Program

Thursday, August 19

08:30 - 09:00
Opening Ceremony
Háskólatorg Entry Hall

President’s Address
Professor Matti Anniko

Opening Address
Professor Kristín Ingólfsdóttir
Rector - University of Iceland

Musical Entertainment

09:15 - 10:30
Oral Session A1 - Advances and Basic Science
Room 102
Chairs: Dan Merfeld and Paul Smith

09:15 - 09:30
A1-1 Animal responses evoked by chronic vestibular implant stimulation
Dan Merfeld, Wangsong Gong, Csilla Haburcakova, Richard Lewis, Keyvan Nicoucar, Michael Saginaw
Harvard Medical School, Boston, USA

09:30 - 09:45
A1-2 Discharge frequency versus recruitment coding for a unilateral vestibular implant
James Phillips
University of Washington, Seattle, USA

09:45 - 10:00
A1-3 Evidence that spatial memory deficits in rats following bilateral vestibular loss may be permanent
Smith Paul, Jean ha-Back, Cynthia Darlington, Zheng Yiwen
University of Otago, Dunedin, New Zealand

10:00 - 10:15
A1-4 Vestibular function in human subjects and animal models with profound deafness related to GJB2 mutation
Katsuhisa Ikeda, Misato Kasai
Juntendo University Faculty of Medicine, Tokyo, Japan
10:15 - 10:30  
**A1-5 Molecular physiology of signaling and plasticity in functionally distinct central vestibular neurons**  
Sascha du Lac  
Salk Institute, La Jolla, USA

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**09:15 - 10:30**  
**Oral Session B1 - Vestibular Loss**  
Chairs: Miriam Welgampola and Brian Day

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09:15 - 09:30  
**B1-1 Horizontal conjugate gaze deviation (h-CGD) in the acute vestibular syndrome**  
Jorge C Kattah¹, John Pula¹, David Newman-Toke²  
¹University of Illinois College of Medicine Peoria, Peoria, USA  
²Johns Hopkins University, Baltimore, USA

09:30 - 09:45  
**B1-2 Dynamic visual acuity (DVA) and oscillopsia severity in patients with bilateral vestibular loss**  
Mark Pijnenburg¹, Nils Guinand¹, Frans Boselie¹, Christel Loo², Maurice Janssen³, Jean-Philippe Guyot⁴, Herman Kingma⁴  
¹Division of Balance Disorders, Department of ENT, University Hospital Maastricht, Maastrict, The Netherlands  
²Biomedical Engineering, Eindhoven University of Technology, Eindhoven, The Netherlands  
³Department of Otolaryngology Head and Neck Surgery, University Hospitals, Geneva, Switzerland

09:45 - 10:00  
**B1-3 A Clinical test of the vestibulospinal pathways**  
Miriam Welgampola¹, Eli Jane Ramsay², Michael Gleeson², Brian L Day²  
¹University of Sydney, Sydney, Australia  
²Sobell Department of Motor Neuroscience and Movement Disorders, UCL, London, United Kingdom

10:00 - 10:15  
**B1-4 Improved dynamic visual acuity testing to assess peripheral vestibular function**  
Stefan Hegemann¹, D. Vital², Dominik Straumann¹, Christofer Bockisch³, R. Probst³  
¹Zurich University Hospital, Zurich, Switzerland  
²Departments of Otorhinolaryngology Head & Neck Surgery, Switzerland  
³Zurich University Hospital, Zurich, Switzerland  
⁴Departments of Otorhinolaryngology Head & Neck Surgery, Switzerland

10:15 - 10:30  
**B1-5 Postural control, vestibular neuritis, wavelets and fractal analysis**  
Philippe Lorin  
Cabinet d’explorations otoneurologiques et de rééducation vestibulaire, Le Mans, France
09:15 - 10:30  Oral Session C1 - Specific Gravity  Room 104
Chairs: Leonardo Manzari and Giacinto Asprella Libonati

09:15 - 09:30  
C1-1 Gravity sensitive cupula: light/heavy cupula of lateral semicircular canal (LSC)
Giacinto Asprella Libonati
Madonna delle Grazie Hospital, Matera, Italy

09:30 - 09:45  
C1-2 Can the nystagmus pattern in patients with a ‘light cupula’ in the lateral semicircular canal be reproduced during the stage of positional alcohol nystagmus I in hemilabyrinthectomized subjects
Tatjana Tomanovic, Johan Bergenius
Karolinska University Hospital, Stockholm, Sweden

09:45 - 10:00  
C1-3 Oculomotor deficits caused by 0.06% and 0.10% blood alcohol concentrations and relationship to subjective perception of drunkenness
Stephen Gomez1, Per-Anders Fransson2, Måns Magnusson2, Mitesh Patel1, Fredrik Modig2
1University of Plymouth, Plymouth, United Kingdom
2Department of Clinical Sciences, Lund, Sverige

10:00 - 10:15  
C1-4 Dizziness and stand/gait unsteadiness in CSF hypovolemia
Keiko Soma1, Takanobu Kunihiro2, Yasuhiko Takei3
1Nipponkakan hospital, Kawasaki, Japan
2Keio University, Tokyo, Japan
3Kyorin university, Tokyo, Japan

10:15 - 10:30  
C1-5 Obesity and postural sway during quiet upright stance
Kathrine Jáuregui-Renaud, Nora Cruz-Gómez, Georgina Plascencia, Laura Villanueva
Instituto Mexicano del Seguro Social, México D.F., Mexico
09:15 - 09:30  **Oral Session D1- Drugs in Ear**  
**Room 105**  
Chairs: Måns Magnusson and Takayuki Nakagawa

09:15 - 09:30  
**D1-1 Vestibular PREHAB and gentamicin before schwannoma surgery may improve long-term postural function**  
Fredrik Tjernström¹, Per-Anders Fransson², Babar Kahlón³, Mikael Karlberg⁴, Sven Lindberg⁵, Peter Siesjö⁶, Måns Magnusson⁷  
¹Skåne University Hospital, Lund, Sweden  
²Lund University Hospital, Lund, Sweden  
³Lund, Sweden

09:30 - 09:45  
**D1-2 Selective oval window gentamicin to spare the cochlea in Meniere's disease**  
Måns Magnusson  
Lund University, Lund, Sweden

09:45 - 10:00  
**D1-3 Unilateral intra perilymphatic infusion of substance P facilitates vestibular functional recovery against AMPA-induced vestibulotoxicity**  
Hiroshi Yamashita, Hiroaki Shimogori, Hideki Toyota, Kenji Takeno, Kazuma Sugahara, Makoto Hashimoto  
Yamaguchi University Graduate School of Medicine, Ube, Japan

10:00 - 10:15  
**D1-4 Topical application of IGF1 for the treatment of inner ear disorders**  
Takayuki Nakagawa¹, Tatsunori Sakamoto¹, Harukazu Hiraumi¹, Norio Yamamoto¹, Yayoi Kikkawa², Yasuhiro Tabata¹, Satoshi Teramukai¹, Ken-ichi Inui¹, Juichi Ito¹  
¹Kyoto University, Kyoto, Japan  
²University of Tokyo, Tokyo, Japan

10:15 - 10:30  
**D1-5 Validation of a specific drug against g-level transition induced spatial disorientation and orthostatic intolerance: the ESA SPIN-D study**  
Aurélie Weerts¹, Robby Vanspauwen¹, Kristof Buytaert¹, Pierre-François Migeotte², Xavier Neyt², Paul Van de Heyning², Floris Wuys¹  
¹Antwerp University Research Centre for Equilibrium and Aerospace (AUREA), Antwerp (Edegem), Belgium  
²Signal and Image Centre, Royal Military Academy, Brussels, Belgium

10:30 - 11:00  Coffee Break
<table>
<thead>
<tr>
<th>Time</th>
<th>Session Title</th>
<th>Location</th>
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<tbody>
<tr>
<td>11:00 - 12:30</td>
<td>Oral Session A2 - VEMP</td>
<td>Room 102</td>
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<td>Chairs: Ian S. Curthoys and Sally Rosengren</td>
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<td>11:00 - 11:20</td>
<td>A2-1 An overview of the ocular vestibular evoked myogenic potential (oVEMP) to bone conducted vibration as a simple clinical test of dynamic utricular function</td>
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<td>Ian Curthoys</td>
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<td>University of Sydney, Sydney, Australia</td>
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<td>11:25 - 11:45</td>
<td>A2-2 oVEMPs: which stimulus?</td>
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<td>Sally Rosengren, Sendhil Govender, Ken Cai, James Colebatch</td>
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<td>University of New South Wales, Sydney, Australia</td>
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<td>11:45 - 12:00</td>
<td>A2-3 Does an SCD just ‘amplify’ normal oVEMP responses?</td>
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<td>Leigh McGarvie¹, Ian Curthoys², Ann Burgess³, Michael Halmagyi¹</td>
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<td>¹Institute of Clinical Neurosciences, Sydney, Australia</td>
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<td>²Vestibular Research Laboratory, School of Psychology, University of Sydney, Sydney, Australia</td>
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<td>12:00 - 12:15</td>
<td>A2-4 Test-retest reliability and normative values of ocular vestibular evoked myogenic potentials (oVEMPs) to bone conducted vibration</td>
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<td>Kristof I. Buytaert, Catherine Blaivie, Paul H. Van de Heyning, Floris L. Wuyts</td>
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<td>Antwerp University Research Center for Equilibrium and Aerospace (AUREA), Edegem (Antwerp), Belgium</td>
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<td>12:15 - 12:30</td>
<td>A2-5 Ocular and cervical vestibular-evoked myogenic potentials to 500Hz Fz bone conducted vibration in semicircular canal dehiscence</td>
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<td>Leonardo Manzari¹, Ann Burgess², Leigh A. McGarvie³, Ian S. Curthoys²</td>
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<td>¹MSA Ent Academy Center Cassino, Cassino, Italy</td>
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<td>²Vestibular Research Laboratory, School of Psychology, the University of Sydney, Sydney, Australia</td>
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<td>³Institute of Clinical Neurosciences, Royal Prince Alfred Hospital, Sydney, NSW, Sydney, Australia</td>
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<td>11:00 - 12:30</td>
<td>Oral Session B2 - Head Impulse</td>
<td>Room 103</td>
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<td>Chairs: Michael Halmagyi and Konrad Weber</td>
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<td>11:00 - 11:15</td>
<td>B2-1 Etiologic diversity of positive head impulse test in ENT daily practice</td>
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<td>Erik Ulmer</td>
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<td>Cabinet ORL, Cannes, France</td>
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11:15 - 11:30  
**B2-2 The video head impulse test: diagnosis of bilateral vestibulopathy after gentamicin vestibulotoxicity**  
Gabor Michael Halmagyi¹, Hamish G MacDougall², Konrad Peter Weber³, Leigh A Mcgarvie¹, Ian S Curthoys²  
¹Department of Neurology, Royal Prince Alfred Hospital, Sydney, Australia  
²Vestibular Research Laboratory, School of Psychology, University of Sydney, Sydney, Australia  
³Zurich University Hospital & Royal Prince Alfred Hospital, Sidney, Zurich, Switzerland

11:30 - 11:45  
**B2-3 The video head impulse test: diagnosis of unilateral vestibulopathy**  
Konrad Peter Weber¹, Hamish G MacDougall², Leigh A Mcgarvie³, Gabor Michael Halmagyi³, Ian S Curthoys²  
¹Zurich University Hospital & Royal Prince Alfred Hospital, Sidney, Zurich, Switzerland  
²Vestibular Research Laboratory, School of Psychology, University of Sydney, Sydney, Australia  
³Department of Neurology, Royal Prince Alfred Hospital, Sydney, Australia

11:45 - 12:00  
**B2-4 Head impulse testing after chronic complete vestibular loss: catch-up saccades**  
Nadine Lehnen¹, Stefan Glasauer¹, Konrad P. Weber²  
¹University of Munich, Munich, Germany  
²Zurich University Hospital, Zurich, Switzerland

12:00 - 12:15  
**B2-5 Is the caloric stimulation indispensable?**  
Karl-Friedrich Hamann  
TU München, München, Germany

12:15 - 12:30  
**B2-6 Assessing vestibular function without measuring eye movements**  
Kara Beaton, Howard Ying, Dale Roberts, Mark Shelmamer  
Johns Hopkins University School of Medicine, Baltimore, USA

11:00 - 12:30 **Oral Session C2 - Motion Sickness**

*Room 104*

Chairs: Bernard Cohen and Philippe Perrin

11:00 - 11:15  
**C2-1 Vertigo induced by downhill mountain biking and road cycling**  
Philippe Perrin¹, Alexis Lion², Gilles Bosser³, Gérôme Gauchard³, Dominique Vibert⁴  
¹Nancy-University and University Hospital, Villers-Lès-Nancy, France  
²Nancy-University, Nancy, France  
³Regional Institute of Rehabilitation (IRR), Nancy, France  
⁴Department of Otorhinolaryngology, Inselspital, University of Bern, Bern, Switzerland
Program 105

11:15 - 11:30

**C2-2 Motion sickness and tilting trains**

Bernard Cohen¹, Mingiai Dai¹, Dmitri Ogorodnikov¹, Jean Laurens², Theodore Raphan³, Christopher Bockisch², Marco Penner², Philippe Müller⁴, Alexiou Athanasios⁴, Klaus Stadtmüller⁴, Jürgen Edmaier⁴, Thomas Grossenbacher⁴, Ueli Brugger⁵, Gerald Hauser⁵, Dominik Straumann⁵

