Dear friends and colleagues,

It will be our pleasure to welcome you in Rotterdam for INTS 2006

Andrew Maas
John Weber
chairmen
local organizing committee

8th International Neurotrauma Symposium
Rotterdam, The Netherlands, 21 - 25 May 2006

Traumatic brain injury
Spinal cord injury
The silent epidemic of the 21st century

Symposium highlights:
- The impact of neurotrauma
- Dynamics of lesion progression
- Ethics and trials
- Pediatric TBI
- Genes and destiny
- Improving recovery and outcome
- Neurobionics and robotics
- Pre-congress ATLS course at reduced rate

The scientific program is structured to provide state of the art overviews and to promote intense interaction between all disciplines.

Controversial topics will not be evaded, but challenged head on

Congress Tour and Dinner.
Not to be missed! A perfect opportunity to renew old and make new friendships.

Included:
Scenic boat trip, Dutch windmills, medieval castle, exquisite dinner (informal), evening entertainment

Scientific Secretariat:
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Congress Organization:
Phone: +31 (0)343 - 443 888
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Deadlines:
Abstract submission:
Feb 1, 2006
Early Bird Registration:
March 1, 2006

Target audience:
- Neuroscientists and Clinical Researchers with an interest in TBI and Spinal Cord Injury
- Clinicians: Intensive Care Neurology Neurosurgery Pediatrics Rehabilitation
- Medical Ethicists
Speakers & Topics

Adelson D. - Treatment of pediatric TBI
Buki A. - Inhibition of apoptosis
Dietrich D. - Prevention of lesion progression in SCI
Duhaime A.C. - TBI in infants and children
Fehlings M. - Update on clinical trials in spinal cord injury
Hayes R. - Genomics, proteomics and biomarkers
Hovda D. - Plasticity after experimental pediatric TBI
Katayama Y. - Contusion a role model for lesion progression
Kelly D. - Post-traumatic pituitary dysfunction
Kooy D. van der - Stem cell therapy
LaPlaca M. - Biomechanics of injury
Manley G. - Aquaporins
Matser E. - Sports injuries
Meaney D. - The impact of injury on membranes
Muizelaar J.P. - Mitochondrial dysfunction: primary engine failure or lack of fuel?
Nicoll J. - Targeting therapy to genetic profiles, near or distant future?
Parizel P. - Structural and functional imaging
Plesnila N. - Recent experimental results considered relevant for the clinician
Povlishock J. - Cellular and subcellular mechanisms
Privat A. - Treating SCI with genetic tools
Reilly P. - The impact of neurotrauma
Shoichet M - Nanotechnology and tissue engineering
Steeves J. - Guidelines for trials in SCI
Schwartz M. - Autoimmune processes in neurotrauma
Servadei F. - Patients who talk, walk and deteriorate: unavoidable destiny or management failures?
Spek P. van der - Genomics and proteomics
Steinbuechel N von - Outcome and Quality of Life
Sykova E. - Stem cell therapy and neurotrophic factors
Tasker R. - Optimal CPP in pediatric TBI
Unterberg A. - Decompressive craniectomy
Valadka A. - Trauma systems and center capacity
Vink R. - Neurotrauma and degenerative disease
Weber J. - Modeling repetitive injuries
Wild K. von - Early intensive rehabilitation

Special features

* ARDS: Similarities and differences with neurotrauma - L. Gattinoni/N. Stocchetti.


* Improving clinical trial design and analysis in TBI

* Update on TBI Guidelines

Luncheon seminars

* Coagulopathy in TBI
* Brain metabolism and monitoring in neuro critical care

Pre-congress ATLS Course (19-21 May)

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Introduction

Dear colleagues and friends,

Traumatic brain injury and spinal cord injury, together constituting the field of neurotrauma, are diseases with some of the highest unmet medical needs. Traumatic brain injury is the leading cause of death and disability among young adults, and accounts for more potential years of life lost than cancer and cardiovascular disease combined. Not only does TBI lead to great personal suffering and family disruption, but poses a significant burden to society with direct and indirect costs in the United States alone being estimated at over $6 billion per year.

Spinal cord injury is less frequent, but equally devastating. The prevalence in Europe is estimated at 330,000 individuals, also mainly afflicting young adult males. However, none of us is exempt from the risk for neurotrauma at any age, extending from battering during infancy, through sports injuries and traffic accidents during adolescence and young adulthood, to an increased risk of injuries from falls as we age.

Prevention and awareness of risks remain top priorities. Research has greatly advanced our understanding of neurotrauma, and treatment results have improved following the establishment of an appropriate trauma organization and implementation of guidelines.

Bench research has identified various strategies with neuroprotective potential to reduce secondary injury, and new insights hold promise for enhancing recovery. Yet, there is no cure for neurotrauma.

The tremendous personal suffering and tragedy, and the high socio-economic costs associated with neurotrauma, call for immediate and extensive research efforts to further increase our understanding of the disease and to improve treatments. This can only be accomplished with adequate funding and by collaboration between multiple disciplines including epidemiology, basic neuroscience research, neurology, neurosurgery, intensive care medicine, general traumatology, rehabilitation medicine, outcome research and other health professions preferably in close cooperation with health institutes/departments and health insurance companies. It is here that the International Neurotrauma Symposium provides a platform for advancing our knowledge with the aim of reducing the burden of neurotrauma and improving treatment results and quality of life in individual patients.

The program of the 8th International Neurotrauma Symposium has been designed to encourage multi-disciplinary interaction and to facilitate translational research. State of the art overviews will be presented during the plenary sessions, whilst the breakout sessions and guided poster tours will permit extensive discussions of the newest results in smaller groups. The poster sessions form an important element of the meeting, and all posters will be up for the entire duration of the meeting. We hope that you will find this new format attractive.

We are very grateful to our sponsors and trade exhibitors, providing an extra dimension to the meeting. Without their support we would not have been able to provide you with such an attractive program and venue.

