signia

Life sounds brilliant.

Tinnitus relief.

Valuable information, practical solutions, and helpful tips.

Hearing Systems

SIEMENS

signiausa.com/tinnitus

When tinnitus takes control.

Our world is alive with sound. Laughter, unforgettable melodies, waves breaking on the shore – all these sounds enrich our lives and are literally music to our ears, lifting our mood. However, what happens when one sound suddenly takes control?

Tinnitus is described as a phantom auditory perception – perception of a sound in the absence of an external sound signal. This may affect one or both ears. A tinnitus diagnosis is often a surprise. Unfortunately, some patients often learn from their doctors that their "ringing-in-the-ears" is untreatable. This kind of information makes patients feel isolated and convinced that no one can understand what they are going through. Because tinnitus has many causes, there is no specific medication or patient cure. Despite this, even for chronic tinnitus, there are ways to find relief and take control. The information in this brochure is designed to help patients and their loved ones come to terms with a tinnitus diagnosis, and to inform them of what they can do to actively address the problem.

[1] Crummer RW; Hassan GA. Jan, 2004.
[2] Tyler, R. Tinnitus Handbook, 2000.
[3] Kochkin, S., Tyler, R. and Born, J. MarkeTrak VIII: Prevalence of Tinnitus and Efficacy of Treatments, The Hearing Review, Vol. 18 (12), November 2011, pp. 10-26
[4] Barnea G, Attias J, Gold S, Shahar A. Tinnitus with normal hearing sensitivity: extended high-frequency audiometry and auditory-nerve brain-stem-evoked responses. Audiology 1990; 29:36-45.
[5] Langguth B, Kleinjung T, Fischer G, Hajak P, Eichhammer P, Sand PG. Tinnitus severity, depression and the big five personality traits. Prog Brain Res. 2007; 166:221-7.

Addressing tinnitus

Facts about tinnitus

- Tinnitus is a common disorder with many possible causes.[1]
- Tinnitus mechanisms are often related to spontaneous activity of nerve fibers.[2]
- 10 % to 15 % of the population suffers from chronic tinnitus (over six months).[3]
- Over 90 % of people with tinnitus are also affected by hearing impairment.[4]
- About 20 % of patients with tinnitus find the symptoms difficult to endure.[5]
- The prevalence of tinnitus is correlated with degree of hearing loss; however, all levels of hearing loss can experience tinnitus.[3]

Tinnitus comes in many forms.

The term *tinnitus* comes from the Latin verb *tinnire*, which means "to ring". The noise differs from one person to the next in nature, pitch, and volume. Many describe the noise as a whistling, hissing, roaring, or ringing in the ears.

If this type of noise occurs only temporarily and soon disappears again, for instance after a loud concert, it is called acute tinnitus. For millions of people, though, the noise is permanent (more than six months), thus developing into chronic tinnitus. The large majority of these individuals perceive the noise as a source of only minor irritation or no irritation at all. Around one in five, on the other hand, describes the experience as unpleasant to unbearable. A significant number of people are so affected by tinnitus that it impairs their quality of life. In 90 % of cases[1], tinnitus is accompanied by a hearing impairment.

Subjective and objective tinnitus

Tinnitus can be classified into two categories: objective and subjective.

- The more rarely encountered objective tinnitus is also perceptible to another person, and can be directly measured by a Hearing Care Professional. Generally, it can be treated medically.
- Subjective tinnitus, on the other hand, is only audible to the sufferer. The tinnitus is internalized – with no direct external noise source. Although this type of tinnitus cannot be measured by standard audiometric testing procedures, it is possible to ask the patient to match the pitch or sound of their tinnitus to known sounds. It is a very real affliction. However, there are ways of coping with this condition and alleviating the discomfort of subjective tinnitus.

[1] Barnea G, Attias J, Gold S, Shahar A. Tinnitus with normal hearing sensitivity: extended high-frequency audiometry and auditory-nerve brain-stem-evoked responses. Audiology 1990; 29:36-45.

Tinnitus – terms and forms

What causes tinnitus, and how can it be identified?

Tinnitus can occur within the auditory system or externally. In most cases, tinnitus is caused by a combination of different factors.

A hearing care professional can start you on the path to managing your tinnitus.

Tinnitus is most commonly (but not always) associated with hearing loss. This may be due to a blast injury or exposure to exceptionally loud music. Tinnitus also frequently occurs together with sudden hearing loss. It's worth noting that tinnitus does not trigger sudden hearing loss. Aside from damage to the auditory system, tinnitus can also be caused by jaw joint dysfunction (e.g., teeth grinding) and chronic neck muscle strain.

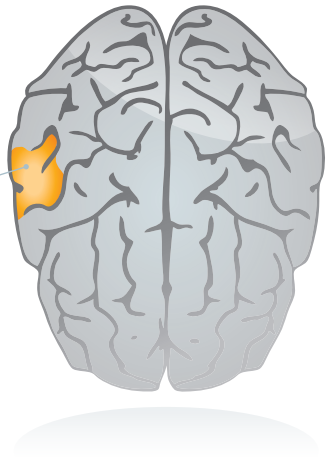
Stress is the single most commonly quoted cause of tinnitus. However, so far there is no scientific basis for assuming a connection between stress and tinnitus. But tinnitus can cause stress. Noises – even those in the head – are perceived more acutely when the person is tense than when in a relaxed state of mind.