¹Mount Sinai School of Medicine, New York, United States of America
²Zurich University Hospital, Zurich, Switzerland
³Brooklyn College of the City University of New York, Brooklyn, United States of America
⁴Schweizerische Bundesbahn, Zurich, Switzerland
⁵Alstom Schienenfahrzeuge AG, Zurich, Switzerland
⁶University of Zurich, Zurich, Switzerland

11:30 - 11:45

**C2-3 Motion sickness and postural stability**

Jelte Bos

TNO Human Factors, Vrije Universiteit Amsterdam, Soesterberg, Nederland

11:45 - 12:00

**C2-4 Subjective body alignment with g-vector seems independent of g-load**

Eric Groen, Bruno Correia Grácio, Mark Wentink

TNO Defence, Security and Safety, Soesterberg, Nederland

12:00 - 12:15

**C2-5 Galvanic vestibular stimulation (GVS) as an analog of post-flight spatial disorientation in shuttle pilots**

Steven Moore¹, Valentia DiIida¹, Hamish MacDougall², Jonathan Clark³

¹Mount Sinai School of Medicine, New York, USA
²University of Sydney, Sydney, Australia
³National Space Biomedical Research Institute, Houston, USA

12:15 - 12:30

**C2-6 Somatogyrical illusions during flight: effect of the post-roll illusion on pilot's control behaviour**

Suzanne Nooij ¹, Eric Groen²

¹Center for Man in Aviation, Soesterberg, Netherlands
²TNO Human factors, Soesterberg, Netherlands
11:00 - 12:30  **Oral Session D2 - Ageing & Balance**  
**Room 105**  
Chairs: F. Owen Black and Ilmari Pyykkö

11:00 - 11:15  
**D2-1 Longitudinal study of normal subject postural control: age, gender and vestibular dysfunction**  
F. Owen Black¹, William Paloski², Jeffrey Mettler³, Alan Feiveson¹, Scott Wood²  
¹Legacy Clinical Research & Technology Center, Portland, USA  
²University of Houston, Houston, USA  
³NIA Clinical Research Branch, Gerontology Research Center, Baltimore, USA  
²NASA/JSC Neuroscience Laboratories, Houston, USA  
³University Space Research Association, Houston, USA

11:15 - 11:30  
**D2-2 Presbyequilibrium in the oldest olds, a combination of vestibular, oculomotor and postural deficits**  
Ilmari Pyykkö¹, Eeva Tuunanen², Pirkko Jäntti², Dennis Poe³  
¹University of Tampere, Tampere, Finland  
²University of Tampere, Tampere, Finland

11:30 - 11:45  
**D2-3 Change of body movement coordination during cervical proprioceptive disturbances in older adults**  
Mitesh Patel  
Lund University Hospital, Lund, Sweden

11:45 - 12:00  
**D2-4 Aging effect on galvanic vestibular-evoked myogenic potentials**  
Chih-Ming Chang¹, Po-Wen Cheng¹, Yi-Ho Young²  
¹Far Eastern Memorial Hospital, Taipei, Taiwan  
²Department of Otolaryngology, National Taiwan University Hospital, Taipei, Taiwan

12:00 - 12:15  
**D2-5 Vibrotactile neurofeedback for vestibular rehabilitation in patients with presbyvertigo**  
Tatsuhiko Harada¹, Fumiyuki Goto², Sho Kanzaki³, Kaoru Ogawa³, Arne Ernst⁴, Dietmar Basta⁵  
¹International University of Health and Welfare, Atami, Japan  
²Hino Municipal Hospital, Hino, Japan  
³Keio University, Tokyo, Japan  
⁴University of Berlin, Berlin, Germany
12:15 - 12:30
**D2-6 Clinical investigation of presbyastasis patients using the cross test**
Takao Yabe¹, Yoshinari Takai¹, Junichi Yokota¹, Fumiyuki Goto³, Toshiaki Tanaka⁴, Tohru Ifukube⁵, Yasuyuki Nomura⁵, Rie Yabe⁶
¹Tokyo Metropolita Hiroo Hospital, Tokyo, Japan
²Rehabilitation Amakusa hospital, Koshigaya, Japan
³Department of Otolaryngology, Hino Municipal Hospital, Tokyo, Japan
⁴Research center for advanced science and technology, Tokyo University, Tokyo, Japan
⁵Department of Otolaryngology, Nihon University, Tokyo, Japan
⁶Yabe ENT Clinic Ginza, Japan

12:30 - 13:30    Lunch

13:30 - 14:00    **Poster Session 1 - Posters No: PA-1 to PA-36 and PB-37 to PB-70**
During the poster session the authors of these abstracts will stand by their poster ready to answer questions

14:00 - 15:45    **Oral Session A3 - VEMP**
Chairs: Ian S. Curthoys and Sally Rosengren

14:00 - 14:15
**A3-1 Ocular vestibular evoked potentials (oVEmps) compared to the subjective visual vertical (SVV) during tilt and eccentric rotation - easier, cheaper and almost better**
Stefan Hegemann¹, Yulia Matkhalikova², Dominik Straumann², Christofer Bockisch²
¹Zurich University Hospital, Zurich, Switzerland
²Zurich University Hosital, Zurich, Switzerland

14:15 - 14:30
**A3-2 Direction dependent excitatory and inhibitory ocular vestibular evoked myogenic potentials (oVEmps) produced by oppositely directed accelerations along the antero-posterior mid-sagittal axis of the head**
Peter Jombik¹, Pavel Spodniak²
¹Zvolen Hospital, Zvolen, Slovak Republic
²Tech Univ Zvolen, Fac Environm Technol, Dept Environm Sci, Zvolen Slovak Republic

14:30 - 14:45
**A3-3 Ocular VEMP via bone-conducted vibration stimuli in guinea pigs**
Yi-Ho Young, Ting-Hua Yang
National Taiwan University Hospital, Taipei, Taiwan
14:45 - 15:00  
**A3-4 Ocular vestibular evoked myogenic potentials (oVEMPs) after unilateral vestibular deafferentiation due to vestibular schwannoma**  
Kristof I. Buytaert, Catherine Blaivie, Paul H. Van de Heyning, Floris L. Wuys  
Antwerp University Research center for Equilibrium and Aerospace (AUREA), Edegem (Antwerp), Belgium

15:00 - 15:15  
**A3-5 Influence of the repetition rate of the stimulation on the ocular vestibular evoked myogenic potentials (oVEMPs) to bone conducted vibration**  
Kristof I. Buytaert, Catherine Blaivie, Paul H. Van de Heyning, Floris L. Wuys  
Antwerp University Research center for Equilibrium and Aerospace (AUREA), Edegem (Antwerp), Belgium

15:15 - 15:30  
**A3-6 Does VEMP testing detect vestibular damage related to head trauma and whiplash injury?**  
Art Mallinson¹, Neil Longridge²  
¹Vancouver General Hospital, Vancouver, B.C., Canada  
²University of British Columbia, Vancouver, B.C., Canada

15:30 - 15:45  
**A3-7 Vestibular-evoked myogenic potential (VEMP) in the evaluation of schistosomal myeloradiculopathy**  
Lilian Felipe¹, Herman Kingma², Carlos Mauricio de Figueiredo Antunes³, Denise Utsch Goncalves⁴, José Roberto Lambertucci⁵  
¹Belo Horizonte, Brazil  
²Department of Balance Disorders, Clinical Movement Laboratory, Maastricht, The Netherlands  
³Santa Casa de Belo Horizonte, Belo Horizonte, Brazil  
⁴Tropical Medicine Post Graduate Program, Faculty of Medicine, Federal University, Belo Horizonte, Brazil

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14:00 - 17:00  
**Oral Session B3 - Mathematical Modelling**  
Chairs: Rolf Johansson and Thomas Mergner

Room 103

14:00 - 14:30  
**B3-1 Identification of and compensation for sensorineural time delays in human postural control**  
Robert J. Peterka  
Oregon Health & Science University, Portland, USA

14:30 - 15:00  
**B3-2 Modelling the vestibular system-fifty years of progress**  
Laurence R. Young  
MIT, Cambridge, USA
15:00 - 15:30  
**B3-3 Modeling posture control and vertigo**  
Thomas Mergner  
Neurologische Klinik, Freiburg, Germany

15:30 - 16:00  
**Coffee Break**

16:00 - 16:30  
**B3-4 Modeling stance control in neurological patients with Parkinson’s rigidity and hereditary spasticity**  
Christoph Maurer  
Universitätsklinikum Freiburg Neurologische UNI-Klinik, Freiburg, Germany

16:30 - 17:00  
**B3-5 Optimal coordination and control of posture and movements**  
Rolf Johansson  
Lund University, Lund, Sweden

14:00 - 15:45  
**Oral Session C3 - Neuro & Neck**  
Chairs: Thomas Lempert and Eva-Maj Malmström

14:00 - 14:15  
**C3-1 Classification of vestibular migraine**  
Thomas Lempert¹, David Newman-Okker², Barry Seemungal³, Alexander Bisgood⁴, John Waterston⁵, John Carey⁶, Joseph Furman⁷, Maurizio Versino⁸  
¹Schlosspark-Klinik, Berlin, Germany  
²Dept. of Neurology, Johns Hopkins University School of Medicine, Baltimore, USA  
³Dept.of Clinical Neuroscience, Charing Cross Hospital, London, United Kingdom  
⁴Dept. of Neurology, Centre Hospitalier Emile Mayrisch, Esch-Sur-Alzette, Luxembourg  
⁵Dept. of Neurology, The Alfred Hospital, Victoria, Australia  
⁶Dept. of Otolaryngology, Johns Hopkins University School of Medicine, Baltimore, USA  
⁷Dept. of Neurology and Otolaryngology, Pittsburgh, USA  
⁸Dept. of Neurological Sciences, University of Pavia, Pavia, Italy

14:15 - 14:30  
**C3-2 Enhanced motion detection in vestibular migraine**  
Richard Lewis, Koeun Lim, Keyvan Nicoucar, Daniel Merfeld, Adrian Priesol  
Harvard Medical School, Boston MA, USA

14:30 - 14:45  
**C3-3 Sensory dysmodulation in vestibular migraine: an otoacoustic emission suppression study**  
Louisa Murdin¹, Fresanna Premachandra², Rosalyn Davies²  
¹Institute of Neurology, London, United Kingdom  
²National Hospital for Neurology and Neurosurgery, London, United Kingdom
14:45 - 15:00
C3-4 Treatment of the vestibular migraine according to the clinical picture
Sergio Carmona, Romina Weinschelbaum, Osvaldo Bruera
INEBA, Buenos Aires, Argentina

15:00 - 15:15
C3-5 Experimentally induced deep cervical muscle pain distort head on trunk orientation
Eva-Maj Malmström¹, Hans Westergren¹, Per-Anders Fransson¹, Mikael Karlberg², Måns Magnusson²
¹Skåne University Hospital, Malmö, Sweden
²Clinical Sciences, Lund University, Lund, Sverige

15:15 - 15:30
C3-6 Neuropathy is an integral component of the cerebellar ataxia neuropathy vestibular areflexia syndrome (CANVAS)
David Szmulewicz², John Waterston³, Michael Halmagyi³, Stuart Mossman¹, Andrew Chancellor³, Catriona McLean⁶, Elsdon Storey²
¹Melbourne, Australia
²Department of Neuroscience (Medicine), Monash University, Alfred Hospital Campus, Melbourne, Australia
³Department of Neurology, Royal Prince Alfred Hospital, New South Wales, Sydney, Australia
⁴Department of Neurology, Capital Coast Health, Wellington, New Zealand
⁵Department of Medicine, Tauranga Hospital, Tauranga, New Zealand
⁶Department of Anatomical Pathology, Alfred Hospital Campus, Melbourne, Australia

15:30 - 15:45
C3-7 A spatial navigation bias due to a distorted internal representation of time
Diego Kaski, Matthew Dudson-Green, Paresh Malhotra, Adolfo Bronstein, Barry Seemungal
Imperial College London, London, United Kingdom

14:00 - 15:45 Oral Session D3 - Epidemiology Room 105
Chairs: Howard Hoffman and Scott Eggers

14:00 - 14:20
D3-1 Balance and dizziness problems and falls in the United States: results from the 2008 national health interview survey (NHIS)
Howard Hoffman¹, Helen Cohen², Charles Della Santina³, Daniel Sklare¹
¹National Institute on Deafness and Other Communication Disorders (NIDCD), NIH, Bethesda, USA
²Department of Otolaryngology - Head and Neck Surgery, Baylor College of Medicine, Houston, USA
³Department of Otolaryngology-Head and Neck Surgery, Johns Hopkins Medical School, Baltimore, USA
14:25 - 14:45  
**D3-2 Prevalence and impact of bilateral vestibular deficiency (BVD): results from the 2008 United States national health interview survey**  
Charles C. Della Santina¹, Howard Hoffman²  
¹Johns Hopkins School of Medicine, Baltimore, USA  
²Epidemiology and Statistics Program, NIDCD, NIH, Bethesda, USA  

14:45 - 15:00  
**D3-3 Investigation of the relationship between migraine, vertigo, unsteadiness and dizziness in a clinical cohort**  
Scott Eggers, Jeffrey Staab, Neil Shepard, Brian Neff, Adam Goulson, Matthew Carlson  
Mayo Clinic, Rochester, USA  

