It Doesn’t Have To Be This Way

You come home from a night out with family and friends at a popular restaurant. You are frustrated and upset that you struggled throughout the dinner to keep up with the fast moving conversation among the three people at your table. You didn’t have fun at all. Yoy wish you spoke up when this location was first suggested. You knew it could be an effort to go to that restaurant but didn’t realize it would be this tiring. …. 

While driving you can’t hear questions from your kids when they’re in the back seat. You turn off the radio but the road noise still makes understanding hard. Several times after a question is not understood and you ask them repeat it, you hear “Forget It. It’s not important”. It stings but you hold in your anger. Suddenly, you remember saying the same thing to your dad and realize he might have felt hurt…. 

Things are pretty competitive at work. There is a rumor that there may be another round of layoffs. Your problem hearing has been the subject of a few jokes and jabs at the office. It didn’t bother you because sometimes your mistakes were funny. Now however, you are concerned that it may threaten your career. …

The last time you were out with clients for lunch it was so loud and busy you had to do everything you knew just to keep up with the conversation. You didn’t want them to think you weren’t paying attention. You looked at each one when they talked, tried to block out that other noisy table behind you. Sometimes when missing a word your mind seemed to quickly narrow the choices and make a guess. You were able to keep up. However, it was tiring. You remember that time when you were on the verge of
panic when all of a sudden the conversation switched outside the business that was being discussed to an experience of one their daughters and you didn’t recognize the switch and missed the name. For an instant you were lost....

The last time you were at the movies listening to the dialogue you were almost immediately lost. It was a combination of the accents, background sounds, music and rapid speech really taxed you. You asked your wife several times to tell you what was just said in the movie. She helped but you knew it was hard for her to listen and enjoy the movie while at the same time stop watching it to answer your questions. After a while you stopped asking and start to guess and fill in the blanks for yourself. After the show when you both are having coffee and talking about the movie, it is interesting when you learn your version is different from hers. ...

You like being outdoor working but because of you’re sweating you either have to leave your hearing aids in the house or go ahead and wear them but risk they become damaged by the moisture...

You tried hearing aids in the past and were unsuccessful. Your ear always felt plugged and they didn’t help you understand conversation better when you were in groups or in restaurants or other noisy places. Of course that was 10 years ago but they ended up in the drawer and just went on struggling. ...

You’re afraid that ringing in your ears is not going away. It seems to get worse as the day goes on. It came on after the fireworks and hasn’t left you. That’s been months now. ...
You struggle to hear conversation at the office, with clients and even at home. You also have to tolerate that incessant noise that seems to block some soft speech.

You dread hearing the low battery warning in your hearing aids. The batteries are so small. They are difficult for to grasp and insert without sometimes dropping them on the floor. Finding them later is a challenge.

It doesn’t have to be this way.

Hear Well Again Centers has developed this web site to introduce our emphasis on hearing improvement and tinnitus treatment that is designed for today’s busy lifestyles.
You Are Not Alone – Many People Have Tinnitus

Kochkin, Tyler, and Born (2011) recently estimated the prevalence of tinnitus in the United States based on a nationally representative sample of more than 46,000 households. They estimated the U.S. tinnitus population (in 2008) at 29.7 million people. Although tinnitus is generally reported to be highly correlated with hearing loss, surprisingly, some 44 percent of respondents (representing approximately 12.95 million Americans) reported no hearing loss.

They found the following:

- Some 30 million Americans have tinnitus.
- Some 13 million Americans report tinnitus without hearing loss.
- The incidence of tinnitus for people aged 65 to 84 years is approximately 27 percent.
- The prevalence of tinnitus is generally correlated with degree of hearing loss.
- Of those with tinnitus, almost 40 percent experience tinnitus during 80 percent of their day.
- Approximately 1 in 4 tinnitus sufferers report their tinnitus as loud, 1 in 5 report their tinnitus is disabling or nearly disabling.

Tinnitus treatment methods with substantial tinnitus amelioration includes hearing aids and music, and “the provision of hearing aids offers substantial benefit to a significant number of people suffering from tinnitus.”
Tinnitus and Hearing Loss May Go Hand in Hand

The leading cause of tinnitus is hearing loss. This is why a hearing evaluation is necessary as a part of any tinnitus treatment program. In addition to measuring a hearing loss, before assessing tinnitus, it is necessary that any hearing difficulties be thoroughly understood along with listening needs and listening lifestyle.

Those with tinnitus and a hearing problem need to be able to listen easily to conversation when socializing and living their lives. Tinnitus feeds off stress and struggling to hear conversation can be very stressful.

If you have tinnitus, its alleviation will depend on your hearing. If you have a problem hearing than it may depend on your hearing well again. Hearing well again starts all with you. You need to be familiar with your hearing ability. If have a hearing loss, you need to understand it and how it affects your everyday life.

You need to be familiar with the solutions available for your hearing problem including new effective listening strategies, new auditory training programs and current hearing aid and tinnitus sound therapy technologies. You need to be realistic about of how well you can and want to hear.

Hear Well Again Center’s Just Listen program will enable you to try the latest state of the art hearing aids with tinnitus sound therapy in your everyday life for free. After a hearing evaluation, tinnitus assessment and hearing aid evaluation, you can walk out wearing some of the most advanced digital hearing aids equipped with tinnitus sound therapy to experience easier listening and possible tinnitus relief without risking a penny in our exclusive Just Listen program.
Understand Your Hearing Problem and Tinnitus

In order to hear well again and possibly lessen your tinnitus, you may need to do more than Just Listen and try a demonstrator hearing instrument. To alleviate your tinnitus and hear well again, your understanding of these problems is part of the solution. There needs to be some agreement between the situations where you want easier hearing and as a result less everyday stress.

What is Tinnitus?

Tinnitus is the medical term for noises in the ears. Tinnitus is not limited to ringing. It can be roaring, buzzing, whistling, or hissing. Tinnitus is a persistent continual noise in the ear.

Tinnitus is usually caused by damage to the hair cells of the inner ear. It can be brain centered, caused by abnormalities to the brain. There are a number of other causes of tinnitus which will be reviewed shortly.

Tinnitus is not a disease, but a condition that can result from a wide range of underlying causes. Tinnitus can accompany hearing loss. It may be temporary if the hearing loss is conductive and amenable to medical intervention. If the hearing loss is sensorineural or congenital, the tinnitus may be longer standing. While it is generally believed that an insult to the peripheral auditory system can trigger tinnitus, recent evidence suggests that tinnitus is caused by abnormal activities resulting from cortical re-organization.

Tinnitus is usually a subjective phenomenon and is difficult to measure using objective tests. Tinnitus can be matched with noise of a certain band width or tone of known frequency and intensity as in an audiometric test. Sometimes, the tinnitus can interfere with hearing real sounds.
Tinnitus can be annoying and frustrating. Tinnitus is linked to depression, anxiety, and stress. People can have tinnitus in one or both ears. While people of all ages can develop tinnitus, it is more common in older adults.