The meetings of INTS are traditionally characterized by hard work and informal discussions. We consider the city of Rotterdam a most appropriate venue for this meeting. The motto of the city of Rotterdam has always been: ’work hard, live well” and a popular joke says that in Rotterdam shirts are sold with the sleeves rolled up. The city’s businesslike attitude and its flexibility to overcome difficult challenges have made it to what it is: straightforward, open and honest. This will be the approach for INTS 2006.

We hope that you will be scientifically stimulated by the meeting, enjoy your time in Rotterdam, and may return home safely, invigorated and full of new ideas to continue your great work in this important field.

Andrew I.R. Maas
John T. Weber

Congress chairmen
Rotterdam is also an old city. It dates back to the thirteenth century. There is not much that reminds us of that time, because Rotterdam was heavily bombarded at the onset of World War II. The heart of Rotterdam was literally cut out of the city.

After the war it was decided not to look back but to build an ultramodern city on the borders of the river Maas. From that time on Rotterdam rose higher and higher creating the only city in the Netherlands with a true skyline. That’s why nowadays its high-rise heart gives Rotterdam more of the “feel” of a 21st century big city. Anywhere in the city you can be surprised with unique architecture and design. Rotterdam pushes forward and upward; like you in the field of neurotrauma. Ambition and hard work are values we share!

In the past the city of Rotterdam was injured but it has successfully recovered. I sincerely hope and wish that researchers and clinicians like yourselves, will be equally successful. Successful in treating brain and spinal cord injured patients and improving their quality of life after injury.

Rotterdam is proud to host the 8th International Neurotrauma Symposium. I wish you a successful symposium and an enjoyable stay in Rotterdam.

mr. I.W. Opstelten
Mayor of Rotterdam
Welcome to Rotterdam and Congress Center De Doelen

De Doelen is situated in the centre of Rotterdam at only two minutes walking from the central railway station. Arriving at Schiphol Airport there is a direct train connection (45 minutes) to Rotterdam. Rotterdam Airport offers a fifteen minutes connection to de Doelen.

Trade Exhibition and Poster Tours

TRADE EXHIBITION
1. NOVO NORDISK
2. INTEGRA
3. BRAIN LAB
4. PHILIPS MEDICAL SYSTEMS
5. CHRISTOPHER REEVE FOUNDATION
6. PFIZER
7. CODEMAN
8. SCHERING-PLOUGH
9. ALSIUS
10. 3B SCIENTIFIC
11. BRAUN MEDICAL
12. CMA
A. DUTCH CLOGS
B. WAFERS (STROOPWAFELS)

POSTER PRESENTATIONS
P1. EXPERIMENTAL MODELS AND PATHOPHYSIOLOGY
P2. MONITORING
P4. UNDERSTANDING SECONDARY INJURY AND NEUROINFLAMMATION
P5. BIOMARKERS AND PREDICTION
P7. TARGETING CEREBRAL OXYGENATION AND ICP
P9. STEM CELLS AND NEUROTROPHIC FACTORS

ORAL PRESENTATIONS
O11. PEDIATRIC TBI
Meeting Chairmen

Andrew I.R. Maas
John Weber

INTS Executive Committee

INTS Executive Committee meetings:

Sunday May 21: 13:00-15:00
Van der Vorm room

Tuesday May 23: 20:00-21:30
Van der Vorm room

David Graham
Anders Holtz
David Hovda
Yoichi Katayama
Andrew Maas
Tracy McIntosh
John Pickard
Peter Reilly
Esther Shohami
Andreas Unterberg

INTS Scientific Advisory Board

INTS Scientific Advisory Board meeting:

Sunday May 21: 15:00-18:00
Van der Vorm room

Alex Baethmann, Germany
Jacqueline Bresnahan, USA
Ross Bullock, USA
Dalton Dietrich, USA
Michael Fehlings, Canada
David Graham, UK
Ed Hall, USA
Anders Holtz, Sweden
David Hovda, USA
Yoichi Katayama, Japan
Geoff Manley, USA
Anthony Marmarou, USA
Tracy McIntosh, USA
John Povlishock, USA
Alain Privat, France
Peter Reilly, Australia
Minori Shigemori, Japan
Esther Shohami, Israel
Nino Stocchetti, Italy
Sir Graham Teasdale, UK
Andreas Unterberg, Germany
Robert Vink, Australia

INTS Local Organizing Committee

Jan Bakker
Wimar v.d. Brink
Ernst Delwel
Marja van Gemerden
Armand Girbes
Aart Hemker
Erwin Kompanje
Andrew Maas

Saskia Peerdeman
Henk van Santbrink
Joost Schouten
Jennifer Slemmer
Frans Slieker
Bon Verweij
John Weber
Associated meetings

May 19 – 21  Pre-congress ATLS Course

Sunday, May 21
- INTS Executive Committee
  13:00-15:00  Van der Vorm room
  Members INTS Executive Committee
- INTS Scientific Advisory Board
  15:00-17:30  Van der Vorm room
  Members INTS Scientific Advisory Board
- QOLIBRI
  10:00-17:30  Schadee room
  Members of QOLIBRI working party
- Neurotraumatology Committee WFNS
  15:00-18:00  Hudig room
  Members Neurotraumatology Committee

Monday, May 22
- EBIC Annual General Meeting
  19:30-21:00  Ruys room
  Representatives of all EBIC centers
- IWINTR (International Women in Neurotrauma Research) business meeting
  19:30-21:00  Schadee room
  Come and establish the first international research group, founded to support and promote the careers of women and minorities of neurotrauma research. IWINTR is for all MEN and women interested in these goals.