15:00 - 15:15  
**D3-4 Development of screening tests of the vestibular system for epidemiologic and post-flight studies**  
Helen S Cohen¹, Ajitkumar Mulavara², Brian Peters³, Christopher Miller⁴, Jacob Bloomberg⁴, Haleh Sangi-Haghpeykar¹  
¹Baylor College of Medicine, Houston, USA  
²Universities Space Research Association, Houston, USA  
³Wyle Laboratories, Houston, USA  
⁴NASA/Johnson Space Center, Houston, USA  

15:15 - 15:30  
**D3-5 Prevalence of vestibular function and balance abnormalities among HIV-seropositive and HIV-seronegative women and men**  
Helen S Cohen¹, Michael Plankey², Howard Hoffman³, Mary Young³, Joseph Margolick⁴, Gayle Springer⁴  
¹Baylor College of Medicine, Houston, USA  
²Georgetown University Medical Center, Washington, USA  
³National Institute on Deafness and Other Communication Disorders, Bethesda, USA  
⁴Johns Hopkins School of Public Health, Baltimore, USA  

15:30 - 15:45  
**D3-6 Quality of life (QoL) of patients with bilateral vestibular loss**  
Nils Guinand¹, Frans Boselie¹, Jean-Philippe Guyot², Herman Kingma¹  
¹Division of Balance Disorders, Department of ENT, University Hospital Maastricht, Maastricht, The Netherlands  
²Department of Otolaryngology Head and Neck Surgery, University Hospitals, Geneva, Geneva, Switzerland
Friday, August 20

08:45 - 10:30  Oral Session A4 - Postural Control
                Chairs: Richard Fitzpatrick and Juichi Ito

08:45 - 09:00
A4-1 The impact of external noise perception on sway in normal individuals
Michael Hoffer\textsuperscript{1}, Ali Hoffer\textsuperscript{2}, Carey Balaban\textsuperscript{3}, Kim Gottshall\textsuperscript{1}
\textsuperscript{1}Naval Medical Center, San Diego, San Diego, USA
\textsuperscript{2}Marshall School, San Diego, USA
\textsuperscript{3}Department of Otolaryngology, University of Pittsburgh, Pittsburgh, PA

09:00 - 09:15
A4-2 First trial postural reactions to unexpected balance disturbances: a comparison with the acoustic startle reaction
John HJ Allum\textsuperscript{1}, Lars Oude Nijhuis\textsuperscript{2}, Josep Valls-Sole\textsuperscript{3}, Sebastiaan Overeem\textsuperscript{2}, Bastiaan Bloem\textsuperscript{2}
\textsuperscript{1}University Hospital Basel, Basel, Switzerland
\textsuperscript{2}Dept of Neurology, Radboud University Medical Centre, Nijmegen, The Netherlands
\textsuperscript{3}Neurology Service, Clinical Hospital Barcelona, Barcelona, Spain

09:15 - 09:30
A4-3 Foam surfaces and standing balance testing: the balance perturbing effects, the perturbing mechanisms and considerations for clinical and experimental practice
Mitesh Patel, Per-Anders Fransson, Rolf Johansson, Måns Magnusson
Lund University Hospital, Lund, Sweden

09:30 - 09:45
A4-4 Perceptual and locomotor responses to galvanic vestibular stimulation with and without sensory conflict
Richard Fitzpatrick\textsuperscript{1}, Brian Day\textsuperscript{2}, Rebecca St George\textsuperscript{1}
\textsuperscript{1}Prince of Wales Medical Research Institute, Sydney, Australia
\textsuperscript{2}Institute of Neurology, UCL, London, United Kingdom

09:45 - 10:00
A4-5 What advantages do two vestibular labyrinths offer the human balance system?
Brian Day\textsuperscript{1}, Jonathan Marsden\textsuperscript{2}, Elijane Ramsay\textsuperscript{1}, Omar Mian\textsuperscript{1}, Richard Fitzpatrick\textsuperscript{3}
\textsuperscript{1}UCL Institute of Neurology, London, United Kingdom
\textsuperscript{2}University of Plymouth, Plymouth, United Kingdom
\textsuperscript{3}Prince of Wales Medical Research Institute, Sydney, Australia
10:00 - 10:15
A4-6 Otolith and canal involvement in the balance response to galvanic vestibular stimulation
Omar Mian¹, Chris Dakin², Jean-Sébastien Blouin³, Richard Fitzpatrick³, Brian Day¹
¹UCL Institute of Neurology, London, United Kingdom
²School of Human Kinetics, University of British Columbia, Vancouver, Canada
³Prince of Wales Medical Research Institute and University of New South Wales, Sydney, Australia

10:15 - 10:30
A4-7 Cortical transcranial direct current stimulation increases the duration of the ‘broken escalator’
locomotor aftereffect
Diego Kaski, Shamim Quadir, Mark Buckwell, Barry Seemungal, Adolfo Bronstein
Imperial College London, London, United Kingdom

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<tr>
<th>08:45 - 10:30</th>
<th>Oral Session B4 - Eye &amp; Head Movements</th>
<th>Room 102</th>
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<td>Chairs: Jelte Bos and Krister Brantberg</td>
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08:45 - 09:00
B4-1 A new clinical test of otolith function
Qadeer Arshad, Diego Kaski, David Buckwell, ME Faldon, Michael Gresty, Barry Seemungal, Adolfo Bronstein
Imperial College London, London, United Kingdom

09:00 - 09:15
B4-2 Functional imaging of the development of the vestibulo-ocular reflex circuit
Joel Glover¹, Hiraku Mochida¹, Katsushige Sato², Yoko Momose-Sato³
¹University of Oslo, Oslo, Norge
²Komazawa Women’s University, Tokyo, Japan
³Kanto Gakuin University, Yokohama, Japan

09:15 - 09:30
B4-3 Dynamic visual acuity before, during and after exercise in traumatic brain injury subjects and normal controls
Caroline Messmer, Michael Hoffer, Kim Gottshall
Naval Medical Center San Diego, San Diego, USA

09:30 - 09:45
B4-4 A Dynamic visual acuity test with a flasing optotype
Jelte Bos¹, Maarten Hogervorst², Anne-Marie Brouwer²
¹TNO Human Factors, Vrije Universiteit Amsterdam, Soesterberg, Nederland
²TNO Human Factors, Soesterberg, Nederland
09:45 - 10:00
**B4-5 Three-dimensional signal analysis of nystagmus with video-oculography**
Martti Juhola¹, Heikki Aalto², Topi Jutila³, Timo Hirvonen²
¹University of Tampere, Tampere, Finland
²Helsinki University Central Hospital, Helsinki, Finland

10:00 - 10:15
**B4-6 Dynamic visual acuity of patients with vestibular neuritis**
Ingrid van Rooy¹, Anne-Marie Brouwer², Sjaak Klis¹, Jelte Bos², Tjasse Bruintjes³
¹University Medical Center Utrecht, Utrecht, Nederland
²Department of Human Factors, TNO Defence and Security, Perception and Simulation, Soesterberg, Nederland
³Department of Otorhinolaryngology, Gelre Ziekenhuizen Apeldoorn, Apeldoorn, Nederland

10:15 - 10:30
**B4-7 Development of a normative percentage of saccadation during smooth pursuit testing**
Jorge Gonzalez¹, Alexander Kiderman²
¹Bloomburg University of Pennsylvania, Bloomburg, USA
²Neuro-Kinetics, Inc., Pittsburgh, USA

08:45 - 10:30 **Oral Session C4 - Vestibular Loss and Little More**
Chairs: Michael Karlberg and Barry Seemungal

08:45 - 09:00
**C4-1 Acute bilateral vestibular loss - a single subject experimental study**
Mikael Karlberg¹, Måns Magnusson²
¹Lund University Hospital, Lund, Sverige
²Oto-rhino-laryngology, Lund, Sverige

09:00 - 09:15
**C4-2 Vestibular perception after acute vestibular neuritis**
Barry Seemungal, Sian Cousins, Nick Cutfield, Michael Gresty, Adolfo Bronstein
Imperial College London, London, United Kingdom

09:15 - 09:30
**C4-3 Residual perception of motion and tilt in patients with bilateral vestibular function loss**
Nils Guinand¹, Bram Geerets¹, Frans Boselie¹, Mark Pijnenburg¹, Christel Van Loo¹, Maurice Janssen¹, Jean-Philippe Guyot², Herman Kingma¹
¹Division of Balance Disorders, Department of ENT, University Hospital Maastricht, Maastricht, The Netherlands
²Department of Otolaryngology Head and Neck Surgery, University Hospitals, Geneva, Geneva, Switzerland
09:30 - 09:45
C4-4 Crohn’s disease in the inner ear. A histopathological approach to a special autoimmune inner ear disease (AIED)
Stefan Hegemann¹, I. Hegemann², M. Dettmer³
¹Zurich University Hospital, Zurich, Switzerland
²Internal Medicine, Switzerland
³Zurich University Hospital, University of Bern, Iceland

09:45 - 10:00
C4-5 To investigate the influence of acute vestibular impairment following mild traumatic brain injury on subsequent ability to successfully complete a vestibular physical therapy program and remain on active duty one year later
Kim Gottshall, Michael Hoffer
Naval Medical Center San Diego, San Diego, USA

10:00 - 10:15
C4-6 Recovery after acute unilateral vestibular loss and predictors for self-rated remaining symptoms after six months
Ann-Sofi Kammerling¹, Torbjörn Ledin², Lars Ödkvist³, Elisabeth Skargren⁴
¹Rybov County Hospital, Jönköping, Sweden
²Department of Clinical and Experimental Medicine, Linköping University, Linköping, Sweden
³Department of Otorhinolaryngology, University Hospital, Linköping, Sweden
⁴Department of Medicine and Health, Linköping University, Linköping, Sweden

10:15 - 10:30
C4-7 The halmern syndrome of monocular visual vertigo: resurgence of a dorsal light reflex in the patient with central vestibular disease
Michael Brodsky
Mayo Clinic, Rochester, USA

08:45 - 10:30 Oral Session D4 - Vestibular Reflexes Room 104
Chairs : Thomas Mergner and Pierre-Paul Vidal

08:45 - 09:00
D4-1 Unilateral centrifugation by head tilt
Jelte Bos¹, Stephanie Winters², Sjaak Kiis³, Wilko Grolman³
¹TNO Human Factors, Vrije Universiteit Amsterdam, Soesterberg, Nederland
²University Medical Center, Utrecht, Netherlands
09:00 - 09:15

**D4-2 Vestibular stimulation during active head movements: perceptual and motor findings and proactive-reactive fusion model**

Thomas Mergner\textsuperscript{1}, Jan Kassubeck\textsuperscript{2}, Grigorius Nasios\textsuperscript{3}, Christoph Maurer\textsuperscript{1}

\textsuperscript{1}University of Freiburg, Freiburg, Germany  
\textsuperscript{2}University of Ulm, Ulm, Germany  
\textsuperscript{3}Department of Speech and Language Therapy, TEI of Epirus, Ioannina, Greece

09:15 - 09:30

**D4-3 Vestibular predominance and post rotatory nystagmus in figure skaters**

Anna Hafström\textsuperscript{1}, Per-Anders Fransson\textsuperscript{2}, Måns Magnusson\textsuperscript{2}

\textsuperscript{1}Lund University Hospital, Lund, Sweden  
\textsuperscript{2}Dept of Otorhinolaryngology, Lund University Hospital, Lund, Sweden

09:30 - 09:45

**D4-4 Vestibular asymmetry as the cause of idiopathic scoliosis: A possible answer from xenopus**

Pierre-Paul Vidal

CNRS - Paris Descartes, Paris, France

09:45 - 10:00

**D4-5 Self-tilt thresholds match (or outperform) standard maximum-likelihood predictions**

Dan Merfeld, Koeun Lim, Keyvan Nicoucar

Harvard Medical School, Boston, USA

10:00 - 10:15

**D4-6 Modification of the cervico-ocular reflex (cor) by visual-cervical interaction**

Sergei Yakushin\textsuperscript{1}, Olga V Kolesnikova\textsuperscript{1}, Charley C Della Santina\textsuperscript{2}, Lloyd B Minor\textsuperscript{2}, Theodore Raphan\textsuperscript{3}, Bernard Cohen\textsuperscript{1}

\textsuperscript{1}Mount Sinai School of Medicine, New York, USA  
\textsuperscript{2}John Hopkins University, Baltimore, USA  
\textsuperscript{3}Brooklyn College, CUNY, Brooklyn, USA

10:15 - 10:30

**D4-7 Cognitive influences on motion perception**

Dan Merfeld\textsuperscript{1}, Andrew Rader\textsuperscript{2}, Charles Oman\textsuperscript{2}

\textsuperscript{1}Harvard Medical School, Boston, USA  
\textsuperscript{2}MIT, Cambridge, USA

