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Saturday, June 10, 2017 (Room 3)

14:00 - 14:55 WS #138: Tinnitus and Hearing Loss

15:05 - 16:00 WS #150: Tinnitus and Hearing Loss (Repeated)

Tinnitus and Hearing Loss

Rotorua GP CME June 2017

Presented by
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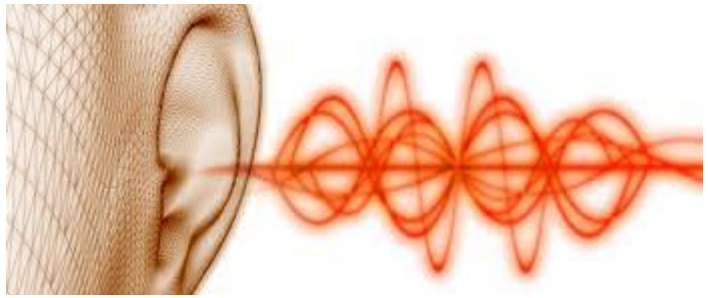

DILWORTH HEARING

Dilworth Hearing Services

- Hearing Tests for all ages
- Hearing Aid Fitting & Adjustments – we are not owned by a manufacturer we fit what is best for the patient
- Assistive Listening Devices
- Cochlear Implants
- Tinnitus Assessment and Management
- Auditory Processing Assessments
- Hearing / Ear Protection
- Ear Nurses for wax removal

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Today's talk will focus on

- What is tinnitus?
- How is it generated?
- What are the red flags?
- How do we assess tinnitus and what are the treatment options available?

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Why is it important?

- Almost all adults have experienced some form of tinnitus, mostly transient in nature, at some moments during their life.
- However, in 6–20% of the adults, tinnitus is chronic and for 1–3% tinnitus severely affects the quality of life.
- Tinnitus is more prevalent in men than in women and its prevalence increases with advancing age (Axelsson and Ringdahl, 1989;Lockwood et al., 2002)

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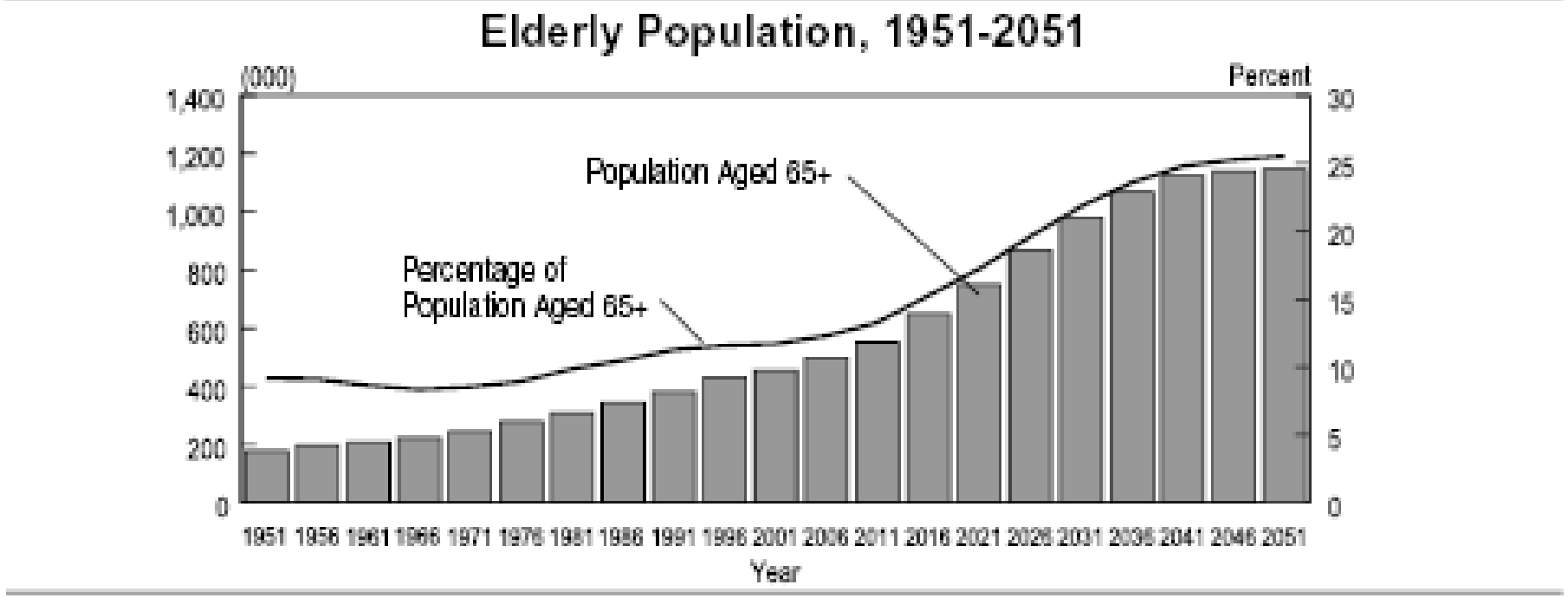
PROJECTED DATA (NZ)

Figure 1



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Tinnitus- Partnership with Dr Ron Goodey and Dr Grant Searchfield

- Dilworth recognised gap in service for those with tinnitus
- Clinical staff have undertaken training to better serve the needs of the tinnitus patient
- Dr Goodey and Dr Searchfield are recognised internationally for their contributions to tinnitus research as well as clinical skills

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Tinnitus

The perception of sound in the absence of external auditory stimuli

Can sound like: Ringing, hissing, buzzing, crackling, pulsing, clicking cacadas, lawnmower, white noise etc.

