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
The role of the brain

- Fear
- Fight or flight
- Release of hormones
- Heart rate and breathing etc. increases
WHAT HELPS?
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
Common elements of effective tinnitus management

- Education and counselling
- Sound stimulation
- Stress reduction
- Hearing aids

Henry J. & Wilson, P (2001): The psychological management
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
Stress management

Stress exaccerbates tinnitus:

- Stress management and relaxation training may be a useful therapy
- Mindfullness, yoga, meditiation 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/](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