10:30 - 11:00  
Coffee Break
<table>
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<tr>
<th>Time</th>
<th>Session Title</th>
<th>Chairs</th>
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<tr>
<td>11:00</td>
<td>Oral Session A5 - Vestibular-Eye Interaction</td>
<td>Swee Aw and Kathleen Cullen</td>
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<tr>
<th>Time</th>
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<th>Authors and Affiliations</th>
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<tr>
<td>11:00</td>
<td><strong>A5-1 Effect of vestibular activation on human visual cortical area V5/MT excitability</strong></td>
<td>Barry Seemungal¹, Jessica Guzman¹, Qadeer Arshad¹, Vincent Walsh², Adolfo Bronstein¹</td>
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<td>¹Imperial College London, London, United Kingdom</td>
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<td>²Institute of Cognitive Neurosciences, UCL, London, UK</td>
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<td>11:15</td>
<td><strong>A5-2 Does the human electrically-evoked vestibulo-ocular reflex rely on vestibular hair cell transduction?</strong></td>
<td>Swee Aw¹, Michael Todd², Nadine Lehnen², Grace Aw², Konrad Weber², Thomas Eggert³, Michael Halmagyi²</td>
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<td>¹Royal Prince Alfred Hospital / University of Sydney, Sydney, Australia</td>
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<td>³Ludwig-Maximilians University Munich, Munich, Germany</td>
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<td>11:30</td>
<td><strong>A5-3 The mechanism underlying human electrical vestibular stimulation</strong></td>
<td>Michael Todd, Swee Aw, Michael Halmagyi</td>
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<td>Royal Prince Alfred Hospital, Sydney, Australia</td>
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<td>11:45</td>
<td><strong>A5-4 Maintaining binocular fixation while moving: a model of smooth pursuit in three dimesions</strong></td>
<td>Theodore Raphan¹, Mikhail Kunin¹, Sergei Yakushin², Bernard Cohen²</td>
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<td>¹City University of NY (Brooklyn College), Brooklyn, USA</td>
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<td>²Mt. Sinai School of Medicine, New York, USA</td>
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<td>12:00</td>
<td><strong>A5-5 Neural correlates of motor learning in the vestibulo-ocular reflex: dynamic regulation of multimodal integration</strong></td>
<td>Kathleen Cullen¹, Lloyd Minor², Soroush Sadeghi¹</td>
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<td>¹McGill University, Montreal, Canada</td>
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<td>²Johns Hopkins University School of Medicine, Baltimore, USA</td>
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<td>12:15</td>
<td><strong>A5-6 Virtually dizzy - modelling the human vestibulo-ocular response</strong></td>
<td>John Veness¹, Paul Radomsksj², Ewa Raglan¹</td>
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<td>¹Great Ormond Street Hospital, London, UK</td>
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<td>²University College London, London, UK</td>
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<td>11:00 - 12:30</td>
<td>Oral Session B5 – Meniere’s</td>
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<td>11:00 - 11:15</td>
<td>B5-1 Spontaneous recurrent attacks of vertigo that do not lead to permanent audio-vestibular deficit</td>
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<td>11:30 - 11:45</td>
<td>B5-3 The air-conducted ovemp in Ménière’s disease</td>
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<td>11:45 - 12:00</td>
<td>B5-4 Ocular and cervical vestibular-evoked myogenic potentials (oVEMPs and cVEMPs) to bone conducted vibration (BCV) in Ménière’s disease during quiescence vs during acute attacks</td>
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<td>12:00 - 12:15</td>
<td>B5-5 The Antwerp Meniere Index (AMI): an electrocochleography based method to scale Meniere’s Disease</td>
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<td>12:15 - 12:30</td>
<td>B5-6 Endolympathic hydrops in Meniere’s disease and sudden deafness detected by MRI in combination with intratympanic gadolinium injection</td>
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11:00 - 11:15
C5-1 A new type of BPPV with only unsteadiness of gait: a 152 patients study
Thomas Richard-Vitton
ENT - Clinique Générale de Marignane, Marignane, France

11:15 - 11:30
C5-2 Visual dependence and BPPV
Adolfo Bronstein, K Agarwal, M Faldon, M Mandala, K Murray, Y Silove
Imperial College London, London, United Kingdom

11:30 - 11:45
C5-3 Benign paroxysmal positional vertigo in mountain bikers
Dominique Vibert¹, Robin C. Redfield PhD², Rudolf Häusler MD¹, Marco Caversaccio MD³
¹University of Berne, Berne, Switzerland
²Department of Engineering Mechanics, US Air Force Academy, Colorado Springs, USA

11:45 - 12:00
C5-4 Sitting-up vertigo and trunk oscillation in patients with benign positional vertigo but without positional nystagmus
Bela Buki¹, Lászlo Simon², Sándor Garab³, Yunxia W Lundberg¹, Heinz Jünger⁴, Dominik Straumann⁵
¹Krems, Austria
²Semmelweis University, Budapest, Hungary
³Boys Town National Research Hospital, Omaha, USA
⁴Krems County Hospital, Krems, Austria
⁵University Hospital Zurich, Zurich, Switzerland

12:00 - 12:15
C5-5 Benign paroxysmal positional vertigo of horizontal canal about 30 ageotropic cases
Philippe Lorin
Cabinet d’explorations otoneurologiques et de rééducation vestibulaire, Le Mans, France

12:15 - 12:30
C5-6 Characteristics of subjects with complex BPV treated on the epley omniax rotator
Miriam Welgampola¹, Robbie Yavor², Alison White³, Leigh McGarvie², Swee Aw¹, Michael Todd², Michael Halmagyi²
¹University of Sydney, Sydney, Australia
²Royal Prince Alfred Hospital Camperdown, Sydney, Australia
11:00 - 12:30  Oral Session D5 - Vestibular Rehabilitation  
Chairs: Helen S. Cohen and Johan Holmberg

11:00 - 11:15  
**D5-1 Static, dynamic balance and well being after acute unilateral vestibular loss**  
Lena Kollén¹, Berit Bjerlemo², Monika Fagevik Olsén², Claes cm Möller³  
¹Sahlgrenska University, Gothenburg, Sverige  
²Gothenburg, Sverige  
³Claes.möller, Öregro, Sverige

11:15 - 11:30  
**D5-2 Comparison of the effects of visual and vibrotactile feedback on postural stability during balance rehabilitation exercise training**  
Kelli E. Bechly, Wendy Carender, Kathleen Sienko  
University of Michigan, Ann Arbor, USA

11:30 - 11:45  
**D5-3 The effect of additional otolith specific exercises to standard vestibular rehabilitation protocols for adults with unilateral vestibular dysfunction**  
Arimbi Winoto¹, Kate Murray², Keith Hill¹, Joanne Enticott³  
¹La Trobe University, Bundoora, Australia  
²Dizzy Day Clinics, Melbourne, Australia  
³Royal Victorian Eye and Ear Hospital, Melbourne, Australia

11:45 - 12:00  
**D5-4 The Vibrotactile labyrinthe substitution system (VLS): indications for placebo effects of vibrotactile biofeedback in improving balance in bilateral vestibular loss patients**  
Maurice Janssen¹, Jos Aarts², Yvonne Janssen-Potten³, Hans Vles³, Rob Van Lummel³, Robert Stokroos³, Herman Kingma³  
¹Maastricht, Nederland  
²University Maastricht, Maastricht, Nederland  
³University Hospital Maastricht, Maastricht, Nederland  
¹McRoberts, The Hague, Nederland

12:00 - 12:15  
**D5-5 Vestibular rehabilitation by vibrotactile neurofeedback in otolith disorders**  
Dietmar Basta, Arne Ernst  
Charité Medical School, University of Berlin, Berlin, Germany
12:15 - 12:30
**DS-6 Vestibular physiotherapy outcomes in patients with and without migrainous vertigo. A prospective single blinded controlled study**
Jessica Vitkovic
The University of Melbourne, Parkville, Australia

12:30 - 13:30  Lunch

13:30 - 14:00 **Poster Session 2 - Posters No: PC-71 to PC-93, PD-94 to PD-109, PE-110 to PE-111, and PF-112 to PF-113**
During the poster session the authors of these abstracts will stand by their poster ready to answer questions

14:00 - 15:30  **Oral Session A6 - Inner Ear Morphology**  
Chairs: Helge Rask Andersen and Timothy Hullar

14:00 - 14:15
**A6-1 A new study on the fluid dynamics in the SCC and the utricle**
Francesco Boselli¹, Leonhard Kleiser², Stefan Hegemann³, Dominik Obrist¹  
¹ETH, Zurich, Switzerland  
²University Hospital Zurich, Zurich, Switzerland

14:15 - 14:30
**A6-2 Precise measurement of the human semicircular canals in CT and micro-CT**
Andrew Bradshaw¹, Ian Curthoys², Michael Todd³, John Magnussen⁴, David Taubman⁵, Swee Aw⁶, Michael Halmagyi⁷  
¹Royal Prince Alfred Hospital, Camperdown, NSW, Australia  
²Vestibular Research Laboratory, School of Psychology, the University of Sydney, Sydney, Australia  
³Department of Neurology, Royal Prince Alfred Hospital, Sydney, Australia  
⁴Department of Radiology, Royal Prince Alfred Hospital, Sydney, Australia  
⁵School of Electrical Engineering, University of New South Wales, Sydney, Australia

14:30 - 14:45
**A6-3 Whale inner ear morphology: Use of 3D modelling and rapid prototyping technology**
Paolo Gargiulo, Hannes Petersen  
Landspitali University Hospital, Reykjavik, Iceland

14:45 - 15:00
**A6-4 Acoustic resonance and reduced semicircular canal size in cetaceans**
Timothy Hullar  
Washington University in St. Louis, Saint Louis, USA
15:00 - 15:15

**A6-5 Vestibular evoked myogenic potentials divers**

Haim Lavon¹, Dror Tal², Gil Kaminski-Grait³, Dov Hershkovitz², Avi Shupak¹

¹Carmel Medical Center, Haifa, Israel
²Motion Sickness and Human Performance Laboratory, Israel Naval Medical Institute, Haifa, Israel
³Unit of Otoneurology Lim Medical Center, and The Technion Faculty of Medicine, Haifa, Israel

15:15 - 15:30

**A6-6 Whale vestibular morphology and sea sickness**

Hannes Petersen
Landpitali, University Hospital, Reykjavik, Iceland

________________________________________________________________________

14:00 - 15:30  **Oral Session B6 - ESCEBD & the Young Ones**  Room 102

Chairs: Philippe Perrin, Herman Kingma

14:00 - 14:30

**B6-1 Presentation of the ‘European Society for Clinical Evaluation of Balance Disorders’ (ESCEBD)**

Several speakers

14:30 - 14:45

**B6-2 Vestibular-evoked myogenic potential (VEMP) to evaluate cervical myelopathy in human T cell lymphotropic virus type I infection**

Lilian Felipe¹, Jose Roberto Lambertucci², Herman Kingma³, Anna Barbara Carneiro-Proietti⁴, Denise Utsch Goncalves⁵

¹Belo Horizonte, Brazil
²Tropical Medicine Post Graduate Program, Faculty of Medicine, Federal University, Belo Horizonte, Brazil
³Department of Balance Disorders, Clinical Movement Laboratory, Maastricht, The Netherlands
⁴Hemominas Foundation, Minas Gerais State Centre of Hematology and Blood Transfusion, Belo Horizonte, Brazil

14:45 - 15:00

**B6-3 Postural control in adolescent extremely low birthweight preterm children**

Arnar Dór Tulinius¹, Einar J. Einarsson¹, Ingibjörg Georgsdóttir², Ásgeir Haraldsson², Hannes Petersen²

¹Faculty of Medicine, University of Iceland, Reykjavik, Iceland
²Landspitali University Hospital, Reykjavik, Iceland

15:00 - 15:15

**B6-4 Blood pressure and heart rate changes induced by sinusoidal galvanic stimulation of the labyrinths in the anesthetized rat**

Bernard Cohen, Sergei Yakushin, Giorgio Martinelli, Dmitri Ogorodnikov, Rowena Flores, Mingjia Dai, Gay Holstein

Mount Sinai School of Medicine, New York, USA
15:15 - 15:30

B6-5 Physiological effect of cupula shrinkage on the semicircular canal activity
Mamoru Suzuki, Youichi Iimura, Ujimoto Konomi, Koji Otsuka, Taro Inagaki, Shigetaka Shimizu, Yasuo Ogawa
Tokyo Medical University, Tokyo, Japan

14:00 - 15:30  Oral Session C6 — Meniere’s & More  Room 105
Chairs: Ilmari Pykkö and Ian S. Curthoys

14:00 - 14:15

C6-1 The vestibular evoked-potential profile of Ménière’s disease
Rachael Taylor¹, Ayanthi Wijewardene², William Gibson³, Michael Halmagyi⁴, Miriam Welgampola⁵
¹Royal Prince Alfred Hospital, Sydney, Australia
²University of Sydney, Sydney, Australia

14:15 - 14:30

C6-2 Meniere’s disease patients show enhanced eye velocity and altered VOR dynamics in response to high acceleration head rotations
Ian Curthoys¹, Leonardo Manzari², Hamish MacDougall¹
¹University of Sydney, Sydney, Australia
²MSA ENT Academy Center, Cassino, Italy