**Tinnitus can be correlated with...**

**Hearing Loss**
As we age, or because of trauma to the ear (through noise, drugs, or chemicals), the cochlea becomes damaged and is no longer sending the normal signals to the brain. Tinnitus can be made worse by anything that makes hearing worse, such as ear infection or excess wax in the ear.

**Ear Trauma**
Tinnitus caused by ear trauma is usually noticed in both ears, because both ears are usually exposed to the same noises, drugs, and other influences.

**Noise Exposure**
Loud noise exposure is a common cause of tinnitus today, and it often damages hearing as well. Ten million Americans have irreversible noise-induced hearing loss, and 30 million more are exposed to dangerous noise levels each day.

**Middle Ear Problems**
Tinnitus can be present in middle ear problems, such as a middle ear infection or the buildup of new bony tissue around one of the middle ear bones which stiffens the middle ear transmission system (otosclerosis) may be muscle spasms of one of the two tiny muscles attached to middle ear bones.

**Meniere’s Disease**
Meniere's disease includes dizziness, tinnitus, and fullness in the ear or hearing loss that can last for hours, but then goes away. This disease is actually caused by a problem in the ear itself. The tinnitus is merely a symptom.

**Neural Causes**
Conditions that affect the hearing nerve can also cause tinnitus, the most common being benign tumors commonly referred to as acoustic neuroma or vestibular schwannoma. Tinnitus caused by an acoustic neuroma is usually unilateral and may or may not be accompanied initially by a hearing loss.

**Lesions in the Brain**
Tinnitus may also originate from lesions on or in the vicinity of the hearing portion of the brain, called the auditory cortex. These can be traumatic injuries with or without skull fracture, as well as whiplash-type injuries common in automobile accidents. Benign tumors called meningiomas that originate from tissue protecting the brain may also cause tinnitus that originates in the brain.

**Other Health Problems**
Hypertension and thyroid problems can cause tinnitus without any specific auditory problem. Stress and fatigue may increase the possibility of tinnitus. Poor diet, lack of exercise and allergies can increase the possibility of tinnitus.

**Medications**
A number of medications may cause or worsen tinnitus. Generally, the higher the dose of medication, the worse tinnitus becomes. Often the unwanted noise disappears when you stop using these drugs. Some medications known to cause or worsen
tinnitus include: Antbiotics, including chloramphenicol, erythromycin, gentamicin, vancomycin and bleomycin, Cancer medications, including mechloretamine and vincristine, Diuretics — water pills — such as bumetanide, ethacrynic acid, furosemide, Medications used for malaria or other health condition. Aspirin taken in high doses of 12 or more a day.

Understand Your Audiogram

A great place to start when discussing your hearing problem and or possible tinnitus is your audiogram. This audiogram is a graph representing various aspects of your hearing. This audiogram simply displays the thresholds for hearing pure tones at certain test frequencies. It graphically illustrates your hearing ability across a wide spectrum of frequencies.

Your speech understanding ability in the quiet test environment will also be part of your hearing evaluation and displayed on your audiogram. Your ability to tolerate loud sounds is also measured. All this information is included on the same test form that contains the audiogram. The shape of the overall hearing loss (predominantly high frequency, relatively flat affecting all frequencies etc.) can be readily seen on the audiogram.

The type of hearing loss – conductive, mixed, sensory or neural is also indicated on an audiogram by the placement of air conduction thresholds and bone conduction thresholds. Loudness tolerance which would be important when considering amplification will be indicated on the audiogram.
Severity of the Hearing Loss

Hearing losses are usually classified in terms of severity as *mild*, *moderate*, **severe** or *profound*. The more severe a hearing loss, the more difficult it will be for a person with this hearing loss to live a quality life without some assistance.

Here are the various classifications

![Diagram showing the classification of hearing losses](image-url)
A mild hearing loss can be an annoyance at times to the person affected or to family and friends. It will be more evident when the person is in a group because of competing background noise. It may be the reason for a few winces as a question is misunderstood and an inappropriate answer is given. It may cause an embarrassing moment or two for the person with the hearing loss.

A moderate hearing loss can have a greater impact. It can cause communication problems at work. It can be a primary reason for not socializing with loved ones and friends. It detracts from the enjoyment of meeting others at a restaurant or other social gathering. It sometimes can make a telephone conversation difficult to understand.

A severe hearing loss can isolate a person and cause a great deal of frustration at home. A telephone ring may not be heard and conversation on the phone maybe avoided. The TV is no longer enjoyable because the dialogue is too soft and unclear.

A profound hearing loss is not very common. When it does occur extraordinary measures may need to be taken to help the person resume a normalized life in a hearing world where so much of life’s information is transmitted by spoken language and with other signal sounds such as alarms, door bells, telephones etc.

The Site Of Lesion
(Location of the Hearing Problem)

A hearing loss may be caused by a problem in the outer or middle ear (conductive), a problem in the inner ear
(sensory), in the eighth auditory nerve, neural pathways, or brain (neural).

Most times if there is not an indication that the site of lesion is neural, the diagnosis will be made as sensorineural. As displayed on the audiogram, a sensorineural hearing loss is present when the air conduction and bone conduction pure tone thresholds are close or overlapping. About 95% of adults with a problem hearing have a sensorineural hearing loss. This is often called a "nerve" loss but there is a high probability that the loss is in the inner ear. Often accompanying this hearing loss is an abnormal sensitivity to loud sounds or loudness recruitment as well as increased difficulty hearing and understanding speech in competing speech. Sensorineural hearing loss is often caused by aging and/or noise exposure. As American’s are living longer and living with more environmental noise than ever, the prevalence of sensorineural hearing loss is dramatically increasing. The use of hearing aids is the most common and effective treatment.

Those with a sensorineural hearing have difficulty hearing speech clearly. They often think others are mumbling and frequently misunderstand what they say. They have trouble understanding conversation when in crowds and surrounded by competing background noise. It is a clarity problem more than a loudness problem.

Those with a sensorineural hearing loss may also have difficulty speech in complex listening situations or to follow rapid speech. This may be both peripheral (in the inner ear)
and central due to normal aging patterns in the brain. Most adults in America who have a longstanding hearing problem (not a temporary one) have a sensorineural hearing loss which cannot benefit from medical intervention.

If you have a hearing problem that is part conductive and part sensorineural is said to have a (mixed) hearing loss. This is displayed on the audiogram when the bone conduction thresholds indicate a hearing loss and the air conduction thresholds are further depressed.