Tuesday, May 23
- Werkgroep neurotraumatologie
  10:30-11:30  Schadee room
  Formal establishment of a Dutch National Neurotrauma working party. Investigators of the IMPACT study
- Investigators meeting IMPACT study
  19:15-21:30  Hudig room
  All members of the International Neurotrauma Society

Wednesday, May 24
- Members meeting of INTS
  Later afternoon  On board “De Majesteit”
  All members of the International Neurotrauma Society

Thursday, May 25
- Working party on prognostic guidelines
  19:00-21:00  Schadee room
  By invitation
- COSBID (Co-operative Study of Brain Injury Depolarisations)
  08:00-10:00  Erasmus MC
  Investigators of COSBID
- COSBID open meeting
  10:00-13:00  Erasmus MC auditorium
  Open to all interested

Preparing your presentation......

Oral presentations:
- Time slots for plenary lectures: 25 minutes; for oral presentations during breakout sessions: 15 minutes. Please keep well within these time frames, as we would like to encourage discussion of your work.
- Powerpoint presentations can be uploaded in the speaker service center at any time during the meeting or by web-based system, even from your hotel room. This is possible up to 2 hours prior your presentation. You can upload 5 different presentations, and change these as often as you like. Simply log in to the website: http://ftp.dedoelen.nl, click INTS 2006, select your name and enter your email address as password. Uploading through the website is only possible up to a maximum of 30 MB. Please note that it is not possible to connect your laptop, or present your memory stick or CD-rom in the lecture room. All presentations are centrally distributed through the speaker service center.

Poster presentations:
- Posters will be up for the entire duration of the meeting, allowing maximum exposure.
- Poster setup is Sunday afternoon May 21 or Monday morning May 22.

Three guided poster tours have been scheduled for Monday, Tuesday and Thursday each. The aim of the guided poster tours is to visit the posters together with the chairmen of the poster sessions and interested participants. The authors will present their work in 2 to 3 minutes, allowing for a further few minutes of discussion.
08:30 - 10:15  **Session I: Impact of neurotrauma**  
*Chairmen: J. Povlishock, S. Peerdeman.*

08:30  The impact of neurotrauma to society: an international view  
P. Reilly.

08:55  The impact of neurotrauma to patient and family  
M. Hoevenaars / A. Maas.

09:20  Sports concussion: the impact of neural dysfunction  
C. Giza.

09:45  The impact of injury on membranes  
D. Meaney.

10:15-11:45  **Guided poster tours P1 – P3**  
P1 - Experimental models and pathophysiology (see page 10)  
P2 - Monitoring (see page 10)  
P3 - Treatment and outcome (see page 11)

11:45-13:00  **Breakout sessions O1 - O3**

### W. Burger room

**01. Cellular and subcellular mechanisms**

*Chairmen: N. Plesnila, E. Shohami.*

11:45  **Introduction: J. Povlishock**  
The pathophysiology of TBI

12:00  **01.1 Neuronal Changes in human cerebral cortex after TBI.**  
Maxwell, W.L.; Mackinnon, M.A.; Graham, D.J.: University of Pennsylvania, USA.

12:15  **01.2 Glial-axonal signaling in spinal cord injury: a closer look at oligodendrocyte-myelin-axon-interactions.**  
Velumian, A.A.; Fehlings, M.G.: Toronto Western Hospital, Canada.

12:30  **01.3 Metabotropic glutamate receptor antagonists and agonists in diffuse brain injury.**  
Zhou, F.; Xiang Z.: Xijing Hospital, Fourth Military Medical University, P.R.China.

12:45  **01.4 WNT Proteins inhibit neurite outgrowth by a rho/rhokinase dependent mechanism.**  
Miyashita, T.; Koda, M.; Someya, Y.; Nishio, Y.; Kadota, R.; Mannoji, C.: Chiba University Graduate School of Medicine, Japan; 2: Togane Prefectural Hospital / Japan.

### Ruys room

**02. Trauma organization and sports injuries**

*Chairmen: A.C. Duhaime, J. Bakker.*

11:45  **Introduction: A. Valadka**  
Trauma systems, center capacity and divert rates

12:00  **02.1 Comparing clinical decision rules for CT scans in mild head injury.**  
Stein, S.C.; Glick, H.A.: University of Pennsylvania, USA.

12:15  **02.2 Sport-related head injuries in Japan: a high incidence of concussion potentially provides a high risk of fatal brain injury.**  

12:30  **02.3 A comprehensive statistical approach to assessing biomechanical parameters for mild traumatic brain injury.**  
Kou, Z.; Ziejelewski, M.; Doelltott, C.: North Dakota State University, USA.

12:45  **02.4 Sports-related head and cranio-maxillofacial injuries in Japan: a retrospective study of 141 patients.**  

### Fortis room

**03. Outcome and Quality of Life**

*Chairmen: J.L. Truelle, E. Neugebauer.*

11:45  **Introduction: N. von Steinbuechel**  
Quality of Life

12:00  **03.1 Cognitive outcome after MTBI: bridging the gap between complaints and performance.**  

12:15  **03.2 Changes in work and QOL after rehabilitation in traumatic brain injury.**  

12:30  **03.3 Cognitive outcome after MTBI: impact of effort on cognitive test performance and its relation to distress, personality and fatigue.**  
Andriessen, T.M.J.C.; Stuilemeijer, M.; Vos, P.E.; Brauer, J.M.P.; Werf, S.P. van der: Radboud University Medical Centre Nijmegen, NL.

12:45  **03.4 Patient-relevant end-points after brain injury from traumatic accidents (PEBITA) – pilot phase of a population-based cohort study in Switzerland.**  
Elm, E.; von: 1: University of Berne; 2: University of Geneva; 3: Cantonal Hospital of St.Gallen; 4: University of Lausanne; 5: University of Zurich; 6: SUVA Rehabilitation Center Bellikon, Switzerland.