– It may be unilateral or bilateral

– Can be objective or subjective

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Objective Tinnitus (an actual perceived internal noise)

- Reported as cracks/clicks as a result of muscle spasms in the middle ear
  - Eustachian tube dysfunction
  - Stapedial muscle spasm
  - Tensor tympani myoclonus

- Pulsatile tinnitus as a results of altered blood flow or increased blood turbulence close to the ear:
  - Carotid artery or jugular vein anomalies
  - Idiopathic intracranial hyper tension
  - Glomus tumors

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Subjective Tinnitus

- Subjective tinnitus is a sound perceived with no actual external- or internal auditory stimulation

Most commonly associated with hearing loss

Complex neural networks can exacerbate tinnitus and because it involves the limbic system can be reported differently in severity between patients.

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Hearing Loss

- Otologic
  - Hearing loss (presbycusis, noise exposure, otosclerosis, middle ear effusion)
  - Meniere's disease
  - Acoustic neuroma

- Ototoxic drugs or substances
- Neurological
  - Head trauma
- Wax block

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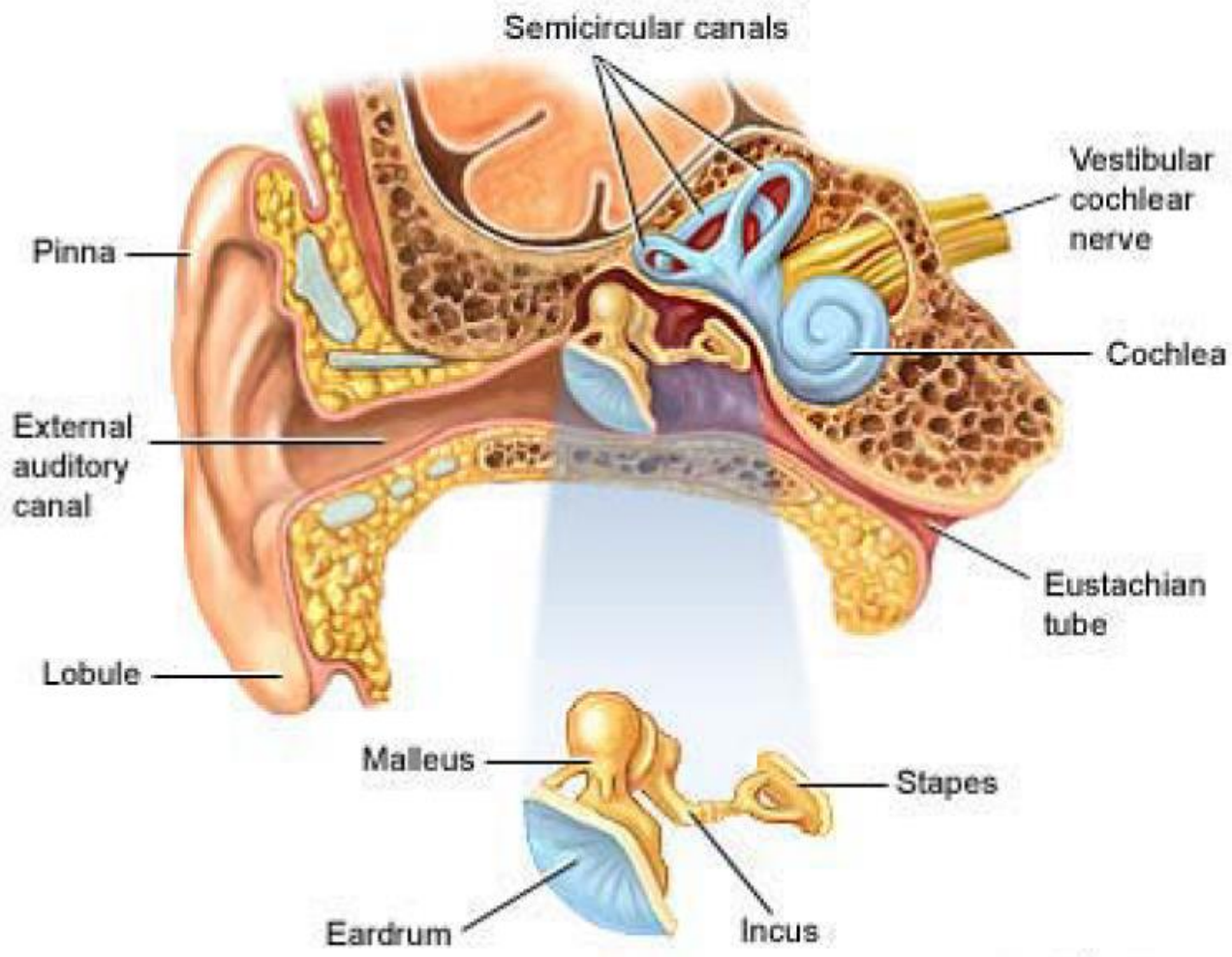
Red flags – refer straight away