A conductive loss is the type of hearing loss that is most amenable to medical treatment. The treatment for conductive hearing loss may range from cleaning the ears of a cerumen (earwax) impaction to treatment of an infection by the use of medicine, to surgery. It is displayed on the audiogram with the bone conduction thresholds in the normal hearing range and air conduction thresholds indicating a hearing loss.

Slope of Your Audiogram

If your hearing loss is much worse in the high frequencies than in the lower test frequencies you may find speech not loud enough and have even more difficulty understanding what is being said. How rapidly the hearing threshold deteriorates as the test frequencies get higher (the steepness of the slope as displayed on the audiogram) was an important indicator of amplification success, Now with new advanced hearing aid technology the precipitously sloping hearing loss is not as challenging. Most hearing losses are gently sloping. There is a gradual worsening of
the measured hearing thresholds as the test frequency becomes higher in pitch. The people with this gently sloping configuration audiogram will probably have a sensorineural or mixed hearing loss and respond quite well to amplification.

Upward sloping audiograms with worse pure tone thresholds in the lower test frequencies are more common in conductive and mixed hearing loss. Many with conductive hearing losses usually respond quite well to the use of amplification. The inner ear is in good condition and there usually is not a tolerance problem to loud sounds (recruitment).
Hearing Well in Real Life Listening Environments

The real life listening environments where you have a problem hearing conversation may be complex. Many times that could mean

• multiple talkers,
• quick random speakers,
• sound source movements,
• competing noise such as air conditioning,
• office or other work equipment,
• unstable non-speech sources of competing sounds such as street noise,
• distractions,
• shifting your focus on people talking when you are in a group when you’re seated at a restaurant table,
• shifting from weak distant voices in the back to stronger voices up front in a classroom,
• or people talker with a radio playing and road noise as in a car.

When people report having problems hearing in noise, they usually mean understanding conversation in complex listening environments with multiple talkers competing. They remember the situations they found stressful trying to hear were with a number people talking around them. In this type of complex environment, many visual and/or situational distractions may be there as well.
Dr Frank Lin, of Johns Hopkins Medical Institutions in Baltimore, and colleagues found an increased risk of dementia among those with hearing loss of greater than 25 decibels. Further increases in risk observed among those with a moderate or severe hearing loss as compared with a mild hearing loss. For participants age 60 and older, more than a third (36.4 per cent) of the risk of dementia was associated with hearing loss. The risk of developing Alzheimer's disease specifically also increased with hearing loss, such that for every 10 decibels of hearing loss, the extra risk increased by 20 per cent.

Dr Lin said that the two conditions may share the same cause. "Hearing loss may be causally related to dementia, possibly through exhaustion of cognitive reserve, social isolation, environmental deafferentation [elimination of sensory nerve fibers] or a combination of these pathways," he said.

The strain of decoding sounds over many years may overwhelm the brain, leaving people with hearing loss more vulnerable to dementia. Hearing loss can lead to social isolation, which is a known risk factor for dementia and other cognitive disorders. “People with severe hearing loss had about a five-fold increase risk of developing dementia over time,” Dr. Lin said.

Researchers from the Perelman School of Medicine at the University of Pennsylvania showed that a decline in hearing ability may accelerate gray matter atrophy in auditory areas of the brain and increase the listening effort necessary for older adults to successfully comprehend speech. They found that the gray matter
density of the auditory areas was lower in those with decreased hearing ability, suggesting a link between hearing & brain volume. Older adults (60-77 years of age) with normal hearing for their age were evaluated to determine whether normal variations in hearing ability impacted the structure or function of the network of areas in the brain supporting speech comprehension. People with hearing loss were shown to have less brain activity on functional MRI scans when listening to complex sentences. Poorer hearers also had less gray matter in the auditory cortex, suggesting that areas of the brain related to auditory processing may show accelerated atrophy when hearing ability declines.

The Psych-Social Cost

After helping thousands of people to hear well again, I now know first-hand some of the deleterious psycho-social effects of the hearing loss. The cost is best expressed in their own words. Here is a sample of what I’ve heard from my patients when first interviewed.

Anxiety – Will I be able to hear conversation in this restaurant or will I have to nod my head and hope I’m not embarrassing myself? …Will I understand my grandchildren when they come to visit?… Should I continue playing bridge even though I sometimes miss the bid?… When I listen with my kids to their records will I don’t have any idea what the lyrics are because the music is louder and the singing is too fast… Will the ringing get worse?

Frustration – I wish they would just talk slower. … Does this restaurant have to be so noisy? … I’m sick of saying “what” all the time. …Why can't my husband realize how much his hearing loss hurts him?
Anger – Sometimes I hate when that telephone rings, they talk so fast and many times with an accent and I just don’t know what they are saying. ... I wish my family had my hearing for a day. They would finally understand what I go through. ...That store clerk who mumbled made me look stupid and embarrassed me.

Fear – They’ll all stare at me with a hearing aid ... I’ll look old.

Depression – My hearing loss and constant ringing in my head really gets wearisome. ... What did I do to deserve this? ... I was planning on enjoying this vacation but that isn’t happening. ... I don’t think anything can help me.

Loss of self-confidence – I used to take charge at the meetings, but now, because I can’t hear well I sit back and try to follow part of the discussion. ...I liked listening to my friend’s jokes but now I cringe because sometimes I can’t hear the punch lines.

Loss of self-esteem – I hope they didn’t think I was stuck up. I just couldn’t hear what she was saying. ... I bet they thought I was disinterested...I kept nodding my head and looking for help. I really hate being embarrassed. I answered what I thought was the question. It was hard to understand what was being said in all that noise. ...

Isolation – With this hearing loss I just want to be left alone. I would rather read a book than go out to the movies with friends. ... Why can’t I eat in the dining room (at the life care center) at a table for 2 or sitting by myself. All that chatter drives me crazy.

Fatigue – Hearing on the phone drains me. ... It is so tiring reading my newspaper and trying to listen for anyone talking to me down the hall.

Loss of memory – I can’t believe I didn’t remember what she said. It’s just that I didn’t hear her…. How can I remember what I didn’t hear?
Denial – I don’t have a hearing problem if they would slow down and stop mumbling.

Loss of companionship, friendship – Now that the kids are grown and we’re able to spend more time together, I’d like to talk to him more but it’s too difficult... I miss the long talks...I wish he would meet me halfway and get some help.

Increase stress within the family – I seem to always be reminding my wife to turn around and face me when she’s talking. Instead she’s talking to me from down the hall or while walking away to another room... He’s always blaming me because he can’t hear. Why do I have to come down the hall to talk to him? Why can't he get up? Facing him and cooking at the same time is impossible...
Amplification

Some of today’s hearing aids are so light that when worn they can’t be felt. Their size is small and can match your skin or hair color so others will find them hard to see.

