

Acoustic Neuroma: Audiological Perspectives for Balance & Tinnitus



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Who we are

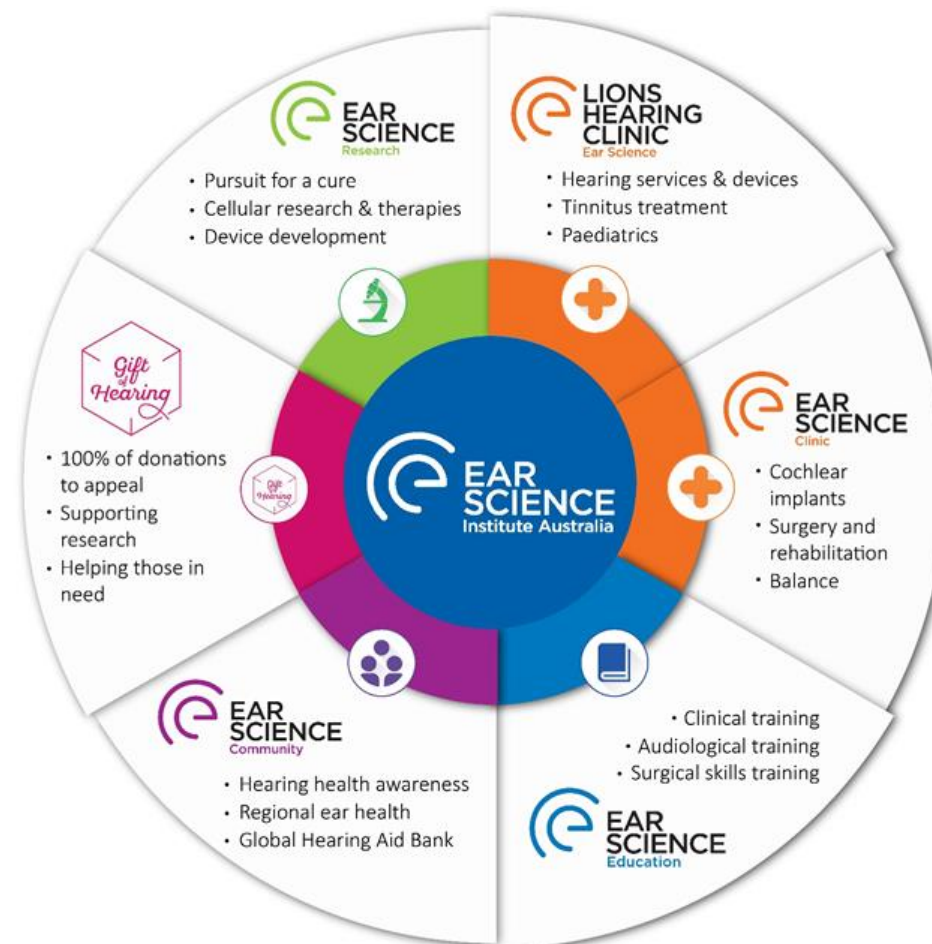


- **ESIA Vision:**

A centre of excellence, enhancing the lives of people with ear and hearing disorders.