- Pulsatile
- Unilateral
- Sudden Onset
- Sleep loss
- Unmanageable

Let’s go back to the basics…



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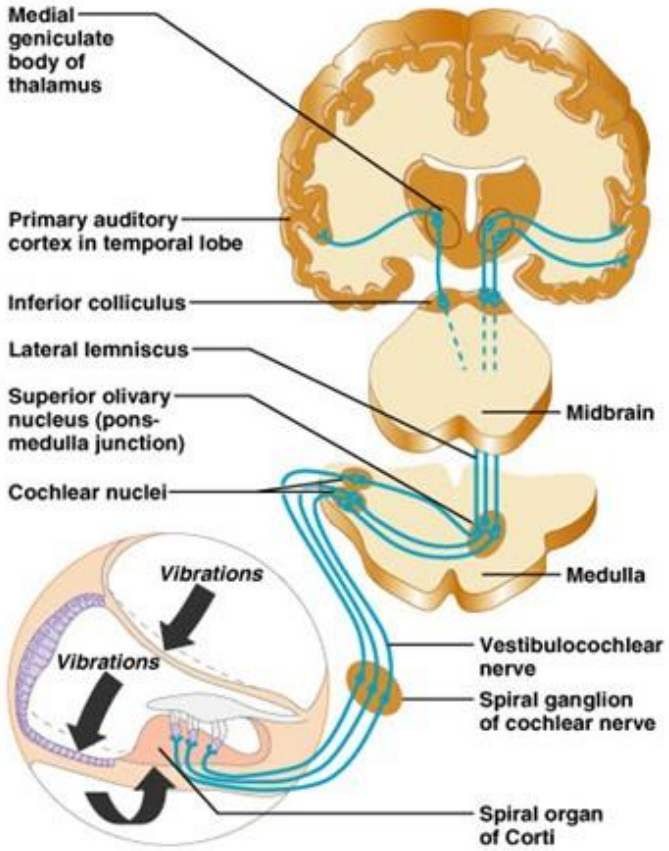
Generation of tinnitus



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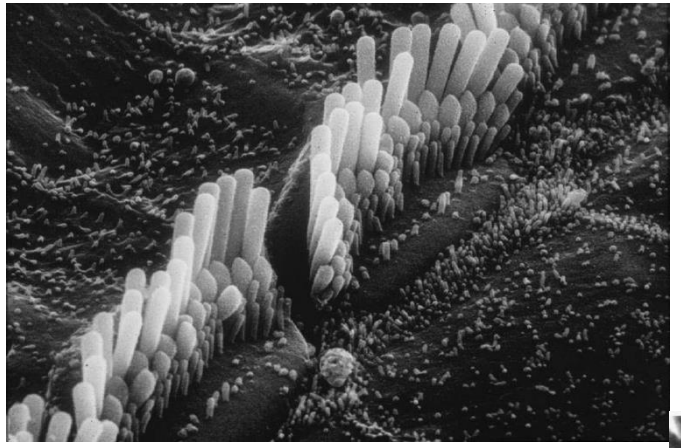
Damage to hair cells



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Tinnitus generation

Auditory cortex

Brainstem

Auditory cortex

Theories of Tinnitus Generation

What can be done?

- As tinnitus is different for every client there is no one size fits all solution. The audiologist taking into consideration the patient history, questionnaire, audiological and pyschoacoustic results, will work with the patient to develop an individual treatment plan. It is likely to include one or more of the following:
  - **Informational Counselling**
  - **Sound Enrichment Therapy**
  - **Hearing Aids / Combination / Masking Devices**

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Tinnitus Counselling

- Explanation of auditory system
- Personalised explanation of Neurophysiological basis of tinnitus and reactions to tinnitus (& neural plasticity)
- Factors that can affect tinnitus
- Relaxation techniques, lifestyle improvements and sleep hygiene

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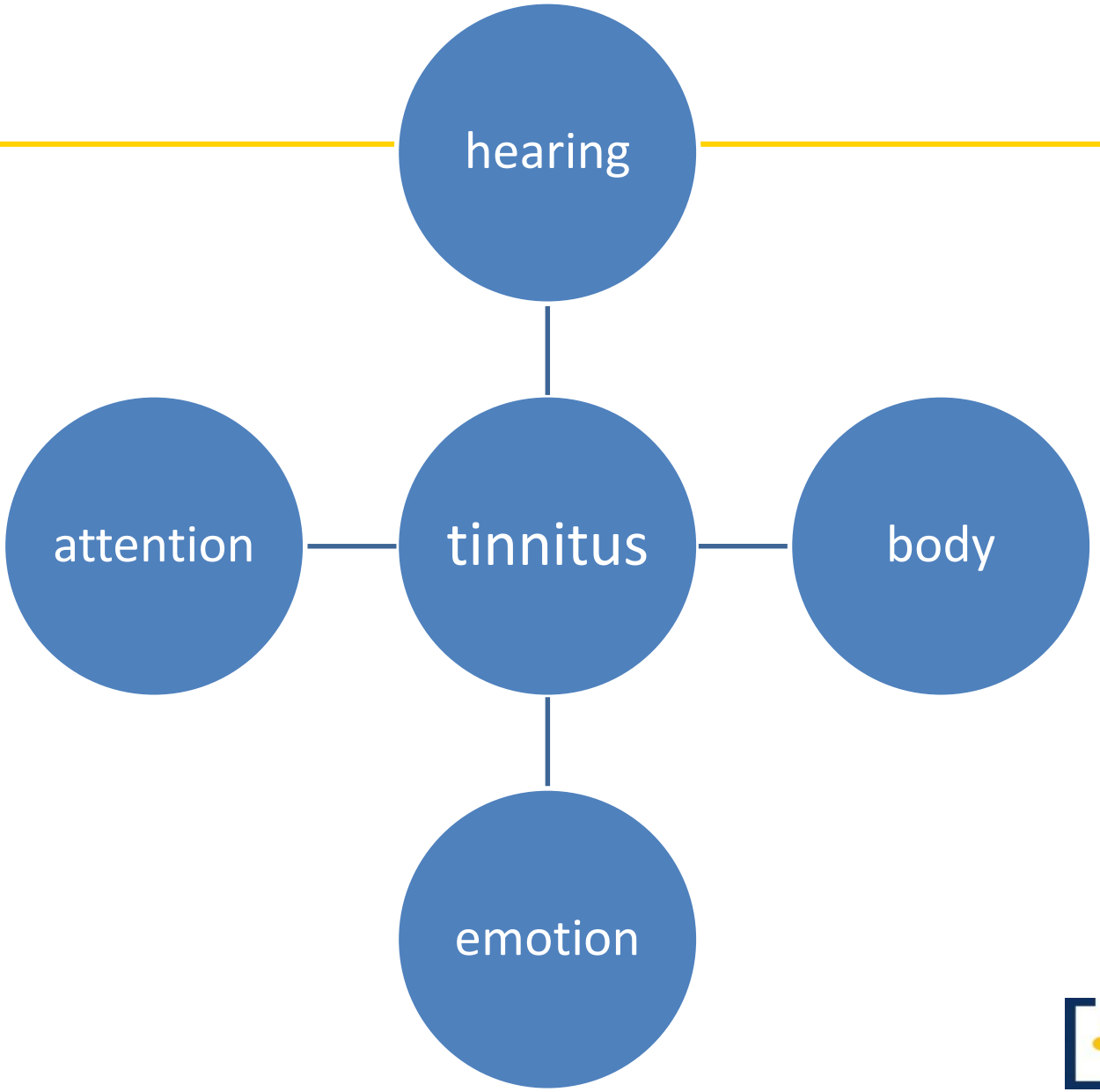