They now have such advanced feedback cancellation technology that if you were the wearer, your ear canal could be left open and you wouldn’t feel plugged up. This open ear canal fit and advanced hearing aid technology would enable your voice to sound natural. Conversational speech would be natural, clear and enhanced over surrounding competing noise.

Some of these hearing aids identify and classify their acoustic listening environment and predominant input sound. They can adjust their performance to optimize to these acoustic and listening conditions.

These hearing aids could analyze your listening conditions and select the optimum settings and adjust to changing listening environments, speakers and speaker distance automatically and seamlessly. Some of these breakthrough devices could recognize speech coming from behind, as from the back seat of a car, and emphasize it and attenuate other interference even if in front. Some of these hearing aids can be moisture proof and dust proof. Some receiver-in-the-canal style hearing aids could have a complete selection of removable receivers so they are able to have enough gain and output to provide enough amplification for a mild hearing loss to a profound hearing loss. This range would accommodate 95% of all hearing losses. They have several levels of hearing aid technology with their speech enhancement/noise reduction ability to best fit your listening need, hearing loss and auditory processing ability.
Today’s hearing aid styles and technology synergize

For some with a mild to moderate hearing loss, the newest barely visible open ear and receiver-in-the-canal style hearing aids are an attractive first option. These hearing instruments can be so light that the wearer forgets it’s there. Their open feature eliminates the occlusion effect or plugged up feeling.

Open-ear style digital hearing aids with advanced speech/noise management technology offer significant assistance. A person with a high frequency hearing loss will most often find people to be loud enough but not clear enough. Difficulty understanding others from the next room or in a meeting will occur more often especially when there is some interference from background noise. Listening difficulty occurs in a car, at the movies, while shopping in the mall or at a restaurant. This individual may not have a problem understanding one-on-one conversations. When in a quiet setting this person may also hear internal generated head noise called tinnitus.

Open ear hearing aid

Wide range digital amplification where soft sounds are amplified the most and loud sounds not at all can reduce tinnitus.
While similar to open ear style, the receiver-in-the-canal (R-I-C) hearing aids are different because as the name implies the receiver is placed in the ear canal. This can be a major advantage over other styles, if there is a selection available of different strength receivers that will expand the fitting range from mild to even profound level hearing losses. *One model R-I-C hearing aid can fit 95% of all hearing losses.* For some it has been reported that receiver placement deep in the ear canal produces a higher fidelity sound. There may also be sound advantages of R-I-C hearing aids when compared to custom one piece and behind-the-ear style hearing aids.

**Receiver-in-the-canal hearing aid**

A person with a *moderate* hearing loss may sometimes misunderstand conversations on the telephone. For this person, conversation will be more difficult because of the interference caused by surrounding noise while riding in a car, crowd noise and reverberation while shopping in the mall or with others socializing at nearby tables at a restaurant.

In addition to R-I-C style hearing aids, custom-made, one-piece hearing aid styles may also be a good choice.
all-in-the-ear  all-in-the-canal  completely-in-the-canal

The barrier of a moderate to severe hearing loss, is more formidable and present most of the time even in relatively quiet listening settings. Speech is often unclear. Soft voices may not be loud enough especially if there is competing background noise. This moderate to severe hearing loss may cause constant frustration especially in noisy or complex listening environments.

Meetings and lengthy telephone conversations will be avoided. All the previously mentioned hearing aid styles except for the open ear may be appropriate for this level hearing loss. Choice of style may depend on other factors besides the strength.

Behind-the-ear hearing aids may be the best choice when the hearing loss is severe to profound and worse. Another situation to recommend fitting a behind-the-ear hearing aid is when the wearer has had bouts of middle ear fluid running from the ear canal into the outer ear even after the most diligent care and aggressive medical intervention.

behind-the-ear style

courtesy Siemens
Deep insertion completely-in-the-canal style hearing aids have an attractive discrete benefit. One of these digital hearing aids, the Siemens Eclipse has a soft tip that minimizes any occlusion effect or plugged up feeling that can occur with a custom made completely-in-the-canal hearing aid with slight venting.
The New Evolving Goal Of Amplification

The goal of amplification has changed from *loud and clear* to *easier listening*, as the hearing aid technology has evolved to be more effective in more demanding listening environments. The goal now is for people with a hearing loss to not have to work so hard keeping up with conversations in a wide variety of listening situations that they find themselves.

From the studies at Johns Hopkins and the University of Pennsylvania easier listening will not only improve a person’s life but will produce neurological benefits as well. With the goal of amplification progressing to easier listening, listening lifestyle and listening need become as important as the pure tone and speech thresholds found on the audiogram. They are now factors to consider. Auditory processing ability is important when considering the level of hearing aid technology needed in an individual’s amplification. Age should also be considered. Age provides a basic estimate of a person’s auditory processing ability. A fifty year-olds auditory processing ability could be expected to be better than an 85 year old.

Amplification and tinnitus sound therapy are more effective than ever in improving hearing in a wider variety of listening situations. Tosay’s multiple channel tinnitus sound therapy is much more effective alleviating tinnitus. Before we discuss today’s amazing breakthrough hearing aids along with tinnitus sound therapy technology, I would like to briefly share with you the research and development needed to get to today’s solutions.
How We Got to Today’s Amplification

Hearing aids have been steadily and incrementally improved over more than 100 years. One of the first creators of the electronically amplified hearing aid was the Siemens company in 1913.

I’ve witnessed a remarkable growth in the hearing aid industry, the profession of audiology and the effectiveness of hearing aids over the past almost 4 decades. This state-of-the-art hearing aid technology did not come about overnight. It resulted from decades of research and development building with one improvement or breakthrough at a time from a countless number of contributors. I’ve witnessed this incredibly ride in the development of today’s devices that can truly help many to hear well again and reduce or even eliminate tinnitus. When I began as an audiologist, it now seems like it was a different world with minimal response choices, basic crude amplification technology and disappointing user results.

When I started as an audiologist almost 40 years ago, digital or even programmable hearing aids were decades away. Software to program hearing aids would take even more time to develop.

Some of the hearing aids of that day were

- bulky body-aids that were worn under the shirt or blouse with a set of cords leading to large ear molds,
- bone conduction hearing aids vibrating the mastoid bone behind the ear with an oscillator held in a head band,
- eyeglass hearing aids in thick brown or black temple pieces,
- behind-the-ear hearing aids with the microphone placed at the bottom of the case to prevent whistling
- and the largest style of custom made one piece hearing aids.
Most amplification required that the ears be at least partially plugged to prevent annoying feedback. This plugging resulted in a whole series of wearer issues that could be all categorized as the occlusion effect. This left many hearing aid wearers feeling constantly plugged, their voices sounding so different to them that many couldn’t adjust and all amplified sounds being too loud and unnatural. A large part of my job as audiologist involved counseling new hearing aid wearers to help them persevere with amplification.

