



York and Scarborough
Teaching Hospitals
NHS Foundation Trust

Managing Tinnitus

Information for patients, relatives and carers

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If you need to talk to someone about your tinnitus you can call Tinnitus UK's trained advisers on 0800 018 0527 or use their online chat service (visit www.tinnitus.org.uk), between the hours of 10am to 4pm, Monday to Friday.

What is tinnitus?

Tinnitus comes from the Latin word 'Tinnire' meaning 'to ring.' It is the sensation of hearing a sound when there is no external source of sound.

It is unique to the person experiencing it. Someone with tinnitus may report hearing a variety of sounds such as a low or high-pitched ringing, hissing, buzzing or music. It could be a single sound, multiple different ones and can even beat in time with your heart.

Tinnitus can be continuous or intermittent and fluctuate in volume and intensity. It can be in one ear, both ears, or feel like it is in the middle of the head. It is most common for people to be most aware of their tinnitus in the absence of any other sound.

Tinnitus affects **one** in **seven** of the adults in the UK (Biswas et.al, 2021). While it may be a temporary annoyance for some, for others, it can become a persistent and distressing companion.

What causes tinnitus?

Although there is no definitive answer to why people perceive tinnitus there are currently several ongoing research projects which are investigating causes, influencing factors, generation theories and management techniques.

Tinnitus is not a disease or an illness, but it could be a symptom of other problems. If your tinnitus begins suddenly, appears to be on only one side of your head or pulses with your heartbeat you should mention it to your GP because it might require further investigation. However, it must be stressed that for most people tinnitus is not caused by anything which is medically worrying.

Much like the low-level hum that you get from a fridge, tinnitus is something we generally ignore but is perceptible if we concentrate on it. Past studies have shown (Heller and Bergman, 1953) that in a quiet environment the majority of normally hearing people, who never previously reported any tinnitus, can perceive some sound. These internal sounds are likely to have always been there, but everyday ambient noise is normally enough to mask them out and, if they are not seen to be threatening, we do not pay them any attention. Changes in the awareness of tinnitus can occur due to physical or emotional factors including a change in hearing, exposure to loud sound, stress (including anxiety), illness or head injuries.

These factors could cause some over activity in the auditory cortex (the part of the brain that creates sound) and the brain could perceive this extra activity as a sound.

Usually, the brain naturally filters out unimportant sounds, like a computer fan or fridge hum, which we do not need to concentrate on. However, once detected we can fixate on the sound, which stimulates a negative physical or emotional response.

When we first hear tinnitus, or our tinnitus changes, our brain may interpret it as a danger sound or threat. A similar example we experience is our reaction to suddenly hearing an ambulance siren amongst the normal traffic noise.

When we feel threatened, frightened, anxious, annoyed, or excited, our body secretes the hormone adrenaline into our blood stream.

Adrenaline affects our body in many ways:

- It makes you breathe faster.
- increases your heart rate.
- sends blood to your muscles to give them a boost of energy.
- makes you sweat.
- it will also enhance our senses, particularly sight, hearing and touch.

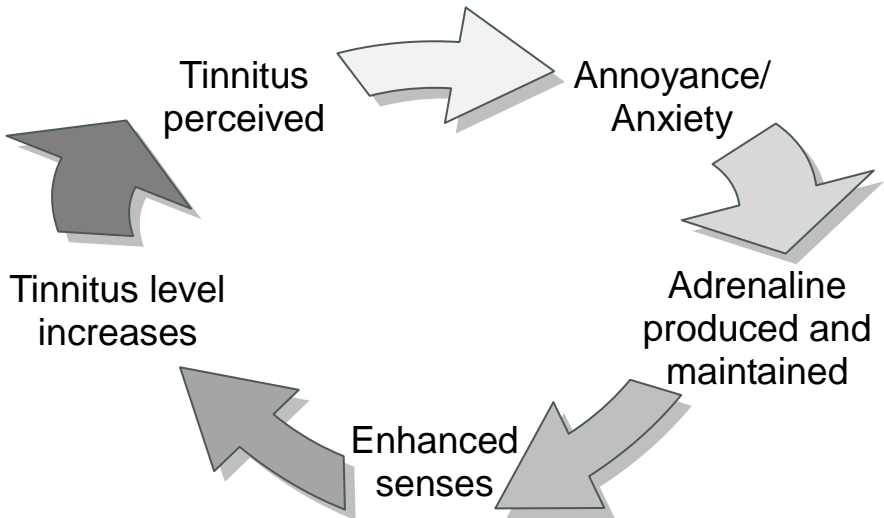
When our brain feels ‘threatened’ by a sound it activates an automatic ‘fight or flight’ reflex. This response has evolved to help us deal with potentially dangerous events. They are there to help us defend ourselves (fight) or run from it (flight).

