

## **SATURDAY 16<sup>th</sup>**

**8:30 am - 9:00 am Registration**

**9:00 am – 10:45 am Central Vestibular Pathways (Carlo Rinaudo)**

This introduction lecture provides a framework for the weekend, highlighting the main neurophysiology and neuroanatomy relating to the vestibular system, with special emphasis on brainstem, cerebellum and higher cortical regions.

Content on various reflexes and regions in the neuraxis involved with central vestibular disorders will be discussed, including connection and influence of the autonomic nervous system on many chronic dizziness conditions

**10:45 – 11:00 am Morning tea break**

**11:00 – 1pm Tinnitus, PPPD and neuroplasticity (Joey Remenyi)**

An update on current theory, research and clinical approaches will be discussed, with emphasis on neuroplasticity for patients with persistent vertigo and tinnitus. These neuroplasticity techniques may be applied to any client with persistent symptoms who is unresponsive to traditional treatment methods.

Expanded discussion will centre on factors that delay or prevent healing with neuroplasticity, the role of education and an integrated daily practice, and why we need to go beyond generic prescription, physical exercises or diets

**1:00 – 2pm Lunch (buffet lunch served in hotel restaurant)**

**2:00 pm – 4:00 pm Mal de Debarquement Syndrome (Viviana Mucci)**

MdDS is a complex neurological disorder where the perception of self-motion is accompanied by additional symptoms such as light sensitivities and fatigue. MdDS can develop as a result of disembarking from a vehicle (in most cases), but in some cases the same symptoms can develop spontaneously or without a clear trigger. The difficulties in recognizing this disorder results in a significant socio-economic burden for the patients and for the healthcare system. As a result, treatments are limited.

This talk aims to provide an overview about MdDS, including diagnostic criteria, co-morbidities, recent studies and potential treatments to ease MdDS symptoms. Secondly the course will offer practical tips for physicians and healthcare professionals about how to recognise MdDS and how to treat these patients.

**4:00 pm – 4:15 pm Afternoon tea break**

**4:15 pm – 6:00 pm Visually Induced Vertigo (Viviana Mucci)**

Visually Induced Dizziness (VID) literarily defines a condition where visual stimuli such as computer screens, optic flow and visual motion in general can trigger dizziness. This condition has been named with different terms over the years. In 2009 the Barany Society adopted the term Visually Induced Dizziness (VID) to describe these symptoms and recently included them under the umbrella of Persistent Postural-Perceptual Dizziness (PPPD).

Vestibular patients with either a central or peripheral disorder are likely to develop VID symptoms due to an overweighting of their visual inputs. Patients suffering from VID are becoming visually dependent and therefore they are susceptible to complex visual stimuli, such as looking at passing trains or flickering lights, repetitive visual patterns, walking in supermarket aisles, watching movies or scrolling phones and laptop screens. When dizziness is triggered by visual inputs, avoidance behaviours are often observed and patients are unable to conduct a normal lifestyle.

This talk will provide an overview on what is VID, the current research findings, and pathophysiology. Treatment options to ease VID symptoms based on optokinetic rehabilitation will also be presented.

**SUNDAY 17<sup>th</sup>**

**9:00 am – 10:00 am Psychological treatment for central vestibular conditions**

**(Sarah Edelman)**

This session will provide an overview of the two-way relationship between dizziness and psychiatric disorders. The syndrome most frequently associated with functional dizziness (now called 'persistent postural perceptual dizziness'- PPPD), and its key identifying features will be described. Personality style and common precipitants of the disorder, as well as signs suggesting a role for psychological factors will be described. Evidence-based therapies, with a particular focus on cognitive behaviour therapy will be reviewed. Useful components of CBT that can be readily administered by the non-psychologist will be identified, and psychoeducational material that can be given to patients will be provided.

**10:00 am – 11:00 am Vestibular Migraine – a Neurologist view (Shaun Watson)**

An update on the pathophysiology of VM with various theories discussed. Assessment and management from a Neurologist will be shared including typical patient presentations, medications commonly used, as well as red flag for practitioners to be on the look-out for.

**11:00 am – 11:15 am Morning tea break**

**11:15 am – 1:00 pm Functional applications for Vestibular Migraine (Joey, Viviana, Carlo)**

A not-to-be missed session involving 3 engaging multi-disciplined practitioners and researchers will be sharing clinical gems utilising novel functional clinical applications to help manage VM. These will include a visual-motion desensitization technique, an application of neuroplasticity, as well as discussion of hormonal links to patient cases.

**1:00pm – 2:00pm Lunch (buffet lunch served in hotel restaurant)**

### **2:00pm – 2:45pm Virtual Reality in Clinical Practice (Hamish MacDougall)**

Virtual reality is no longer limited to science fiction movies or video games. Rapid advances in technology in the past ten years have made it available for everyone. With its increasing affordability, this technology has opened the door to novel ways to teach, measure cognition and behaviour, and to design tailored interventions to treat various disorders and deficits. Virtual reality now provides opportunities to examine behaviours in ways that would otherwise be impossible in real life. Virtual reality can be used in training to gain new skills, such as surgery, and in the diagnosis and treatment of disorders, such as phobias. We use virtual reality to visualising complex 3D data for anatomy, physiology and virtual surgical planning, and to improve understanding and empathy through exposure to simulated vestibular attacks for those that support patients.

### **2:45pm – 3:30pm How to setup a balance and vestibular testing, and rehabilitation clinic (Elodie Chiarovano)**

In the Virtual Reality OpenLab at the University of Sydney we have developed devices and applications for vestibular testing and rehabilitation. For vestibular testing, we have developed virtual versions of the subjective visual vertical test, visual perturbations useful in balance testing, etc. We also developed a simple and portable VEMP test device which we call the  $\mu$ VEMP. For rehabilitation, we have made visual stimuli including optokinetic clouds (for balance training), striped rotating drums (potentially useful in the treatment of MDDS) and modelled various environments that vestibular patients find challenging (to develop coping mechanisms and strategies with gradual and controlled exposure). In this presentation we will demonstrate, with live testing and virtual reality, many of these exciting applications. It is now possible to assess the function of all ten vestibular end-organs and balance (posturography) in less than 30 minutes using simple, portable and affordable equipment including vHIT,  $\mu$ VEMP, and BalanceRite with Virtual Reality.

### **3:30pm – 3:45pm Afternoon tea break**

### **3:45pm – 4:30pm Neuromodulation with Galvanic Vestibular Stimulation (Carlo Rinaudo)**

We'll discuss the neurophysiological effects of GVS and its neuromodulating effects on the central nervous system. Expansion on its putative effect on restoring balance impairments, as well its 'neuro-priming' effects on traditional vestibular rehabilitation therapy will be discussed

### **4:30pm – 5:00pm Neuromodulation with Trans Cranial Direct Stimulation (Viviana Mucci)**

A discussion on the exploratory field of tDCS for the management of central vestibular including tinnitus. Research and clinical applications will be highlighted with opportunities for enhanced results for challenging cases