s reaction to sound until the last moment of life, after every other function has ceased.

Its interaction with the brain’s emotional centres makes the auditory system exceptionally sensitive to ***biochemicals generated by stress or shock***. In some cases these stimuli produce the multiple symptoms of tinnitus. Less often they lead to *sudden hearing loss*, a remarkably common occurrence as compared to the relative rarity of trauma-induced loss of sight or speech. The fact that *hallucinations* in serious emotional illnesses are far more frequently *auditory* than *visual* further demonstrates this neural connection.

REASON FOR OPTIMISM

Many people find it relatively easy to adapt to tinnitus, while others have a lot of difficulty and need help. **How do we explain the difference?**

Disturbing forms of tinnitus are often the outcome of serious shock or prolonged stress that has undermined the resilience of the nervous system, whereas minor changes usually provoke more moderate forms of tinnitus. The difference in nervous reactivity of individuals is also clearly an important factor.

It's known that tinnitus sounds, *when measured against external sound*, register as no louder than a whisper: ***the nervous system amplifies them.***

Improving the state of the nervous system can reduce the intrusiveness of tinnitus and the discomfort that's part of the condition.

More often than not, this happens gradually through the organism's natural ability to heal itself. In serious cases, therapy can often *rehabilitate the nervous system*, so *that the sounds and symptoms gradually lose their disturbing quality*, though they may continue to be present.

WHAT DOESN'T WORK

Consistent with its primitive basis, tinnitus refuses to respond to *superficial or short-term* strategies, no matter how ingenious or high tech. It can't be bullied or manipulated into submission. That's why instruments that try to obliterate the sounds by covering over or 'matching' them, by stimulating specific frequencies, or prolonging 'residual inhibition', by subjecting them to lasers, instilling medication in the ear, or in times past, severing the auditory nerve, have been and will continue to be disappointing, despite all the time, money, and expertise devoted to them.

WHAT CAN WORK

Only gradual, unobtrusive, long-term treatments have a good chance of being helpful. In severe cases progress may have to be measured in intervals of many months. So a therapy that shows promise shouldn't be quickly abandoned.

Every effective therapy acts in a general, never a specific way. These include: ***stress reduction; low-level neutral sound (TR-T); and medication*** to balance the biochemicals that regulate mood and the sleep-wake cycle.

TINNITUS RE-TRAINING

Tinnitus Re-training therapy is the *only* sound-based treatment that's proven generally helpful. It accords with the principles noted above, and was developed in a pragmatic way by audiologists who noticed the response of tinnitus patients to many different forms of sound. *It takes effect slowly over an extended period of time.*

(The renowned Canadian pain researcher, Ronald Melzack, believes this neutral blend of 'white sound', acts as a form of *anesthesia* on the deepest levels of the subconscious.)

Audiologists with experience in *Tinnitus Re-Training (TRT)* have particular skills to offer, and this form of support is advantageous, though not available in many places.

However, *the therapy is simple and straightforward and can be done on your own.* Guidelines for the use of a *sound generator*, drawn up by the audiologists in Britain who initially developed it, are part of our Information Package.

The barrier to this therapy remains *the cost of the generator.* Some help is available in Ontario in the form of a \$500 subsidy. Other provinces may follow suit.

A THERAPY UNEXPLORED: MEDICATION

No single therapy helps everyone, so we need as many valid treatments as possible. Since studies confirm that suffering caused by *tinnitus is related to the presence of symptoms like anxiety, depression and sleep disturbance*, the resources of psychiatric medication have an obvious role in treating the 15% of those whose lives are disturbed by the disorder.

But with a few exceptions there's been a striking lack of psychiatric input in tinnitus studies and research, and a near-total absence of psychiatric presence on the Advisory Boards of Tinnitus Associations, despite the widely acknowledged *double-sided nature of the disorder.*

Nevertheless, doctors want to help their patients, and many use this commonsense approach to doing so. Non-habit-forming *anti-depressants* are commonly prescribed for help with sleep disturbance. With time they can often calm the tinnitus, though seldom eliminating it. If this type of medication doesn't offer sufficient relief, one or other of the new *anti-psychotics* often can.

WHAT TO AVOID

Misunderstandings about the nature and origins of tinnitus have sometimes led to the advocacy of ineffective 'alternative' remedies, and unsuitable medications.

Since the purpose of treatment is to restore the nervous system to a normal state, it's easy to see why *nerve stimulants*, like *caffeine*, aren't helpful. In the same way, *nerve depressants* are inappropriate. Yet this is the action of *tranquillizers* like Ativan (lorazepam), Rivotril (clonazepam), Xanax (alprazolam), bromazepam, and temazepam, etc. Their long-term use may result in depression. Because it's easy to develop tolerance to these medications, so they lose effectiveness, take them only as adjuncts to anti-depressants, or on their own for brief periods.

Good evidence indicates that relying *only* on tranquillizers can make it difficult for the nervous system to respond to more effective, non-habituating medicines.

GROWING A CONSENSUS

The extreme variation in tinnitus severity both between individuals and from time to time in the same person, as well as the length of time – sometimes years - needed to confirm sustained improvement, makes long-term clinical drug trials for tinnitus expensive and seldom undertaken.

That makes it all the more important that we share our own experiences with every form of therapy.

In fellowship,

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