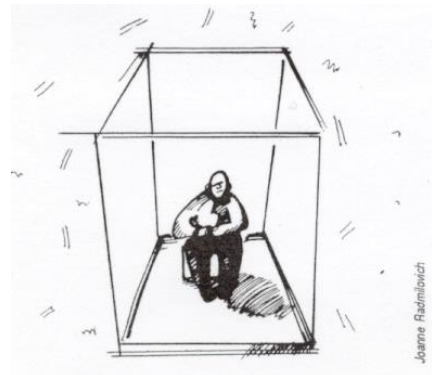


WHAT IS HYPERACUSIS?

Imagine being at a movie where the soundtrack is turned to the highest volume. Actors' voices are screaming at you. After five minutes, you leave, holding your ears and cursing the theater for its poor judgment. Turning newspaper pages, running water in the kitchen sink, your child placing dishes and silverware on the table - all are intolerable to your ears. A baby cries or a truck screeches its brakes to a halt and the sound is excruciating. You ask, "What has happened to my ears?"

Hyperacusis is a severe collapsed tolerance to normal environmental sounds. The ears lose most of their dynamic range and have a difficult time with sudden shifts in sound loudness. Suddenly everyday noises sound unbearably or painfully loud.

This disorder is often chronic and usually accompanied by tinnitus (ringing in the ears), but can occur in patients who have little or no measurable hearing loss or tinnitus.



Recruitment is a similar condition. Recruitment is an abnormal growth in the perception of loudness accompanied with hearing loss. Dr. Stephen Nagler explains the difference between hyperacusis and recruitment this way: "There are many misconceptions about hyperacusis and recruitment. Hearing professionals often oversimplify the concept of recruitment by stating that when hyperacusis occurs in a

person with hearing loss, it is "recruitment." Moreover, you and I have both heard folks with severe hyperacusis claim that "my hyperacusis is so bad that I must have recruitment, too." I feel it is very important that these terms are defined properly. (Or at the very least, that you understand how "I" am defining them.)

Hyperacusis is a decreased threshold to discomfort from sound. It can range from a person who is mildly uncomfortable in a restaurant setting wherein all the rest of the people at the table have no discomfort at all ... to a person who has profound discomfort from many of the sounds encountered in daily life. TRT and other desensitization techniques can be highly effective in treating hyperacusis.

Recruitment is something completely different. Recruitment is the rapid growth of perceived loudness for those sounds located in the pitch region of a hearing loss. (This is Jack Vernon's definition.) So let me give you an example. My father had a significant hearing loss for several years before his death at the age of 89. I could say, "Dad." He heard nothing, and he of course did not respond. So I'd say it a bit louder. Still nothing. A bit louder than that. Still nothing. And then ... just a very tiny bit louder. The response: "Stop yelling so loud, Steve, I hear you just fine. Tone it down a bit, will you!" And THAT'S recruitment - a *rapid* growth of perceived loudness in a pitch region containing hearing impairment. (And it is very difficult to convey to a person with significant hearing loss that the time he hears my voice at a level uncomfortable to his ears ... was actually the *fourth* time I tried to get his attention.) This phenomenon occurs because at some decibel level, the normal hair cells adjacent to the damaged hair cells (corresponding to the frequency of a hearing loss) are "recruited." At the decibel level at which these normal hair cells "kick in," perceived loudness shoots up rapidly, causing discomfort. My professional opinion is that TRT and various desensitization protocols do not help in these cases... what is required is hearing aids (with compression, if the recruitment is severe). BUT - just because a person has some hearing loss and also has sound sensitivity ... it does not mean that the sound sensitivity is due to recruitment. Hyperacusis can occur in people with hearing loss! Unfortunately there is no "test" which can be given to a person with hearing loss and sound sensitivity to determine what percentage of the sound sensitivity is actually due to recruitment. The only thing we can say for certain, in fact, is that if a person has normal hearing, he or she cannot have recruitment. As a guideline, then, at our clinic if a person with sound sensitivity has a hearing loss not severe enough to warrant hearing aids, we would initially treat that sound sensitivity with TRT or another desensitization protocol. Even if hearing aids WERE warranted, we would encourage exposure to environmental sound while wearing hearing aids (as in TRT) and only go to compression hearing aids if that approach failed after a concerted effort on both our part and the patient's part."

Hyperacusis can be devastating to the patient's career, relationships, and peace of mind. Suddenly it can be difficult or impossible to socialize or handle a work environment that is loud to the normal ear. Finding the proper diagnosis is difficult because few doctors understand hyperacusis and give misguided information.

A LIFE ALTERING CONDITION

Hyperacusis makes living in the noisy 21st century difficult and dramatically changes the patient's pattern of life. Moving about, traveling, and communicating with others is challenging. Ear protection - earplugs, industrial earmuffs, or both if necessary must be worn in areas, which seem too loud (over 85 decibels). Even then, many vocational and recreational activities must be temporarily curtailed or eliminated because, although protection reduces the noise entering the ears, it sometimes seems insufficient to block out certain frequencies or noise intensities.

The things most of us take for granted: driving a car, walking down the street, riding a bicycle, listening to the TV or stereo, hearing someone speak over a telephone or microphone, shopping, attending indoor events, dining at restaurants, taking vacations, or participating in lively conversation or sports can be very difficult with hyperacusis. Many cannot use a vacuum cleaner, hammer, lawn mower, power tools, ride a motor boat or motorcycle without ear protection. Most jobs involve some level of noise. In some cases, the patient may need to seek other employment or attempt to secure disability with the help of an understanding doctor.