When people experience tinnitus and become distressed, or annoyed, our body will produce adrenaline in response to the annoyance rather than it being a direct response to the noise itself.

One of the effects of adrenaline is that it can make you more sensitive to sound. This can heighten the level of your tinnitus, further adding to the annoyance and distress. This results in a continuous production of excessive adrenaline due to the constant distress.

This cycle (see Figure 1) must be broken for tinnitus to be manageable. When the cycle is broken, the amount of adrenaline in our body decreases shifting the sensitivity to sound from “heightened” to a more “normal” level. This, in turn, lowers the level of our tinnitus, until we no longer associate it as a threat, and it can be filtered out.

Figure 1: A diagram of the cycle our body experiences when we hear tinnitus.



When we feel frightened, anxious, annoyed, excited or happy our body secretes adrenaline into our blood stream. Adrenaline is a hormone which affects our body in many ways. It will increase our heart rate and will make it pump more strongly. It will also enhance our senses particularly sight, hearing and touch.

When people experience tinnitus and are distressed, or at least annoyed by it, our body will produce adrenaline in response to the annoyance rather than it being a direct response to the noise itself. Amongst the other effects of adrenaline are that it will make you more sensitive to sound than usual.

This often has the effect of increasing the level of your tinnitus which will almost certainly increase the previous levels of annoyance and distress that the tinnitus caused. The result being that our body does not stop producing excessive adrenaline because it is being permanently stimulated by the distress.

This cycle has to be broken for us to make tinnitus manageable. By breaking the cycle, we reduce the amount of adrenaline that our body makes, and this will have the effect of reducing the range of our senses from “heightened” to a more “normal” level. This, in turn, will bring the tinnitus down to a more manageable level, even though it may never go away.

How you can manage tinnitus

Management of tinnitus focusses on reducing the importance or perceived threat, so it does not interfere as much in your day-to-day life. Some options include hearing aids and/or ear level sound generators (if determined appropriate by your Audiologist), sound therapy, relaxation, and counselling.

Sleep

A good night's sleep is important. It allows you to be better equipped to cope physically and mentally with your tinnitus. There are no set amounts of time which we must sleep to function normally.

Some people perform well on very little sleep while others need a much longer sleep to feel rested.

As we get older our natural sleep pattern changes to include less periods of deep sleep and more frequent awakenings. Of course, with tinnitus once you are awake it is easy to assume that the tinnitus woke you, rather than it just being part of a normal sleep pattern.

Research into stress has shown 90% of people who experience insomnia believe a busy mind plays more of an important role in their sleep problems than their physical condition. This is also thought to be true with people with tinnitus. In addition, if you spend a couple of hours a night worrying about not sleeping or going over the stresses of the day in your mind then it is a lot more likely that you will stay awake.

There are certain things that can help with your sleep pattern:

- Keep active during the day; if you feel physically tired you might sleep easier.
- Try to unwind before bed. Writing down any worries or things which need remembering will mean you can forget them for the night and rest knowing they can be dealt with the next day.
- Avoid using excessive alcohol or over the counter sleeping medications. These will work in the short term, but they can affect your natural sleep pattern over time.

