

IN BALANCE

Vol 10 November 2008

VESTIBULAR INVESTIGATION UNIT

A collaborative service provided by the Royal Victorian Eye & Ear Hospital and University of Melbourne Department of Otolaryngology
<http://www.medoto.unimelb.edu.au/oto/vestibular.html>

EDITORS NOTE

In this edition, the spotlight shines brightly on our newest test – the oVEMP!

In an exciting new phase for the VIU, RVEEH and Department of Otolaryngology, we are actively working towards creating better links between our basic and clinical research. The VIU working with our new vestibular physiologist, Leon Heffer, and other scientists Hayden Eastwood, Prof Ian Curthoys and Prof Stephen O'Leary, are leading some very new patient focused clinical research here in the near future. We are very pleased to continue working towards better patient outcomes for those with hearing and balance problems.

On the staff front, we have welcomed Joe Thompson to our team and about to come on board are two new Audiologists; Jo Remenyi and Caitlin Barr. Nichola Baker welcomed 'Emma Rose', the second addition to her family and Chelsea Jose welcomed her first bub - 'Spencer James'. Our current waiting list is now a very manageable 4 weeks.
- Rebecca Verhoef

New easy Otolith function test for patients introducing the

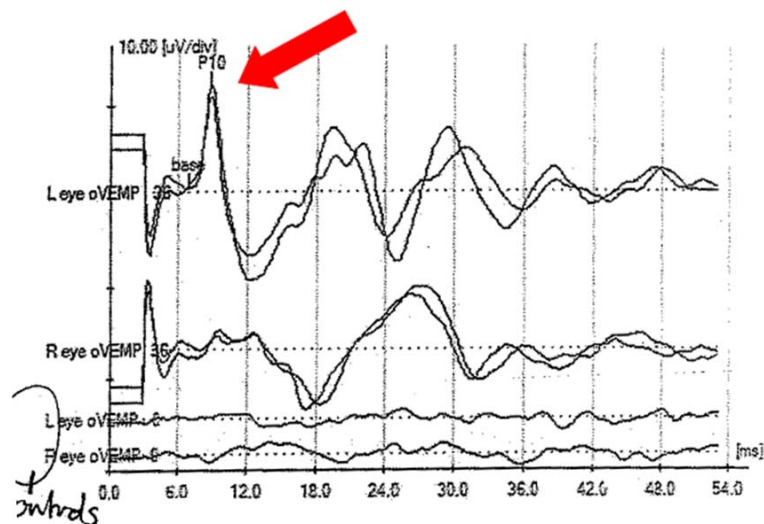


The ocular Vestibular Evoked Myogenic Potential (oVEMP) testing is relatively simple and comfortable to perform with patients. This test is brand new in the world, and it is through our collaboration with Sydney University that we have been lucky to recently introduce the oVEMP into our clinic and help investigate its clinical potential.

The oVEMP test has been recently developed by Ian Curthoys' and colleagues at Sydney University. The oVEMP test is similar to our regular cervical VEMP (cVEMP) test, which elicits a response from the sternocleidomastoid muscles. The oVEMP test elicits a response through different pathways compared to the cVEMP and originates from activation of the utricular macula and measured in the ocular muscles (Iwasaki et al., 2007).

The patient wears electrodes on the face under the eyes during oVEMP testing, and is instructed to deviate eyes upward continuously during testing. The vestibular system is activated by bone-conduction stimulation by introducing a series of 500Hz short tone bursts onto the patient's forehead. These 500Hz vibrations are well tolerated by patients, and we recently calibrated the force and acoustic properties of the 500Hz stimulus and showed that the equivalent sound intensity is well within safety limits (<70dB short bursts at 500Hz).

Our experience to date is that the test is extremely useful, and has been helping to diagnose previously undiagnosed otolith dysfunction. We are currently collecting normative data and next plan to investigate the results from three groups of patients; those with 1. Superior Canal Dehiscence and 2. Post-surgery translabyrinthine vestibular schwannoma removal and 3. pre- and post-cochlear implantees.



ABOVE FIGURE: This result was taken from a patient with vestibular function only in the right ear. The arrow shows the oVEMP response measured under the left eye (a crossed response, indicating utricle function in the right ear). No response is observed under the right eye.

Interim patient reports can be emailed to you, making it easier for you to store electronic files. Please send your email address to enticott@unimelb.edu.au

MENIERE'S SYNDROME & ECoG - A review...