13:15-14:30  **TBI and endocrinology: interdisciplinary management of long term endocrine consequences**  
*Chairmen: E. Ghigo, G. Ribbers*

13:15  **Opening and introduction**

13:20  **TBI and the pituitary: a pathophysiological perspective**  
D.F. Kelly, Dept. of Neurosurgery, UCLA, Los Angeles, USA.

13:40  **Endocrine signs and symptoms of hypopituitarism after TBI**  
E. Ghigo, Dept. of Internal Medicine, University of Turin, Italy.

14:00  **The needs and the hopes of rehabilitation physicians**  
B.E. Masel, Dept. of Neurology, University of Texas, Galveston, USA.

13:00-14:45  **Lunch and poster viewing**
Willem Burger room  Monday, May 22, afternoon

14:45-16:00  Session II: Cross talk
Chairmen: A. Marmarou, T. Kawamata.

14:45  Recent experimental results considered relevant for the clinician
N. Plesnila.

15:10  Drug delivery and tissue engineering for reconstruction of the injured CNS
M. Shoichet.

15:35  ARDS: similarities and differences with neurotrauma
L. Gattinoni / N. Stocchetti.

16:00-16:45  Tea break and poster viewing

16:45-18:15  Breakout sessions O4 - O6

W. Burger room

O4. Biomechanics and experimental models

16:45  Introduction: M. LaPlace
Experimental models and biomechanics

17:00  O4.1 In vivo monitoring of a mouse spinal cord injury during the acute phase by quantitative MRI

17:15  O4.2 Inhibitory interneuronal response in the mouse hippocampus after fluid percussion brain injury.
Witgen, B.M.; Lifshitz, J.; Nyengaard, J.R.; Grady, M.S.; 1: Aarhus University; Denmark; 2: Virginia Commonwealth University; 3: University of Pennsylvania, USA.

17:30  O4.3 Reactive and regenerative changes in mature cortical axons following injury in acute and organotypic rat brain slices.
Vickers, J.C.; Staat, J.A.; Chung, R.S.; Dickson, T.C.: University of Tasmania, Australia.

17:45  O4.4 N-acetylaspartate uptake in astrocytes may contribute to cell pathology after TBI in rats.
Lyeth, B.G.; Berman, R.F.; Muizelaar, J.P.; Floyd, C.L.; 1: University of California, San Francisco, USA.

18:00  O4.5 Fluid percussion injury and post-injury environment affect NMDA receptor subunit composition in the immature rat.
Giza, C.C.; Santa Maria, N.S.; Hovda, D.A.J.; Divisions of 1: Pediatric Neurology and 2: Neurosurgery, Department of 3: Medical and Molecular Pharmacology, David Geffen School of Medicine, Mattel Children’s Hospital at UCLA, USA.

Ruys room

O5. Structural and functional imaging

16:45  Introduction: P. Parizel
O5.1 Structural and functional imaging in neurotrauma

17:00  O5.2 Diffusion tension MR imaging in diffuse axonal injury: serial measurements of the corpus callosum.
Nielsen, A.S.; Engberg, A.W.; Sidaros, K.; Liptrot, M.G.; Mathiesen, H.K.; Rostrup, E.: 1: Danish Research Centre for Magnetic Resonance; 2: Department of Neurorehabilitation, Brain Injury Unit; 3: Danish Research Centre for Magnetic Resonance, Copenhagen University, Denmark.

17:15  O5.3 Perfusion CT compared to conventional imaging techniques in relation to outcome in mild to moderate head injury.
Metting, Z.; Rodiger, L.A.; Quäcker, M.; Naaltj, J.; van der: University Medical Center Groningen, NL.

17:30  O5.4 Prospective, multicenter evaluation of the reliability of a quantitative imager-based assessment of canal stenosis and spinal cord compression after cervical spinal cord injury: results of the International Spinal Trauma Study Group (STSG) trial.

17:45  O5.5 Prediction of neurological outcome in patients with acute traumatic cervical spinal cord injury based on quantitative assessment of MRI parameters: a prospective multicenter study in 100 consecutive cases.
Furlan, J.C.; Miyanji, F.; Aarabi, B.; Arnold, P.; Fehlings, M.G.; 1: Krembil Neuroscience Centre, University of Toronto, Toronto, ON, Canada; 2: Children’s Hospital of San Diego, San Diego, CA, USA; 3: Department of Neurosurgery, University of Maryland, Baltimore, MD, USA; 4: Department of Neurosurgery, University of Kansas, KS, USA.

18:00  O5.6 Are we ready for non-invasive cerebral perfusion pressure.
Czosnyka, M.; Smielewski, P.; Schmidt, E.; Pickard, J.D.: 1: University of Cambridge; UK; 2: Hospital Purpan, Toulouse, France.

Fortis room

O6. Systemic and neuroendocrine effects of neurotrauma
Chairmen: N. Stocchetti, M. Dearden.

16:45  Introduction: D. Kelly
Neuroendocrine effects of neurotrauma

17:00  O6.1 Invited lecture.
Complexity in acute illness, a necessity for interdisciplinary exchanges.
Neugebauer, E.A.M.: Institute for Research in Operative Medicine, University of Witten/Herdecke, Germany.

17:15  O6.2 Anterior pituitary dysfunction evoked by severe traumatic brain injury.

17:30  O6.3 Endocrine response to traumatic head injury: a prospective study.

17:45  O6.4 Lung function strongly influences the response to an oxygen challenge in severe TBI.

18:00  O6.5 Different strategies for SIRS in head-injured patients.

18:15-19:15  Wine and cheese at trade exhibition
10:15-11:45 Experimental models and pathophysiology

Chairmen: N. Plesnila, A. Marmarou.

P 1.1 Effects of injury severity on chronic sensorimotor, cognitive and histopathological outcome measures.
Furones-Alonso, O.; Garcia, M.; Green, E.J.; Dietrich, W.D.; Bramlett, H.M.; 1: University of Miami Miller School of Medicine/USA; 2: University of Miami/USA.

