

Tinnitus - Taking Control



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Introduction

This brochure has been produced as a reference guide to explain tinnitus and to assist in finding successful means of taking control and managing tinnitus. The research undertaken has explored medical journals and collated information from manufacturers and organizations actively involved in the treatment and management of tinnitus. It is aimed at adults suffering from tinnitus that need information and a way forward to seek the right kind of help and support.

We hope that you will find the information enlightening and a starting point for further discussion with your clinician. Several factors need to be taken into account when formulating the right management plan for you. This brochure in itself will not contain everything there is to know on the subject of tinnitus however it provides a brief overview of treatments, counseling and support that is available to you, and provides some background information and a foundation to increase your knowledge that will ultimately lead to finding a solution that works for you.

What is Tinnitus?

Tinnitus is the perception of sound in the absence of an external acoustic sound stimulus. It is possible to be aware of sound even though there is no sound present. It can be heard in one ear, both ears, from anywhere inside the head or outside the head (Lungguth 2013).

Tinnitus is relatively common with persistent tinnitus being experienced by approximately 10% of the population in the United Kingdom. It tends to occur with increasing age and the onset of hearing loss and is commonly reported by people who have a reduced tolerance to sound known as **hyperacusis**. (Kay 2008).

Many people learn to live with tinnitus, however tinnitus severely impairs the quality of life of about 1–2% of all people. Surveys conducted in Norway reflected that 21·3% of men and 16·2% of women suffered with tinnitus, with 4·4% of men and 2·1% of women reporting high tinnitus intensity.

These results were also consistent with figures reported in the USA, Japan, Asia and Africa. It is fair to say that tinnitus is a global issue affecting millions of people. (Lungguth 2013).



Did you know...?

Tinnitus can be categorized as **objective** or **subjective**. Objective tinnitus is a noise generated in the body that can be measured with specialized powerful microphone equipment.

It can be caused by abnormal blood vessel pumping activity in the proximity of the *tympanic membrane* (ear drum) or from the muscles in the middle ear.

Most tinnitus however is subjective and occurs without any external sound source. It can be perceived as throbbing, pulsing, hissing, ringing, whistling or buzzing.



Tinnitus Triggers

Sudden loud impact sounds like shooting or blasting can trigger tinnitus. Exposure to excessive noise from power tools, engineering, loud music and pop concerts can cause tinnitus depending on the volume and duration of exposure. People who have worked in noisy environments over a period of time often end up with a noise induced hearing loss and or tinnitus.

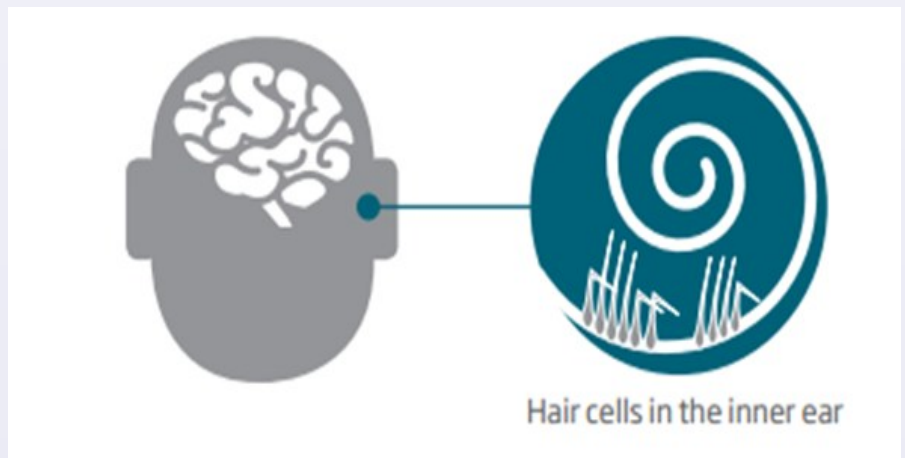
Drugs that are poisonous to the ear are known as ototoxic drugs. The inner ear has a rich nerve and blood supply and certain drugs can cause permanent damage that can lead to hearing loss and tinnitus. They can also worsen or accelerate hearing loss and tinnitus.

Hearing loss is one of the most common causes of tinnitus. Hearing loss can be conductive or sensorineural. A conductive loss is any impairment in the transporting of sound from the entrance of the ear to the inner ear.