- **Lions Hearing Clinic Purpose:**

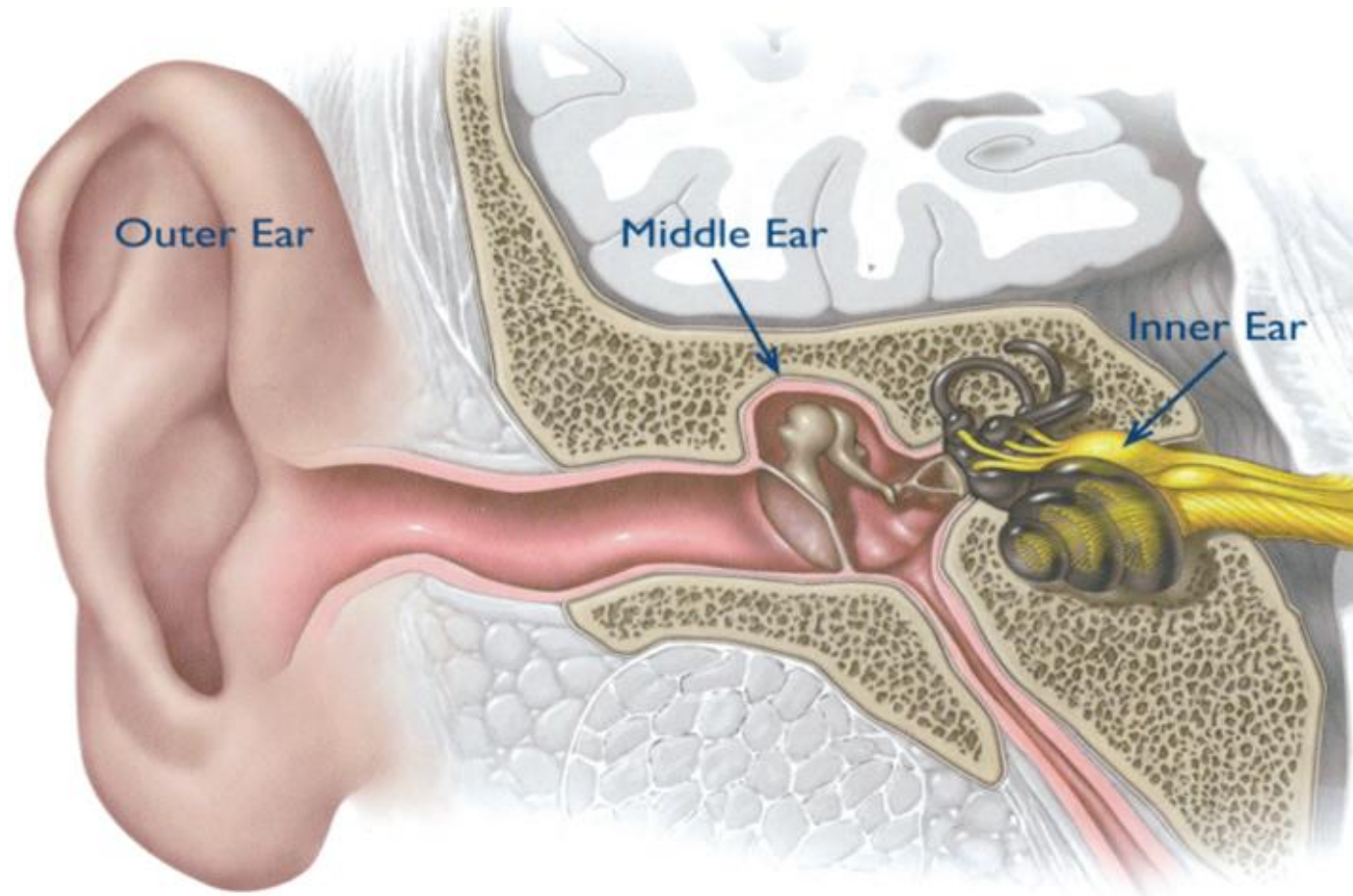
to improve people's quality of life through improved communication