P 1.2 Metabotropic glutamate receptors in diffuse brain injury.
Zhou, F.; Xiang, Z.: Xijing Hospital, 4th Military Medical University/P.R.China.

P 1.3 Evolving neuronal plasmalemmal change following diffuse brain injury.
Farkas, O.; Lifshitz, J.; Povlishock, J.T.: Virginia Commonwealth University, USA.

P 1.4 Stroke model in rats: a reproducible photochemically-induced ischemia functional and morphological characterization.

P 1.5 Acute changes in cox-2 mRNA expression and compound EEG after penetrating TBI in the rat.

P 1.6 A sagittal rotational acceleration impact to a head generates intracranial pressures and brain injury.

P 1.7 Acute ventriculomegaly following mild traumatic brain injury.
Stemper, B.D.; Fijakowski, R.J.; Yoganandan, N.; Pintar, F.A.; Gennarelli, T.A.: Medical College of Wisconsin, USA.

P 1.8 Age-specific alterations occur in the rat subventricular zone proteome following lateral fluid percussion injury.
McGinn, M.J.; Sun, D.; Colellido, R.J.: Virginia Commonwealth University, Richmond, USA.

P 1.9 Cellular alterations in an in vitro model of stretch injury to cortical neurons.
Staal, J.A.; Chung, R.S.; Dickson, T.C.; Vickers, J.C.: University of Tasmania, Australia.

P 1.10 Enhanced neurite outgrowth on vitronectin substrate after in vitro neurotrauma.
Skold, M.K.; Frödin, M.I.; Brask, J.J.; Gertsen, C. von 1: Karolinska Institutet, Sweden; 2: Linköping University, Sweden; 3: Karolinska University Hospital, Sweden.

P 1.11 Focal cortical injury induces long-lasting changes in extracellular glutamate concentrations, NMDA receptor binding affinities, spectral EEG and neuronal excitability.
Sakowicz, O.W.; Flügge, G.; Unterberg, A.W.; Stover, J.F.; 1: Dept. of Neurosurgery, University of Heidelberg, Germany; 2: Clinical Neurobiology Laboratory, German Primate Center Göttingen, Germany; 3: Dept. of Surgery, Div. of Surgical Intensive Care Medicine, University Hospital Zürich, Switzerland.

Lifshitz, J.; Farkas, O.; Kelley, B.J.; Dunn, B.A.; Povlishock, J.T. Virginia Commonwealth University Richmond, USA.

P 1.13 Ordered water within microtubules as a separate and significant hydration fraction in brain edema.

P 1.14 Silencing intermediate filament proteins in injured spinal cord by small interfering RNA complexed with atelocollagen.

Guided Poster Tour P2 - May 22

10:15-11:45 Monitoring

Chairmen: D. Hovda, T. Kawamata.

P 2.1 Using area under the curve to estimate ICP dose above treatment goal: is there a relationship to outcome?

P 2.2 Three types of intra- and extracranial compensatory reaction and preventive oriented intensive care - new point of view?
Schegelev, A.; Military Medical Academy, St. Petersburg, Russia.

P 2.3 Multimodality neuromonitoring of patients with severe head trauma – recent experience.

P 2.4 Rodent model of multiparametric intracranial pressure monitoring.

P 2.5 Experience of using ICM+ software for continuous monitoring of ICP and pressure reactivity in head injured patients.
Smielewski, P.; Czosnyka, M.; 1: University of Cambridge, UK; 2: University of Giesen, Germany; 3: Prince Alfred Hospital, Melbourne, Australia.

P 2.6 Development of a new brain it touch sensitive bedside data collection tool.
Van Es, W.; Piper, I.D.: 1: The Brain IT Group; 2: Brussels, Belgium; 3: Glasgow, UK.

P 2.7 Development of non-invasive ultrasonic technology for monitoring craniospinal compliance.
P 3.1 Pre-hospital intubation in patients with traumatic brain injury – a systematic review.
Eilm, E. von ; Walder, B.; Henzi, I.; Schuetz, P.; Osterwalder, J. 1
1: University of Berne; 2: University of Geneva; 3: University of Lausanne; 4: Cantonal Hospital of St.Gallen, Switzerland.

P 3.2 Controversy in neurotrauma: time may not be the crucial factor in TBI.
Hansen, P.M.; Wolff, J.; Michagin, G. Odense University Hospital/Denmark.

P 3.3 Effects of glycemic control in cerebral neurochemistry in primary intracerebral haemorrhage.
Ho, C.L.; Ang, B.T.; Lee, K.K.; Ng, I. University of Berne; 2: Department of Neurosurgery, National Neuroscience Institute, Singapore.

P 3.4 The results of our management of brain injury in children.
Pechlik, M.; Tomek, P.; Komolikova, H. Thomayer Teaching Hospital, Prague, Czech Republic.

P 3.5 Severe head injury: organ failure and complications in the intensive care unit.
Schirmer-Mikalsen, K.; Vik, A.; Gisvold, S-E.; Hynne, H.; Klepstad, P. 1: Department of Anesthesia and Intensive Care, the University Hospital of Trondheim, Norway; 2: Department of Neurosurgery, the University Hospital of Trondheim, Norway.

P 3.6 ICU management of patients with severe TBI in Austria.
Mauritz, W.; Rusnak, M.; Leitgeb, J.; Wilbacher, I.; Janciak, I.; Lenartova, L. 1: Dept. of Neurosurgery, University Hospital Brno-Bohunice, Czech Republic; 2: Department of Psychiatry, University Hospital Brno-Bohunice, Czech Republic.

P 3.7 Practical PTA: short and simple.

P 3.8 Risk factors for heterotopic ossification after traumatic brain injury.
Hendricks, H.T.; Geurts, A.C.H.; Ginneken, B. van; Heeren, A. 1: Radboud University Medical Centre, Nijmegen, The Netherlands.