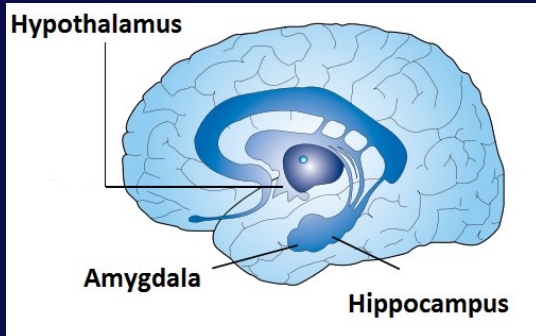
What can cause a conductive loss? A conductive loss can develop from impacted wax. Wax removal by micro suction or syringing can correct the loss, reopening the ear canal to incoming sound.

Ear infections that effect the ear canal, ear drum, or middle ear can cause a conductive losses that can trigger tinnitus. Treatment of these conditions can, but not always, correct the hearing loss and or tinnitus.

A sensorineural hearing loss is a hearing loss in the cochlear (the inner ear) where the hair cells responsible for responding to pitch and volume become damaged.



Did you know...?



The Limbic System – Emotional Control Centre in the Brain. (Widex).

When we hear tinnitus, a chain of nerve impulses fire in the **limbic system** - the emotional control centre in the brain. When the limbic system associates tinnitus with fear or threat, attention is directed toward the tinnitus.

The increased emotional awareness awards the tinnitus greater significance accentuating its presence and thus the tinnitus becomes a focal point. (Widex).

What can cause a sensorineural hearing loss (SNHL)? The most common SNHL is **presbycusis** (age related hearing deterioration). As hearing loss progresses tinnitus can get worse, change its pitch or perceived volume. Other causes: exposure to noise, infection and ototoxic drugs.



The tone of the tinnitus can change, intensify and be further aggravated by stress, lack of sleep, and in some cases by jaw movement. It can become a vicious cycle. You become more aware of your tinnitus and worry about what is causing it. The anxiety can effect sleep patterns and the lack of sleep and stress can make the tinnitus worse.

Stress from a divorce, court case, bereavement or trauma of any kind can trigger tinnitus even when there is no actual hearing loss present. Studies have shown that inner hair cell damage to certain hair cells can exist without a measureable hearing loss.

Focusing on the tinnitus and the anxiety that follows, can and does make it worse. A successful management plan would need to take into account not just the tinnitus itself, but also help to manage stress and anxiety.

The Brain and Tinnitus

If tinnitus can be present without hearing loss and can be triggered or aggravated by stress and anxiety, then our understanding surely needs to be deeper. Research into how we **feel** about tinnitus has provided some interesting results .

There is a link between **neural activity** (nerve function) in the brain and the emotion we associate with the tinnitus. Tinnitus can actually remain after the auditory nerve between the inner ear and the brain is severed. How is that possible? There is clearly more to tinnitus than a defective auditory pathway. The emotions attached to tinnitus have been mirrored with emotions linked to our fight or flight response.

One of these responses turns the sensitivity of our senses up to 'full volume'. Not only do our pupils dilate so that we see more, but our brain turns up its internal sensitivity so that we become aware of the slightest noise.

Success Stories:

"I cannot thank you enough for the help and support you have given me.

After the initial hurdle of accepting the fact I had a hearing loss, getting used to wearing hearing aids has been relatively easy.

I can hear better in almost all environments and no longer struggle to hear when I'm out with family and friends.

The aids have taken my focus off my tinnitus that used to be a constant intrusion. My family have noticed the positive changes with me. Overall I am significantly happier in myself." (M. Winter)

"My hearing aids have not taken my tinnitus away entirely but the relief is incredible. I was troubled with constant ringing in my ears and was not actually aware I had a hearing problem.

My quality of life has significantly improved by wearing hearing aids. I am generally calmer and much happier." (B. Henson)

Sounds are heightened because we are in emergency mode. Normally we do not even notice a creaking floorboard, unless it's important. A person with tinnitus has become hypersensitive so that they end up hearing things that other people would not detect. If this makes them anxious, their system then registers this noise as a threat, and locks onto it, monitoring its every movement. (Lungguth 2013).

Regardless of what has triggered tinnitus, it is the attention we award to the tinnitus and how we feel about its presence that triggers heightened neural activity. If we are to successfully manage tinnitus we need to somehow reduce the significance and attention we place on it.

Finding Solutions

The initial consultations with your clinician will involve taking your medical history and details relating to your lifestyle and habits. The health of your ears will be thoroughly assessed to look for any referable conditions i.e. wax or infection that may require medical attention.