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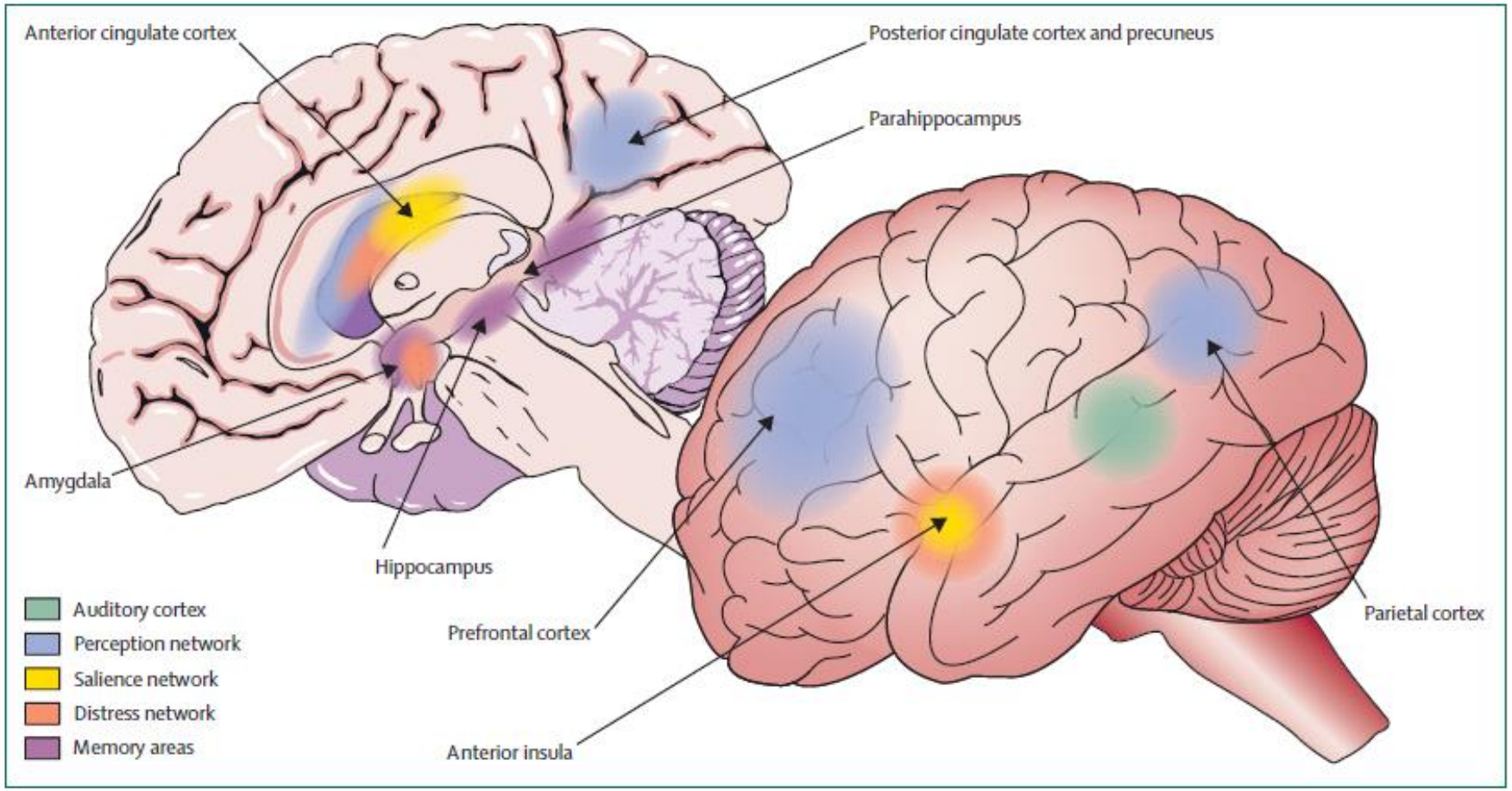