P 3.9 Resocialization and quality of life after severe traumatic brain injury.
Navratal, O.; Smrcka, M.; Hanak, P. 1: Department of Neurosurgery, University Hospital Brno-Bohunice, Czech Republic; 2: Department of Psychiatry, University Hospital Brno-Bohunice, Czech Republic.

P 3.10 The emergency treatment assessment on the most severe cranio-cerebral injury: a report of 337 cases.
Yu, M.; Lu, Y.; Zhu, C. Changzheng Hospital, Peoples Republic of China.

P 3.11 Analysis of the PECS severe traumatic brain injury database: the effect of guideline implementation on outcome.

P 3.12 Guideline-based management of patients with severe TBI.


P 3.14 European multicenter study of spinal cord injury: results of the Nijmegen contribution.
Van de Meent H.; Duysens J.; Kuppelveld D.; Vos, P.E.; Zwarts M.J. 1: Dept of Rehabilitation medicine, 2: Dept of Neurology, University Medical Centre St Radboud Nijmegen, 3: St Maartensclinic, Nijmegen, The Netherlands.
<table>
<thead>
<tr>
<th>Time</th>
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<tbody>
<tr>
<td>08:30</td>
<td>Modelling repetitive injuries</td>
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<tr>
<td>08:55</td>
<td>Sport injuries: a clinical model for repetitive injuries?</td>
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<tr>
<td>09:20</td>
<td>Contusion: a role model for lesion progression</td>
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<tr>
<td>09:45</td>
<td>Neuroprotection and prevention of lesion progression in SCI</td>
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<tr>
<td>10:15</td>
<td>Guided poster tours P4 – P6</td>
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<tr>
<td>10:45</td>
<td>Breakout sessions O7 - O9</td>
</tr>
<tr>
<td>11:30</td>
<td>O7.3 The chemokine MCP-1 modulates post-traumatic inflammation following closed head injury in the mouse</td>
</tr>
<tr>
<td>12:00</td>
<td>O8.1 Relevance of spontaneous perifocal depolarizations for secondary contusion expansion after CCI in mice.</td>
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<tr>
<td>12:15</td>
<td>O8.2 Cortical spreading depression after traumatic and penetrating injury to the human brain</td>
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<tr>
<td>12:30</td>
<td>O8.3 Metabolic characteristics of irreversibly damaged contusional tissue following head injury</td>
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<tr>
<td>12:45</td>
<td>O8.4 Microglial activation after traumatic brain injury (TBI): an (R)-C-PK11195 positron emission tomography (PET) study in TBI patients.</td>
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<tr>
<td>13:00</td>
<td>O8.5 Embryonic stem (ES) cell transplantation following experimental TBI:</td>
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<td>14:00</td>
<td>14:00-14:45 Lunch and poster viewing</td>
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**Fortis room - Luncheon seminar**

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<thead>
<tr>
<th>Time</th>
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<tr>
<td>13:15</td>
<td>Brain metabolism, monitoring and challenges in Neurocritical Care.</td>
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<td></td>
<td>Clinical Experience with the intraparenchymal ICP monitoring Codman microsensor system.</td>
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L. Koskinen, Umeå University Hospital, Sweden.

**Protective activity of CSF shunt catheters impregnated with antimicrobial agents**

R. Baynton, University of Nottingham, UK.

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**Willem Burger room**

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<tr>
<th>Time</th>
<th>Session</th>
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<tr>
<td>11:45</td>
<td>O7. Neuroinflammatory response and astrogliosis</td>
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<tr>
<td></td>
<td>Chairmen: H. Bramlett, A. Buki.</td>
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<tr>
<td>11:45</td>
<td>Introduction: M. Schwarz</td>
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<tr>
<td>12:00</td>
<td>O7.1 The neuroinflammatory response after traumatic brain injury.</td>
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<tr>
<td></td>
<td>Smith, C.; Gentleman, S.M.; Leclercq, P.; Murray, L.S.; Graham, D.I.</td>
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<td></td>
<td>1: University of Edinburgh; 2: Imperial College London; 3: University of</td>
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<td></td>
<td>Copenhagen; 4: University of Southampton, UK.</td>
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<td>12:15</td>
<td>O7.2 Metallothionein plays an important role in brain-injury induced</td>
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<td>reactive astrogliosis</td>
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<td>Chung, R.S.; Dittmann, J.; Fung, S.J.; Chuaah, M.I.; Vickers, J.C.; West,</td>
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<td>A.K.; University of Tasmania, Australia.</td>
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<td>12:30</td>
<td>O7.3 The chemokine MCP-1 modulates post-traumatic inflammation</td>
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<td>following closed head injury in the mouse.</td>
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<td>Byte, N.; Malakooti, N.; Kossmann, T.; Morganti-Kossmann, C.;</td>
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<td></td>
<td>National Trauma Research Institute, Department of Trauma Surgery, The</td>
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<td></td>
<td>Alfred Hospital, Monash University, Australia; 2: National Trauma</td>
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<td>Research Institute, Department of Trauma Surgery, The Alfred Hospital,</td>
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<td>Australia.</td>
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<td>12:45</td>
<td>O7.4 Enriched environment combined with multimodal stimulation is</td>
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<td>associated with reduced CNS scar and less neuromotor deficit</td>
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<td>after traumatic brain injury in rats.</td>
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<td>Maegle, M.; Lippert-Gruener, M.; Bouillon, B.; McIntosh, T.;</td>
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<td>Neugebauer, E.; Angelov, D.;</td>
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<td>11:45</td>
<td>O8. Secondary understanding injury</td>
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<td>O8.1 Relevance of spontaneous perifocal depolarizations for secondary</td>
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<td>contusion expansion after CCI in mice.</td>
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<td>Trabold, R.; Baumgarten, L.; von; Baethmann, A.; Back, T.; Plesniala, N.</td>
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<td>1: University of Munch; 2: University of Heidelberg, Germany.</td>
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<td>12:00</td>
<td>O8.2 Cortical spreading depression after traumatic and penetrating injury</td>
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<td>to the human brain.</td>
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<td>Hartings, J.A.; Bullock, M.R.; Fabricius, M.; Bhatia, R.; Dreier, J.P.;</td>
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<td>Tortella, F.C.; Strong, A.J.;</td>
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<td>1: Walter Reed Army Institute of Research, USA; 2: Virginia Commonwealth</td>
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<td>University, USA; 3: Gastroop Hospital, University of Copenhagen, Denmark;</td>
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<td>4: King's College London, UK; 5: Charité University Medicine, Germany.</td>
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<td>12:15</td>
<td>O8.3 Metabolic characteristics of irreversibly damaged contusional tissue following head injury</td>
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<td>Cunningham, A.S.; Coles, J.P.; Salvador, R.; Chatfield, D.A.; Pickard,</td>
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<td>J.D.; Menon, D.K.; University of Cambridge, UK.</td>
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<td>12:30</td>
<td>O8.4 Microglial activation after traumatic brain injury (TBI): an (R)-C-</td>
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<td>PK11195 positron emission tomography (PET) study in TBI patients.</td>
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<td>Kerssersma, H.; Berckel, B.N.M.; van; Boellard, R.; Kloet, R.W.; Lammert-</td>
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<td>sma, A.A.; Vandertop, W.P.; University Medical Center, Amsterdam, NL.</td>
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<td>12:45</td>
<td>O8.5 Embryonic stem (ES) cell transplantation following experimental TBI:</td>
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<td>improves motor function but not cognitive function, - produces trophic</td>
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<td>factors, - can lead to tumorigenesis.</td>
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<td>Riess, P.; Molcan, M.; Bentz, K.; Maegle, M.; Simanski, C.; Schäfer, U.;</td>
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<td>Hescheler, J.; Bouillon, B.; Neugebauer, E.; Dept. of Trauma and</td>
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<td>Orthopaedic Surgery, Hospital Köl-Merheim, University of Witten/Herdecke;</td>
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<td></td>
<td>Dept. of Neurosurgery, University of Witten/Herdecke; 3: Institute for</td>
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<td></td>
<td>Research in Operative Medicine, University of Witten/Herdecke; 4: Dept. of</td>
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<td>Neurophysiology, University Cologne, Germany.</td>
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**Willem Burger room**