Your case history will include discussions regarding what triggered the tinnitus, how and when it affects you and what impact it has on your life. Diagnostic assessments will look for hearing loss that may require further investigation. The assessment will check your thresholds against average normal hearing. If a hearing loss is determined, you may be a candidate for hearing aid trials. Hearing deficiency can result in your inability to hear certain tones or speech sounds.

Sound Therapy

Hearing Aids

Simple, corrective amplification can help to restore your ability to hear and can also help mask tinnitus. We can retrain the brain to hear sounds at a normal level and the restoration of clarity can be life changing.

If you are a candidate for hearing aid trials, a program will be set up to fit you with an appropriate prescription. Regular follow ups and reassessments will become a part of your management plan and your progress will be closely monitored.

Did you Know...?

In some exceptional cases, cochlear implants are used to treat more severe sensorineural hearing losses. A cochlear implant is a small, complex electronic device that can help to provide a sense of sound to a person who is profoundly deaf or severely hard-of-hearing.

The implant consists of an external portion that sits behind the ear and a second portion that is surgically placed under the skin (NIDCD).

Current research is being done into cochlear implants for treating tinnitus associated with severe hearing loss.



Examples of Hearing Aid Products. (Oticon)

There is a huge selection of custom built hearing aid products available. Some hearing aids have optional custom tinnitus maskers that can be activated or deactivated depending on their effectiveness. The masker generates a sound that can, as the name suggests, help to mask tinnitus.

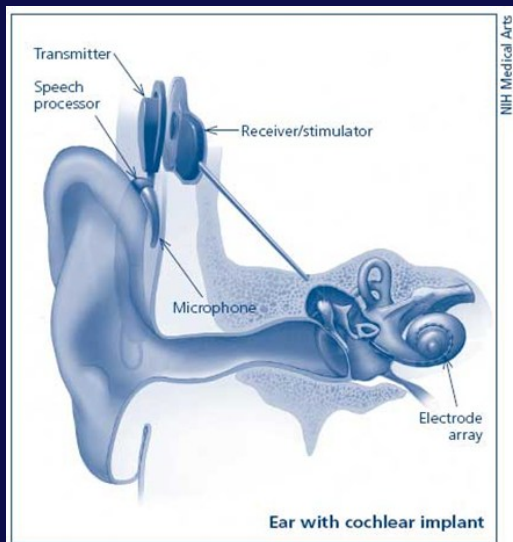
Such maskers have been used with varying degrees of success. They may or may not work for you personally, however the important thing to bear in mind is that they are available and can be trialled and your progress monitored.

We refer to your management plan as a patient journey. Each step along this journey is carefully outlined for you with as much support as you need. The terms of any trial, costs and time frames will be clarified and your regular follow ups will be scheduled for you.

Diagnostic tests can assess the pitch and volume of your tinnitus. This can be useful in its management and can help to select the most appropriate tinnitus masker. Hearing aids can be worn consistently throughout the day, but are taken out at night.

Tinnitus Maskers – Sound Therapy

Quiet environments, such as when you go to bed at night, can make you more aware of your tinnitus since ambient sounds around you are reduced. Hearing aids are useful during the day but you would typically take them out when you go to bed at night. Sound therapy Tinnitus relaxers or maskers can be useful during these times to create peaceful sounds and eliminate the silence.





Products with a variety of peaceful sounds to choose from are available. Some examples of soothing sound options: Heartbeat, Sea Waves, Running Stream, Birdsong, Woodland Glade, Falling Raindrops or simple White Noise (AOHL).

An alternative sound delivery is a pillow with built in speakers. This is useful to provide you with relieve while not disturbing your partner or spouse. The pillow incorporates two built in speakers that can be connected to a sound source such as a MP3 player. There is a large variety of environmental sounds to choose from (AOHL).

Please visit AOHL or The British Tinnitus Association (BTA) for a full range of sound therapy products—details under ‘useful contacts’ section of this brochure. If your own research has revealed alternative therapies/devices, please discuss these with your clinician.

Counselling & Support



Group counselling sessions can be a good way to learn how to manage your tinnitus. It enables you to meet with other sufferers and learn about the practical management techniques successfully used.

Meetings are held by trained councillors and clinicians offering practical advice on tinnitus management. The shared experiences helps you to realise you are not alone, that tinnitus is common and it can and has been successfully managed.

One to one counselling may also be arranged where necessary to provide more personalised support and assistance.