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Case study: Mr X

- Bilateral tinnitus for 25 years
  - High pitched static in the left
  - Cicadas in the right
- **Has really worsened in the last 3-4 months**
- **Increased stress**
  - Prostate cancer, hip replacement and heart surgery
- Significant **sleep disturbances**. Waking 2-3x per night
  - Feeling tired during the day
- Cannot modulate it by head, neck or jaw
- **Struggling to hear-avoiding social settings**

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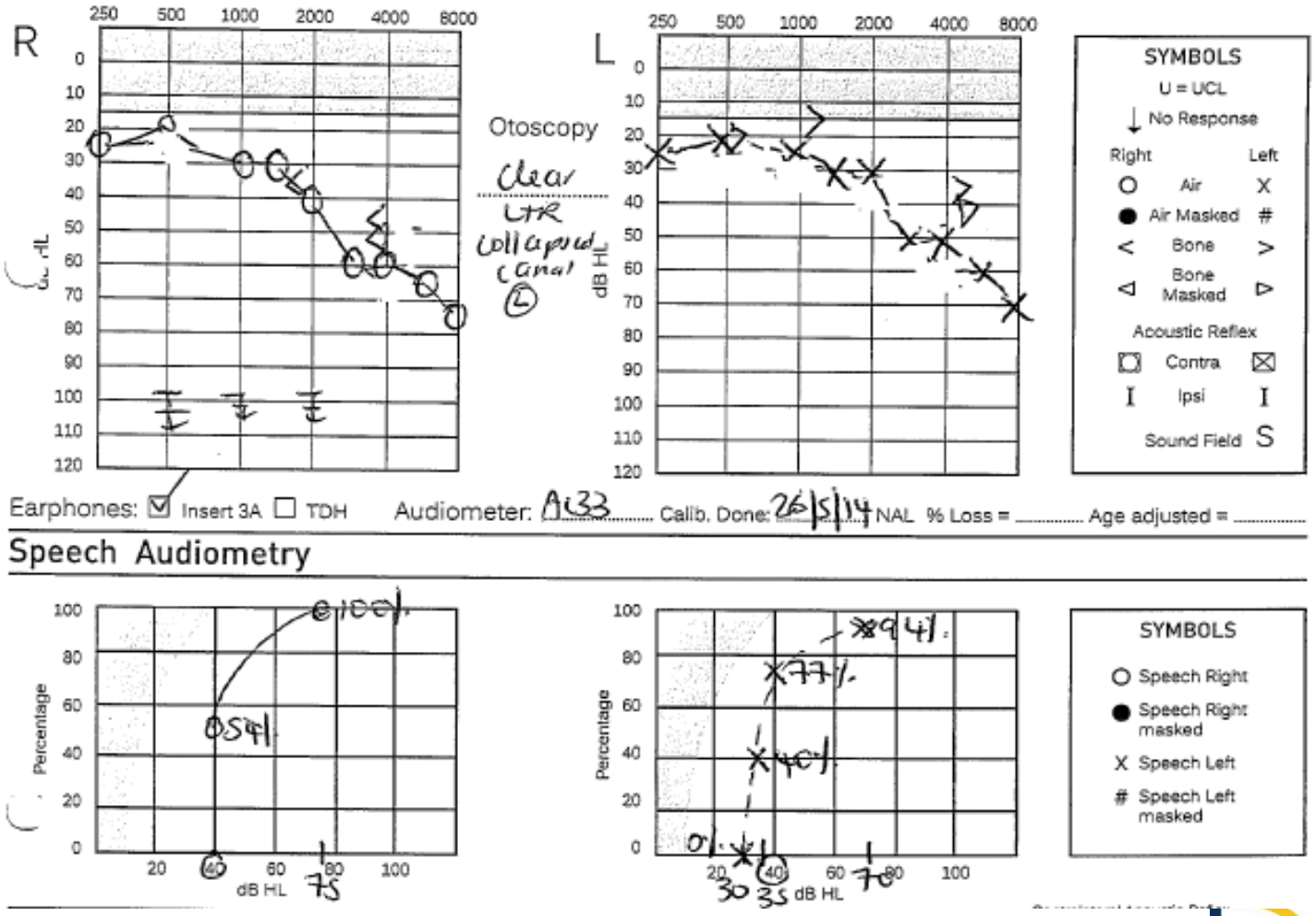
Audiogram-high pitch permanent hearing loss



