Tinnitus

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Tinnitus is a noise such as a ringing or buzzing that you can hear, but the noise is not caused by anything outside your ear.

In this article:

What is tinnitus?

When you can hear sounds inside your head that are created by your hearing system, not your environment, the condition is known as tinnitus. It could be ringing, humming, pulsing or hissing. It is more prominent in quiet areas or at night. It usually has no particular cause, but can still be treated.

You can't turn it off or move away from it, so it can be spectacularly annoying

How bothersome tinnitus is varies vastly between different people or in the same person over time. It may be there a lot of the time, happen occasionally, or fluctuate between the two. It can involve one ear or both.

Tinnitus is a symptom rather than a disease.

Why do I have tinnitus?

There are a number of reasons for tinnitus. The most common situation is that it often comes as an unwanted 'added extra' when you develop age-related hearing loss. It may also occur as a consequence of exposure to loud noises (noise-induced hearing loss), or from working in a noisy place for a long time. Sometimes it is a symptom of other medical conditions, such as Ménière's disease, ear infections or inner ear conditions. Occasionally it's caused by a build-up of wax in the ear (although usually this affects your hearing or you are aware of a blocked feeling in your ear, rather than tinnitus). Sometimes there is no obvious reason.

What does tinnitus sound like?

Tinnitus is an abnormal noise (or noises) that you can hear. However, the noise does not come from outside your ear. The sorts of noises that people hear include:

- Ringing in the ears.
- Buzzing.
- Whistles.
- Roaring.
- Humming.
- Machine-type noises.
- A pulse or beat which is at the same rate as your pulse.

Tinnitus can be either constant or come and go. It can vary in loudness and character from time to time. You can hear the noise or noises in one ear, or in both ears, or it may be difficult to pinpoint where the noise seems to come from.

The noise is often more prominent when you are in a quiet place. For example, when you are in bed and trying to get to sleep. It may also be more noticeable when you're

Some people with tinnitus are also more sensitive to normal everyday sounds. For example, some people with tinnitus find that a radio or TV is painfully loud when it is at a normal volume for most people.

For most people with tinnitus, nobody else can hear the noise. In one very uncommon type of tinnitus (objective tinnitus), the noise can be heard by another person listening very carefully. This is not the usual type of tinnitus and it is rare. It is usually due to a problem with blood or blood vessels, making them pulsate differently to usual.

Pulsatile tinnitus

If you have this condition, the tinnitus sounds like a pulse. It is usually due to a problem with the blood circulation (such as carotid stenosis, a narrowing of the carotid artery as it passes through the neck). This type of tinnitus can sometimes be heard by other people (that is, objective tinnitus). It beats in time with the pulse (synchronous). Sometimes you can develop a pulsatile tinnitus which is not in time with the pulse (non-synchronous). An example is palatal myoclonus, a condition in which the muscles of the palate go into spasm.

Sudden-onset (over seconds) pulsatile tinnitus can - rarely - be caused by a serious problem with the arteries in the neck. **You should see a doctor urgently if you have developed this**.

How common is tinnitus?

Tinnitus is common and can occur at any age. Most people have an occasional episode of tinnitus after going to a loud concert or disco. For most people, this is temporary and soon goes. As many as 1 in 10 people have persistent tinnitus that is mild and not very troublesome. However, about 1 in 100 people have tinnitus which persists most of the time, and severely affects their quality of life.

What causes tinnitus?

In many people with tinnitus, the cause is not known. Tinnitus often develops at the same time as the hearing loss of older age.

Common causes of tinnitus include age-related hearing loss, or by being exposed to a noise - like working in a loud factory or being in the armed forces. Often no particular cause is found. Very rarely it can be caused by anaemia, a thyroid problem, medications like aspirin, or a problem in your brain.

In many cases

What seems to happen is that signals are sent from the ear down the auditory nerve to the hearing part of the brain. The brain interprets these signals as noise. It is not clear why these signals are sent from the ear. The noise may also originate somewhere else in the hearing nerve pathways in the brain.

In some cases

Sometimes the tinnitus is caused by another condition. For example:

- Tinnitus often develops at the same time as the hearing loss of older age.
- Ménière's disease. In this condition you develop attacks of dizziness (vertigo), hearing loss and tinnitus. It is due to a problem of the cochlea - a snail-shaped chamber filled with fluid, in the inner ear.
- Exposure to very loud noise. Some people develop persistent tinnitus after being subjected to loud noise for a long time, often in association with noise-induced hearing loss. For example, after years of working in a loud factory. Sometimes permanent tinnitus persists after a one-off loud noise experience. For example, following a rock concert.
- As an uncommon side-effect of some medicines. For example, aspirin, non-steroidal anti-inflammatory drugs (NSAIDs) and quinine.
- Following an ear or head injury.
- Wax blocking the ear.
- Some other ear disorders such as otosclerosis.
- Some uncommon diseases of blood vessels, brain or nerves can cause tinnitus. In these situations you are likely to have other symptoms or signs such as nerve weakness, etc. However, rarely, tinnitus may be the first symptom to develop.
- Tinnitus can sometimes be a feature of a lack of iron in the body (anaemia), thyroid disease or diabetes.
- An ear infection. The tinnitus tends to clear when the infection clears.