14:30 - 14:45

C6-3 Tinnitus in Menière’s disorder
Ilmari Pykkö¹, Dafydd Stephens², Erna Kentala³, Hilla Levo³, Dennis Poe⁴, Yrjö Auramo⁵
¹University of Tampere, Tampere, Finland
²University of Cardiff, Cardiff, United Kingdom
³University of Helsinki, Helsinki, Finland
⁴University of Tampere, Tampere, Finland
⁵Pori Polytechnical University, Pori, Finland
14:45 - 15:00
C6-4 Clinical characteristics of delayed endolympathic hydrops in Japan: a nation-wide survey by the peripheral vestibular disorder research committee of Japan
Hideo Shojaku¹, Yukio Watanabe², Noriaki Takeda³, Tetsuo Ikezono⁴, Masahiro Takahashi⁵, Akinobu Kakigi⁵, Juichi Ito⁶, Katsumi Doi⁷, Mamoru Suzuki⁵, Masaya Takumida⁸, Katsumasa Takahashi¹⁰, Hiroshi Yamashita¹¹, Izumi Koizuka¹², Shinichi Usami¹³, Mitsuhiko Aoki¹⁴, Hideaki Naganuma¹⁵
¹University of Toyama, Toyama, Japan
²University of Tokushima, Tokushima, Japan
³Nihon Medical University, Tokyo, Japan
⁴Yokohama Central Clinic, Yokohama, Japan
⁵University of Tokyo, Tokyo, Japan
⁶University of Kyoto, Kyoto, Japan
⁷University of Osaka, Osaka, Japan
⁸Tokyo Medical University, Tokyo, Japan
⁹University of Hiroshima, Hiroshima, Japan
¹⁰University of Gunma, Maebashi, Japan
¹¹University of Yamaguchi, Ube, Japan
¹²St. Marianna Medical University, Kawasaki, Japan
¹³University of Sinsyu, Matsumoto, Japan
¹⁴University of Gifu, Gifu, Japan
¹⁵Kitasato University, Sagamihara, Japan

15:00 - 15:15
C6-5 Shorter CCTTT repeats at promoter of NOS2A gene decrease risk for Ménière’s disease in European population in a case-control with replication study
Jose Antonio Lopez-Escamez¹, Antonia Moreno², Irene Gazquez¹, Ismael Aran³, Andres Soto-Varela⁴, Sofia Santos⁴, Herminio Perez-Garrigues⁵, Alicia Lopez-Nevo⁶, Miguel Angel Lopez-Nevo⁶
¹Hospital de Poniente, Almeria, Spain
²Hospital Virgen de las Nieves, Granada, Spain
³Hospital de Pontevedra, Pontevedra, Spain
⁴Hospital Clinico Universitario Santiago, Aantiago de Compostela, Spain
⁵Hospital La Fe, Valencia, Spain

15:15 - 15:30
C6-6 Blockage of endolymph by saccular otoconia in Meniere’s disease
Hideo Yamane¹, Masahiro Takayama², Kishiko Sunami², Hiramori Sakamoto², Toshio Imoto², Matti Anniko³
¹Osaka City University, Osaka, Japan
²Dept. of Otolaryngology Osaka City University, Osaka, Japan
³Dept. of Otolaryngology and Head & Neck Surgery, Uppsala, Sweden
14:00 - 15:30    **Oral Session D6 - Vestibular Rehabilitation**    Room 104

**Chairs:** Helen S. Cohen and Brian Day

14:00 - 14:15
**D6-1 Pilot studies on treatment of Mal de Debarquement (MDD)**
Mingxia Dai¹, Theodore Raphan², Catherine Cho¹, Eric Smouha¹, Bernard Cohen¹

¹Mount Sinai School of Medicine, New York, USA
²Brooklyn College, CUNY, New York, USA

14:15 - 14:30
**D6-2 Vestibular rehabilitation with vibrotactile neurofeedback training in patients with Parkinson’s disease**
Marcos Rossi-Izuquerdo¹, Arne Ernst², Dietmar Basta³, Andrés Soto-Varela¹, Sofía Santos-Pérez¹, Ana Faraldo-García¹, Ángel Sesar-Ignacio¹

¹University Hospital of Santiago de Compostela, Santiago de Compostela, Spain
²Hospital of the University of Berlin, Berlin, Germany

14:30 - 14:45
**D6-3 The effects of vibrotactile feedback on protective stepping responses in Parkinson’s disease patients**
Pei-Yun Lee¹, Kris Gadach¹, Mohammad J Naushahi², Peter G Bain², Dipankar Nandi², Michael A Gresty¹, Adolfo M Bronstein¹

¹Imperial College Neuro-otology Unit, London, United Kingdom
²Imperial College Neuromodulation Group, London, United Kingdom

14:45 - 15:00
**D6-4 Reduced posturographic differences during anticipation of a postural threat between patients with phobic postural vertigo and healthy subjects**
Johan Holmberg, Fredrik Tjernström, Mikael Karlberg, Per-Anders Fransson, Måns Magnusson

University of Lund, Lund, Sweden

15:00 - 15:15
**D6-5 The effect of vibrotactile feedback on vestibular-deficient postural performance during visual perturbations**
Kelli E. Bechly¹, Shawn O’Connor², Kathleen Sienko¹

¹University of Michigan, Ann Arbor, USA
²Simon Fraser University, Burnaby, Canada

15:15 - 15:30
**D6-6 The application of vibrotactile neurofeedback training in patients with a semicircular dysfunction**
Fumiyuki Goto¹, Tatsuhiro Harada², Shô Kanzaki³, Ogawa Kaoru¹, Arne Ernst³, Dietmar Basta⁴

¹Hino Municipal Hospital, Tokyo, Japan
²Department of Otolaryngology, International University of Health and Welfare, Kanagawa, Japan
³Department of Otolaryngology, Keio University, School of Medicine, Tokyo, Japan
⁴Department of Otolaryngology at UKB, Charité Medical School, Berlin, Germany

15:30 - 16:00    **Coffee Break**
16:00 - 18:00  Oral Session A7 - Classification  
Chairs: Herman Kingma and Alexander Bisdorff  

16:00 - 16:15
**A7-1 Classification of vestibular symptoms**
Alexandre Bisdorff  
Centre Hospitalier Emile Mayrisch, Department of Neurology, Esch-Sur-Alzette, Luxembourg

16:15 - 16:25
**A7-2 Building a classification**
David Newman-Toker  
The Johns Hopkins University School of Medicine, Baltimore, USA

16:25 - 16:35
**A7-3 Proposed multi-layer structure for the international classification of vestibular disorders**
David Newman-Toker¹, Jeffrey Staab², Adolfo Bronstein³, Thomas Lempert⁴, Nicolás Pérez⁵, Toshiaki Yagi⁶, Alexandre Bisdorff⁷  
¹The Johns Hopkins University School of Medicine, Baltimore, USA  
²Mayo Clinic, Department of Psychiatry and Psychology, Rochester, USA  
³Imperial College London, Division of Neuroscience & Psychological Medicine, London, United Kingdom  
⁴Schlosspark-Klinik, Department of Neurology, Berlin, Germany  
⁵Clinica Universitaria de Navarra, Department of Otorhinolaryngology, Navarra, Spain  
⁶Nippon Medical School, Department of Otolaryngology, Tokyo, Japan  
⁷Centre Hospitalier Emile Mayrisch, Department of Neurology, Esch-Sur-Alzette, Luxembourg

16:35 - 16:50
**A7-4 Validation of a clinical syndrome of persistent dizziness and unsteadiness**
Jeffrey Staab, Scott Eggers, Brian Neff, Neil Shepard, Adam Goulson, Matthew Carlson  
Mayo Clinic, Rochester, USA

16:50 - 17:05
**A7-5 Acute vestibular syndrome - systematic review of bedside diagnostic predictors of stroke**
The Johns Hopkins School of Medicine, Baltimore, USA

17:05 - 17:15
**A7-6 Defining Meniere’s**
Lloyd Minor  
John Hopkins University, Baltimore, USA

17:15 - 17:25
**A7-7 Defining vestibular migraine**
Thomas Lempert  
Schlosspark-Klinik, Department of Neurology, Berlin, Germany
17:25 - 17:35
**A7-8 Defining BPPV**
Michael Von Brevern
Parkklinik Weissensee, Berlin, Germany

17:35 - 17:40
**A7-9 Future directions**
Alexandre Bisdorff

17:40 - 18:00
**Panel**

18:30 / 19:15  **Banquet - Blue Lagoon**

Transport will be from the Congress Hotels at 18:30 for banquet with bath entrance and at 19:15 for banquet without bath entrance.

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**Saturday, August 21**

09:30 - 12:30  **Oral Session A8 - Vestibular Physiology**  
Chairs: Cynthia Darlington and Dan Merfeld

09:30 - 09:45
**A8-1 Electrophysiological and immunohistochemical changes in the vestibular nuclear activity following acute hypotension in rats**
Byung Kim Park¹, Min Sun Kim¹, Dae Im Kang²
¹Wonkwang University School of Medicine, Iksan, Korea (Rep)  
²Korea Research Institute of Standards and Science, Daejeon, Korea (Rep)

09:45 - 10:00
**A8-2 Effects of tinnitus induced by acoustic trauma on performance in a spatial forced alternating T maze task**
Cynthia Darlington, Emma Hamilton, Lucy Stiles, Paul Smith, Yiwen Zheng
University of Otago, Dunedin, New Zealand

10:00 - 10:15
**A8-3 Responses of rostral vestibular nucleus neurons to low velocity yaw rotation**
Shawn Newlands, Min Wei, Tom Seidl, Laurel Carney
University of Rochester Medical Center, Rochester, USA
10:15 - 10:30

**A8-4 Pulsed infrared radiation rapidly modulates hair cell neurotransmitter release**
Suhrad M. Rajguru\(^1\), Claus-Peter Richter\(^1\), Stephen M. Highstein\(^2\), Greg M. Dittami\(^3\), Richard D. Rabbitt\(^1\)
\(^1\)Northwestern University, Chicago, USA
\(^2\)Marine Biological Laboratory, Woods Hole, USA
\(^3\)University of Utah, Salt Lake City, USA

10:30 - 11:00  Coffee Break

11:00 - 11:15

**A8-5 Membrane proteins define microdomains in the vestibular afferent calyx**
Anna Lysakowski\(^1\), Sophie Gaboyard-Niay\(^2\), Irina Calin-Jageman\(^3\), Shilpa Chatlani\(^4\), Steven Price\(^1\), Ruth Anne Eatock\(^5\)
\(^1\)University of Illinois at Chicago, Chicago, USA
\(^2\)Universite de Montpelier, Montpelier, France
\(^3\)Dominican University, River Forest, USA
\(^4\)University of Chicago, Chicago, USA
\(^5\)Harvard University, Boston, USA

11:15 - 11:30

**A8-6 Asymmetry in vestibular responses to cross-coupled stimulus**
Jaime Mateus\(^1\), Jorge Cañizales\(^1\), Andrew Hearn\(^2\), Laurence Young\(^1\)
\(^1\)Massachusetts Institute of Technology, Cambridge, USA
\(^2\)National University of Ireland, Dublin, Ireland

11:30 - 11:45

**A8-7 Achromatic zebrafish as a behavioral model for infantile nystagmus syndrome (INS)**
Melody Yingyu Huang\(^1\), Dominik Straumann\(^1\), Stephan Neuhauss\(^2\)
\(^1\)University Hospital Zurich, Zurich, Switzerland
\(^2\)University of Zurich, Zurich, Switzerland

11:45 - 12:00

**A8-8 The use of ocular counterroll and horizontal nystagmus patterns in trapezoidal eccentric rotation as indicators of canal and utricular function.**
Jorge Gonzalez\(^1\), Alexander Kiderman\(^2\)
\(^1\)Bloomburg University of Pennsylvania, Bloorburg, USA
\(^2\)Neuro-Kinetics, Inc., Pittsburgh, USA

12:00 - 12:15

**A8-9 Dynamic posturography: the clinical value in the diagnosis of patients with acute vertigo**
Daogong Zhang, Zhaomin Fan, Yuechen Han, Haibo Wang
Provincial Hospital affiliated to Shandong University, Jinan, China
12:15 - 12:30

A8-10 A New vestibular evoked potential occurring 6 msec after stimulus onset with air-conducted tone auditory stimuli
Eleftherios Paphathanasiou¹, Athena Lemesiou¹, Stavros Hadjiloizou², Panayiota Myrianthropoulou¹, Marios Pantzaris¹, Savvas Papacostas¹
¹The Cyprus Institute of Neurology & Genetics, Nicosia, Cyprus
²Cyprus Paediatric Neurology Institute, Nicosia, Cyprus

09:30 - 12:30 Oral Session B7 - Differential Diagnosis
Chairs: Nicolas Perez and Pierre Bertholon

09:30 - 09:45

B7-1 Dizziness in the emergency department
Arni Egill Ornolfsson¹, Olof Birna Margretardottir¹, Einar Hjaltested¹, Hannes Petersen²
¹Landspitali Hospital, Reykjavik, Iceland
²Landspitali University Hospital, Reykjavik, Iceland

09:45 - 10:00

B7-2 Nystagmus assessments documented by emergency physicians in acute dizziness presentations: opportunity for improvement?
Kevin Kerber¹, Lewis Morgenstern¹, William Meurer¹, Jane Forman¹, A. Fendrick¹, David Newman-Toker²
¹University of Michigan, Ann Arbor, USA
²John Hopkins University, Baltimore, USA

10:00 - 10:15

B7-3 Do different symptom sets represent different sites of pathology or different types of patients?
Art Mallinson¹, Neil Longridge²
¹Vancouver General Hospital, Vancouver, Canada
²University of British Columbia, Vancouver, Canada

10:15 - 10:30

B7-4 Otosclerosis among patients with dizziness
Nicolas Perez¹, Paloma Eza²
¹University of Navarra, Pamplona, Spain
²University of Cantabria, Santander, Spain

10:30 - 11:00 Coffee Break

11:00 - 11:15

B7-5 Canal and otolith function testing in subjects with vestibular schwannoma
Robbie Yavor¹, Miriam Welgampola², Rachael Taylor², Benjamin Jonker¹, Brindha Shivalingam¹, Hamish MacDougall², Ian Curthoys², Michael Halmagyi¹
¹Royal Prince Alfred Hospital Camperdown, Sydney, Australia
²University of Sydney, Syndey, Australia
11:15 - 11:30
**B7-6 Endolympathic hydrops in patients with superior semicircular canal dehiscence syndrome**
Ilmari Pyykkö¹, Dennis Poe²
¹University of Tampere, Tampere, Finland
²University of Tampere, Tampere, Finland