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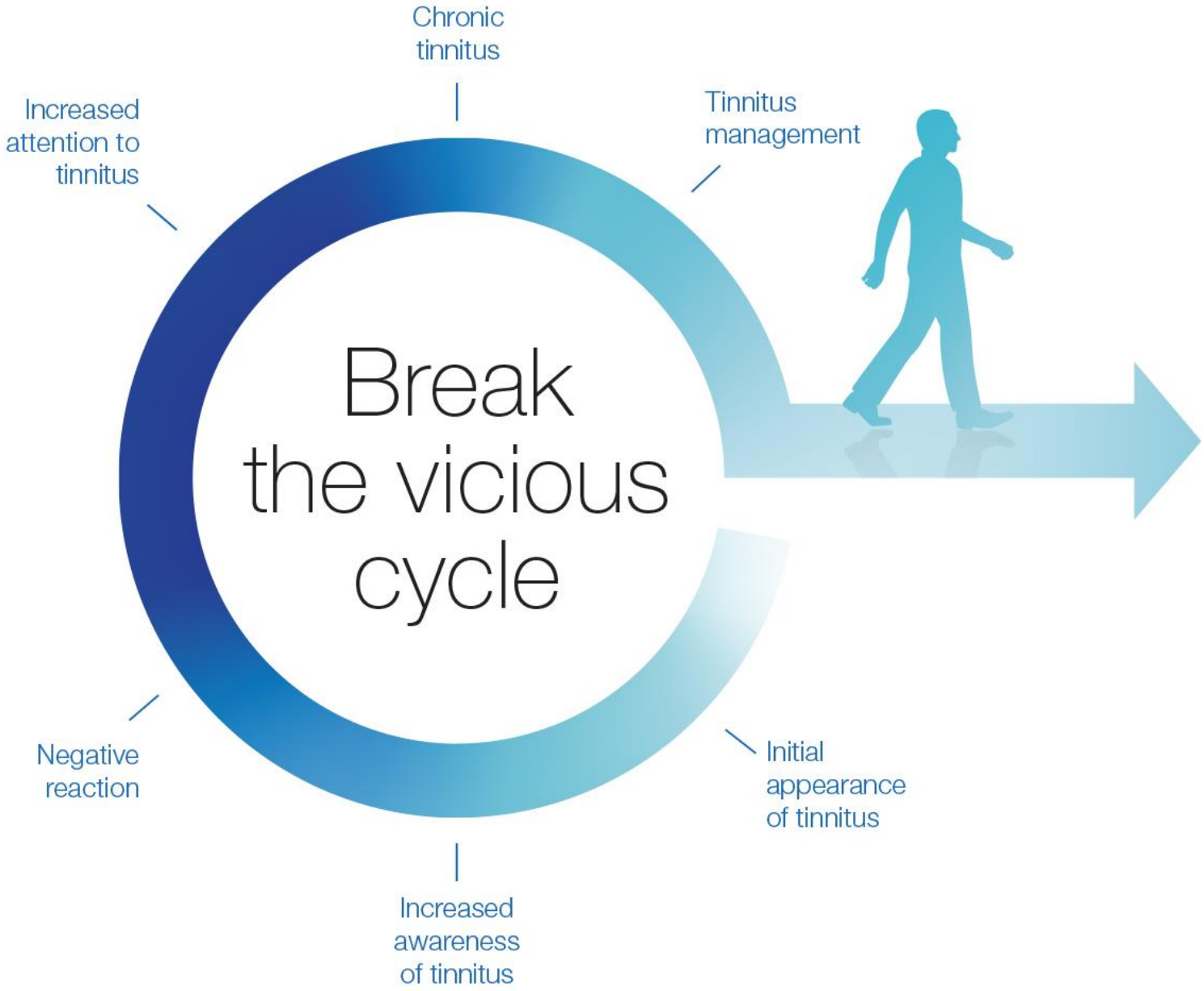
Counselling and management

- KNOWLEDGE IS POWER!
- Sleep hygiene
- Progressive muscle relaxation
- Healthy diet and exercise
- Sound enrichment
  - Aidable hearing loss
  - Musical/environnmental sounds around home
  - AVOID SILENCE!
  - Pillow speakers

DILWORTH HEARING



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Positive Association

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Positive Association

Progressive Muscle Relaxation & Stress Reduction Breathing Exercise

- Easy to perform
- Free downloadable apps now available

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Cognitive Behavioural Therapy (CBT)

- CBT needs to be conducted by psychologist or psychiatrist as it asks patient to think about the way they react to their tinnitus and change/modify their behavioural response to it.
- CBT has good success rate with tinnitus patients

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Counselling and management

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Sleep Hygiene

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Sleep Hygiene

- Sleep disturbance is often reported in association with tinnitus
- Wait to see sleep specialist can be considerable
- Handout developed to give simple, easy to follow tips to help with sleep

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Counselling and management

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Fit with hearing aids to reduce tinnitus awareness

- Started with a conventional fitting
- 1st f/up- R tinnitus has **gone**-great! ☺
  - Increased stress- left tinnitus has gone up
- Data logging: 11 hrs/day

- 2nd f/up-Masking program for L tinnitus
- Now sleeping through the night ☺☺☺
  - Some of the best sleep he's had in a long time

- 3rd f/up- tinnitus 10x better than when he first walked in. Not feeling distressed and helpless.
- L tinnitus has just about gone
- Hearing better

- Ongoing f/up- level of masker reduced-YAY

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Tinnitus Sound Enrichment

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Tinnitus Sound Enrichment

- AVOID Silence!
- Use of environmental sounds, white noise, nature sounds
- Pillow speakers
- Headphones / ipod for delivery of sound

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Tinnitus Sound Enrichment

- Gradually developing hearing loss can be difficult to self diagnose and people with a hearing loss often blame their hearing difficulties on their tinnitus. The tinnitus is a symptom of the hearing loss not the cause.
- For clients with hearing loss and tinnitus hearing aids provide an effective way of managing both communication difficulties/hearing loss and their tinnitus.
- By amplifying environmental sounds the internal noise/tinnitus becomes less noticeable.

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Tinnitus Sound Enrichment

- To be effective in managing hearing loss and tinnitus, hearing aids need to be worn for the majority of the day.
- Once clients have adapted to amplification, a significant reduction in stress and fatigue can be expected.
- Clients need to be prepared for the increased prominence of their tinnitus once hearing aids are removed.
- Many hearing aid manufacturers provide technology to help improve sound enrichment in quiet listening environments.