Noise exposure generally makes the condition worse and exacerbates the accompanying tinnitus. Patients report that they perceive sound - even their own voice as uncomfortably loud, and this not only causes tinnitus to increase but may also cause inner ear discomfort or a popping reflex in the ear. Some first develop hyperacusis in one ear, but in most cases both ears become affected. Initially some patients have no tinnitus with their hyperacusis but in most cases at least a mild form of tinnitus becomes evident.

The condition can come on slowly or suddenly. It is the nature of the patient to try and make sense out of this condition and wonder what they have done in their life to get to this point with their hearing. Often patients will think they developed hypersensitivity to sound over a period of time usually attributing it to job-related noise, listening to loud music or living a noisy lifestyle. One must however, leave room for the fact that their ears are not as strong and durable as others. After all, why can a group of teenagers stand just a few feet from a towering wall of speakers at a rock concert, yet only one come down with hyperacusis?

Some come down with hyperacusis suddenly by firing a gun, having an airbag deploy in their car, experiencing any extremely loud sound, taking ear sensitive drugs, Lyme's disease, Meniere's, TMJ (Temporo-Mandibular Joint – jaw disorder), head injury, or surgery. Others are born with sound sensitivity (Superior Canal Dehiscence Syndrome), Williams Syndrome, autism or have had a history of ear infections. Some come from a family that has had hearing a history of ear problems. At this point however, there is no evidence which would prove a hereditary link to hyperacusis.

A PUZZLING PROBLEM

The appearance of hyperacusis in some of these disorders may provide important clues. Sometimes it disappears once the patient heals from the surgery, Meniere's goes into remission, or TMJ is resolved.

There is speculation that the efferent portion of the auditory nerve has been affected (efferent meaning fibers that originate in the brain which serve to regulate sounds). This theory also suggests that the



efferent fibers of the auditory nerve are selectively damaged while the hair cells that allow us to hear pure tones in an audiometric evaluation remain intact. Others feel hyperacusis is a brain processing problem specific to how the brain perceives sound. Some doctors feel that hyperacusis and tinnitus are two sides of the same coin. In other words, once a cure is found for tinnitus, a cure

for hyperacusis may also have been found. This is very promising. The most important thing for now is that the patient pursue retraining therapy until a cure is found.

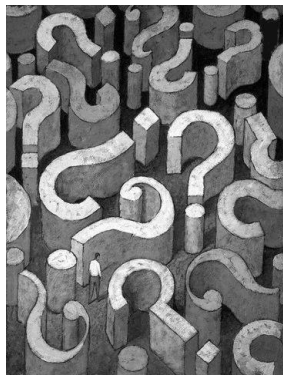
WHAT CAN BE DONE

The progression of hyperacusis is unpredictable. Most patients' tolerances improve while some rare cases do not. The only factor that unquestionably affects progression or regression is continued exposure to loud noise. Proper guidelines must be followed, especially when one first develops hyperacusis. Contact the network!

Many patients have seen improvement in sound tolerance through the use of sound generators (special hearing aids) that emit broadband

sound. This retraining therapy suggests that the ear can normalize its tolerances to sound by listening to broadband sound at barely audible levels for a disciplined period of time each day. Direct counseling by a hearing doctor who specializes in this special retraining therapy (a.k.a. TRT) is an integral part of this therapy. The Network has a current list of these doctors. Another method involves having the patient listen to a broadband pink sound CD (available through the network). These methods represent great hope and can help the patient greatly but they are not a cure.

Individuals who suddenly come down with hyperacusis go through a crisis period where it may be difficult for them to sleep at night. Getting proper sleep and reducing stress levels are critical, and medication may be needed to help facilitate this.



Of the various catalysts for the onset of hyperacusis, noise is the most common and preventable one. For those who suddenly develop hyperacusis, ear protection may be necessary until the patient's ears have an opportunity to recover. During this time one should avoid loud sounds and wear ear protection if needed. Those who come down with hyperacusis may fear all noise (phonophobia) and may tend to overprotect by using earplugs (muffs) continuously. This is not

good because hyperacusis ears quickly adjust to silence. Making this mistake would eventually lead to wearing ear protection 24 hours a day! The patient is in a Catch 22 and walks a fine line between overprotecting and under protecting their ears. Most, over a period of time come to understand that normal everyday sounds will not hurt them. One major problem is hearing professionals who, in their attempts to diagnose the problem, subject the patient to tests which involve loud sounds (MRI or BAER) and make the patient worse. Loudness Discomfort Levels (LDL's) must be known before any tests are performed. Oddly enough, some patients can even hear sounds at minus decibel levels.

WHERE TO FIND HELP

Because no test will confirm hyperacusis, it is misunderstood by all - like an invisible disability. Patients feel isolated and helpless even in the company of those who love them. The Hyperacusis Network consists of individuals who share information and offer support to one another, knowing full well that our condition at this time does not have a cure. As a network we share ways to improve our condition, discuss treatments, review products that make our environment more

noise friendly and make referrals to physicians who are knowledgeable and compassionate. Membership is free. Contact:

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Email

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Message Board

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