11:30 - 11:45
**B7-7 Gait disorders associated with bilateral sensorineural hearing loss due to late chronic Lyme disease in 2 patients**
Pierre Bertholon¹, Céline Cazorla², Anne Carricaço², Alexander Oletskei², Gilles Damon², Christian Martin², Bernard Laurent¹
¹Hôpital Nord, Saint Etienne, France
²Saint Etienne, France

11:45 - 12:00
**B7-8 Gaze displacement and eye-to-foot coordination during voluntary reorientations in standing parkinsonian patients**
Dimitri Anastasopoulos¹, Nausica Zivra¹, Socratis Sklavos¹, Eugenia Savvidou¹, Adolfo Bronstein²
¹University of Athens, Athens, Greece
²Imperial College, London, United Kingdom

12:00 - 12:15
**B7-9 How balance deteriorates in migraines**
Gülden Akdal, Birgül Dönmez Balci, Salih Angin, Vesile Öztürk
Dokuz Eylül University, Izmir, Turkey

12:15 - 12:30
**B7-10 Vestibular migraine - validity of clinical diagnostic criteria at long-term follow up**
Andrea Radtke¹, Hannelore Neuhauser², Michael Von Bremen², Tilman Hottenrott¹, Thomas Lempert¹
¹Charité, Berlin, Germany
²Robert Koch Institute, Berlin, Germany
³Park clinic Weissensee, Berlin, Germany
⁴Schlosspark-Klinik, Berlin, Germany

**09:30 - 12:30 Oral Session C7 - Ageing & Balance**
Chair: John H.J. Allum

**Room 104**

09:30 - 09:45
**C7-1 Reference values of static and dynamic clinical balance tests**
Pia Bergquist Larsson¹, Ann-Sofi Kammerlind², Torbjörn Ledin³
¹Faculty of Health Science Linköping University, Linköping, Sweden
²Rybov County Hospital, Jönköping, Sverige
³Department of Clinical and Experimental Medicine, Linköping University, Linköping, Sweden
09:45 - 10:00

**C7-2 The relationship between accelerometer scores, age, and status (patient versus control) during standing**
Susan Whitney¹, Gregory Marchetti², Jennica Roche¹, Chia-Cheng Lin¹, Daniel Steed¹, Mark Musolino³, Gabriel Furman¹, Mark Redfern¹
¹University of Pittsburgh, Pittsburgh, PA
²Duquesne University, Pittsburgh, USA
³Crossroads Consulting, LLC, Johnstown, USA

10:00 - 10:15

**C7-3 Psychophysical responses to earth-vertical rotations in the elderly**
Timothy Hullar¹, Osarenoma Olomu¹, Robert Mallory², Rosalie Uchanski³
¹Washington University in St. Louis, Saint Louis, USA
²Brigham and Women’s Hospital, Boston, USA

10:15 - 10:30

**C7-4 Vibrotactile postural control in patients that have sit-to-stand balance deficit and fall**
Karen Atkins
BalanceSense LLC, Celebration, USA

10:30 - 11:00 Coffee Break

11:00 - 11:15

**C7-5 Visual vertigo and vestibulopathy: oculomotor and posturography findings**
Oz Zur¹, Ruth Dickstein¹, Elizabeth Dannenbaum², Joyce Fung²
¹Haifa University, Raanan, Israel
²Jewish Rehabilitation Hospital, Quebec, Canada

11:15 - 11:30

**C7-6 The role of positive experiences in Menière’s disorder**
Dafydd Stephens¹, Ilmari Pyykkö², Hilla Levo³, Erna Kentala³, Dennis Poe², Yrjö Auramo⁴
¹Cardiff University, Cardiff, Wales, United Kingdom
²University of Tampere, Tampere, Finland
³University of Helsinki, Helsinki, Finland
⁴Pori Polytechnical University, Pori, Finland

11:30 - 11:45

**C7-7 Cell phone based vibrotactile feedback system for home-based vestibular rehabilitation balance training**
Beom-Chan Lee, Kelli Bechly, Kathleen Helen Sienko
University of Michigan, Ann Arbor, USA
11:45 - 12:00

**C7-8 Enhancing vestibular function by imperceptible levels of electrical stimulation**
Jorge Serrador¹, Maria Geraghty², Brian Deegan³, Scott Wood⁴
¹Veterans Biomedical Research Institute, East Orange, USA
²University College Dublin, Dublin, Ireland
³National University of Ireland Galway, Galway, Ireland
⁴University Space Research Administration & NASA JSC, Houston, USA

12:00 - 12:15

**C7-9 Trunk sway reductions in young and older adults using multi-modal biofeedback: randomized controlled trials**
John HJ Allum
University Hospital Basel, Basel, Switzerland

12:15 - 12:30

**C7-10 Effectiveness of variations on repositioning treatments for benign paroxysmal positional vertigo**
Helen S Cohen, Haleh Sangi-Haghpeykar
Baylor College of Medicine, Houston, USA

**Oral Session D7 - Meniere’s & SSCD**

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<th>Time</th>
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<tr>
<td>09:30 - 12:30</td>
<td>Oral Session D7 - Meniere’s &amp; SSCD</td>
<td>Room 105</td>
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<td>Chairs: Swee Aw and Martin Westhofen</td>
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<td>09:30 - 09:45</td>
<td><strong>D7-1 A novel inner ear monitoring system for evaluating ototoxicity of gentamicin eardrops in guinea pigs</strong></td>
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<td>National Taiwan University Hospital, Taipei, Taiwan</td>
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<td>09:45 - 10:00</td>
<td><strong>D7-2 Using different protocols of intratympanic gentamycin for the treatment of Meniere disease, according to the condition of the patient</strong></td>
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<td>Sergio Carmona, Diego Castagnino, Lilian Frankel, Romina Weinschelbaum</td>
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<td>10:00 - 10:15</td>
<td><strong>D7-3 The effect of intratympanic injection of gentamicin in low concentration for Meniere’s disease on hearing level (3 years follow up)</strong></td>
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<td>Nathan Shlamkovich, Efraim Eviatar</td>
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<td>Assaf Harofeh Medical Center, Zerifin, Israel</td>
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<td>10:15 - 10:30</td>
<td><strong>D7-4 Audiological status of intratympanic gentamicin and medication treatment for Meniere’s disease</strong></td>
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<td>Hisayoshi Ishizaki</td>
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<td>Kikugawa General Hospital, Shizuoka, Japan</td>
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10:30 - 11:00  Coffee Break

11:00 - 11:15
**D7-5 Ventilation tubes in Meniere’s disease and Meniere’s syndrome - cochlear and vestibular effects**
Martin Westhofen¹, Jonas Park²
¹ORL-Department, Aachen, Germany
²ORL-Department, University Aachen, Aachen, Germany

11:15 - 11:30
**D7-6 Middle ear pressure treatment of Meniere’s disease by the trans-tympanic membrane stimulation**
Yukio Watanabe, Hideo Shoujaku, Makiko Junicho, Masatsugu Asai, Michiro Fujisaka, Hiromasa Takakura
Graduate school of Medicine and Pharmaceutical Sciences, University of Toyama, Toyama, Japan

11:30 - 11:45
**D7-7 Vestibulo-ocular reflex evoked by bone-conducted tone in superior and posterior canal dehiscence**
Swee Aw¹, Grace Aw², Andrew Bradshaw³, Michael Todd⁴, Michael Halmagyi⁵
¹Royal Prince Alfred Hospital / University of Sydney, Sydney, Australia
²Royal Prince Alfred Hospital, Sydney, Australia

11:45 - 12:00
**D7-8 Autophony and pulsatile tinnitus in patients with superior canal dehiscence syndrome (SCDS): insights into mechanisms from tympanic membrane displacement measurement**
Ros Davies¹, Robert Marchbanks², Linda Luxon¹, Peter Rudge¹, Adolfo Bronstein¹, Rosalyn Davies¹
¹The National Hospital for Neurology and Neurosurgery, London, United Kingdom
²Neurological Physics Group, Dept of Medical Physics, Southampton University, Southampton, United Kingdom

12:00 - 12:15
**D7-9 Superior canal dehiscence in Iceland**
Sigurður Stefánsson
Landspitali University Hospital, Reykjavik, Iceland

12:15 - 12:30
**D7-10 The subarcuate canal and its artery as a surgical landmark in transmastoid repair of superior semicircular canal dehiscence syndrome**
Robby Vanspauwen¹, Liselotte Rotteveel², Thomas Somers², Bert De Foer¹, Joost Van Dinther², Andrzej Zarowski², Erwin Offeciers²
¹Sint-Augustinus Hospital, Wilrijk - Antwerp, Belgium
²University Department of ENT, Sint-Augustinus Hospital, Wilrijk - Antwerp, Belgium
³Dept. of Medical Imaging, Sint-Augustinus Hospital, Wilrijk - Antwerp, Belgium

12:30 - 13:30  Lunch and Closing of the Conference
Poster Sessions

Poster Session 1 - A. Basic Science

PA-01 Effect of an ototoxic agent on cupular morphology - a comparison with semicircular canal pathology
Koji Otsuka, Ujimoto Konomi, Mamoru Suzuki, Taro Inagaki, Go Hasegawa, Shigetaka Shimizu, Takafumi Kondo
Tokyo Medical University, Tokyo, Japan

PA-02 Using an artificial vestibular system and robot simulations to mimic human postural responses to support surface translational accelerations
Thomas Mergner, Luminous Fennell
University of Freiburg, Freiburg, Germany

PA-03 Membrane excitability of Purkinje neuron in vestibulocerebellum
Chang-IIhee Kim¹, Jun Kim², Sang Jeong Kim²
¹Seoul National University College of Medicine, Seoul, Korea (Rep)
²Seoul National University, Seoul, Korea (Rep)

PA-04 Bone-conducted vibration combined with real-time triaxial accelerometry in eliciting ocular and cervical vestibular evoked myogenic potentials
Shou-Jen Wang¹, Fu-Shan Jaw², Yi-Ho Young³
¹Institute of Biomedical Engineering, Taipei, Taiwan
²Institute of Biomedical Engineering, National Taiwan University, Taipei, Taiwan
³Department of Otolaryngology, National Taiwan University Hospital, Taipei, Taiwan

PA-05 Galvanic vestibular–evoked myogenic potentials in humans and guinea pigs
Po-Wen Cheng¹, Yi-Ho Young³
¹Department of Otolaryngology, Far Eastern Memorial Hospital, Taipei, Taiwan
²Department of Otolaryngology, National Taiwan University Hospital, Taipei, Taiwan

PA-06 Gabab receptors contribute to the restoration of balance during vestibular compensation in mice
Dianne Broussard¹, Raquel Heskin-Sweeze², Heather Titley³, Joan Baizer³
¹University Health Network, Toronto, Canada
²Department of Physiology, University of Toronto, Toronto, Canada
³University at Buffalo, Buffalo, United States of America

PA-07 Vestibulo-ocular reflex thresholds match perceptual thresholds above 1 Hz
Dan Merfeld, Csilla Haburakova, Richard Lewis
Harvard Medical School, Boston, United States of America
PA-08 A primate model for pendular nystagmus
Junko Fukushima¹, Natsuko Shichinohe², Graham Barnes², Teppei Akao³, Sergei Kurkin¹, Manabu Kase¹, John Leigh⁴, Tim Belton⁴, Kikuro Fukushima¹
¹Hokkaido University, Sapporo, Japan
²University of Manchester, Manchester, United Kingdom
³Teine Keijinkai Hospital, Sapporo, Japan
⁴Case Western Reserve University, Cleveland, United States of America
⁵Northwestern University, Chicago, United States of America

PA-09 Dose deficit in hippocampal function affect equilibrium function?
Hidefumi Yamamoto¹, Hideo Yamane¹, Michiharu Morini²
¹Osaka City University, Osaka, Japan
²Tokyo Metropolitan Neurological Hospital, Tokyo, Japan

PA-10 Cortical response concerned with circularvection detected by functional near infrared spectroscopy (fNIRS)
Hiromasa Takakura, Hideo Shoujaku, Hisao Nishijo, Yukio Watanebe
Graduate school of Medicine and Pharmaceutical Sciences, University of Toyama, Toyama, Japan

PA-11 Evidence of re-weighting to plantar sensation at 0.06% and 0.10% blood alcohol intoxication in human postural control and adaptation
Per-Anders Fransson, Fredrik Modig, Mitesh Patel, Måns Magnusson
Lund University, Lund, Sverige

PA-12 Morphological changes in stria vascularis in experimental animal modes administered arginine vasopressin
Hideaki Naganuma, Katsumasa Kawahara, Ryohei Sato, Koji Tokumasu, Atsusi Ochiai, Hiroyuki Makino, Makito Okamoto
Kiasato Univ. School of Medicine, Kanagawa, Japan

PA-13 Expression of aryl hydrocarbon receptor in the inner ear of rodents.
Kazuhide Kubo¹, Mitsuru Ohashi², Shizuo Komune³
¹Chidoribashi General Hospital, Fukuoka, Japan
²Department of Otorhinolaryngology, Kyushu University, Fukuoka, Japan

PA-14 Influence of galvanic and air-caloric vestibular stimulation on self-attribution of body parts and tactile perception
Christophe Lopez¹, Bigna Lenggenhager², Olaf Blanke², Fred W. Mast¹
¹University of Bern, Bern, Switzerland
²Ecole Polytechnique Federale de Lausanne, Lausanne, Switzerland

PA-15 The relationship between the superior canal dehiscence syndrome and human evolution: Does human evolution cause vertigo?
Atsunobu Tsumoda, Naoto Takahashi, Ken Kitamura
Tokyo Medical and Dental University, Tokyo, Japan
PA-16 Effects of 0.06% and 0.10% blood alcohol intoxication on human postural control
Fredrik Modig, Patel M, Magnusson M, Johansson R, Fransson PA.
Department of Clinical Sciences, Lund, Lund University, Sweden.