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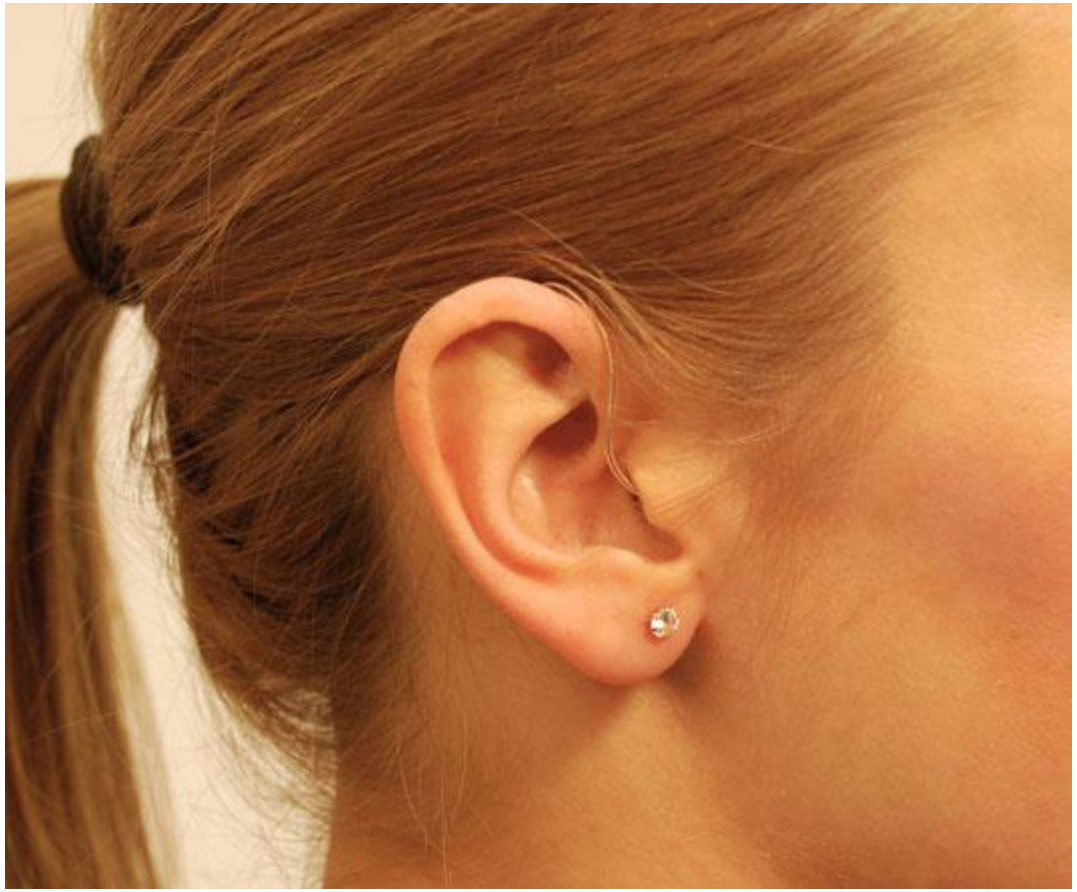
Hearing Aids / Combination devices



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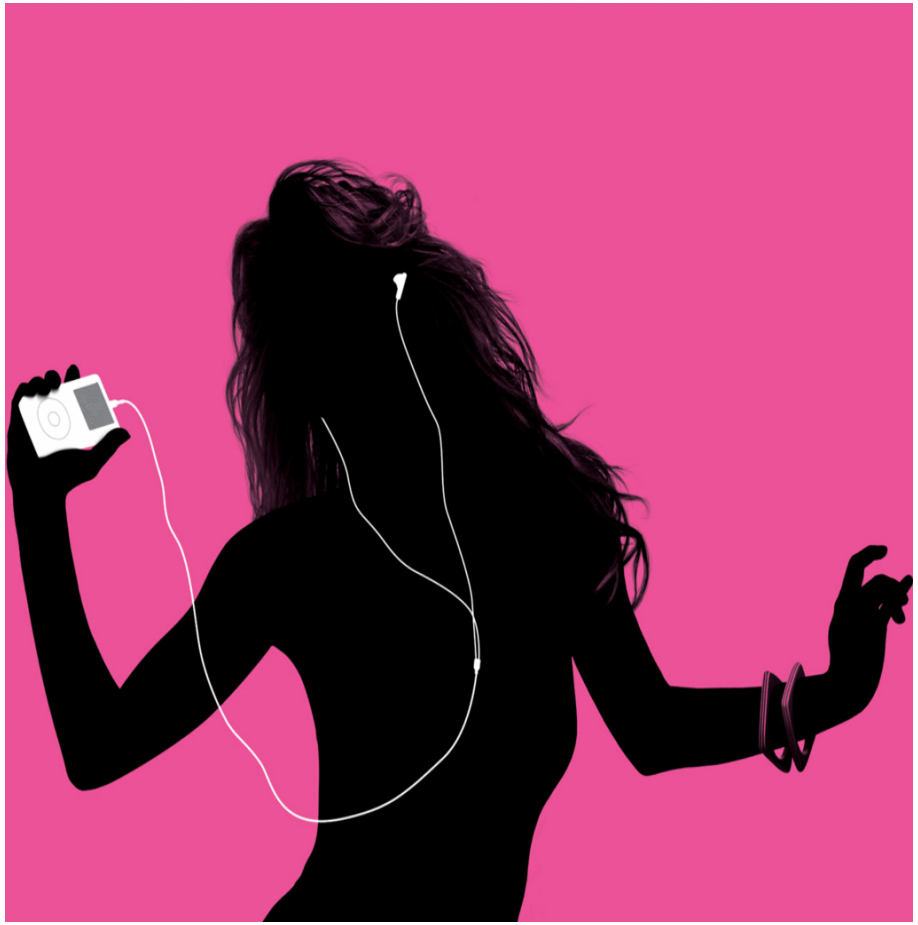
Sound Therapy – General