Counseling was an integral part of any hearing aid fitting program. People needed a lot of perseverance to acclimate to amplification. To motivate people to continue to wear their hearing aids required much effort by their audiologists and hearing aid fitters. Amplification was harsh and artificial, there was considerable distortion. Loud sounds amplified were often uncomfortable. Hearing aids had a single response that could not react adequately to keep amplification comfortable and clear and change to attenuate competing noise. The only tool left to the hearing aid wearer was the hearing aid’s volume control.

In reacting to rapidly changing listening conditions, loudness of voices and competing noise, the wearer would be constantly adjust the volume control to keep speech clear and comfortable. Unfortunately this accomplished little. The wearer would finally become frustrated and the hearing aid would end up in the bureau drawer.

The dissatisfaction with early amplification was considerable especially when the wearer had less than a moderately severe hearing loss. This was the case because this wearer was seeking help understanding speech in competing noise or complex
listening situations. Unfortunately, the necessary hearing aid technology to achieve this was more than 30 years away. Hearing aids ending up in bureau drawers became the urban legend.

It seemed that the number of people who had negative impressions of amplification was growing. Breakthroughs such as compression to reduce distortion and increase comfort, new success in making behind-the-ear style hearing aids powerful enough to retire body and bone conduction hearing aids and miniaturization small enough to make one piece custom made hearing aids more cosmetically attractive kept the industry growing.

The initial introduction of transistors into hearing aids was not successful. It was quickly found that transistors could not get damp. Because of this dampness, a hearing aid with transistors in stead of vacuum tubes would only last for a few weeks and then die. In order to stop this from happening, a coating had to be put on the transistor to protect it from the dampness. This problem had to be fixed in order for transistors in hearing aids to be successful. Another hurdle was realized by Zenith when it was determined that body heat of individuals shortened the transistor life. In 1954, Texas Instruments produced a silicon transmitter, which was much more effective than previous transmitters. In 1958 Texas Instruments created the integrated circuit or IC.

The microprocessor was created in the 1970s. This helped to open up the door to miniaturization of the hearing aid. Multi-channel amplitude compression was also developed. This enabled the audio signal in hearing aids to be separated into frequency bands. These bands were able to adjust sounds so that
sounds that were more intensive were weakened and sounds that were weakened would become more intensified. Multi-channel amplitude compression was fundamental in the design of the first digital hearing aids.

The six-channel hearing aid was introduced in 1975 and four years later, in 1979, electro-acoustic features of hearing aids were able to be changed by a simple button. This caused the amplification to respond to changes in the listening environment. This technique of controlling the hearing aid for the environment is used in some manner throughout all digital hearing aids.

The most significant developments of the 1970’s - hearing aid compression, multiple channel amplification and multiple microphones made amplified sounds more comfortable and hearing aids more effective in noisy complex listening environments. At the same time miniaturization continued and this became one of the main marketing tools.

The real breakthrough in consumer acceptance came in the 1980’s. The dramatic increase in the acceptance of amplification was not due to something cosmetic or technical. It was the fitting of President Reagan with binaural hearing aids. Before his fitting, the barrier that had been building up against wearing hearing aids had already begun to come down but at that point many more were open to idea of personal amplification. After all, if hearing aids were good enough for a much admired president to wear than they many would reconsider them. This resultant rapid increase in hearing sales helped to provide the increasing interest of hearing aid industry and infused more financial
investment to fund the next big breakthrough that would be refined and improved and carry amplification up to today – digital.

In 1982, at the City University of New York, the first real-time all digital hearing aid was created. The first wearable digital hearing aid was invented by Audiotone. It was introduced in 1983. It had a converter that allowed the device to change from analog to digital and back again. It also had digital signal processing. In 1996 two companies, Widex and Oticon, introduced true all-digital signal processing hearing aids that could be worn in the ear just like regular hearing aids.

Software development was the next step forward. Most digital hearing aids are now programmable. This was not the case before the early 1990’s. Today’s hearing aids are capable of regulating sound on their own, without using a separate control. Technological breakthroughs from American industry and Silicon Valley helped in the continued miniaturization and increased informational processing speed to these tiny ultra-fast devices. Some of today’s advanced hearing aids can process information millions of per second. The hearing aid can now adjust itself depending on what environment it is in and often does not even need a physical volume control button. More will be said about today’s hearing devices in following chapters.

The reason that I have very briefly outlined the progress in amplification over the past 40 years is that the technical progression that led to the latest state-of-the-art hearing aids was accomplished one development at a time. Patience, persistence, confidence, imagination and innovative thinking were required by the engineers, manufacturers, researchers, clinicians to
constantly enhance the products with the aim that they become more effective improving hearing and treating tinnitus than ever before.

This same patience, persistence and confidence is needed by those individuals with the tinnitus and or a problem hearing if their want their difficulties are alleviated.
Alleviating Ringing in the Ears

A French physician, Itard, in 1821, wrote that tinnitus treatment was generally unsuccessful. He believed that he and other physicians should try to make a person’s tinnitus bearable. To achieve this, he described a technique in which tinnitus could be masked by matching it with a similar external sound. He observed that this technique had been successful.

In 1903 Dr. Spaulding using a piano was one of the first to match the frequency of tinnitus in his patients. He would then produce the same note on a wind instrument so it could be prolonged over a period of time. He would increase the volume of the note until the tinnitus became inaudible for his patient.

The very first bedside maker was developed and introduced in 1928, two researchers, Jones and Knudsen presented the patient with an outside sound similar to tinnitus but only louder. This masker could be placed on a bedside table for patients experiencing difficulty sleeping.

In 1978 the first patent was given for a tinnitus masker. It was developed by Jack A. Vernon, Ph.D., and Robert Hocks Ph.D. Ear level tinnitus maskers are often referred to as wearable sound generators. Dr. Vernon became the father of modern Tinnitus Masking. He started a tinnitus clinic at Oregon Health Sciences University and began seeing patients. He offered the first wearable tinnitus maskers in 1976.

Digital amplification by itself has often partially masked tinnitus. These hearing aids amplify enough background noise to partially mask tinnitus sounds for many people.
There are many ways to mask tinnitus. CDs with broad band white noise or natural masking sounds are available. Bedside units are used by many people. These units can produce different sound tracks that emulate rain forest, seaside, rainy day environments, and many others. Sound pillows with small speakers embedded in the pillows are offered by several manufacturers. There are now apps of these various masking sounds that can be downloaded to an MP3 player or smartphone.

