



**INTERNATIONAL CONFERENCE FOR
VESTIBULAR REHABILITATION**
AUGUST 17-19 ▪ CHICAGO, IL **2018**
TRANSLATING RESEARCH TO ADVANCE PRACTICE

International Conference of Vestibular Rehabilitation: Translating Research to Advance Practice

Sponsored by the Academy of Neurologic Physical Therapy

American Physical Therapy Association

Palmer House Hilton Hotel, Chicago, IL

August 17-19, 2018

Conference Description

This conference will provide experienced clinicians and basic scientists with the most current evidence and theories to advance vestibular rehabilitation. The planned question and answer and poster sessions will provide opportunities for vestibular basic and applied scientists to interact with the participants. A cadre of internationally recognized leaders will present their cutting-edge research and its translation into practice as it applies to the diagnosis and management of persons with vestibular disorders. This 2.5-day conference covers five unique sessions, a panel discussion following each session, a nightly poster session and reception, and a final summary of the evidence and new findings at the end of the conference. The nightly poster session and reception will enable participants to dialogue with the session speakers. The five sessions will include a variety of topics: Differentiating Causes of Vestibular Dysfunction, Motor Learning in the Vestibular System, Benign Paroxysmal Positional Vertigo (BPPV), Vestibular Rehabilitation Does not Fix Everything, and Future Directions. The conference format will consist of lecture, discussion, and interactions during the poster sessions. Participants will also have an opportunity to submit written questions for the summary session on the last morning of the meeting. It is strongly recommended that participants have a working knowledge of anatomy, physiology, and pathophysiology of the vestibular system and have experience treating individuals with vestibular disorders.

Who Should Attend

Physical therapists, occupational therapists, vestibular basic scientists, audiologists, and physicians

CEUs credits available for US physical therapists

Conference Objectives

Upon completion of this conference, participants will be able to:

- Use evidence based clinical decision rules to differentiate peripheral from central vestibular dysfunction in acute vestibular syndromes
- Describe measurements of canal and utricular dysfunction
- Identify central nystagmus patterns



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- Describe neuroplasticity within the vestibular system and how its study is evolving
- Apply principles of motor learning to optimize performance of the VOR in individuals with vestibular hypofunction
- Discuss effects and use of sensory re-weighting in the management of vestibular disorders
- Describe the pathological biomechanics of BPPV
- Interpret unusual patterns of nystagmus observed during positional testing and particle repositioning maneuvers based on a better understanding of the anatomy and physiology of the utricle and saccule
- Determine components of the “ideal” particle repositioning maneuver based on biomechanics of BPPV
- Discuss strategies to prevent recurrence of BPPV
- Identify disorders that may interfere with recovery of level of function and participation such as anxiety, vestibular migraine, visual motion sensitivity, and motion sickness
- Recognize the effects of aging on the vestibular system
- Discuss new advances and techniques for vestibular rehabilitation
- Be exposed to new technologies being utilized to better understand central and peripheral vestibular function
- Describe some of the innovations and technologies being utilized to identify and intervene with persons post-concussion
- Develop an understanding of new basic research findings related to skew that may affect vestibular rehabilitation
- Be exposed to some of the latest findings related to TMS and Mal de Debarquement
- View and observe data related to some of the first subjects who have received the surgically implanted vestibular prostheses
- Begin to understand how “big data” may revolutionize the care of the persons with dizziness and balance disorders
- Discuss exciting technologies that are currently being developed around the world that may improve care for persons with balance and vestibular disorders