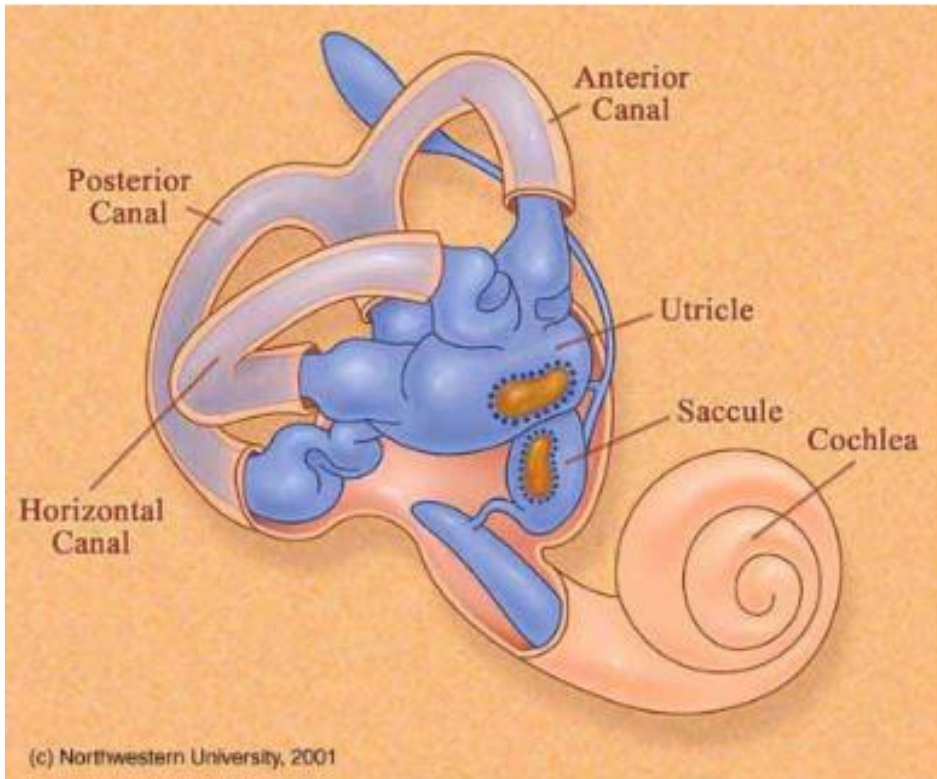


The Vestibular System and Balance

The Vestibular System



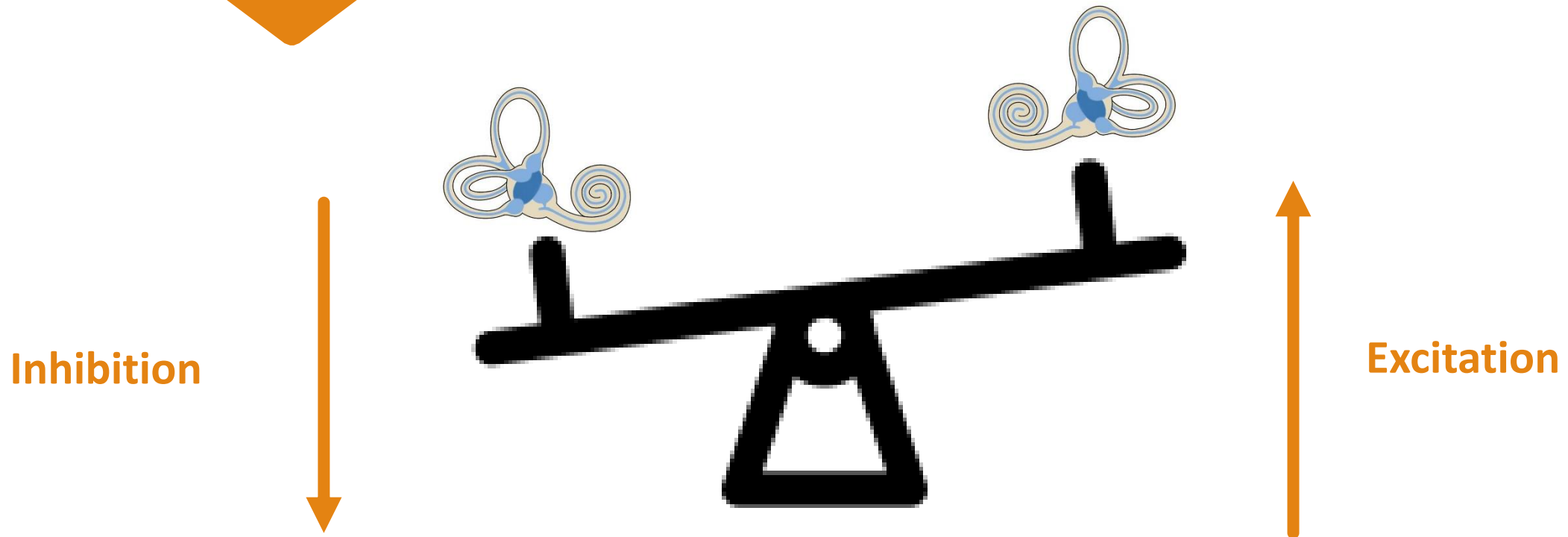
The Vestibular System



