

Current Trends in the Treatment and Management of Tinnitus

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What is tinnitus?

- Tinnitus is a ringing or buzzing noise in the head when there is no physical sound present. It is a symptom not a disease but we know it is real and not imagined.
- There are many different causes all associated with damage to the auditory system and the most common is noise exposure.



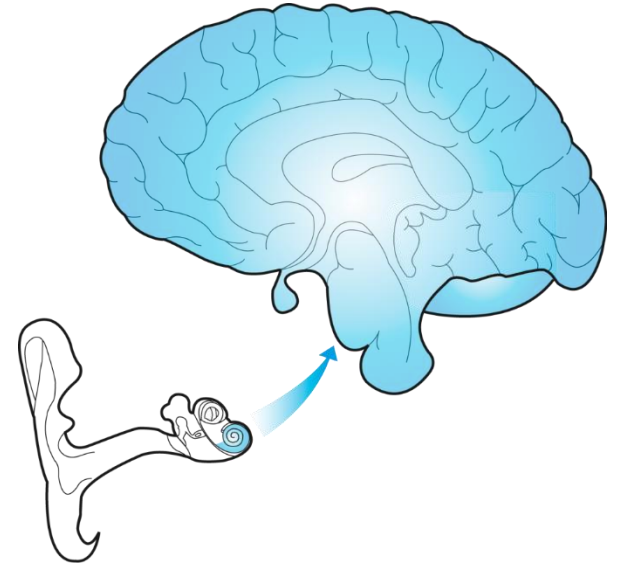
Who has tinnitus?

- 15-20% of the general population have experienced tinnitus at some time
- More than 70% of people with a hearing loss have tinnitus
- 80% of tinnitus clients have some cochlea damage, even if they do not notice communication problems



How does tinnitus start ?

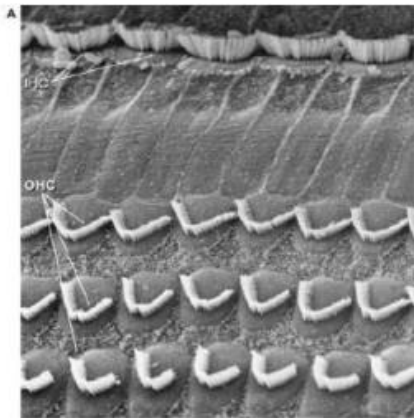
- The brain reacts to lack of stimulation due to damage in the inner ear (auditory deprivation)
- The brain overcompensates, seeks out new stimuli and misperceives other impulses as “sound”
- The emotional centre in the brain is activated setting up a cycle of stress and anxiety



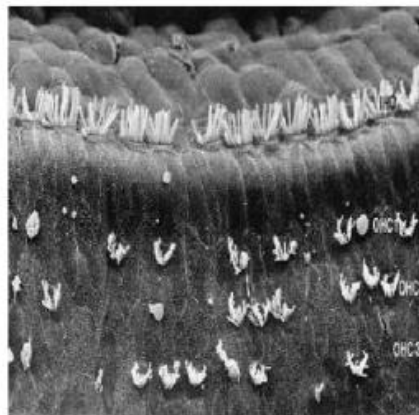
The role of the ear

- Cochlear damage doesn't always mean you have communication difficulties
- The damage can cause the hair cells to respond abnormally sending messages to the brain when there is no sound present
- The cochlear needs to hear meaningful sounds

