

# Debilitating Tinnitus: A Problem, and Solution, in Neuroplasticity

By Dennis A. Colucci, AuD

Individuals with debilitating tinnitus are a special subset of patients who present with a pervasive reaction to their new body sound. They have severe hyperacusis, a chronic lack of sleep, and persistent anxiety and depression, and they are unable to concentrate or to experience relaxation or quiet time.

Their “bad days” consist of tinnitus and sound annoyance that is endless, resulting in days, weeks, or months off of work. They stay away from family and friends, isolate themselves from sound, inappropriately use hearing protection, and restrict their daily interactions to avoid discomfort.

The condition becomes more entrenched as they spend considerable time searching the Internet for a magical cure only to learn that pills, tinnitus product promises, hearing aid advertising, and anecdotal experiences are misleading, inaccurate, and confusing.

Seeing no reasonable answer to the problem, they increasingly become fearful. They may appear desperate at times, with passive thoughts and comments of suicide: “How can I live like this?” The complexity of the debilitating tinnitus patient is multifocal, requiring the care of a team of specialists who provide treatments targeting changes in neuroplasticity.

## EARLY INTERVENTION

According to the *Tinnitus Practitioners Association*, of the more than 50 million people who acquire tinnitus, 36 million habituate the condition without care, 15 million seek care, and another 2 million have a debilitating range of reactions. These clusters occur regardless of the fact that tinnitus loudness for all three groups, independent of the frequency, is typically 20 dB or less above threshold.

What generally pushes someone into the debilitating range is the attachment of an emotional experience that occurred around the time of tinnitus onset, such as accidents resulting in chronic pain and co-symptoms (*Laryngoscope* 2003;113[5]:821-827), loss of a job, a death in the family, or even acoustic shock injury (*Acta Otolaryngol* 2006;126[suppl 556]:54-58).

Recognizing the severity of the problem is the first step. Taking a medical history that defines the timeline of events, reveals medical complications and treatment needs, and characterizes the patient’s mental status and risk factors is essential at the onset.

I find that the subconscious activity is in control and the limbic system is engaged well before the patient is able to understand how this happened or how it can become manageable. Therefore, early intervention is crucial.



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To evaluate the emotional burden and perceptions, I use the Tinnitus Handicap Inventory and the Khalfa Hyperacusis Questionnaire. These tools yield useful information that can be strategically applied in counseling and when developing objectives for therapy.


The goal of tinnitus reassignment is to rewire the brain through education, treatments, and active cognitive behaviors that stimulate learning and memory changes while deactivating the negative emotions associated with the condition.

As Matthieu Guitton suggests, “tinnitus is a pathology of synaptic plasticity involving both molecular pathways central for neuronal adaptation and neuronal networks involved in higher cognitive functions” (*Front Syst Neurosci* 2012;6:12).

## SPECIALIST TREATMENT

I recently saw a patient who was off of work for six weeks and had a full complement of co-symptoms, including neck pain and no sleep. The sleep and pain issues were treated by her physicians, but combining this treatment with sound therapy and meditation helped the patient relax, remove attention away from her tinnitus, and eventually develop a sleep regime.

After nine months of therapy the patient’s hyperacusis was essentially resolved, her tinnitus annoyance went from a 9/10 down to a 4/10, and she was gainfully employed.

When debilitating tinnitus patients are identified, especially early on, they can obtain considerable improvements in their quality of life through neuroplastic changes. 



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