Relaxation Therapy

Breathing and relaxation exercises are a simple but effective means of controlling anxiety and reducing stress. This is a fundamental key to avoid aggravating tinnitus and taking control. These exercises will be discussed with you and the effectiveness monitored by your clinician. (<http://www.tinnitus.org.uk/relaxation>)

Tinnitus Retraining Therapy

Tinnitus Retraining Therapy (TRT) is a process of learning to manage your tinnitus on a conscious and subconscious level. It has been successful in helping many to achieve this. To illustrate how the treatment works, consider walking into a room with a noisy air conditioning unit humming away in the background.

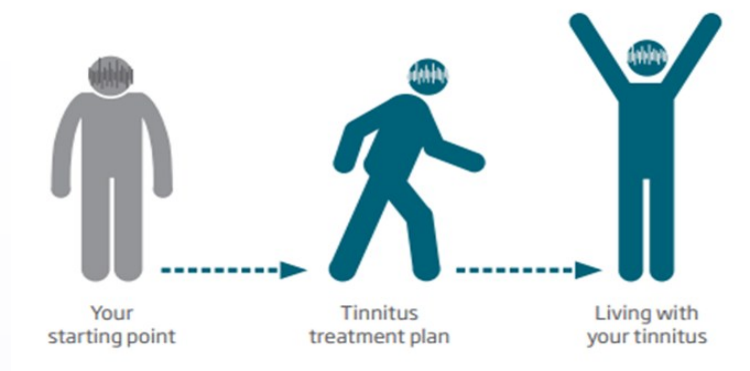
On first entering the room, you are particularly aware of the sound. However, once you have been in the room for a length of time, you automatically become conditioned to the sound and it has less importance and is in fact ignored. The therapy is employed at the perceived source of the tinnitus and aims to teach the brain to ignore it.

Tinnitus Retraining Therapy combines three significant therapeutic steps:

1. Extensive collection of information about you, your case history, lifestyle and habits.
2. Use of devices worn that generate masking sounds to divert your attention away from the tinnitus.
3. Psychological therapy teaching you to ignore the tinnitus noise. This is combined with relaxation exercises and stress management. The object is the elimination of your anxiety, so that the tinnitus is no longer perceived as a danger, thus diverting the concentration away from the tinnitus noise (<http://www.hear-it.org/Tinnitus-Retraining-Therapy>).

The duration of the TRT will vary and it is tailored on a case by case but can last one to two years. This is a long term time commitment for all parties involved and it is important for you to be comfortable in your choice of who you chose to council you during this period.

In some cases talking about tinnitus can initially make you more aware of its presence, however counselling will include relaxation therapies that will help you to manage your tinnitus and stress levels. (<http://tinnitustreatment.org/tinnitus-retraining-therapy/>).



Begin your Tinnitus Management Plan and Take Control

Neuromonics Tinnitus Treatment (NTT)

NNT uses a combination of music known to have relaxation qualities in conjunction with white noise masking. White noise covers a wide range of frequencies and sounds similar to static on the radio. The combination of white noise and music being played together helps to desensitise the tinnitus.

The sound delivery is programmed to take into account the presence of hearing loss and the sound customized or equalized accordingly to ensure suitable clarity. Over a period of a few months the white noise masking levels are altered and reduced. The goal is the same as TRT in that the aim is to reduce your awareness and reaction to the tinnitus (James 2008).

Cognitive Behavioural Therapy (CBT)

Cognitive Behavioural Therapy (CBT) has proved to have positive results with tinnitus counselling. It helps you to analyse your thought patterns, beliefs and the way you do things, in order to understand why you react in certain ways. Therapy may be provided in a group sessions or one to one. Although it has not been specifically designed for tinnitus management, CBT can assist you in a number of ways:

- It can teach you coping strategies to deal with negative emotions and distress and to aim your emotions in a positive direction.
- By changing how you think about your tinnitus your anxiety is reduced and you eventually pay less attention to the tinnitus.

Useful Contacts:

British Tinnitus Association

Sales: 0114 250 9922

Email: info@tinnitus.org.uk

Web: www.tinnitus.org.uk

Helpline: 0800 018 0527

Action on Hearing Loss

Sales: 03330 144525/30

Email:

solutions@hearingloss.org.uk

Web:

actiononhearingloss.org.uk

Helpline: 0808 808 9000

3D Hearing Solutions

Sales: 01208 234 245

Email:

GES@3dhearingsolutions.co.uk

Web: 3dhearingsolutions.co.uk

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Research and the Future

This brochure has highlighted some practical measures and treatments that may prove useful in helping you to take control of your tinnitus. Although there is **currently no absolute cure** for tinnitus, research is currently being undertaken with finding a cure in mind. The British Tinnitus Association, Action on Hearing Loss and a host of other global organisations sponsor ongoing research into cures for hearing loss and tinnitus.