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Conference Faculty

- Yuri Agrawal, MD, MPH, Johns Hopkins University, Baltimore, MD USA
- Bela Büki, MD, PhD, Karl Landsteiner University Hospital Krems, Austria
- Yoon-Hee Cha, MD, Laureate Institute for Brain Research, Tulsa, OK USA
- Charles C. Della Santina, MD, PhD, Johns Hopkins University, Baltimore, MD USA
- Scott D. Eggers, MD, Mayo Clinic, Rochester, MN USA
- Joseph M. Furman, MD, PhD, FAAN, University of Pittsburgh, Pittsburgh, PA USA
- Dan Gold, DO, Johns Hopkins University, Baltimore, MD USA
- Janet O. Helminski, PT, PhD, Midwestern University, Chicago, IL USA
- Susan J. Herdman, PT, PhD, FAPTA, Emeritus, Emory University, Atlanta, GA USA
- MAJ Carrie Hoppes, PT, PhD, NCS, OCS, Army-Baylor University, San Antonio, TX USA
- Jorge C. Kattah, MD, FAAN, University of Illinois, Peoria, IL USA
- Behrang Keshavarz, PhD, Toronto Rehabilitation Institute-UHN, Toronto, Canada
- Chang-Hee Kim, MD, PhD, Konkuk University School of Medicine, Seoul, South Korea
- Ji-Soo Kim, MD, PhD, Seoul National University, Seoul, South Korea
- Michel Lacour, PhD, Aix-Marseille Université, France
- Americo Migliaccio, PhD, University of New South Wales, Australia
- Dominik Obrist, PhD, University of Bern, Bern, Switzerland
- Marousa Pavlou, PT, PhD, BA, MCSP, King's College London, United Kingdom
- Richard Rabbitt, PhD, University of Utah, Salt Lake City, UT USA
- Michael C. Schubert, PT, PhD, FAPTA, Johns Hopkins University, Baltimore, MD USA
- Paul F. Smith, MAppI. Stat (Hons), PhD, DSc, University of Otago, Dunedin, New Zealand
- Patrick J. Sparto, PT, PhD, University of Pittsburgh, Pittsburgh, PA USA
- Jeffrey P. Staab, MD, Mayo Clinic, Rochester, MN USA
- Michael Strupp, MD, MD, FANA, FEAN, hon. Doctorate, University of Munich, Munich, Germany
- Konrad P. Weber, MD, University Hospital Zürich, Zürich Switzerland
- Susan L. Whitney, PT, PhD, NCS, ATC, FAPTA, University of Pittsburgh, Pittsburgh, PA USA
- Lucy Yardley, PhD, Oxford University and the University of Southampton, Southampton, United Kingdom
- Andreas Zwergal, MD, University of Munich, Munich, Germany



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Conference Schedule

Friday August 17, 2018

Session 1 - Differentiate central from peripheral vestibular dysfunction

This session will focus on the differential diagnosis and clinical relevance of various pathologies affecting the vestibular pathway considering both peripheral and central relevance.

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| 7:00-7:45 | Breakfast with exhibitors |
| 7:45-8:00 | Keynote Address: <i>Where vestibular rehab has been and where it is headed</i>
Speaker: Susan J. Herdman, PT, PhD, FAPTA |
| 8:00-8:30 | <i>An Update on HINTS plus Pitfalls and Pearls</i>
Speaker: Jorge C. Kattah, MD, FAAN |
| 8:30-9:00 | <i>Clinical application of the head impulse test for vestibular diagnosis and rehabilitation</i>
Speaker: Konrad P. Weber, MD |
| 9:00-9:30 | <i>Measurement of skew and its relevance to rehab</i>
Speaker: Dan Gold, DO |
| 9:30-10:00 | Break with exhibitors |
| 10:00-10:30 | <i>Diagnosing cerebellar dizziness</i>
Speaker: Michael Strupp, MD, FANA, FEAN, hon. Doctorate |
| 10:30-11:00 | <i>Central nystagmus patterns</i>
Speaker: Scott D. Eggers, MD |
| 11:00-11:30 | <i>Eye movements and concussion: the emerging evidence</i>
Speaker: Susan L. Whitney, PT, PhD, NCS, ATC, FAPTA |
| 11:30-12:00 | Panel Discussion with all morning speakers |
| 12:00-12:30 | Break with exhibitors |
| 12:30-1:30 | Lunch on your own |



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Session 2 - Motor Learning

This session is constructed to inform participants about motor learning within the vestibular system. Invited speakers will cover topics ranging from cellular plasticity to behavioral output as it applies to neuroplasticity within the cerebellum, brainstem, and vestibular reflexes.

- 1:30-2:00 *How are vestibular functions recovered? A background for vestibular rehabilitation therapy*
Speaker: Michel Lacour, PhD
- 2:00-2:30 *Understanding VOR gain adaptation*
Speaker: Americo Migliaccio, PhD
- 2:30-3:00 *Concurrent VOR Adaptation Up and Down to Head Impulses*
Speaker: Michael C. Schubert, PT, PhD
- 3:00-3:30 Break with exhibitors
- 3:30-4:00 *Implications of vestibular input to the hippocampus for vestibular rehabilitation*
Speaker: Paul F. Smith, MApp. Stat (Hons), PhD, DSc
- 4:00-4:30 *Neuroimaging of balance and vestibular function using functional near infrared spectroscopy*
Speaker: Patrick J Sparto, PT, PhD
- 4:30-5:00 *Mal de Debarquement and TMS: New findings*
Speaker: Yoon-He Cha, MD
- 5:00-5:30 Panel Discussion with all afternoon speakers
- 5:45-7:30 Reception with exhibitors and poster session