Wearable maskers are available and usually fit by audiologists. They would conduct a tinnitus assessment and hearing evaluation which will determine frequency and loudness of tinnitus and degree of hearing loss, if any. Wearable maskers can be:

**Hearing aids.** Hearing aids can help people with hearing loss and in many cases besides improving hearing they also reduce tinnitus symptoms. There seem to be two or more reasons for this. First, tinnitus is exacerbated by silence because the brain turns up its sensitivity by seeking the neural stimulation it’s being deprived of due to hearing loss. Amplification increases neural activity and assists the brain in turning down its sensitivity. Second, hearing aids amplify enough background noise to partially mask tinnitus sounds for many people. **Often tinnitus is accompanied by hearing loss, auditory processing difficulty (understanding speech in competing background noise) and hyperacusis (abnormal sensitivity to even moderately loud sounds).** Such listening difficulty can increase stress and worsen the tinnitus. These advanced hearing devices may improve hearing in a wide variety of listening environments, eliminate or alleviate tinnitus and help desensitizing those who are overly sensitive to sound.
If amplifying and clarifying speech is needed, these digital hearing instruments have advanced sound/noise management technology to improve speech understanding in a wide variety of listening environments. While wearing these instruments, **most of our patients report initially at least some reduction in their tinnitus.** These hearing instruments are successful because they amplify speech and other sounds of life that mask the tinnitus and make listening to conversational speech easier resulting in reduced stress. They may actually alter the production of tinnitus due to the reduction in contrast between tinnitus and silence, or because of the new stimulation provided to the brain.

**Tinnitus maskers/hearing aids or Tinnitus Instruments.** These devices are a combination of a hearing aid and a tinnitus masker in the same instrument. Tinnitus masking used to be prescribed to patients who did not have significant hearing loss. With the emphasis of amplification now changing to easier listening, even those with pure tone thresholds within the traditional range of normal hearing (0dB to 25dB) can now be helped with advanced hearing aids.

These advanced hearing aids have amplification as well as tinnitus sound therapy. The tinnitus sound therapy is designed to be more acceptable to the patient than the sound of the tinnitus, this could include narrow band noise, fractal tones or music. The brain can very easily learn to ignore external sound, especially if it’s at a constant level and frequency, though it has much more difficulty ignoring internal sound such as tinnitus. Therefore, if you mask the tinnitus externally, your brain will learn to ignore it and therefore ignore the tinnitus itself. There are many advantages to
tinnitus instruments and they seem to have a higher level of success than either hearing aids or maskers,

One important side effect that occurs in a small number of people who have tinnitus maskers is after the maskers are turned off, the tinnitus continues at the reduced level for a period of time. This is referred to as Residual Inhibition. For most people this lasts a very short time but for others it can last a considerable amount of time. The amplification on a tinnitus instrument can be turned off while the masking is left on to provide relief throughout the night. Also, it’s important to note that residual inhibition never occurs from wearing a hearing aid. It appears that the constant stimulation of the masker is necessary to produce the inhibition.

As hearing aid amplification effectiveness in competing noise and tinnitus maskers alleviation of tinnitus have improved, the way they are evaluated has not kept up. Hearing Aid/Masker solutions have been developed that can lessen tinnitus of many. This is the age of amazing hearing aid technology. Some of these state-of-the-art hearing aids with tinnitus sound therapy and amplification capability out to 12 K Hz., along with feedback reduction ability to allow open ear fittings have reduced and even eliminated tinnitus.
If You Have a Hearing Loss and Tinnitus
Easier Listening Can Mean Less Tinnitus

Most patients I see daily report having difficulty hearing in less than optimal listening situations. They rely on visual cues to augment auditory information, have a reduced enjoyment of music, and feel isolated because they have difficulty understanding speech when the speaker is unfamiliar. It is not uncommon that people in their thirties, forties and early fifties have difficulty hearing and understanding soft or distant conversation when surrounded by the competing sounds confronted in their busy lifestyle.

A reason for their difficulty may be their auditory processing and poor hearing in the higher test frequencies. One major aspect associated with an auditory processing disorder is difficulty listening in the presence of background noise or reverberant environments. The auditory nervous system appears to become less flexible with age, meaning that processing conversation, especially with background noise or competing speech, can be increasingly challenging.

People are living longer than ever. It is common for a patient 85 years or older to be seen at my practice. We are becoming more acutely aware of auditory processing difficulties due to aging. Older people are more socially active than ever with very demanding listening lifestyles.

Most patients just don't need speech to be made louder. The chief complaint is that they can have difficulty hearing speech and can't understand it in the listening environments they find themselves.
Most People Don’t Have Quiet Easy Listening Lifestyles

Today, an older person’s challenging listening environments may include a:

• Meeting or church
• Dining room or restaurant
• Inside a traveling car, train or airplane
• Noisy public place like an airport or train station
• Theater or cinema
• Cocktail party
• Court room
• Doctor’s office or hospital
• Shopping Mall

More and more younger people that I see have normal peripheral hearing acuity based on the results of their audiometric testing. However, they have similar difficulty understanding conversation in the competing noise listening situations they face. For many, their listening lifestyle is very demanding. In addition to many of the venues already discussed, they need to hear soft conversation at:

• their office while surrounded by other desks with co-workers talking on their phones or with each other
• their health club with others exercising around them
• meetings ranging from business, civic, church to PTA
• a meeting with their family or their parent’s health providers
• a restaurant meeting with clients
• a shopping mall or while traveling via their Bluetooth phone
Many of these patients have also reported having tinnitus (head noise) that is commonly the result of high levels and/or long-term noise exposure. The world is getting noisier all the time. More will be said about tinnitus later this other book.

This difficulty hearing and understanding conversation when in competing noise can primarily be due to a high frequency peripheral hearing loss that renders many speech sounds inaudible. This high-frequency hearing loss would make it difficult for these younger adults to hear high-frequency, low-intensity speech sounds, many of which are information-bearing consonants. If their hearing in the lower test frequencies (below 1000 Hz.) was found to be in the normal hearing range an open-ear style digital hearing aid may be sufficient to meet their listening needs.
How Much Hearing Aid Technology Do You Need?

Hearing aid manufacturers have a selection of hearing instruments in several different levels of technology and a wide variety of hearing aid styles. When selecting a level of hearing aid technology if you are the prospective hearing aid wearer, you need to estimate your difficulty hearing while in noise or in a group along with your listening needs and listening lifestyle.

In general:
- the more difficulty understanding conversation while in a group,
- the more active the listening lifestyle,
- the older the patient,
- the worse the auditory processing ability (ability to hear speech while in competing noise as well as to understand rapid speech),
- the more difficulty adjusting the hearing instruments, require a higher the level of hearing aid technology.

If your goal is to have easier listening resulting in less stress and hopefully tinnitus reduction, you should select a level of technology that is appropriate for your listening lifestyle, hearing loss and auditory processing ability.

Things you need to consider is listening lifestyle, hearing loss and audiogram, impact of tinnitus and your hearing ability in noise.