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<th>Time</th>
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<tr>
<td>09:00</td>
<td>O9. Secondary deterioration and medical complications</td>
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<td>Chairmen: A. Unterberg, P. Reilly.</td>
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<tr>
<td>09:45</td>
<td>O9.2 How can we improve the outcome of patients who have initially good</td>
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<tr>
<td></td>
<td>GCS and deteriorate thereafter? Analysis of 169 cases in Japan Neurotrauma</td>
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<tr>
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<td>Katayama, Y.; Department of Neurological surgery, Nihon University School</td>
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<td>of Medicine, Japan.</td>
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<td>12:15</td>
<td>O9.3 Cerebral contusions in patients with mild head injury: risk</td>
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<td>factors for evolution and surgery.</td>
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<td>Servadei, F.; Compagnone, C.; Giuliani, G.; Vergoni, G.; Rossi, D.;</td>
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<td>Ospedale Bufalini, Cesena, Italy.</td>
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<td>12:30</td>
<td>O9.4 Occurrence of intracranial hypertension in patients with &quot;innocent&quot;</td>
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<td>Stochchi, Folkersma, O.; Ospedale Maggiore Policlinico, Mangiagalli and</td>
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<td>Regina Elena Fondazione IARCC; 2: Università degli Studi di Milano, Italy</td>
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<td>12:45</td>
<td>O9.5 The impact of medical complications in persons with a spinal cord</td>
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<td>injury: prevalence and determinants during and after inpatient rehabilitation.</td>
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<td>Haisma, J.A.; Woude, L.H.V. van der; Stam, H.J.; Sluis, T.A.R.; Bergin,</td>
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<td>M.P.; Bussmann, J.B.J.; Eramus Medical Center, Rotterdam; 2: Vrije</td>
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<td>Universiteit Amsterdam; 3: Rehabilitation Center Rinjdam, Rotterdam, the</td>
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## 14:45-16.00 Session IV: Pediatric neurotrauma: a developing concern

**Chairmen:** D. Adelson, E. van der Voort.

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<tr>
<td>14:45</td>
<td>TBI in infants and children: from animal models to child abuse</td>
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<td>A.C. Duhaime</td>
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<td>15:10</td>
<td>Plasticity and enriched environment after experimental pediatric TBI: implications for treatment and rehabilitation</td>
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<td>D. Hovda</td>
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<tr>
<td>15:35</td>
<td>New insight into optimal CPP in pediatric TBI</td>
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<td></td>
<td>R. Tasker</td>
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### Willem Burger room

**O10. Cell death: necrosis, apoptosis and autophagia**

**Chairmen:** M. Schwartz, D. Snow.

16:45 Invited lecture: A. Buki

O10.1 Rescuing neurons and glia: is inhibition of apoptosis useful?


17:00 O10.2 Induction of mitochondrial apoptotic signaling pathways by FAS activation after spinal cord injury.

Yu, W.; Liu, T.; Fehlings, M.G.; Toronto Western Hospital Research Institute, Krembil Neuroscience Centre, University of Toronto, Canada.

17:15 O10.3 Role of apoptosis-inducing factor (AIF) for secondary contusion expansion following CCI in mice.


17:30 O10.4 Beclin 1, autophagy and neurodegeneration after traumatic brain injury.


17:45 Hemodynamic effects of L-arginine administration on severely head-injured patients. (Abstract O17.4)

Hlatky, R.; Atik, M.; Rangel-Castilla, L.; Gopinath, S.; Valadka, D.; Robertson, C.; 1: The University of Texas Health Science Center, San Antonio; 2: Baylor College of Medicine, Houston, USA.