PA-17 Predicting change of vestibular direction detection thresholds from acceleration profile differences
Florian Soyka, Karl Beykirch, Paolo Robuffò Giordano, Heinrich H. Bültzhofer
Max Planck Institute for Biological Cybernetics, Tübingen, Germany

PA-18 The vertical component of caloric nystagmus and the orientation of the semicircular canals
Sachiko Aoki, Yasuko Arai, Kazufumi Suzuki, Al Masukawa
Tokyo Women’s Medical University, Medical Center East, Tokyo, Japan

PA-19 The effect of morphological cupula change on caloric response
Taro Inagaki, Mamoru Suzuki, Yoichi Iimur, Koji Otsuka, Shigetaka Shimizu, Ujimoto Konomi
Tokyo Medical University, Tokyo, Japan

PA-20 The mammalian saccule: transduction and transmission
Jocelyn Songer1, Ruth Anne Eatock2
1Massachusetts Eye and Ear Infirmary, Boston, United States of America
2Harvard Medical School, Boston, United States of America

PA-21 Path integration in the third dimension
Michael Barnett-Cowan1, Tobias Meilingler1, Manuel Vidal2, Heinrich Bültzhofer3
1Max Planck Institute for Biological Cybernetics, Tübingen, Germany
2Collège de France - CNRS, Paris, France

PA-22 The use of nanotechnology for cochlear regeneration
Ilmar Pyykko1, Dennis Poe2, Jing Zou2
1University of Tampere, Tampere, Finland
2University of Tampere, Tampere, Finland

PA-23 Self-motion perception evoked by vestibular, visual, and combined stimulation at threshold levels
Ognyan Kolev1, Thomas Mergner2, Hubert Kimberg2, Wolfgang Becker3
1University Hospital, St. Naum, Sofia, Bulgaria
2Neurology, University of Freiburg, Freiburg, Germany
3Schwarzwald-Baar Klinikum, Villingen-Schwenningen, Germany
4Universität Ulm, Ulm, Germany

PA-24 Idiopathic scoliosis is linked to an anatomical asymmetry in the peripheral vestibular system
Gaëlle Quarc, Julien Lacoudre, Eric Eyi, Pierre Denise, Jean-François Mallet
University of Caen, Normandy, Caen Cedex, France

PA-25 In vitro whole-cell conductances recorded from developing human cristae
Rebecca Lim, Aaron Camp, Melissa Walsh, Robert Callister, Alan Brichta
The University of Newcastle, Callaghan, Australia
PA-26 Inhibitory synaptic transmission in the lateral vestibular nucleus
Rebecca Lim, Iain Stitt, Aaron Camp, Robert Callister, Alan Brichta
The University of Newcastle, Callaghan, Australia

PA-27 Thresholds for self-motion perception in roll about earth-vertical and earth-horizontal axes with and without fixation targets
Ognyan Kolev, Daniel Merfeld
1Medical University - Sofia, Sofia, Bulgaria
2JVP, MEEI, Department of Otology and Laryngology, Harvard Medical School, Boston, United States of America

PA-28 Response of the angular vestibulo-ocular reflex (aVOR) to high accelerations in three dimensions after lateral semicircular canal nerve section
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2Teikyo University, Tokyo, Japan
3Tokyo Women’s Medical College, Tokyo, Japan
4Brooklyn College, CUNY, Brooklyn, United States of America

PA-29 Self-motion perception parallels the angular vestibulo-ocular reflex during earth-vertical yaw and pitch rotations in patients with midline cerebellar dysfunction
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PA-30 The anatomy of the utricular and saccular maculae in relation to the footplate of the stapes. An Xray microCT study
Payal Mukherjee, Hilal Uzun, Ian Curthoys, Allan Jones, Andrew Bradshaw, David Pohl
1Royal Prince Alfred Hospital, Sydney, Australia
2Australian Centre for Microscopy and Microanalysis, Sydney, Australia
3University of Sydney, Sydney, Australia

PA-31 Utricular function in normal subjects and patients with vestibular dysfunction
Qadeer Arshad, K Agarwal, ME Faldon, Michael Gresty, Barry Seemungal, Adolfo Bronstein
Imperial College London, London, United Kingdom

PA-32 Population responses of floccular purkinje cells during vergence pursuit
Sergey Kurkin, Takashi Tsubuku, Teppi Akao, Junko Fukushima, Kikuro Fukushima
Hokkaido University School of Medicine, Sapporo, Japan

PA-33 Sensorimotor noise in the vestibulo-ocular reflex exhibits low-dimensional structure
Dan Merfeld, Faisal Karmali
Harvard Medical School, Boston, United States of America
PA-34 Perceptual roll tilt thresholds demonstrate visual-vestibular fusion
Dan Merfeld, Faisal Karmali, Keyvan Nicoufar, Koeun Lim
Harvard Medical School, Boston, United States of America

PA-35 Effects of cinnarizine on isolated vestibular hair cells of guinea pigs
Martin Westhofen¹, Ingo Sparrer², Thorsten Haasler², Andreas Lückhoff³, Thien An Duong Dinh²
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PA-36 Histological analysis of a pygmy killer whale (feresa attenuata) inner ear
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Poster Session 1 - B. Diagnosis

PB-37 Non-invasive evaluation of endolymphatic hydrops and normal value of endolymphatic space using magnetic resonance imaging
Fang Liu¹, Weining Huang², Zhengchang Wang³
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PB-38 OVEMP findings to air-conducted tones are independent of CVEMP findings?
Toshihisa Murofushi¹, Hanako Saigusa¹, Kikuko Wakayama¹, Eriko Yoshimura², Yukiko Tsuda³, Yasuhiro Chihara³
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PB-39 Diagnostic value of rotational test in peripheral vertigo patients
Daogong Zhang, Zhaomin Fan, Yuechen Han, Haibo Wang
Provincial Hospital affiliated to Shandong University, Jinan, China

PB-40 Digitalization of paper-based electronystagmography
Masakatsu Taki¹, Tatsuhisa Hasegawa², Hirofumi Sakaguchi¹, Toshihiro Suzuki¹, Yasuo Hisa¹
¹Kyoto Prefectural University of Medicine, Kyoto, Japan
²Kyoto Prefectural Yosanoumi Hospital, Yosa, Japan
PB-41 The prevalence of Vestibulo Ocular Reflex (VOR) deficit and postural sway in children with intellectual disability: preliminary results
Zur O\textsuperscript{1}, Ronen A\textsuperscript{2}, Melzer I\textsuperscript{2} and Carmeli E\textsuperscript{3}
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PB-42 Subjective visual vertical in vestibular neuritis and unilateral sudden deafness
Yasuo Ogawa, Koji Otsuka, Taro Inagaki, Takahito Kondo, Shigetaka Shimizu, Mamoru Suzuki
Tokyo Medical University, Tokyo, Japan

PB-43 The n10 of the oculovestibular evoked myogenic potential to 500Hz Fz bone conducted vibration is a valuable new indicator of semicircular canal dehiscence
Leonardo Manzari\textsuperscript{1}, Ann Burgess\textsuperscript{2}, Ian S. Curthoys\textsuperscript{3}
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\textsuperscript{2}Vestibular Research Laboratory, School of Psychology, The University of Sydney, Sydney, Australia

PB-44 Ocular vestibular evoked myogenic potentials to air-conducted sound and bone-conducted vibration in superior vestibular neuritis
Shinichi Iwasaki\textsuperscript{3}, Ian S. Curthoys\textsuperscript{2}, Yasuhiro Chihara\textsuperscript{1}, Munetaka Ushio\textsuperscript{1}, Leigh McGarvie\textsuperscript{5}, Ann M. Burgess\textsuperscript{2}, Tatsuya Yamasoba\textsuperscript{1}
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\textsuperscript{2}Vestibular Research Laboratory, School of Psychology, University of Sydney, Sydney, Australia
\textsuperscript{3}Institute of Clinical Neurosciences, Royal Prince Alfred Hospital, Sydney, Australia

PB-45 About correlation between centre of pressure, trunk, and head sways during quiet upright stance
Angelo Buizza, Paola Ferraris, Roberto Gandolfi, Remo Lombardi, Eleonora Pilato
University of Pavia, Pavia, Italy

PB-46 3D analysis of benign positional nystagmus due to cupulolithiasis in posterior semicircular canal
Takao Imai\textsuperscript{4}, Atsuhiko Uno\textsuperscript{4}, Suetaka Nishiike\textsuperscript{2}, Tadashi Kitahara\textsuperscript{2}, Arata Horii\textsuperscript{2}, Noriaki Takeda\textsuperscript{3}, Hidenori Inohara\textsuperscript{1}
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PB-47 Localization and prevalence of hydrops formation in Meniere’s disease using a test battery
Chi-Hsuan Huang\textsuperscript{1}, Shou-Jen Wang\textsuperscript{2}, Yi-Ho Young\textsuperscript{2}
\textsuperscript{1}Catholic Cardinal Tien Hospital, Taipei, Taiwan
\textsuperscript{2}National Taiwan University Hospital, Taipei, Taiwan

PB-48 Ocular vestibular evoked myogenic potentials in response to vertex bone
Berit Holmeslet\textsuperscript{4}, Magnus Westin\textsuperscript{2}, Krister Brantberg\textsuperscript{1}
\textsuperscript{1}St.Olav Hospital, Trondheim, Norge
\textsuperscript{2}Department of Audiology, Karolinska Hospital, Stockholm, Sweden
PB-49 Impaired sacculocllcic reflex in anterior inferior cerebellar artery infarction
Seonhye Kim¹, Ji Soo Kim²
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²Seoul National University Bundang Hospital, Seoul, Korea (Rep)

PB-50 Emergency department referrals for acute vestibular neuritis are more commonly due to BPPV
Nick Cutfield¹, Barry Seemungal², Adolfo Bronstein²
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²Imperial College, London, United Kingdom

PB-51 Dissociation between cVEMP and oVEMP projections activated by sound in vestibular neuritis
Sendhil Govender, Sally M. Rosengren, James G. Colebatch
Prince of Wales Clinical School and Medical Research Institute, Sydney, Australia

PB-52 Analysis of vestibular function in patients with otosclerosis
Naoki Saka¹, Masafumi Sakagami², Toru Seo³
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PB-53 Accurate VOR gain measurement in the video head impulse test
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³Department of Neurology, Zurich University Hospital, Zurich, Switzerland

PB-54 Difference of vestibuloauditory findings in patients with tumor of cerebellopontine angle: vestibular schwannoma vs meningioma
Yoshihiro Umeno¹, Kazuhiko Kubo², Shizuo Komune¹
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²Chidoribashi General Hospital, Fukuoka, Japan

PB-55 The clinical utility of Romberg’s test
David Szmulowicz¹, John Waterston², Elsdon Storey²
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PB-56 Ocular vestibular-evoked myogenic potentials to bone conducted vibrations in superior vestibular neuritis show utricular function
A.M. Burgess¹, Leonardo Manzari², I.S. Curthoys¹
¹University of Sydney, Sydney, Australia
²Department of Experimental Pathology, La Sapienza University, Rome, Italy
PB-57 Bedside diagnosis of vestibular neuritis in a patient with congenital nystagmus
Fredrik Tjernström1, Mikael Karlberg2, Måns Magnusson2
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2Lund University Hospital, Lund, Sweden

PB-58 High VOR gain and prolonged time constant in rotation chair test can induce motion intolerance in dizzy patients
Samsung Medical Center, Seoul, South Korea

PB-59 A vestibular evoked myogenic potential (VEMP) metric that estimates the EMG inhibition depth produced by the saccular response
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1Massachusetts Eye and Ear Infirmary, Boston, United States of America
2Eaton-Peabody Laboratory, Massachusetts Eye and Ear Infirmary, Boston, United States of America

PB-60 The Vestibular Dysfunction Index (VDI): A method to assess the degree of vestibular dysfunction in patients with vertigo
Floris Wuyts1, Leen Maes2, Ingeborg DHooghe2, Kristof Buytaert1, Paul Van de Heyning1
1University of Antwerp, Antwerp, Belgium
2University of Ghent, Ghent, Belgium

PB-61 Impaired sacculocollar reflex in lateral medullary infarction: correlation of cervical vestibular evoked myogenic potential with other vestibular function tests
Seonhye Kim1, Ji Soo Kim2
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2Seoul National University Bundang Hospital, Seoul, Korea (Rep)

PB-62 Furosemide loading VEMP testing can detect occult endolymphatic hydrops in silent ears
Toru Sero1, Naoki Saka2, Masafumi Sakagami2
1Osaka Central Hospital, Osaka, Japan
2Hyogo College of Medicine, Nishinomiya, Japan

