# Workshop 3:
## Electrophysiology in clinical vestibular assessment

**PRESENTERS**

**Andy Beynon, PhD (NLD)**

Andy started in 1986 as clinical audiological researcher, followed as lecturer at the Radboud University Medical Center (Fac. Medicine & Biomedical Sciences, Fac. Linguistics), director of Vestibular & Auditory EP Lab at ENT Dept, visiting/guest professor at University Santiago de Chile (CHL), University Bucharest (ROU), University Ghent (BEL), member of several examination & advisory boards, academic editor (J Audiol Res, J ORL Hear Balance Med) and vice-chair of IERASG. Trained at EP Clinic of Queens Medical Center Nottingham (GBR), University of Antwerp (BEL) and Radboud University Nijmegen (NLD), he received his PhD in 2005 on electrically-evoked auditory cortical potentials. Research topics: animal/human auditory electrophysiology, speech processing, oto-genetic audio-vestibular assessment, cochlear implants.

**Rachael Taylor, PhD (NZL)**

Rachael is a senior research fellow, audiologist and neuroscientist from the University of Auckland with over 20 years of experience in diagnostic vestibular and oculomotor function assessment. She trained at the National Hospital for Neurology and Neurosurgery in London, and the Royal Prince Alfred Hospital in Sydney, Australia. She joined the University of Auckland in 2018 where she established a human vestibular research facility to support translational research for vestibular and neurological disorders in New Zealand. Rachael also teaches on the Master of Audiology program, supporting the training of students in assessing people with dizziness and balance problems.

**Karen Hendrick, AuD (USA)**

Karen is a clinical audiologist and Vestibular Clinical Practice Specialist at Children's Hospital Colorado. She graduated with her AuD from the University of Washington in 2015, following an externship at Seattle Children's Hospital. Specialties include pediatric vestibular testing, auditory evoked potential testing, and global health.

**Andrea Gaitlin, AuD (USA)**

Andrea is a pediatric audiologist at the Colorado Springs branch of Children's Hospital Colorado. She graduated with her AuD from Northwestern University in 2021 following an externship at Children's Hospital Colorado. Specialties include pediatric vestibular testing, auditory evoked potential testing, and pediatric hearing aid management.

## ABSTRACT

This workshop will cover application of clinical VEMP recordings in adults and in children. The first part will start with an introduction of VEMP in the context of standard clinical vestibular assessment. Physiology and the evolution of VEMP testing, including practical tips & technical pitfalls, will be addressed, followed by a practical demonstration of VEMP recordings in adults.

After a short break, in the second part we will focus on VEMP testing in infants and children, requiring special considerations. The maturation of neural reflex pathways responsible for VEMPs, the utility of bone conducted stimuli, and pediatric test modifications will be reviewed as well as application in children with high vestibular risk factors such as congenital cytomegalovirus (cCMV) and cochlear implant candidates/recipients. The clinical utility of VEMPs in these populations will be discussed and demonstrated.

## LEARNING OBJECTIVES:

**After this workshop, participants:**

- will know the patho-physiological background of VEMPs
- will know the difference between cervical- and ocular-VEMPs
- will know which parameters are important to successfully perform VEMPs
- will know the clinical pitfalls during VEMP testing and are able to solve them
- will know differences between VEMP testing in adults vs. children
- can give examples of clinical VEMP applications in specific patient groups