Listening lifestyle
Busier, more complex listening lifestyles require the more hearing aid technology. Your listening lifestyle could be considered complex if you
- live with others,
- socialize regularly,
- work in an office and need to understand conversation in competing office background noise and babble
• go to restaurants, shopping malls, attends meetings
• meet clients in restaurants, travel by train or plane and frequents train stations, airports,
• attend meetings,
• work out in clubs,

You need to consider the more advanced hearing aid technology, the greater your hearing loss, especially in the higher test frequencies. The more severe the slope of your audiogram the more you should consider advanced hearing aid technology.

Estimating the personal cost of your hearing loss is necessary when determining an appropriate technology level of new hearing aids. It is almost impossible to compare the everyday long term psycho-social and cognitive cost of you hearing loss with the price of amplification. You should instead spread the price over the 5 to 6 year life of the hearing aids. It would be better to estimate how much alleviating your hearing loss and tinnitus is worth per month or per day. In this way you can estimate an appropriate cost benefit.

For example, it could be expected that a new hearing aid could last at least between 5 and six years. To estimate the daily cost you could divide the hearing aid cost by 2000 (the number of days of the average life of a new hearing aid). If you think easier listening, tinnitus relief and lessening the psycho-social and cognitive costs of your hearing loss for a day is worth a cup of coffee (about $2) then a budget of $4000 for you new hearing aid with an appropriate technology level. For the additional cost of a muffin ,you could budget $6000 for a set of new hearing aids. These devices would be equipped with highest level of technology.
No Way To Buy A Hearing Aid

Imagine purchasing a state-of-the-art stereo system without even hearing it. This system can cost $5000 or more! This system has such advanced technology that it can be fine-tuned to your hearing thresholds as well as a number of other aspects of your hearing giving you an optimum truly customized sound. In place of listening to it and hearing its truly customized sound, you instead read a brochure about the system, talk to the sound technician and purchase the new system. To increase your risk you decide to purchase it on-line from people you don’t know and have them just drop ship it to you.

This isn’t the best way to purchase high end stereo equipment and it’s not the best way to purchase today’s advanced hearing aids. Yet this is the way more and more people are purchasing their hearing aids.

If the hearing instruments are purchased online, the prospective wearer will not have the opportunity before the purchase to meet with a hearing healthcare professional to interpret the hearing test results and assess listening needs and lifestyle. Nor will there be an opportunity for real time adjustments to the hearing aids in response to observations by the person purchasing the hearing aids. Fine tuning of the instruments while being worn is not possible in distant fitting. There is no opportunity to see the device, touch it, put it on and wear before it is bought and paid.

When also trying to treat tinnitus through the use of these hearing aids equipped with tinnitus sound therapy, it is absurd to try to do it on line. Assessing, programming, fine tune adjusting, modification of acoustic and electro-acoustic aspects and aftercare would be impossible.
Today’s listening lifestyles and digital hearing aid technology and tinnitus treatment require a new way to purchase hearing aids. Hear Well Again Centers has developed a unique Just Listen program that revolutionizes the way advanced digital hearing aids are currently being purchased.
Just Listen and Believe Your Ears

Hear Well Again Center’s has a unique demonstrator hearing aid program where patients have the opportunity to wear specially programmed multiple program/multiple microphone digital hearing instruments approximating several technology levels. These patients can wear these devices in their own listening environments with people they need to hear. They can then select the hearing aid technology level that best meets their listening requirements. The demonstration period is usually one to two weeks and is FREE! Hearing instruments with the chosen technology level can then be fit on a 30 day trial.

Hear Well Again Centers with its Just Listen program utilizing advanced digital demonstrator hearing aids enables those considering hearing aid and hearing aids with tinnitus sound therapy to improve their hearing and/or lessen their tinnitus to listen to, wear and evaluate the latest digital devices and assess them in their everyday lives. It gives them an opportunity to sample digital amplification at no risk before new devices are ordered and fit.

Just Listen would make it easy for you to experience the latest digital hearing aid technology. You could walk out and wear these instruments for a period time ranging from a couple of days to one or two weeks.
TINNITUS TREATMENT

While there are a number of things correlated to tinnitus, simply lessening or eliminating them from your life probably will not cause the tinnitus to vanish. No longer being around high levels of noise, cutting down on caffeine or salt etc. rarely by themselves will be the single magic remedy. While more holistic solutions like dietary changes, relaxation therapy, cognitive therapy, tinnitus retraining therapy etc. may be successful, they will require more time and sustained effort than some people can afford or are willing to devote. At Hear Well Again Centers we want to utilize technology since it often works and can be very efficient.

The most commonly used sound solutions are amplification and masking. If amplifying and clarifying speech is needed, digital hearing aids would be part of the sound solution. While it is not clear whether hearing aids help by amplifying background sounds that mask the tinnitus or by actually altering the production of tinnitus, most hearing aid wearers report at least some reduction in their tinnitus. This may be due to the reduction in contrast between tinnitus and silence, or because of the new stimulation provided to the brain. Digital hearing aids, appropriately fit, have been able to alleviate some tinnitus in 40% to 50% of the wearers.

The goal of tinnitus masking is to make the tinnitus less noticeable. The digital hearing aids we use provide amplification as well as masking. Masking typically involves the use of noise played at a volume equal to or louder than the perceived tinnitus. There is a wide variety of masking noise and this noise, using up to 20 channels, can even be matched to the tinnitus.

It is important to draw distinctions between masking and suppression, as the two are often used interchangeably. Masking can be divided into two types, total and partial. With total masking, the external sound is played loudly enough that the tinnitus can no longer be heard. However, some patients are unable to mask
their tinnitus totally or can do so only at intolerable sound levels. In such cases, partial masking is employed. With partial masking, the external stimulus is played at nearly equal levels to the perceived tinnitus or at a tolerable level softer than the tinnitus.

When we use masking noise and amplification together, we are finding that a growing of patients report no longer hearing either the masking noise or their tinnitus. Since this is such a new dramatic development more research is needed to gain more insight.

In suppression, with a gradual step down procedure, a sound is presented that is softer than the level of the tinnitus and may eventually completely habituate or eliminate the perception of the tinnitus. The overall level of this sound is less than the tinnitus alone.

Another important distinction between masking and suppression is the time course of their effect on tinnitus. Masking of tinnitus is typically instantaneous, while suppression of tinnitus takes time to develop (from several seconds to several minutes) suggesting different neural mechanisms for the two methods.

Tinnitus can change in pitch and intensity, hearing can change and the hearing devices with sound therapy must have the versatility to be quickly adjusted by the wearer and/or reprogrammed by the audiologist. We use hearing instruments with the maximum available versatility/fitting range and unlimited reprogramming or adjustment aftercare so the wearer can be confident with the long term effectiveness of the tinnitus solution.