- Limit the amount of sugar, caffeine, and nicotine before bed, all of which are stimulants and will keep you awake.
- Make sure the bedroom is not too hot or cold.
- For some people, low level sound e.g., having the window open; playing calming music or environmental sounds like rain, waves, or white noise (like a radio tuned between stations) can help. Pillow speakers or “SleepPhones” can also be used to listen to sounds discretely, that way you do not have to worry about disturbing your partner’s sleep.
- Using other forms of sensory stimulation such as light or touch to refocus your mind away from the tinnitus can help:
 - Visual stimulation: Focusing on relaxing light can relax and focus your mind away from the tinnitus to help you fall to sleep.
 - There are bedside relaxation devices available such as ‘the Dodow sleep aid device.’
 - Hot or cold water bottles can help distract your attention onto other senses.
 - Smart watches may have built in mindfulness apps which offer light and vibration stimulation to help you focus on your breath.
- Go to bed when you are sleepy and turn off the light.

- If you are awake during the night for more than 20 minutes it is sometimes better to get up, have a warm drink (caffeine free), and relax until you feel sleepy again, before returning to bed. This way, your body is still resting even though you are not sleeping.
- Perhaps most importantly, stick to a routine. Get up at the same time every day, even on weekends, and try not to sleep during the day to make up for lost sleep.

Relaxation

It can be difficult to find time in our busy lives to focus on relaxation and is often something which is low down in our priorities. However, relaxation is important in managing the stress often associated with tinnitus.

Relaxation helps to get any physical anxiety response to your tinnitus back under control. Even finding 10 minutes of the day to actively relax can help you feel more in control of your tinnitus.

Attending a Yoga or Pilate's class can be useful to learn and practice relaxation. There are various techniques which can be taught including controlled breathing and muscle relaxing exercises. These exercises are useful in the short term, but understanding the root cause of your stress, and then finding ways to prevent stressful events in the first place is the only way to achieving a fully relaxed state.

Sound therapy

Tinnitus is more noticeable in the absence of sound therefore it makes sense not to dwell in quiet areas. At home, the TV or radio can be useful at low levels but if this is too distracting then sounds from nature could be used which may be more relaxing to listen to e.g., rain, waves, or general outdoor noises.

The aim of sound therapy **is not to drown out the tinnitus** but to provide a constant external alternative sound for the brain to focus on. In turn, may help reduce the amount of attention paid to the tinnitus.

If you have a hearing loss as well as tinnitus, hearing aids are recommended in the first instance. Hearing aids should not only provide you with increased clarity in speech but easier access to everyday sounds, which can naturally mask out tinnitus.

There is also the option of being fitted with ear-level sound generators if recommended by your Audiologist.

During the night can also be when the tinnitus becomes more intrusive. It is often a time when we want quiet, and darkness removes any visual distractions. These factors often result in tinnitus sounding louder or more prominent.

Sound therapy devices

Using sound therapy devices such as bedside noise generators (or smart speakers like Alexa), sleep headphones, pillow speakers and sound therapy apps on mobile phones are options to try on a night. With advances in technology sounds to help mask tinnitus are much more readily available. The sounds we find relaxing tend to be very individual, so the same thing does not work for everyone. It is best to try out a few and see what works for you.

If you have access to the internet, bedside noise generators, sleep headphones and pillow speakers can usually be purchased via online retail websites such as Amazon.

Bone conduction headphones are a good alternative if you are unable to have sounds on in the external environment or find using in the ear or over the ear headphones uncomfortable or exacerbate your tinnitus. Bone conduction headphones allow you to hear sounds without anything being in your ear, via vibration of the skull. This allows you to still hear environmental sounds whilst listening to your sound therapy sounds.

YouTube has lots to choose from with options of sound only or added video which can add an extra visual distraction to aid relaxation.

❖ We recommend 'Babu's relax TV.'

There are lots of apps available for most smart devices (mobile phones, tablets, and smart speakers). These offer a variety of different sounds which can be used as sound therapy and are often free to download. Apps can be downloaded via the Apple app store (iPhone) or google play store (Android).

Below are a few sound apps we recommend:

- ❖ Atmosphere
- ❖ Oto
- ❖ Tinnibot
- ❖ Calm
- ❖ Resound Tinnitus Relief
- ❖ Sleep Sounds
- ❖ Headspace (see section on mindfulness)

You can also try telling your smart speaker to play different sounds such as white noise, rain or ocean sounds.

Hearing aids

For many people, tinnitus may be related to hearing loss. Accurately fitted hearing aids can decrease your perception of tinnitus (when being worn) by restimulating your ears to hear external sounds instead and reducing the need for your brain to listen to the tinnitus. If hearing aids have been prescribed for hearing loss and tinnitus it is advised, they are worn throughout your waking hours to gain maximum benefit.

