

Understanding and Treating Tinnitus

By Dr Alastair MacKendrick, ENT Surgeon

Tinnitus occurs in 17% of the Australian population. Of these, 4% will approach their doctor looking for an explanation and treatment. Tinnitus - the symptom of noise in the ears or head - is extremely variable in character, pitch and volume.

The sufferer's response to the symptoms is extremely varied and is not related to the type of tinnitus or the personality type. It is due to abnormal electrical activity anywhere along the auditory pathway, from the cochlea, the acoustic nerve, brainstem to cerebral cortex.

By far, the commonest lesion is in the outer hair cell region of the cochlea related to noise damage or 'industrial deafness'.

Hyperacusis or abnormal sensitivity to normal environmental sound is often associated with tinnitus and hearing loss. However any of these three symptoms can occur in isolation, or with one or both of the others.

Management consists of making a diagnosis as to the cause and giving a plausible explanation to the patient. It involves taking a history of noise exposure, previous ear problems and head trauma, serious illness and drugs used in the past, examination of the head, neck and ears and an accurate audiogram.

If asymmetrical hearing loss is found and there is no obvious reason (eg. wax in the ear or perforated eardrum), a CT scan or MRI scan to exclude an acoustic neuroma may be required.



Treatment of Tinnitus

The sufferer must **never** be told 'Nothing can be done', or 'Go and live with it'. This could drive a near suicidal patient over the brink. It also creates a huge negative barrier to any future therapies.

In the vast majority of people with tinnitus natural 'habituation' occurs - the brain 'learns' to ignore it (in the same way we do not hear the fridge running or the air conditioner going after a short time).

In some tinnitus sufferers a 'feedback loop' is set up - with awareness of the tinnitus initiating activity in the limbic system and the autonomic nervous system of the brain which then reinforces or amplifies the tinnitus. Thus, associated emotional responses and physiological changes eg. dry mouth, sweating, tachycardia etc. are triggered.

In these sufferers, we attempt to stop the loop by fitting a sound generator in one or both ears. This is used to partially cover the tinnitus so that if the tinnitus is only just audible, the brain soon 'habituates' to the sound. Gradually, over six months or a year, the annoyance caused by the tinnitus is diminished as the brain habituates.

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WESTERN HEARING SERVICES
&
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Tinnitus Solutions



More Information

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Tinnitus Solutions

Western Hearing Services has been dedicated to helping those with tinnitus or "ringing in the ears" for more than 18 years. What was once met with the response "get use to it" can now be treated using the latest techniques.

Tinnitus Retraining Therapy

Unfortunately, in the past a common response to a complaint of tinnitus was "nothing can be done" or "you'll have to learn to live with it". However, presently there is an exciting new treatment for tinnitus called Tinnitus Retraining Therapy (TRT). Dr Pawel Jastreboff (from the United States) developed TRT based on over 10 years of tinnitus research.

The goal of TRT is that the patient will habituate to the tinnitus sound. We habituate to sound everyday, for example, we do not hear the sound of our refrigerator motor whilst watching television, that is we can effectively "tune out" to it. Therefore, patients who have undergone successful treatment with TRT often report that they can only hear their tinnitus if they concentrate on hearing it, and if they do hear their tinnitus they are not bothered by it. The tinnitus is then treated as a "neutral" signal.

Habituation will occur with two conditions:

- Removal of negative associations of the tinnitus using education and
- Counseling and avoiding silence via low-level "neutral" sounds.

There are a number of ways an individual can avoid silence. Firstly, enhancing the environmental sounds around the tinnitus patient, for example: leaving a television or radio on in the background, or listening to relaxation tapes.



Secondly, if the tinnitus is also associated with a hearing loss, then hearing aids have proved to be very useful in allowing the patient to habituate to the tinnitus and improve their hearing significantly.

Hearing aid technology has continued to improve in recent years, the most exciting step forward has been the development of digital hearing aids. Digital hearing aids are the most effective devices in helping people who have trouble hearing in crowds, background noises and meeting situations.

Thirdly, custom made "noise generators" present a low-level noise which presents a competing noise for the brain to listen to other than solely concentrating on the tinnitus.

The developers of TRT do not maintain that TRT is the only treatment available for tinnitus patients. However, worldwide results suggesting an improvement in 80% of cases suggest that it is working exceedingly well.

If you would like any further information on tinnitus, TRT, or hearing loss contact Western Hearing Services and Tinnitus Management on **1800 622 121**.



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■ What is Tinnitus?

Tinnitus is defined as ringing or other noises in the ears or head. It can take on a variety of forms including high-pitched ringing, buzzing, hissing, roaring or booming, or any combination of these sounds.

■ Tinnitus Retraining Therapy

The treatment we use is called TRT. This treatment can be credited to the work of its originators Drs Jastreboff and Hazel who established it worldwide with the first clinical trials in 1990. It is now the treatment that has been most successful in over 30 countries around the world.

TRT involves an extensive audiological evaluation, several counselling sessions, the use of external sound, and frequently the use of sound devices. It does not involve any surgery or drugs.

Frequently Asked Questions

Are there any side effects of treatment?

There are no side effects. What kind of audiological tests are performed? The tests include an audiogram and several specific tests which will allow us to evaluate whether you have tinnitus and/or hyperacusis, and to what degree. The tests begin with low levels of sound and gradually get louder, therefore, none of the tests will be painful. If your tinnitus is not present on the day of the testing, it will NOT influence the possibility of success with the treatment.

I recently had audiological tests done. Do they have to be repeated?

We prefer to have the tests performed in our centre. There are very specific measurements we perform which are not routinely provided in other clinics.

Is the counselling a form of psychotherapy or biofeedback?

No, the counselling will provide you with information about the causes and factors involved in your tinnitus/hyperacusis, explain to you how the retraining therapy works, and teach you how to control your tinnitus. The counselling session is a fundamental part of the treatment process.

What is the role of external sound?

External sound from radios, TVs, stereos, etc. is used at a low level in order to bring the changes in your subconscious hearing system, and not to cover (mask) your tinnitus. It reduces the contrast between your tinnitus and complete silence, and slightly distracts you from the sound of your tinnitus.