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Saturday August 18, 2018

Session 3 – Benign Paroxysmal Positional Vertigo: New advances in science and treatment

This session will discuss the biomechanics of BPPV, proposed theories of typical and atypical BPPV including apogeotropic PC BPPV and light cupula, the “ideal” particle repositioning maneuver, and strategies to prevent recurrence of BPPV.

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| 7:00-8:00 | Breakfast with exhibitors |
| 8:00-8:30 | <i>Biomechanics of BPPV and the origins of pathological neural responses to gravito-inertial acceleration</i>
Speaker: Richard Rabbitt, PhD |
| 8:30-9:00 | <i>Typical and atypical BPPV - theoretical considerations</i>
Speaker: Bela Büki, MD, PhD |
| 9:00-9:30 | <i>Light cupula: An emerging new concept for positional vertigo</i>
Speaker: Chang-Hee Kim, MD, PhD |
| 9:30-10:00 | Break with exhibitors |
| 10:00-10:30 | <i>Prevention of BPPV recurrences with supplementation of vitamin D</i>
Speaker: Ji-Soo Kim, MD, PhD |
| 10:30-11:00 | <i>Therapy of BPPV: What we can learn from particles falling through a curved tube</i>
Speaker: Dominik Obrist, PhD |
| 11:00-11:30 | <i>Translating the biomechanics of BPPV to the differential diagnosis and intervention</i>
Speaker: Janet O. Helminski, PT, PhD |
| 11:30-12:00 | Panel Discussion with all morning speakers |
| 12:00-12:30 | Break with exhibitors |
| 12:30-1:30 | Lunch on your own |



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Session 4 - When Vestibular Rehabilitation Does Not Work or Provides Incomplete Recovery

This session will address clinical diagnoses and co-morbidities that are common in patients with true vestibular pathology but may limit or not benefit from vestibular rehabilitation.

- 1:30-2:00 *Persistent-Postural Perceptual Dizziness (PPPD)*
Speaker: Jeffrey P. Stabb, MD
- 2:00-2:30 *Vestibular migraine*
Speaker: Joseph M. Furman, MD, PhD, FAAN
- 2:30 – 3:00 *Visual desensitization: assessment and rehabilitation methods for persons with a vestibular disorder*
Speaker: Marousa Pavlou, PT, PhD, BA, MCSP
- 3:00-3:30 Break with exhibitors
- 3:30-4:00 *Vestibular implantation – Long term outcomes from the first-in-human trial of continuous prosthetic stimulation*
Speaker: Charles C. Della Santina, MD, PhD
- 4:00-4:30 *Causes and characteristics of visually induced motion sickness*
Speaker: Behrang Keshavarz, PhD
- 4:30-5:00 *Supporting self-guided vestibular rehabilitation*
Speaker: Lucy Yardley, PhD
- 5:00-5:30 Panel Discussion with all afternoon speakers
- 5:30-7:30 Reception with exhibitors and poster session



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Sunday August 19, 2018

Session 5 - Future Directions/Where should the science go from here?

This session will illustrate unique models for recruiting and studying vestibular pathophysiology as well as include a summary of the key points from the prior day sessions.

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| 7:00-8:00 | Breakfast |
| 8:00-8:30 | <i>Vestibular loss and cognition in aging adults</i>
Speaker: Yuri Agrawal, MD, MPH |
| 8:30-9:00 | <i>Central Dizzy Net-The European Networks attempt to collect "big data"</i>
Speaker: Andreas Zwergal, MD |
| 9:00-9:30 | <i>The Future Starts Here: Advances in Rehabilitation Techniques and Technology</i>
Speaker: MAJ Carrie Hoppes, PT, PhD, NCS, OCS |
| 9:30-10:00 | BREAK |
| 10:00-10:45 | Questions and Answers from the participants |
| 10:45-11:00 | <i>Where do we go from here/meeting summary</i>
Facilitators: Janet O. Helminksi, PT, PhD; Michael C. Schubert, PT, PhD; and Susan L. Whitney, PT, PhD, NCS, ATC, FAPTA |
| 11:00 | Conference concludes |