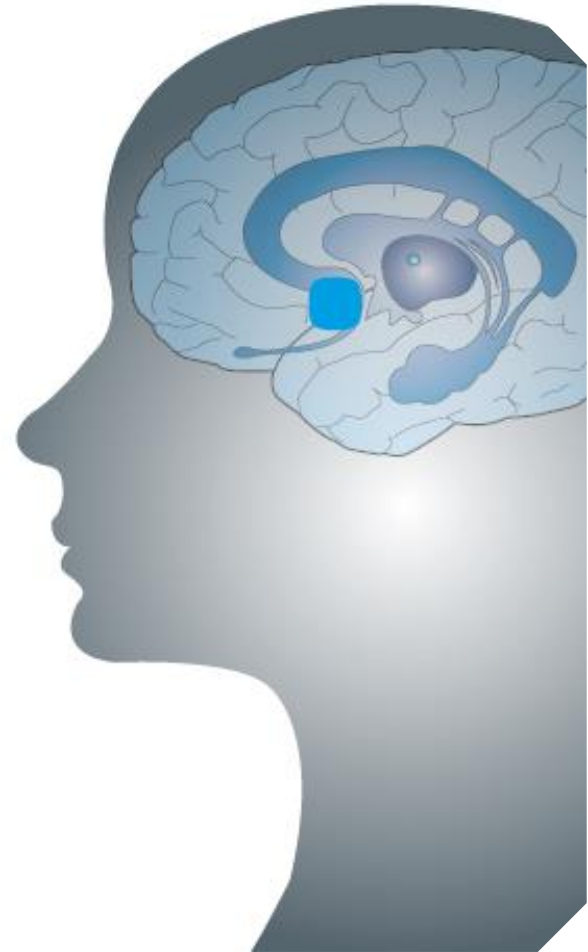
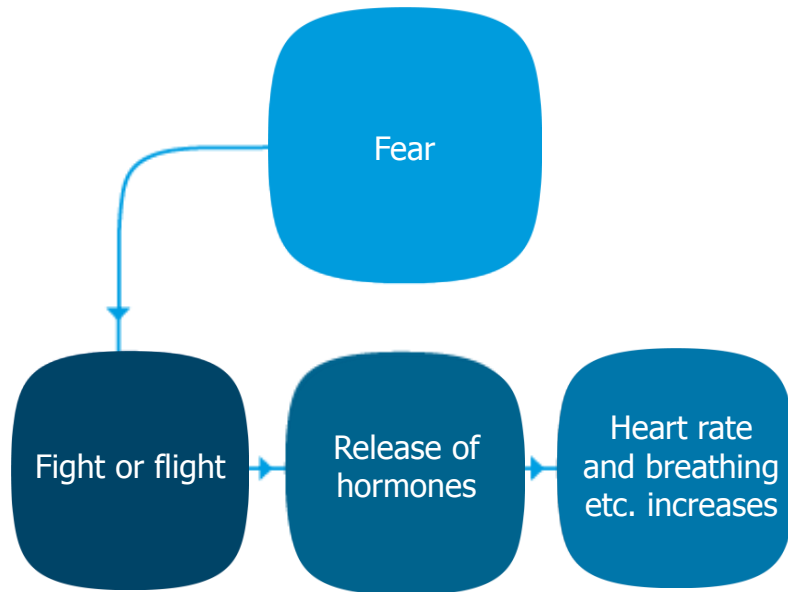
Healthy



Damaged



The role of the brain



Treatment methods

WHAT
HELPS?



Treatment methods

Large variety of suggested causes generate large variety of suggested treatment methods including:

- Cognitive-Behavioral Therapy
- Counselling
- Drug treatment
- Electrical stimulation
- ENT management
- Hearing aids
- Neuromonics
- Progressive Audiologic Tinnitus Management
- Tinnitus Masking
- Tinnitus Retraining Therapy
- Alternative and complementary methods



Treatment methods

Common elements of effective tinnitus management

**Education
and
counselling**

**Sound
stimulation**

**Stress
reduction**

**Hearing
aids**

Education and counselling

- "Talking and listening to someone is the cornerstone of the current tinnitus treatments"

The evidence shows 70% success rate by counselling alone



audiology australia

Accredited Audiologist

Stress management

Stress exacerbates tinnitus:

- Stress management and relaxation training may be a useful therapy
- Mindfulness, yoga, meditation and deep breathing are good options
- Deep breathing, guided imagery, or progressive muscular relaxation help



Hearing devices

- The evidence shows hearing aids can effectively decrease the perception of tinnitus for up **to 80%** of people
- Hearing aids provide sound enrichment and reduce auditory deprivation, keeping the auditory system active
- A real world environmental sound is a positive listening experience compared to the undesirable internal noise



Sound stimulation



What works best ?

Amplification

Tinnitus maskers

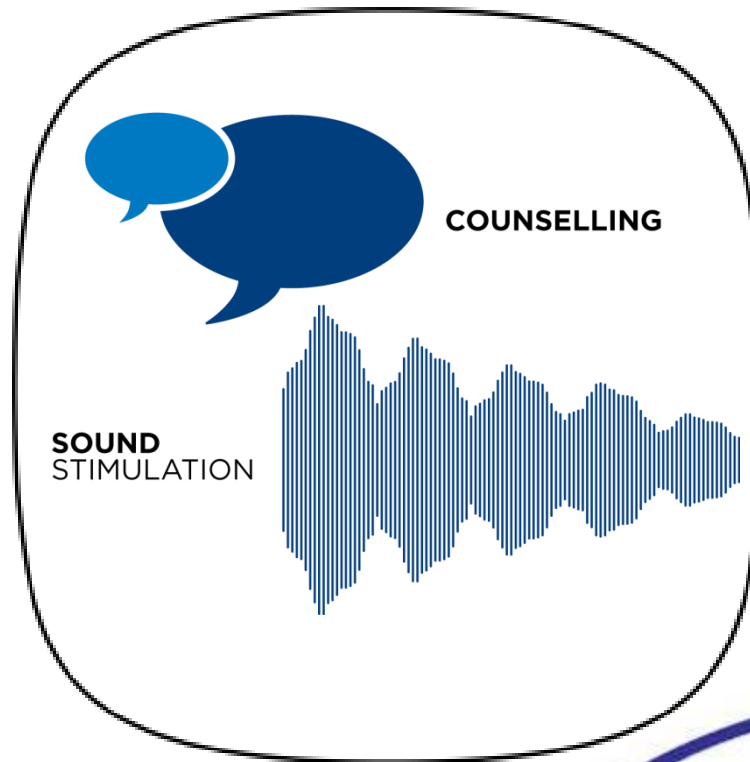
Cognitive Behavioral Therapy (CBT)