Treatments used to alleviate tinnitus or lessen its effects have one thing in common. Up to now they are based on the assumption that tinnitus cannot be eliminated. Therefore, the object has been to get the person accepting of tinnitus and learn to ignore it.

Most of the people suffering from tinnitus usually have a hearing loss due to damaged delicate parts of the inner ear - the cochlea.
and its associated parts. These nerve fibers tend to discharge synchronously in the auditory system so that the audio system cannot discriminate between sounds. While digital amplification has helped improve hearing up until recently it has not been able to significantly lessen tinnitus.

The reason why many feel that a tinnitus cure is next to impossible is because the root cause of this ear noise often is unidentified. There are theories about the physical changes in the inner ear or neural pathways or the brain that cause tinnitus but nothing more.

New breakthrough hearing aid technology with sound therapy has emerged after years of research and development. It is game changing because hearing devices with this new technology have been able to eliminate tinnitus when wearing these devices. **Tinnitus elimination is now for the first time within reach.**

Sound therapy coupled with dietary changes, avoidance of loud noise which can exacerbate tinnitus, use of amplification causing more relaxed hearing, successful mediation of stress and its physical effects can be combined to significantly lessen or eliminate tinnitus.
HEAR WELL AGAIN CENTERS TINNITUS PROGRAM

**Tinnitus Matching**
Hear Well Again Centers assessment of tinnitus begins with an in-depth questionnaire. After understanding the impact, history and characteristics of the tinnitus, tinnitus pitch and minimum masking levels will be determined with some of the newest and most advanced hearing instruments. This tinnitus assessment usually takes about 30 minutes.

**Time Efficient Solutions**

**Tinnitus Treatment**
There is a good chance that tinnitus can at least be alleviated with amplification and customized sound therapy. Hear Well Again Centers provides sound solutions that work to alleviate and habituate tinnitus.

Hear Well Again Centers has a unique sound therapy program. People will be fit with advanced digital devices and taught to readjust them to gradually reduce their tinnitus.

At Hear Well Again Centers we would like to provide tinnitus relief for people relatively quickly. We know that time and money are at a premium and would like to use technology to provide tinnitus alleviating. Our patients can learn how to suppress their tinnitus using state-of-the-art hearing aids with tinnitus therapy. We want a masking solution that can be sustained easily. In order to be successful the tinnitus remedy must be maintained. Tinnitus solutions must fit the busy lifestyles of the many people who seek our assistance. We take advantage of the technology breakthroughs in tinnitus sound therapy.

Typically after a hearing evaluation and tinnitus assessment we can lessen or eliminate tinnitus within 30 minutes for a majority of those we see. Most the time when tinnitus is lessened, the initial success will be improved.
Hear Well Again Centers has a unique sound therapy program that can provide sound solutions to initially mask and eventually suppress the tinnitus. Instead of just trying to mask the tinnitus, at Hear Well Again Centers, people can be taught to gradually use their instruments to suppress their tinnitus to elimination.

**Often tinnitus is accompanied by hearing loss, auditory processing difficulty (understanding speech in competing background noise) and hyperacusis (abnormal sensitivity to even moderately loud sounds).** Such listening difficulty can increase stress and worsen the tinnitus. These advanced hearing devices may improve hearing in a wide variety of listening environments, eliminate or alleviate tinnitus and help desensitizing those who are overly sensitive to sound.

If amplifying and clarifying speech is needed, we fit digital hearing instruments that have advanced sound/noise management technology to improve speech understanding in a wide variety of listening environments. While wearing these hearing instruments, **most of our patients report initially at least some reduction in their tinnitus.** These hearing instruments are successful because they amplify speech and other sounds of life that mask the tinnitus and make listening to conversational speech easier resulting in reduced stress. They may actually alter the production of tinnitus due to the reduction in contrast between tinnitus and silence, or because of the new stimulation provided to the brain.

If there is no hearing loss, *tinnitus sound generation (TSG)* in these hearing devices may be able to initially mask and eventually habituate tinnitus. Amplifying ambient background sound can reduce the loudness or prominence of tinnitus.

If you have a hearing loss and experience tinnitus and want relief, you need to try these new high technology digital hearing aids. They may be the easiest, most effective, most immediate solution.
Hear Well Again Centers makes it possible for people to try these digital aids at no charge for one week to experience their benefit in the environment where they live and the people they meet. Afterwards, new digital hearing instruments can be fit on a trial basis. Fitting these instruments after the tinnitus assessment takes about 30 minutes.
Set the Foundation for a Successful Resolution

Minimize Triggering Your Tinnitus

Sometimes a patient can recall a particular time when his or her tinnitus first appeared. This patient may attribute the tinnitus to a particular event. In this instance the event would trigger the tinnitus and would thereby be a trigger for his or her tinnitus.

A trigger is something that activates or sets off an event or response. Hyperacusis has been reported in approximately forty percent of those people with tinnitus. Hyperacusis is a health condition which causes an over-sensitivity to many sounds including specific frequencies. It is not surprising that many of those with tinnitus report exposure to a loud noise has triggered their tinnitus. This loud sound could be a gunshot, jet engine, dragster or race car. It could be an innocuous sound such as hammering or using your snow blower or lawn mower.

Besides loud sounds, there can be a number of triggers for tinnitus. These could include:

food consumption (salt, alcohol, sugar, flavor enhancers, nicotine, artificial sweeteners, caffeine, tonic water, chocolate). If through trial and error these are identified as triggers, cutting down on their use can lessen the chance of experiencing tinnitus.

Stress - If the tinnitus is louder at the end of the day than at the morning, stress may be a trigger.

Aspirin - excessive use not one or two tablets a day
Expect Success

While the actions and words of others can and do shape our opinions and expectations about our future, ultimately our expectations and opinions are what matters most. We own these expectations and they no longer are those of neighbors, friends co-workers etc.

You need to do understand the dimensions of your tinnitus and/or hearing loss. For only then can it be said that in the final analysis you expected….

In the initial consultation, a number of times I find that the tinnitus sufferer has negative, pessimistic expectations about tinnitus reduction and hearing improvement. When this occurs I try to program the amplification and sound therapy to produce an initial positive wow effect that helps to build their confidence in the future of alleviation of their tinnitus and hearing difficulty. This person may need to be wowed by the clarity, natural sound and comfortable feel of amplification, or the negative voices in their heads will keep telling them that any intervention or help will be unsuccessful, a waste of time and ultimately disappointing. Success can be built on this initial positive experience with amplification and/or tinnitus reduction and help ensure the path toward more progress.

Your hearing improvement and tinnitus reduction or elimination will depend in part on your confidence these goals are achievable. A certain amount of doubt or skepticism along with concerns about risking time, money and possibly being disappointed is normal but going into the process with a certainty that nothing can be improved is not helpful.