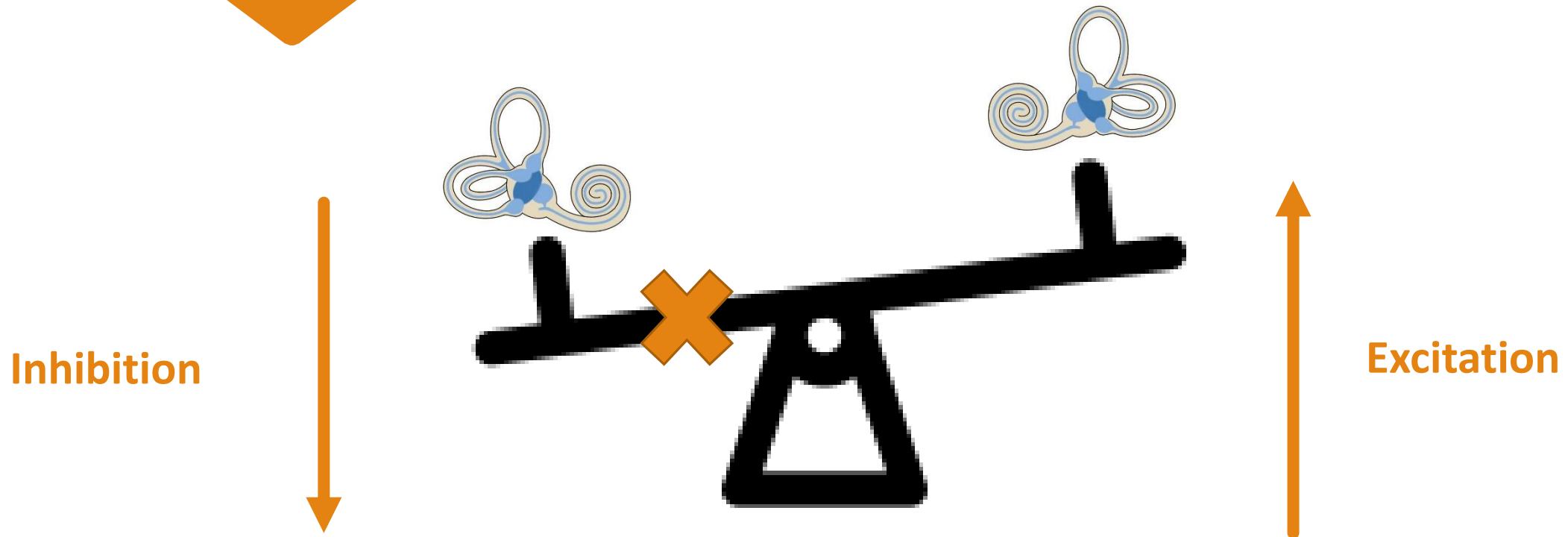
- Semicircular canals: detect angular motion (head rotation)
- Otolith Organs: linear motion (acceleration)