It **may** be that in the future a cure could come in the form of medication. For example, current research has found similarities in neural brain activity between tinnitus and epilepsy. One such trial has sought to use derivatives of a drug called **Retigabine** in clinical trials for preventing noise induced hearing loss and tinnitus in rodents however effectiveness on human trials is work in progress.

Use of the drug in treating epilepsy in the past has had some positive effects in controlling certain brain activity however side effects included nausea and imbalance. The newest clinical trials have sought to change the composition of the drug to reduce the side effects however the research is ongoing (B A Telappa 2015).

Until an absolute cure is available, you will be given as much help and support to help you take control of your tinnitus with a tailor made management plan that works for you. Please complete section 1&2 of the Appendix: **Tinnitus - Taking Control: Workbook** and bring it with you to your next scheduled consultation with your clinician. The workbook will be discussed with you in more detail as to how it will be used during your management plan.

Section 1 - Background Information

Name_____

Date Of Birth_____

Date_____

When did your tinnitus start?_____

What does your tinnitus sound like?
(ringing, buzzing, whistling, chirping,
rushing, pulsing)

What makes your tinnitus worse?

Where do you hear your Tinnitus? (Is
it in one ear, both ears, centrally in
your head or externally)

TINNITUS - TAKING CONTROL: WORKBOOK

Section 1 (continued)

When are you most aware of your tinnitus?_____

When are you least aware of your tinnitus?_____

Does the sound of your tinnitus ever change? If so please explain.

What have you tried in the past to help your tinnitus?_____

Does jaw movement or any physical movement alter your
tinnitus?

Section 2 - Handicap Inventory

With '1' being least troublesome and '10' being most troublesome, please answer the following questions grading the current affect your tinnitus has on you.

Does your tinnitus affect your ability to sleep? ☐

Does your tinnitus affect your ability to concentrate? ☐

Does your tinnitus affect your ability to read? ☐

Does your tinnitus affect your ability to work? ☐

Does your tinnitus prevent you from socialising? ☐

Does your tinnitus cause you to feel stressed and anxious? ☐

Does your tinnitus negatively affect your relationships with family and friends? ☐

Overall Score ☐

Section 3 - Management

Period between _____ and _____

Management Option (Tick option(s) used)

- | | |
|---|---|
| ☐ Hearing Aid(s) | ☐ Sound Generator(s) |
| ☐ Relaxation Therapy | ☐ Counselling |
| ☐ TRT | ☐ NTT |

Outcome Measures

On a scale of 1-10, with '1' being least effective and '10' being most effective, please rate the effectiveness of your management options with the following:

- | | |
|---|---|
| ☐ Sleeping | ☐ Concentration |
| ☐ Reading | ☐ Working |
| ☐ Socialising | ☐ Stress & Anxiety |
| ☐ Family/Relationships | ☐ Overall Score |

What did you find most useful about your management plan?

What did you find most challenging about your management plan?

Section 4 - Handicap Inventory Reassessment

With '1' being least troublesome and '10' being most troublesome, please answer the following questions grading the current affect your tinnitus has on you.

Does your tinnitus affect your ability to sleep?

Does your tinnitus affect your ability to concentrate?

Does your tinnitus affect your ability to read?

Does your tinnitus affect your ability to work?

Does your tinnitus prevent you from socialising?

Does your tinnitus cause you to feel stressed and anxious?

Does your tinnitus negatively affect your relationships with family and friends?

Overall Score

Section 5 - Management

Period between _____ and _____

Management Option (Tick option(s) used)

- | | |
|---|---|
| ☐ Hearing Aid(s) | ☐ Sound Generator(s) |
| ☐ Relaxation Therapy | ☐ Counselling |
| ☐ TRT | ☐ NTT |

Outcome Measures

On a scale of 1-10, with '1' being least effective and '10' being most effective, please rate the effectiveness of your management options with the following:

- | | |
|---|---|
| ☐ Sleeping | ☐ Concentration |
| ☐ Reading | ☐ Working |
| ☐ Socialising | ☐ Stress & Anxiety |
| ☐ Family/Relationships | ☐ Overall Score |

What did you find most useful about your management plan?

What did you find most challenging about your management plan?

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<http://comments.bmartin.cc/wp-content/uploads/2015/07/tinnitus3-300x200.jpg>

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