Arimbi Winoto  (Austin Health, RVEEH, DizzyDayClinics)
Incidence of vestibular dysfunction

Dizziness – a common problem:

- 20% of working age people presenting at GP’s in London with complaints of dizziness (Yardley et al 1998)
- Increased incidence with increased age (1.8% in young to 30% in elderly) (Sloane et al, 2001)
- RVEEH – 1000/year,
  - 25% due to inner ear pathology (Baker & Enticott, 2005)
- Population study – 5% adults surveyed c/o vestibular origin vertigo in the previous year (Neuhauser et al, 2005)
Vestibular Function
Vestibular dysfunction

- **Primary Symptoms:**
  - Dizziness (movement provoked / aggravated)
  - Vertigo

- **Secondary Symptoms:**
  - Nausea, Vomiting,
  - Blurred vision,
  - Imbalance,
  - Hearing loss,
  - Sensitivity to light/noise,
Vestibular dysfunction:

Consequences-Functional restrictions:

- Fatigue / reduced concentration
- Emotional factors: **Anxiety**...
- Daily life activities – work, driving, self-care
- Participation in sport, gardening
- Increased risk of falls, reduced independence
- Social isolation
- Further avoidance behaviours – guarding, slowing
- Further reduced fitness, endurance, confidence
- Further neck/shoulder issues
Poll Question:

- If a patient comes to you for a hearing test do you ask if they have balance or dizziness issues?
  - A. Yes
  - B. No
  - C. Not sure if it’s appropriate
Vestibular Rehabilitation

- Mechanisms of recovery following vestibular loss:
  - Cellular recovery
  - Substitution of other strategies
    - Potentiation of COR
    - Pre-programmed saccadic eye movements
    - Increased reliance of visual / proprioceptive cues
  - Adaptation of vestibular system
Vestibular Rehabilitation

- Central Adaptation of the vestibular system
  - Long-term change in how the vestibular system responds to head movement
  - Process known as vestibular compensation
  - Physiotherapist role is to use exercise and education to promote central compensation
Vestibular Rehabilitation

Physiotherapy – customized program of.....

- Habituation/Compensatory/Adaptation exercises
- Gaze stability training
- Balance and gait training
- Virtual reality, optokinetic stimulation
- Fitness training / sport/activity specific ex
- Cervical and shoulder ROM
- Education
VR habituation/compensation Ex

- graded repeated & controlled exposure to provocative movement/situation
- Causes a reduction in response to that stimulus
VR – gaze stability

- Aim to enhance the VOR gain
VR: Balance and gait retraining
Vestibular Rehabilitation

- Fitness training
  - maintaining an active lifestyle results in faster and longer lasting compensation of the vestibular system
  - Variety – context specific eg, stationary bike, walking, tennis, golf, dance!
  - “People who move more improve more!” 😊
Vestibular Rehabilitation

- Who is most appropriate?
  - stable vestibular lesion
  - movement-provoked symptoms
  - impaired balance, unsteady gait
  - limitations in activities of daily living / sport / leisure
VR – who to refer:

- Good results for:
  - UPVD – labyrinthitis, neuronitis (Hillier 2011)
  - After removal of acoustic neuroma
  - Post gentamycine treatment for Meniere’s
  - Vestibular migraine (Vitkovic 2013)
  - Traumatic brain injury
  - Posterior circulation stroke
VR - Interacting factors affecting outcomes:
Physical, Functional, Emotional:

Effective in:
- Reduce anxiety
- Reducing symptoms
- Improve balance
- Improve daily function
- Reduce secondary neck and shoulder issues
- Improve independence and confidence
- Improve quality of life

For optimal outcomes:
- Early referral
- Good compliance with HEP
- Comorbidities
  - Anxiety/depression
  - Vestibular suppressants
  - Age not a barrier
BPPV

- A biomechanical problem
- Can affect any one of the 6 canals
- A +ve Hallpike includes vertigo and nystagmus
- Roll test for HSCC
- Note the duration and direction of nystagmus
BPPV

- Posterior canal – 85%
- +ve D-H
- Horizontal Canal -10-12%
- May occur as a result of poor positioning with Epley for PSCC
- Roll test

Treatment:
- CRT - Semont, BBQ roll, Appiani, Casani
- Brandt Daroff

NB: care with neck, back, biomechanics

- Radtke A et al. Neurology 2004, 63:150-1
Poll Question:

- Are you confident as to when to refer to Falls Prevention Service
  - A. Yes
  - B. No
  - C. Unsure
Falls prevention

- NB: BVD
- Multifactorial falls risk – multiple comorbidities affecting other systems, age
- Group programs - private or public community rehabilitation centres
- Multidisciplinary –
  - neurologist/geriatrician/rehabilitation specialist / GP
  - Physio
  - OT
  - Psychologist
  - Podiatrist
  - Dietician
REFERENCES:


Hillier, S and McDonald, M. (2011) Vestibular rehabilitation for unilateral peripheral vestibular dysfunction. Cochrane Database of Systematic Reviews


Finding Vestibular Physiotherapy services:

• Listed On RVEEH website
• Contact APA

Other resources:

• seekingbalance.com.au – online resources on Mindfulness for Vertigo and Tinnitus