The Vestibular System

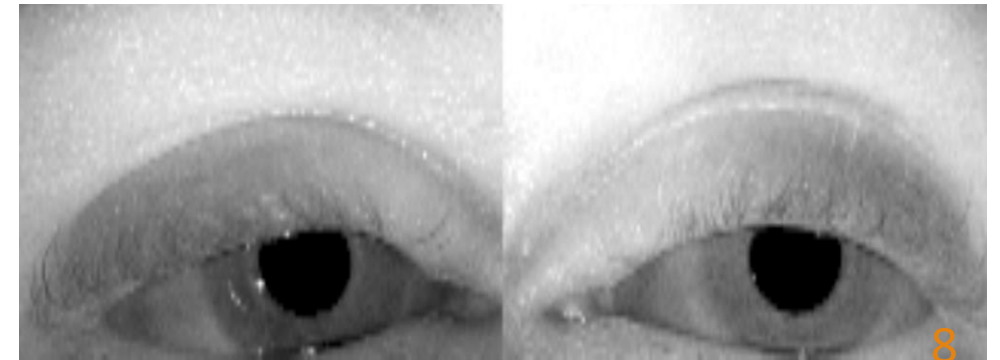


The Vestibular System



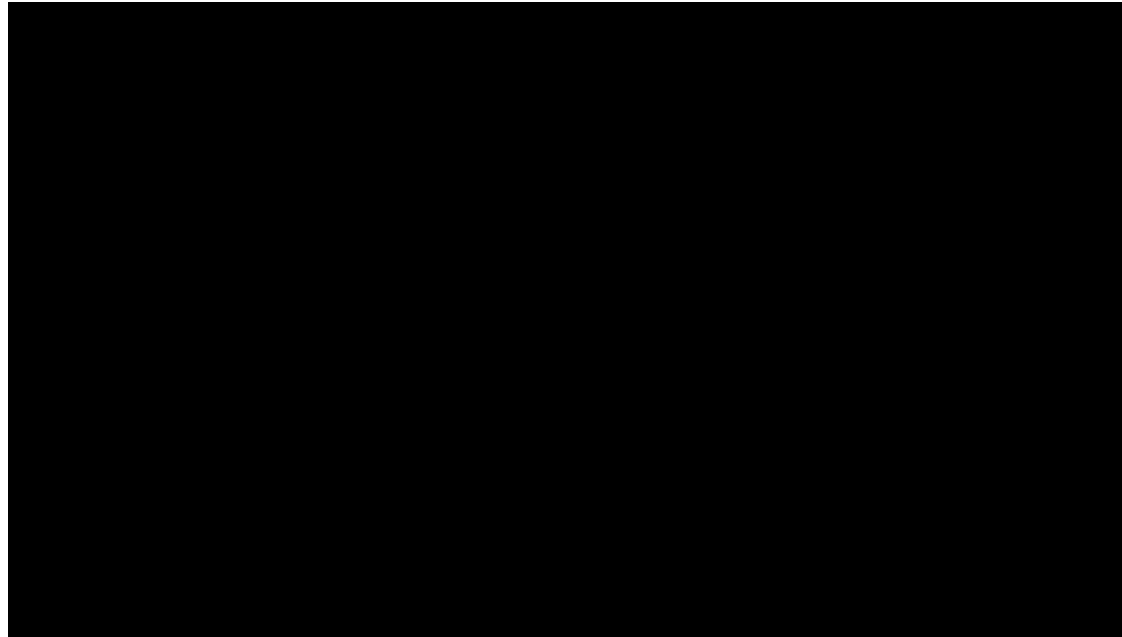
Audiological Vestibular Assessment

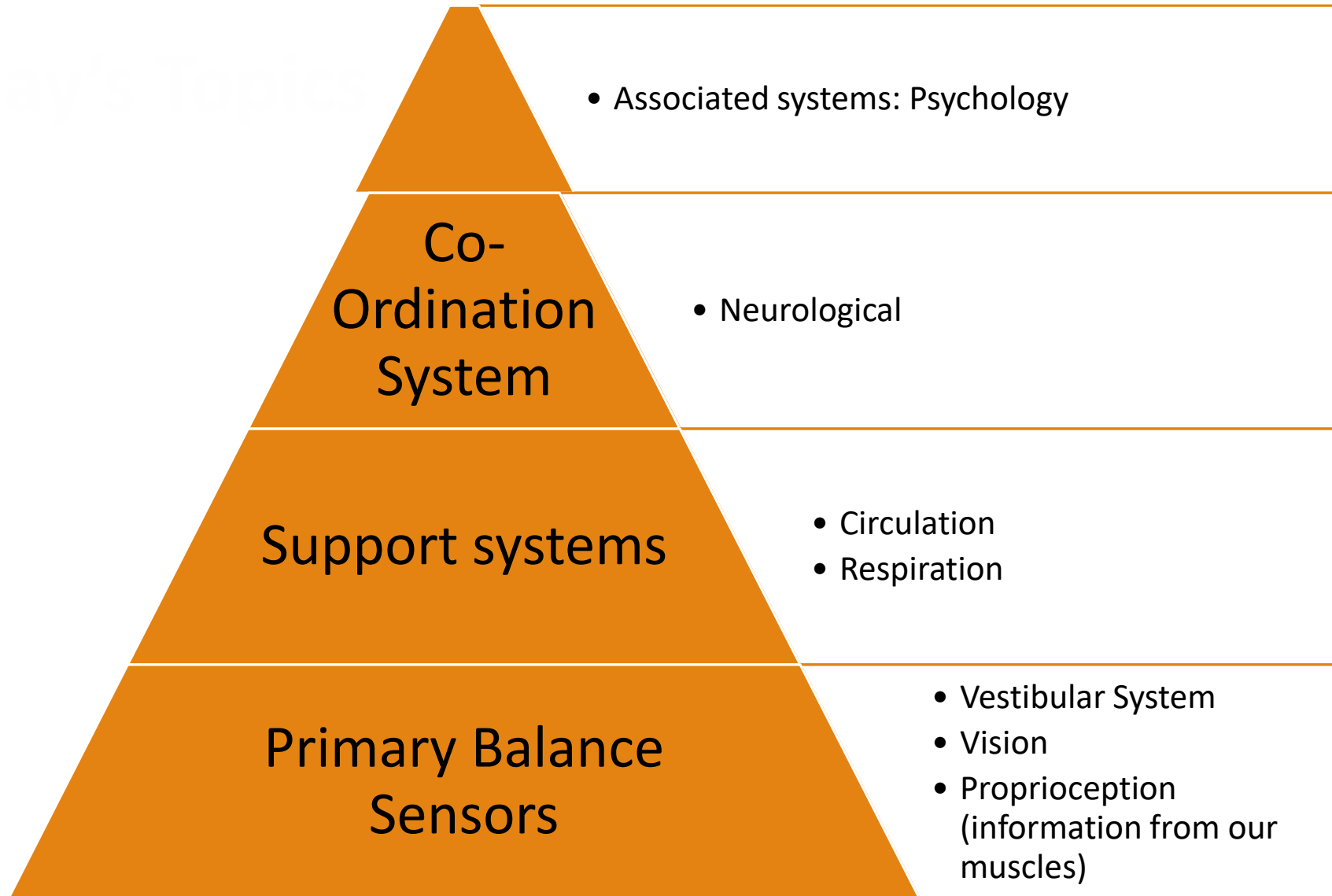
- Measure eye movements:
 - When head is stable
 - When the head is moving
 - In response to a vestibular trigger
- Measure muscle response to a vestibular trigger.
- Measure the nerve response.