PB-63 Video head impulse tests (vHIT) of individual lateral, posterior and anterior semicircular canal function
Hamish MacDougall1, Konrad Weber2, Leigh McGarvie3, Leonardo Manzari4, Michael Halmagyi5, Ian Curthoys1
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2Department of Neurology, Zurich University Hospital, Zurich, Switzerland

PB-64 Inerier labyrinth compromise in Fabry’s disease
Sergio Carmona1, Ana Pardal2, Ricardo Reisin2
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PB-65 Ocular vestibular evoked myogenic potentials in response to skull vibration: dependency on stimulus configuration and stimulus site
Magnus Westin1, Berit Holmesle1, Krister Brantberg1
1Karolinska Hospital, Stockholm, Sweden
2St. Olavs Hospital, Trondheim University Hospital, Trondheim, Norway

PB-66 Prediction of abnormalities of Postural Evoked Responses (PER) with Motor Control Test (MCT) results
Neil Shepard1, Thomas Boismier2, Ann Anderson1
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2Ear, Nose and Throat Associates, PC, Ft. Wayne, United States of America

PB-67 HITs for kids: the video-based head-impulse test in children and adolescents
Nadine Lehnen, Klaus Bartl, Stefan Kohlhebecher, Stefan Glasauer, Klaus Jahn, Erich Schneider
University of Munich, Munich, Germany

PB-68 Psychophysical responses to earth-vertical rotations in normal and vestibulopathic subjects
Timothy Hullar1, Osarenoma Olomu1, Robert Mallery2, Rosalie Uchanski3
1Washington University in St. Louis, St. Louis, United States of America
2Brigham and Women’s Hospital, Boston, United States of America

PB-69 Head-tilt thermal test in patients with unilateral vestibular disorders
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1Musashi no Red Cross Hospital, Tokyo, Japan
2Teikyo University School of Medicine, Mizonokuchi Hospital, Kawasaki, Japan

PB-70 Inferior vestibular neuritis: absence of vestibular evoked myogenic potentials in the presence of normal caloric responses
Eun Jin Son, Kyoung Rok Kim, Seung Ah Hong, Ho Young Lim
Gangnam Severance Hospital, Seoul, Korea (Rep)

Poster Session 2 - C. Disorders

PC-71 Physical activity as a contributing factor for onset of idiopathic benign paroxysmal positional vertigo
Lea Pollak1, Mark Kushner2, Hadassah Goldberg Stern1
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2Assaf Harofeh Medical Center, Zerifin, Israel
3Children Hospital Dana, Petach Tikva, Israel

PC-72 Vestibular and psychiatric manifestations during the first 3 months after vestibular neuritis
Kathrine Jáuregui-Renaud, Fatima Gómez-Alvarez
Instituto Mexicano del Seguro Social, Mexico D.F., Mexico
PC-73 Vestibular paroxysmia with paroxysmal pulsatile tinnitus
Tzu-Pu Chang¹, Yi-Chang Wu²
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²Antien ENT Clinic, Tainan, Taiwan

PC-74 A case of mumps virus related opsoclonus myoclonus syndrome
Jwe Il Kim
Dankook University Hospital, Cheonan, South-Korea

PC-75 Dynamic posturography: the clinical value in finding balance abnormality of patients with benign paroxysmal positional vertigo
Daogong Zhang, Zhaomin Fan, Yuechen Han, Haibo Wang
Provincial Hospital affiliated to Shandong University, Jinan, China

PC-76 Assessment of postural stability using a foam posturography in idiopathic bilateral vestibulopathy
Fujimoto Chisato¹, Murofushi Toshishita¹, Chihara Yasuhiro¹, Ushio Munetaka¹, Suzuki Mitsuya¹, Yamasoba Tatsuya¹, Iwasaki Shinichi¹
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²University Hospital, Misonokuchi, Teikyo University School of Medicine, Kawasaki, Japan

PC-77 Episodic upbeat nystagmus: a new phenotype of episodic ataxia?
Kwang Dong Choi, Jae Hwan Choi, Moon In-Soo
Pusan, Korea

PC-78 Ictal downbeat nystagmus in cardiogenic vertigo
Kwang-Dong Choi¹, Jeong-Ju Lee², Tae-Hyoung Kim³, Min-Ji Kim⁴, Ji Soo Kim⁵
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PC-79 Walking to the toilet in inpatient with vertigo (2nd report)
Akira Doi, Kenichi Kozakura, Aya Murai, Kumiko Shimamoto, Keiko Morizane, Kozo Tamura, Keiko Tsutsui,
Yukari Nishimori, Akiko Motoyoshi, Kayo Hasegawa
Kochi Health Sciences Center, Kochi, Japan

PC-80 Vestibular neuritis with dissociation between cVEMP and oVEMP responses is consistent with utricular origin of oVEMPs and saccular origin of cVEMPs
Leonardo Manzari¹, Ann Burgess², Ian S. Curthoys²
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PC-81 Treatment of apogeotropic horizontal canal benign paroxysmal positional vertigo; comparison of gufoni and head-shaking maneuver
Sun-Young Oh¹, Ji Soo Kim², S.-H. Lee³, D.-U. Kim⁴, S.-H. Jeong⁵, K.-D. Choi⁶, B.-K. Kim⁷
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³Chonnam National University, Kwangju, Korea (Rep)
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PC-82 Partial labyrinthine injury in severe decompression illness: a vascular embolic explanation?
Luca Verrecchia¹, Mikael Gensner², Arne Tribukait³, Krister Brantberg³
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PC-83 Audiovestibular sarcoidosis
David Szmulowicz¹, John Waterston²
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PC-84 Vertigo and disequilibrium of SLE patients
Atsushi Ochiai, Hideaki Naganuma, Koji Tokumasu, Makito Okamoto
Kitasato University, Sagamihara, Japan

PC-85 Characterization of presbyequilibrium among institutionalized elderly persons
Ilmari Pyykkö¹, Dennis Poe², Pirkko Jännti², Eeva Tuunanen²
¹University of Tampere, Tampere, Finland
²University of Tampere, Tampere, Finland

PC-86 Asymmetric vestibular function in CI candidates - does it matter?
Julia Dlugaczyk¹, Markus Kapsreiter², Christoph Brase², Joachim Hornung², Carsten Finke², Bernhard Schick¹
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²Department of Otorhinolaryngology, Erlangen University Hospital, Erlangen, Germany

PC-87 Comparing CT methods for temporal bone imaging
Richard Penninger, John Carey
The Johns Hopkins University School of Medicine, Baltimore, United States of America

PC-88 Rizatriptan reduces motion sickness in migraineurs
Joseph Furman, Dawn Marcus, Carey Balaban
University of Pittsburgh, Pittsburgh, United States of America
PC-89 Lack of vestibulo-ocular reflex gain modulation by eye position signals in the post-acute phase of vestibular neuritis
Dimitri Anastasopoulos, Evangelos Anagnostou, Jochim Heimberger, Socratis Sklavos
University of Athens, Athens, Greece

PC-90 Covert short latency saccades in combined vestibular and cerebellar failure
Stuart Mossman
Wellington Hospital, Wellington, New Zealand

PC-91 Clinical characteristics of inferior vestibular neuritis
Yasuhiro Chihara¹, S Iwasaki², T Murofushi², M Yagi¹, A Inoue², C Fujimoto², N Egami², Munetaka Ushio², S Karino², K Sugasawa², Tatsuya Yamasoba²
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²University of Tokyo, Tokyo, Japan
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PC-92 The action of vestibular signals in suppressing first trial and habituated reactions in the upper body following postural perturbations
John HJ Allum¹, John Allum², Lars Oude Nijhuis³, Sharissa Corporaal², Mark Carpenter⁴
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PC-93 Depersonalization and derealization symptoms in vestibular patients with and without anxiety
Ognyan Kolev¹, Spaska Georgieva²
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Poster Session 2- D. Treatment

PD-94 The comparison of intratympanic steroid injection and oral steroid therapy for sudden sensorineural hearing loss
Yong-Soo Park, Eun-ju Jeon, Dong Hyun Kim, Jae Won Park
Incheon St. Mary’s Hospital, Incheon, South-Korea

PD-95 4-Aminopyridine improves oculomotor and vestibular function in ataxia-telangiectasia
Sarah Marti¹, Aasef Shaikh², Alexander Tarnutzer¹, Antonella Palla¹, Thomas Crawford², Dominik Straumann¹, David Zee²
¹Zurich University Hospital, Zurich, Switzerland
²Department of Neurology, The Johns Hopkins University, Baltimore, United States of America
PD-96 Long-term outcome of benign paroxysmal positional vertigo
BK KIM1, Kyung Cheon Chung2
1Eulji Hospital, Seoul, South-Korea
2Kyung Hee Hospital, Seoul, South-Korea

PD-97 The protective effect of resveratrol on vestibular hair cells death
Kazuma Sugahara, Takefumi Mikuriya, Yoshinobu Hirose, Yujiro Fukuda, Hideki Toyota, Kenji Takeno, Makoto Hashimoto, Hiroaki Shimogori, Hiroshi Yamashita
Yamaguchi University, UBE, Japan

PD-98 A much better visual acuity could suppress the magnitude of the nystagmoid oscillation in a case of congenital nystagmus
Tomoyuki Okada1, Masahiko Fukasawa1, Makoto Hyodo1, Manabu Nakamura1, Yasuhiro Tanaka1, Tadashi Nakamura1, Satoki Ueno2, Izumi Koizuka1
1St Marianna University School of Medicine, Kawasaki City, Japan
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PD-99 Effect of furosemide in patients with Ménière’s disease
Hidefumi Yamamoto, Kishiko Sunami, Hideo Yamane
Japan/Osaka-City University, Osaka-City, Japan

PD-100 Postural control and adaptation are influenced by preceding postural challenges
Fredrik Tjernström1, Mitesh Patel2, Per-Anders Fransson2, Måns Magnusson2
1Skåne University Hospital, Lund, Sweden
2Lund University Hospital, Lund, Sweden

PD-101 Prospective analysis of treatment outcomes between geotropic and apogeotropic type in HC-BPPV
Won-Ho Chung, Hayyoung Byun, Hosuk Chu, Il Joon Moon, Se-Hyung Kim, Gil Joon Lee
Samsung Medical Center, Seoul, South-Korea

PD-102 Treatment of posture and gait disturbance in a patient with advanced Parkinson’s disease using simultaneous PPN and STN DBS
Mohammad J Naushiha1, Pei-Yun Lee1, Peter G Bain1, Adolfo M Bronstein2, Dipankar Nandi1
1Imperial College Neuromodulation Group, London, United Kingdom
2Imperial College Neuro-otology Unit, London, United Kingdom

PD-103 Influence of occlusal splints on equilibrium function
Hiroyuki Ito, Yasunasa Ito, Yumiko Kunimi, Mitsuru Asanuma
Kanagawa Rehabilitation Hospital, Atsugi, Japan

PD-104 3D angular vestibulo-ocular reflex adaptation to chronic motion-modulated multichannel prosthetic stimulation of semicircular canal ampullary nerves
Charles C. Della Santina, Chenkai Dai, Gene Fridman, Bryce Chiang, Natan Davidovics
Johns Hopkins School of Medicine, Baltimore, United States of America
PD-105 The clinical features of vertigo with psychogenic origin
Yasuhiko Takei, Masahiro Morita, Noyuki Kohno
Kyorin University Hospital, Tokyo, Japan

PD-106 Design and performance of a multichannel vestibular prosthesis that restores semicircular canal sensation in rhesus monkey
Charles C. Della Santina, Bryce Chiang, Gene Fridman, Chenkai Dai
Johns Hopkins School of Medicine, Baltimore, United States of America

PD-107 Vestibulo-ocular reflex responses to a multichannel vestibular prosthesis incorporating a 3D coordinate transformation for correction of misalignment
Charles C. Della Santina¹, Gene Fridman¹, Natan Davidovics¹, Chenkai Dai¹, Americo A. Migliaccio²
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²Prince of Wales Medical Research Institute, Sydney, Australia

PD-108 Effects of biphasic current pulse frequency, amplitude, duration and interphase gap on eye movement responses to prosthetic electrical stimulation of the vestibular nerve
Charles C. Della Santina, Natan Davidovics, Gene Fridman, Bryce Chiang
Johns Hopkins School of Medicine, Baltimore, United States of America

PD-109 Galvanic stimulation associated to vestibular rehabilitation to treat unilateral peripheral vestibular
Sergio Carmona, Guillermima Pianetti, Antonella Ferrero
INEBA, Buenos Aires, Argentina

Poster Session 2 - E. Epidemiology

PE-110 The clinical characteristics and treatment outcome of post-traumatic BPPV
HK Song
KangDong Sacred Heart Hospital, Seoul, South-Korea

PE-111 A research of disequilibrium disease at department of Neurotology, Kitasato University Hospital
Hiroyuki Makino¹, Hideaki Naganuma², Atsushi Ochiai¹, Kouji Tokumasu¹, Makito Okamoto²
¹Kitasato Univ., Kanagawa, Japan
²Kitasato University School of Medicine, Kanagawa, Japan

Poster Session 2 - F. Ageing and Balance

PF-112 Postural deficiency in intellectually disabled adult with vestibular impairment
Eli Carmeli¹, Oz Zur²
¹Tel Aviv University, Tel Aviv, Israel
²Vertigo and Balance Disorders Center, Raanana, Israel
PF-113 Effect of vision, proprioception and the position of the vestibular organ on postural sway
Eva Ekvall Hansson, Anders Beckman, Anders (deceased) Håkansson
Lund University, Malmö, Sweden