Neuromonics

Tinnitus Retraining Therapy (TRT)

The best solution

A Combination of Approaches



Technology can help

Amplification

Sound
Enrichment

Reduce the
contrast



Soothing Sounds

Sound
Stimulation

Facilitate
habituation

Sound enrichment

- This means helping the ear to hear the many small, real world sounds around us through amplification, because these sounds are meaningful, tinnitus is not
- A device does this automatically, inside or outside. Try:
 - a correctly fitted hearing aid
 - a simple amplifier, eg nuheara

IQBuds



Sound stimulation

- The goal of sound stimulation is “habituation”, **not** masking
- The human brain can gradually learn to accept something new, recognise that it is not important and learn to ignore it
- Music or other soothing sounds make the tinnitus recede.



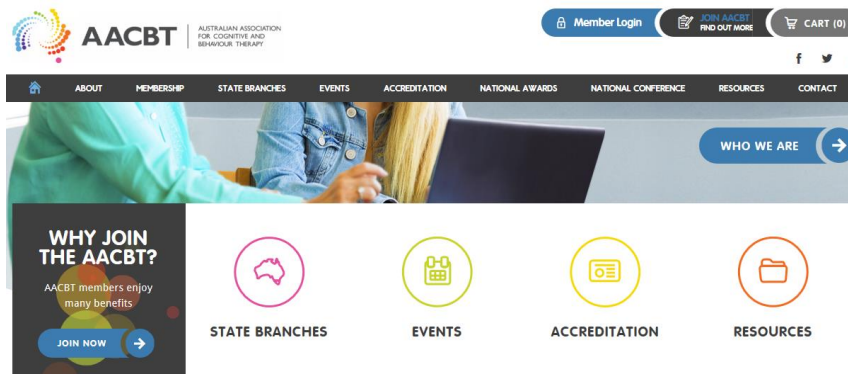
Sound stimulation

- The new way to try sound stimulation solution is via an App on your phone : there are many to choose from, try them out.
- Most generate soothing environmental sounds like water running, birdsong, the sea, the wind. Music is also good, but can have emotional overlay



Structured counselling

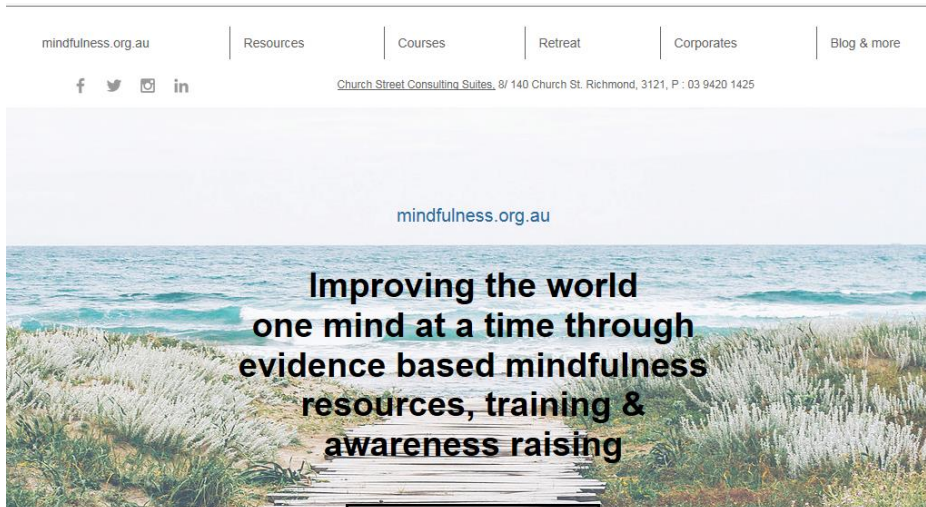
- Cognitive Behavioural Therapy focuses on the emotional reaction to tinnitus. It has proven results as a treatment tool.
- Behavioural approaches reduce tinnitus-related distress, anxiety, and depression, and help overall quality of life.
- Find a qualified CBT counsellor at <https://www.aacbt.org.au/>



The importance of relaxation

Reducing stress is important for tinnitus management : there are many options: mindfulness, yoga, meditation, guided imagery, deep breathing or muscular relaxation

There are many places which offer relaxation programs



Experimental Treatments

There are a range of invasive treatments involving electromagnetic stimulation to reduce neural activity which **do not have an evidence base:**

Repetitive Transcranial Magnetic Stimulation (rTMS)

- A magnetic coil, is placed adjacent to the patient's head and sends electromagnetic pulses into the underlying brain tissue.

Transcranial Direct Current Stimulation (tDCS)

- Patients wear a series of electrodes on their scalp, to transmit electromagnetic pulses through the skull into the underlying brain tissue.

Deep Brain Stimulation (DBS) / Brain Surface Implants

- Surgical implantation of electrodes directly into the brain or onto the exterior of the brain.

Vagus Nerve Stimulation (VNS)

- Implanting an electrode to stimulate the nerve that connects the brain to the heart and digestive system

The best solution

A Combination of Approaches