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Vestibular Rehabilitation Therapy (VRT)

A specialised form of physiotherapy designed to alleviate symptoms of vestibular dysfunction.

May include exercises to:

- Coordinate eye & head movements [adaption and substitution strategies]
- Addresses the 'sensory mismatch' between the impaired vestibular system and the intact visual and muscle systems
- Improve balance & walking ability
- Improve fitness & endurance
- Increase confidence



What can you do today?

- Book with a vestibular physiotherapist for targeted balance exercises.
- Be mindful of changes to eyesight and conditions where vision is limited (e.g. walking to the bathroom at night)
- Keep active – Tai Chi and walks on the beach!





Tinnitus

What is Tinnitus?

- The perception of sound in the absence of an external sound source.
- It is a symptom of a condition, rather than a disease itself.
- It is often described as a ringing or buzzing type sound. It is not uncommon for the sound to change or to hear more than one sound.

Prevalence of Tinnitus

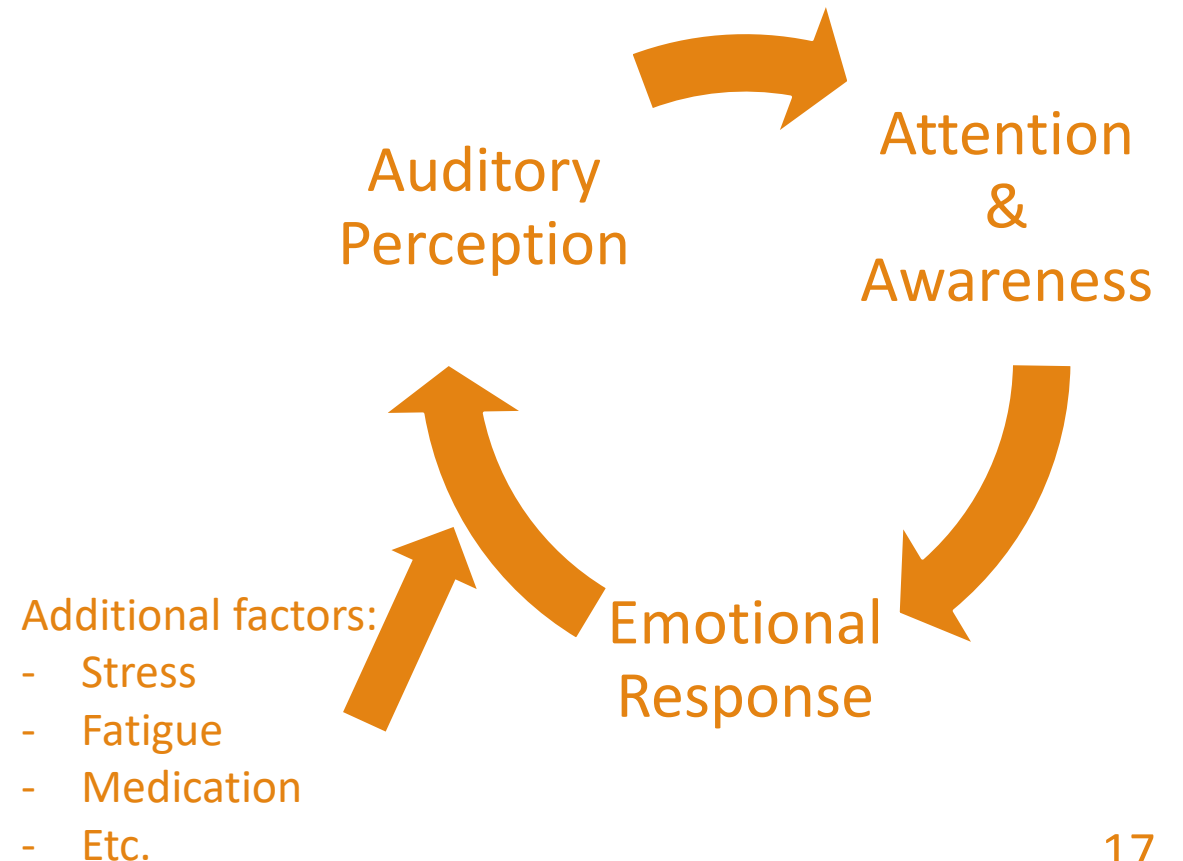
- Tinnitus is very common, affecting approximately 1 in 3 Australians.
- It is important to differentiate those who are **aware** of their tinnitus from those who are **distressed** by tinnitus.
- Audiologists perform subjective measurements to establish the overall impact on quality of life
 - Self-report measures often used that cover aspects of sleep health, relaxation issues, hearing, and emotional distress.