Psychological therapies

Cognitive Behavioural Therapy (CBT) and Mindfulness Meditation are alternative treatments for the management of tinnitus (NICE, 2020).

There are multidimensional aspects of tinnitus, and each one is important to address.

It can be easy to dwell on a reason for having tinnitus in the first place, questioning what caused it, or if there is something else which can be blamed. Regardless of the cause or outcome, the tinnitus is now present and must be dealt with.

The goal of CBT is to accept tinnitus, dismiss its importance, redirect attention to coping and living a full life. It consists of a set of psychological skills; how we think (cognition), act (behaviour), and pay attention (mindfulness), for accepting and diminishing the negative impact of unwanted realities like tinnitus. It looks at the links between emotion, behaviour and attention, their effects on tinnitus, and any associated change in our mental and emotional well-being (McKenna et al., 2014).

Mindfulness serves an important role in helping us accept and coexist with aspects of our experience we desperately do not want but cannot change, fix or control. Since there is no off-switch for tinnitus then move towards accepting it will help reduce the stress it causes (McKenna et al., 2010).

Tinnitus acceptance is a practical decision that helps us calm down and move forward with recovery. To be effective, you must commit to accepting tinnitus, and letting go of attempts to treat it. Persistent effort to gain control over tinnitus, reduce the volume, make it stop, while understandable, will substantially delay your progress.

This method of tinnitus management involves changing our perception of tinnitus and takes a back seat, loses its importance, and no longer controls our decisions and actions.

Further information about this approach this can be found on the Tinnitus UK website.

Certain types of psychological therapy may be available on the NHS. Contact your GP or local IAPT service for further information and advice on the support available.

The more you understand about tinnitus the better equipped you are to accept and manage it. There are various websites and organisations that can help provide further information but look out for ones which are validated by up-to-date research and qualified medical professionals. You can also go here to purchase equipment such as sound generators to aid your tinnitus management.

www.tinnitus.org.uk

www.rnid.org.uk

Tinnitus support groups

Many regions now have a local tinnitus support group. These groups are usually run by their members, audiology departments or local charities, with the support of Tinnitus UK. You can also access some support groups online. They can be a great place to get support from other individuals with tinnitus, share experiences and successful tinnitus management tips.

Information on where you can find your nearest support group can be found through the BTA website:
<https://tinnitus.org.uk/how-we-can-help/support-groups/>

Tinnitus UK also offers a befriending service which pairs vulnerable and isolated individuals with tinnitus with volunteers who are successfully managing the condition.

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Tell us what you think of this leaflet

We hope that you found this leaflet helpful. If you would like to tell us what you think, please contact: Christy Davidson, Senior Specialist Audiologist, Audiology Department, York Hospital, Wigginton Road, York, YO31 8HE, telephone 01904 726741 or email yhs-tr.AudiologyAdmin@nhs.net.

Teaching, training and research

Our Trust is committed to teaching, training and research to support the development of health and healthcare in our community. Healthcare students may observe consultations for this purpose. You can opt out if you do not want students to observe. We may also ask you if you would like to be involved in our research.

Patient Advice and Liaison Service (PALS)

PALS offers impartial advice and assistance to patients, their relatives, friends and carers. We can listen to feedback (positive or negative), answer questions and help resolve any concerns about Trust services.

PALS can be contacted on 01904 726262, or email yhs-tr.patientexperienceteam@nhs.net.

An answer phone is available out of hours.

Leaflets in alternative languages or formats

If you would like this information in a different format, including braille or easy read, or translated into a different language, please speak to a member of staff in the ward or department providing your care.

Patient Information Leaflets can be accessed via the Trust's Patient Information Leaflet website:
www.yorkhospitals.nhs.uk/your-visit/patient-information-leaflets/

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| Owner | Christy Davidson, Specialist Audiologist |
| Date first issued | November 2010 |
| Review Date | June 2027 |
| Version | 9 (issued June 2024) |
| Approved by | Kate Iley, Head of Audiology |
| Document Reference | PIL590 v9 |

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