- Psychological factors may have a role to play. For example, mild tinnitus that is not bothersome may become more bothersome if you become depressed, anxious or stressed.

Tinnitus in one ear

A non-cancerous tumour called an acoustic neuroma occasionally causes tinnitus; this is usually persistent and in one ear only. If you get the noise only in one ear, it is particularly important that you consult a doctor, so this can be ruled out.

How is tinnitus diagnosed?

- There is no definitive test for tinnitus: the diagnosis is based on what you experience.
- Your doctor may organise a hearing test.
- Occasionally a specialist ear doctor may do a brain scan.

Tinnitus tests

When you go to see the doctor, first they will have some questions to help them understand your tinnitus better, and to help them find the cause of it, if there is one. The doctor will usually examine your ears and the nerves around your face and ears.

A hearing test is usually done. In the common type of hearing test, sounds of varying frequency are played to you through headphones. You press a button when you hear a sound. This results in a graph being produced which shows if you have any hearing loss and, if so, which type of hearing loss. Along with the hearing test, you will often have tympanometry, which is a test of the eardrum and the bones of the middle ear. A probe is placed in your ear (which feels much like when the doctor looks inside your ear), a tone is produced and the pressures changed in your ear. The response is then measured.

An underlying ear problem can usually be ruled out by this examination and hearing test.

Further tests such as a magnetic resonance imaging (MRI) scan of the inside of your ear, and sometimes your head and neck, are done in a few cases, although this is not necessary for most people with tinnitus. In some cases, a blood test may be done. This might be to test to check that you don't have a problem with your thyroid gland, anaemia or diabetes if any of these are suspected.

How to get rid of tinnitus

In most cases there is no easy cure. Some people are helped by understanding the problem and knowing that they do not have a serious underlying condition. You may be offered a session with a healthcare professional where your condition is discussed (tinnitus support).

There are no good medications for tinnitus but many things can help (see below).

Is there a tinnitus cure?

In a small number of cases there is an underlying cause which may be corrected. For example, if a side-effect of a medicine that you are taking is causing tinnitus then a change of medication may cure the problem. If earwax or an ear infection is the cause then again, once this is cleared, the tinnitus settles.

Antidepressant medicines called selective serotonin reuptake inhibitors (SSRIs) have helped people in whom the tinnitus causes anxiety and/or depression. SSRIs have been tried for tinnitus in people without anxiety and depression but studies suggest they are not effective.

In most cases there is no easy cure. Some people are helped by understanding the problem and knowing that they do not have a serious underlying condition. With time, the tinnitus may become less of a problem as you adjust to it. In addition, the following often help.

Alternative sounds

If possible, avoid being in quiet or silent rooms. You are more likely to focus on the tinnitus and be distressed by it if there is nothing else to listen to. Other more pleasant sounds can be distracting and help to make the tinnitus less noticeable. This is sometimes called sound therapy. For example, listen to the radio, TV, or stereo. Perhaps leave a window open so outside sounds are more evident. Some people wear a sound generator, although research studies suggest they are not very helpful. It looks similar to a hearing aid but makes a pleasant sound which helps to mask the unpleasant tinnitus noise. Some people use CD or MP3 players to listen to pleasant sounds.

Bedtime

Tinnitus is often most noticeable when you are quiet and trying to get off to sleep. If you play a radio or stereo it can help to mask the tinnitus noise until you drop off to sleep. (One with a timer is best so it switches itself off when you are asleep.) Some people connect a radio or stereo to special pillow speakers which go under the pillow. This enables them to listen to the music or radio without anyone else being disturbed. Some specially designed pillows have speakers actually inside the pillow itself which you connect to your radio or stereo.

If you find getting off to sleep a problem, see the separate leaflet called Insomnia (Poor Sleep) for more details.

Hearing aids

If you have any deafness, even people who have just a slight hearing loss, a hearing aid may help. The aid boosts normal sounds which you may not otherwise hear. These may override the tinnitus noise.

Stress anxiety and depression

Some people become anxious or stressed by tinnitus. This can make things worse. You may benefit from learning ways to relax and to combat stress. There are other leaflets in this series which offer advice on easing stress and anxiety. If you become particularly anxious or become depressed it is best to see a doctor for advice on treatment.

Cognitive behavioural therapy (CBT) is a brain-training psychological therapy which may also help you deal with the effect tinnitus has on you.

Are there specialist tinnitus clinics?

Some ear departments have specialist tinnitus clinics. These offer such things as counselling, advice on sound therapy, relaxation techniques and other advice on ways to cope with living with tinnitus.

Tinnitus retraining therapy (TRT) has been used in the past, but recent research suggests it is not very helpful. It has largely been replaced by CBT.

What is the outlook?

Many people with tinnitus improve, with or without any treatment. Between 2 and 5 out of every 10 people with tinnitus improve within five years. Even if it does not go completely, it can become less severe or less frequent. How troublesome tinnitus is tends to go up and down.

For some people, tinnitus is just a little annoying. On the other end of the scale, for others it can really reduce their enjoyment of life. It may:

- Cause problems sleeping (insomnia).
- Cause anxiety.
- Lead to depression. Some research suggests an association with increased risk of suicide, although this has been disputed.
- Result in reduced social interaction.

Further reading and references

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