Contributing Factors of Tinnitus

- Pathophysiology.
- Hearing loss.
- Stress and feelings of anxiety are a common trigger or exacerbator of tinnitus.
- There is some evidence to suggest muscle tension (e.g. neck or jaw) can impact tinnitus.
- Certain medications.

The Neurophysiological Model

- When the brain perceives the tinnitus, an emotional response is attached to it.
- The emotional attachment can further increase awareness of the tinnitus.
- The model highlights the problem is not the tinnitus itself, or what 'caused' the tinnitus, but how we respond which determines the level of tinnitus distress.



A Holistic Approach to Tinnitus Management

- There is no scientifically validated cure for tinnitus.
- There are clinically proven strategies to help manage tinnitus and therefore reduce the impact it is having on an individual's quality of life.
 - Depending on the severity of symptoms, these strategies may be discussed with either an audiologist or psychologist.

Habituation

- A state of mind where the individual no longer has a negative emotional response to their tinnitus.
- When the brain no longer perceives the stimuli as threatening or intrusive it no longer prioritises it as important.

Strategies to Promote Habituation

1) Informational/Educational Counselling



- A lot of fear can come from not understanding tinnitus which can be confusing and frightening for the individual.
- Audiologist can clarify understanding and help individuals take control through modifying some of their thought patterns and adjusting behaviours which may be reinforcing tinnitus.

Strategies to Promote Habituation

2) Sound Enrichment



- Use of hearing devices and sound generators to reduce the audibility of the tinnitus.
- *Hearing devices* increase auditory stimulation to the brain and reduce the contrast between tinnitus and the silence.
- *Sound Generators* surround the tinnitus with calm, neutral and pleasant sounds which are easily ignored

Strategies to Promote Habituation

3) Guided Meditation and Mindfulness Practice



- Guided meditation and mindfulness practice are recommended as a means of reducing the engagement of these the systems that reinforce tinnitus.
- We take a very holistic approach to tinnitus management and recognise our professional limitations.

Strategies to Promote Habituation

4) Additional Support Services



- Where audiological led interventions are limited, particularly for those suffering significant tinnitus distress, a psychologist can help an individual manage this reaction to their tinnitus through education and down regulation of stress/emotion (i.e. recalibrating the nervous system).
- This helps to balance negative thinking.
- Teaches the individual to manage their attention to their tinnitus and reduce reactivity.

What can you do today?

- Book an appointment with your local audiologist to discuss your tinnitus.
- Routinely wear your hearing device.
- Implement mindfulness into your everyday life – many great apps available!
- Exercise often & minimise things like coffee where possible.
- If your tinnitus is causing you significant distress, please reach out to your GP or psychologist to discuss how they may assist.

Thank you for listening!