*The American Academy of Otolaryngology – Head and Neck Surgery (AAO-HNS) criteria for **DEFINITE Meniere's Syndrome** are:*

- Two or more definitive spontaneous episodes of vertigo of 20 min or longer
- Audiometrically documented hearing loss on at least one occasion
- Tinnitus or aural fullness in affected ear
- Other causes excluded e.g. vestibular migraine, vestibular schwannoma

If your patient falls into the 'Definite' AAO-HNS guidelines listed above, then it is quite likely that they suffer Meniere's syndrome in the affected ear (hit rate = 100%, false alarm = 28%).

Electrocochleography or ECoG can be helpful to the medical practitioner as a tool to reduce the false alarm rate of the AAO-HNS guidelines or when the guidelines for 'Definite' Meniere's syndrome are not met. Although it can be helpful in these circumstances, unfortunately as you know, it is not a definitive test for Meniere's syndrome.

ECoG is contraindicated in some situations and therefore won't be performed if:

- the patient has discharging ears or otitis externa
- there is a severe/profound hearing loss in the test ear, as degree of hearing loss means potentials cannot be elicited

Very occasionally, ECoG can be requested when a patient has a perforation (or grommet). The VIU protocol is that the referring otologist (you!) must be present during ECoG testing in patients with non-intact tympanic membranes.

VESTIBULAR MIGRAINE

We require vestibular migraineurs to participate in a study investigating the affects of motion sickness history, anxiety and central habituation on vestibular physiotherapy outcomes. Patients will receive **FREE** vestibular physiotherapy. For more information or to refer any interested volunteers, contact Jessica Vitkovic, 9929-8235 or jessicav@unimelb.edu.au

There are still some places available in a study here which involves suitable people receiving **FREE** Vestibular physiotherapy...

Inclusion criteria includes:

- First assessed in VIU
- < 70 years old
- Vestibular symptoms provoked by movements
- No history of stroke or serious neurological deficit
- No significant pain issues affecting ability to exercise
- NOT bilateral vestibular failure

Contact Joanne Enticott enticott@unimelb.edu.au

Vestibular Investigations Unit
Locked bag 8, East Melbourne 3002
Tel: 9929 8740 Fax: 9662 3312



A Quick Fix for Vertigo – Case Study

A patient had been under investigation for episodes of severe but brief vertigo for the past 3 months however, a cause could not be determined. She was very pleased we were able to "fix" this problem for her using the following...

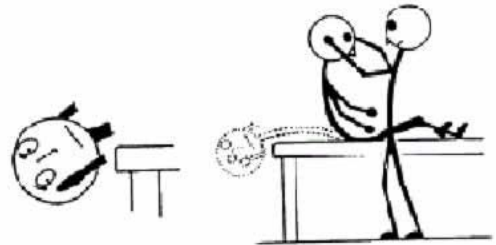
A very **common cause of vertigo is Benign Paroxysmal Positional Vertigo (BPPV)** which is caused by migration of otoconia (crystals) from the vestibule into the semi-circular canals

Symptoms of BPPV:

- severe vertigo with head movement
- brief duration of vertigo: 5-30sec
- often first noticed while rolling in bed

Diagnosis of BPPV:

- By using the (Dix)-Hallpike Manoeuvre - provokes symptoms
- observe short-lived torsional nystagmus



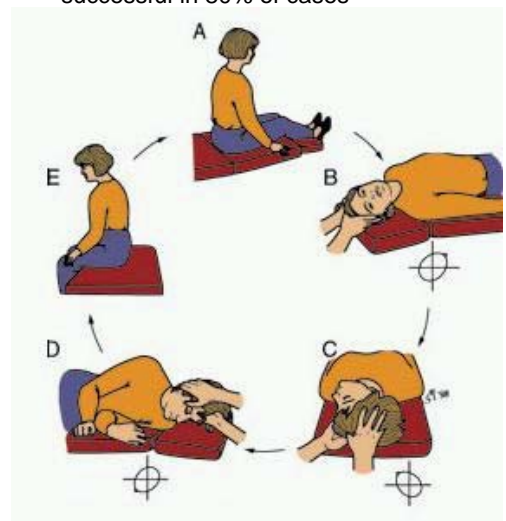
Source: www.fmc-tourcoing.org

HOW? Follow these simple steps:

- ask patient to focus on your nose
- rotate their head 45deg to one side
- supporting the head, lay them backwards
- watch for nystagmus

Treatment of BPPV:

- the Epley Manoeuvre is used to treat BPPV
- repositions otoconia back into the vestibule
- is a continuation of the Hallpike Manoeuvre
- successful in 80% of cases



Source: www.multiple-sclerose-mijn-verhaal.be