Some medications – for instance, painkillers, or medicines that treat rheumatism and malaria – can set off tinnitus. Once medication is stopped, the noises usually disappear, too. Chemotherapy medication used for treating cancer and, in rare cases, antibiotics, may however irreparably damage the inner ear, resulting in permanent tinnitus.

Tinnitus diagnosis.

Tinnitus is individually perceived by sufferers. So before proposing a certain therapy, an exact diagnosis is essential to establish whether the case can be medically treated or not. Your doctors may conduct ENT, dental, orthodontic and orthopedic examinations to determine a diagnosis.

A hearing test can reveal whether hearing impairment is also involved. The pitch and volume of the tinnitus can also be established by special diagnostic tests. Recently developed imaging processes show that tinnitus is not exclusively related to the ear, but that certain areas of the brain may also be involved in the perception of tinnitus.[1]



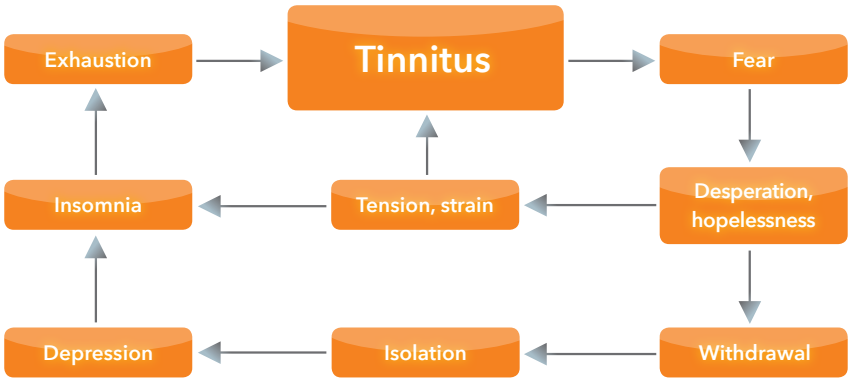
[1] Jane L. Weissman, MD Barry E. Hirsch, MD: Imaging of Tinnitus. A Review From the Department of Radiology and Otolaryngology, Oregon Health Sciences University, 3181 SW Sam Jackson Park Rd, Mail Code CR-135, Portland, OR 97201-3098 (J.L.W.), and the Department of Otolaryngology, University of Pittsburgh Medical Center, Pa (B.E.H.). 2000

Keeping the symptom under control.

The extent to which tinnitus affects a person's life depends on various factors: the volume, frequency, duration of the noise, and on the person's individual perception of it. Tinnitus itself is not regarded as an illness but as a symptom, similar to pain. In contrast to an illness where the goal is to cure the cause, one can often only treat tinnitus as a condition. It's mainly a question of controlling the noise in the ear. Even if tinnitus isn't an illness in itself, it can assume the proportions of an illness. When excessive, the strain caused by tinnitus may cause sleeping problems, fear, and depression.

Why can't you get used to tinnitus?

When tinnitus occurs for the first time, it is quickly perceived as a nuisance, the unusual noise draws attention to itself. Initially, the sufferer might try to rest and refrain from social contact. However, this only focuses more of the person's attention on the tinnitus and gradually takes over. As a result, a growing feeling of despair at being unable to do anything about the noise, coupled with the fear that it might get worse, ensures that the brain focuses on the tinnitus. To avoid this vicious cycle, the sufferer has to push tinnitus out of the limelight – and win back control of his or her life.



FAQs – frequently asked questions

Do I have to worry about sudden hearing loss if I'm affected by tinnitus?
Tinnitus is not the cause of sudden hearing loss. Although tinnitus may occur after sudden hearing loss, it can never cause it.

Can tinnitus cause deafness?
Tinnitus often accompanies impaired hearing, but does not cause it. People who hear well otherwise can also suffer from tinnitus.

Do I have to assume that my tinnitus will get worse over time?
That depends on how you manage tinnitus. Although it has a physical (e.g. neurophysiological) cause, the extent to which you suffer from it greatly depends on how your brain deals with the experience. A person's perception often depends on his or her frame of mind.

Learning to cope with tinnitus.

Even if no specific cause is determined, tinnitus can be treated. There are many options to help patients find ways to cope with their condition. This means changing habits and attitudes so that tinnitus no longer controls your everyday life. The term *tinnitus management* covers various ways of adopting a new approach to tinnitus.

Cognitive-behavioral tinnitus training, for instance, is very promising. Your personal mindset and feelings play a decisive role in this method. Training sessions with varied content promote self-help. Training focuses on targeted information, an analysis of the person's behavior, practical exercises, and positive experiences. Cognitive-behavioral tinnitus training focuses on the following aspects:

- ***Learning more***
- ***Changing habits***
- ***Relearning hearing***

Learning more

- Detailed explanation of the tinnitus symptom: fact and fiction
- Why is it so important not to listen to tinnitus, and what role is played by our emotions and inner feelings?
- What role does stress play concerning tinnitus?