- Music players using apps, CD's coupled to headphones or through speaker
- Range of noise eg: white, pink, red noise and apps of nature sounds
- Apps for classifying relaxing, interesting, distracting etc



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Sound Therapy - General

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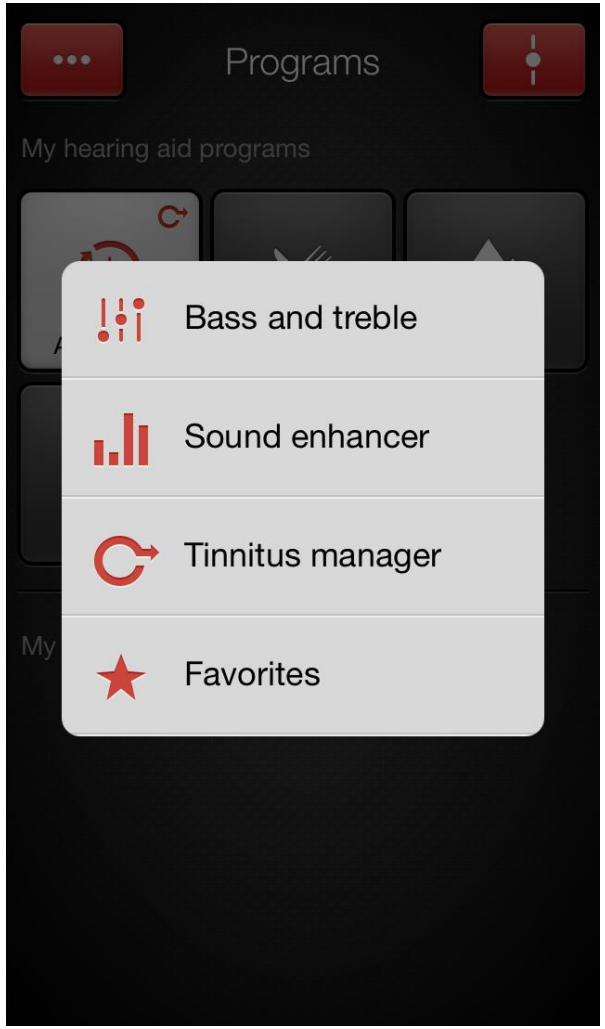
Resound tinnitus relief app



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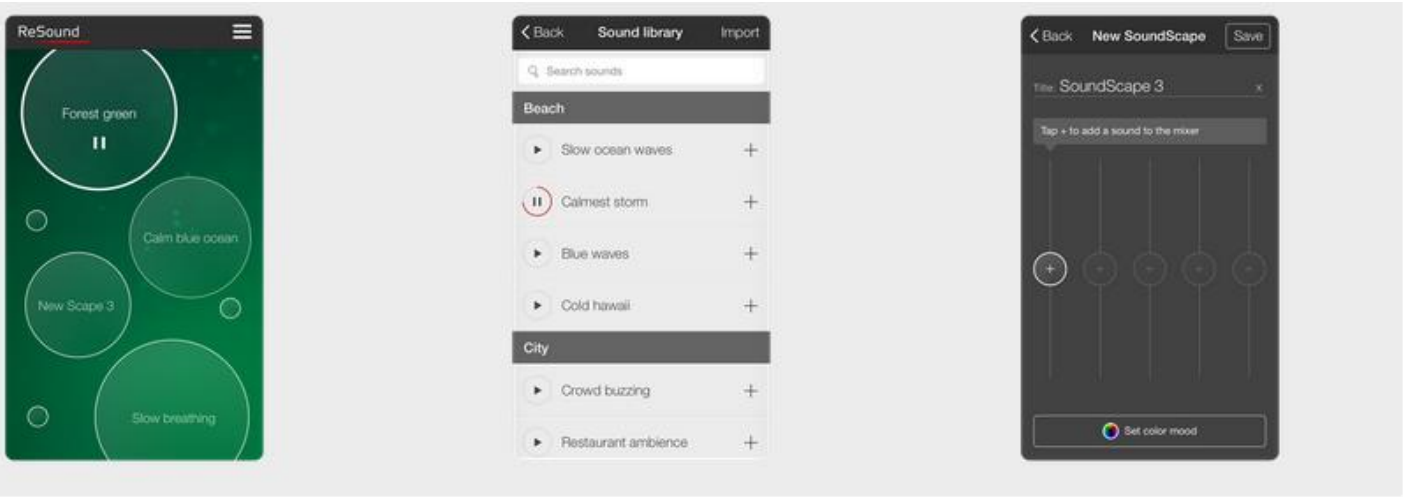

Questions?

- Any further questions can be directed to: chatu.n@dilworth.co.nz
  shantelle.c@dilworth.co.nz

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Dilworth Hearing Clinic Locations

- Te Atatu – 382 Te Atatu Road Ph (09) 557 5500
- Epsom – 160 Gillies Ave Ph (09) 631 1990
- Remuera – 139 Remuera Road Ph (09) 520 1274
- Takapuna – 15 Shea Terrace Ph (09) 485 3040
- St Heliers – 188 St Heliers Bay Rd Ph (09) 585 1100
- Howick – 260 Botany Road Ph (09) 538 0420
- Papakura – 6 Broadway Ph (09) 213 0560
- Hamilton – 8C Mills Lane Ph (07) 838 5860
- Wellington – 99 Upland Road Ph (04) 212 0650
- Christchurch – 9 Caledonian Road Ph (03 550 0148)

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