Tinnitus management

Changing habits

- Learning relaxation methods
- Practicing imaginary journeys to elicit positive emotions
- Transforming negative thoughts and attitudes into a positive ("I can beat tinnitus") mindset
- Weaning off habits that encourage tinnitus, withdrawing from your circle of friends, avoiding activities
- What to do if tinnitus should come to the forefront again (accustomizing techniques)

Relearning hearing

- Acoustic stimulation and training for use of hearing instruments, tinnitus therapy signals, combined devices, or other audio sources to deflect attention away from tinnitus

Minimizing the effects of tinnitus.

Modern technology can help manage tinnitus. The main principle is acoustic stimulation. This means allowing your brain to hear and, therefore, focus on external sound rather than tinnitus.

Therapy signals

These signals can be presented to people without hearing loss via hearing instruments but do not amplify the sounds in the environment. They generate a soft murmur that is mixed in with the tinnitus to distract the patient. Therapy signals generally offer considerable relief from tinnitus.

Hearing instruments

In most cases, wearing hearing instruments both improves hearing and alleviates tinnitus. The reason being that if you can hear better, you can also ignore tinnitus better. Hearing instruments pick up ambient sound over a microphone and amplify it before passing it onto the ear. This enables wearers to better focus on the noises, sounds, and tones around them. The rustle of leaves in the forest, friendly conversation, or beautiful music restore the emphasis on pleasant hearing impressions and narrow the scope for tinnitus. In many cases, users don't hear the tinnitus at all as soon as the hearing instrument is switched on.

Tinnitus combined devices

Some hearing instruments also feature therapy signals. What is the benefit of this combination? As hearing instruments can only amplify noises actually present around us, they are of little use as tinnitus therapy tools in very quiet hearing environments. This is when the therapy signal function can be helpful. In these situations, the device can generate a soft noise to distract the patient from the tinnitus. In modern hearing instruments, like those from Signia, various hearing programs can be selected at the touch of a button – hearing instrument function, therapy signal, or a combination of the two. Your Hearing Care Professional will be happy to tell you more.

Signia hearing instruments with tinnitus therapy feature.

Insio™ Customs

Ace™

Pure®

Carat™ / Carat A

Motion® PX

Aquaris™

Motion® SX/SA

Siemens Life™

Nitro® / Nitro Customs

The tinnitus therapy feature in detail:

- Separate therapy signal generator
- Pre-programmed therapy signals: white noise, pink noise, speech noise, and high-tone noise; plus natural ocean waves signals
- Individual fine-tuning of therapy signal program for up to 20 bands
- Three operating modes: microphone signal only, therapy signal function only, mixed mode

●●○○ Suitable for mild to moderate hearing impairments ●●●○ Suitable for mild to moderately severe hearing impairments ●●●● Suitable for mild to profound hearing impairments

Tips for living with tinnitus.

So take heart – you can beat tinnitus. A positive attitude is very helpful. Relaxation techniques, an active social life, sports and hobbies can assist you in taking control of your life – even with tinnitus. On the following page, we've summarized a few practical tips, recently developed by Signia together with ENT physicians, psychologists, and audiologists.

Practical tips

Relearning how you hear

Listen consciously to the world around you. Enjoy your favorite music or simply the sound of birds in the trees. Everything that provides your ears with varied sound impressions deflects attention away from tinnitus.

Tips for recuperative sleep

The more active you are during the day, the easier it is to sleep at night. Avoid black tea, coffee or heavy meals in the evening. Neither alcohol nor sleeping pills guarantee restful sleep – a warm bath before you go to bed is a better option.

Get active, stay on the move

Relish life with family and friends, and organize your private life to include plenty of activity and variety. Keep an open mind. Everything that increases your personal sense of well-being and enjoyment of life decreases tinnitus' hold over it.

Avoid silence

Give yourself a break now and again. However, avoid complete silence, which is an open invitation for tinnitus to take hold. Opt for enjoyable sources of sound stimulus – an audio book or relaxing music.

Promote your physical fitness

People who participate in sports are healthier and this also applies to people with tinnitus. Everything you enjoy doing and that tests your physical fitness is good for you. Even if your tinnitus seems louder when engaging in sports, it is no cause for concern.

Learn to relax effectively

Because tinnitus causes tension, it is important to learn relaxation methods and use them regularly. Some recommended relaxation methods are Feldenkrais, yoga, tai chi, and qi gong.

Get more information

Visit the American Tinnitus Association website: ata.org

The information in this document contains general descriptions of the technical options available, which do not always have to be present in individual cases and are subject to change without prior notice.

Legal Manufacturer
Sivantos, Inc.
10 Constitution Avenue
Piscataway, NJ 08854
Phone: (800) 766-4500
Fax: (732) 562-6696
www.sivantos.com

signiausa.com

SH201622 3/16 22B771 200 SI/16575-16