### Foyer Jurriaanse room

**18:15** Flashback - Dutch band from the Rehab Center “Groot Klimmendaal”

**18:45-20:00** INTS reception for congress participants, (ex)patients and relatives

### Fortis room

**O11. Pediatric TBI**

**Chairmen:** R. Tasker, D. Hovda.

16:45 Introduction: D. Adelson

Treatment of pediatric TBI.

17:00 O11.1 An ovine model of the shaken baby syndrome.

Finnie, J.W.; Manavis, J.; Blumbergs, P.C.; Institute Medical Veterinary Science, Australia.

17:15 O11.2 Family participation in the rehabilitation of the child with traumatic brain injury: a randomized controlled trial.

Braga, L.W.; SARAH Network of Rehab Hospitals, Brazil.

17:30 O11.3 Children and adolescents with mild traumatic brain injury presenting in Dutch hospitals: how do we act?


17:45 O11.4 Treatment tactics for children with intracranial haematomas (ICH).


### Willem Burger room

#### Ruys room

15:00-18:00 Special program for ex-patients and relatives

17:00 O12.2 Timing for therapeutic exercise is shifted with injury severity.

Griesbach, G.S.; Gomez-Pinilla, F.; Hovda, D.A.; UCLA/USA.

17:15 O12.3 Clinical outcome of arm hand skilled performance in persons with cervical spinal cord injuries.


17:30 O12.4 Critical illness virtual reality rehabilitation device (X-VR-D): a new training device for early intensive clinical rehabilitation.

H. Van de Meent, S. Van Opstal, B.C.M. Baken; P.K. Hogenboom; 1: Dept of Rehabilitation medicine, University Medical Centre St Radboud Nijmegen, The Netherlands; 2: MCW studio’s, Rotterdam, The Netherlands.
**Guided Poster Tour P4- May 23**

*Hall Jurriaanse room - ground floor*

**10:15-11:45 Understanding secondary injury and neuroinflammation**

**Chairmen:** E. Shoahmi, R. Vink.

**P 4.1 What happens to endogenous sex hormone levels following TBI?**
Slewa-Younan, S.1; Heriseanu, R.E.1; Baguley, T.J.1; Rae, C.1; Cameron, I.1: Brain Injury Rehabilitation Service, Westmead Hospital, Westmead NSW 2145, Australia; 2: Prince Of Wales Medical Research Institute, Faculty of Medicine, UNSW, Australia; 3: Rehabilitation Studies Unit, Faculty of Medicine, University of Sydney, NSW, Australia.

**P 4.2 (abstract P10.14) Acute subdural hematoma in rats: do blood constituents affect lesion growth and functional outcome?**

**P 4.3 Microglial/macrophage responses to diffuse brain injury.**
Kelley, B.J.; Lifshitz, J.; Povlishock, J.T. Medical College of Virginia Campus, Virginia Commonwealth University, USA.

**P 4.4 Intravascular leukocytes and secondary brain damage after experimental TBI.**
Schwarzmaier, S.; Kim, S.-W.; Trabold, R.; Plesnilla, N. University of Munich, Germany.

**P 4.5 Role of FASL & TNF in neuronal cell death using a mouse model of closed head injury.**
Ziebell, J.; Bye, N.; Malakooti, N.; Kossmann, T.; Morganti-Kossmann, C. National Trauma Research Institute, The Alfred Hospital, Monash University, Australia.

**P 4.6 Immune system disorders in the patients after severe traumatic brain injury and their relation to the occurrence of extracranial complications.**
Milian, A.; Smrcka, M.; Klabussay, M.1: Department of Neurosurgery, University Hospital Brno-Bohunice, Czech Republic; 2: Department of Hematooncology, University Hospital Brno-Bohunice, Czech Republic.

**P 4.7 Microcirculatory alterations following experimental TBI.**
Schwarzmaier, S.; Kim, S.-W.; Trabold, R.; Plesnilla, N. University of Munich, Germany.

**P 4.8 Role of blood flow for secondary contusion growth after CCI in mice.**
Engel DC1;2; Loch A1; Mies G1; Plesnilla N11) Department of Neurosurgery and Institute for Surgical Research, University of Munich-Grosshadern, Germany 2) Department of Neuroscience, Erasmus MC, Rotterdam, the Netherlands 3) Max Plank Institute for Neurological Research, Cologne, Germany.

**P 4.9 Posttraumatic hypoxia exacerbates cerebral inflammation and metabolic alterations in rats following traumatic axonal injury using microdialysis.**
Nguyen, P.; Agypamoa, D.; Rosenfeld, J.; Morganti-Kossmann, C. National Trauma Research Institute, The Alfred Hospital, Monash University, Australia.

**P 4.10 Dexamethasone differentially inhibits chemokine expression induced by traumatic brain injury in the rat.**
Rhodes, J.K.1; Andrews, P.J.D.; Sharkey, J. University of Edinburgh, UK.

**P 4.11 Early spinal cord injury pathology development following experimental fracture dislocation.**
Clarke, E.C.1; Choo, A.M.1; Lui, J.1; Lam, C.K.1; Bliston, L.E.1; Tetzlaff, W.1; Oxland, T.R.1: 1) The University of Sydney; 2: The University of British Columbia; 3: Prince of Wales Medical Research Institute, UK.

**P 4.12 Matrix metalloproteinases and their inhibitors in human traumatic spinal cord injury.**
Buss, A.1; Pech, K.1; Kakulas, B.A.2; Martin, D.3; Schoenen, J.1; Noth, J.2; Brook, G.A.4: 1) Universitätsklinikum Aachen; 2: University of Western Australia; 3: University of Liège.

**P 4.13 Metabolic changes in thalamus after spinal cord injury: a proton magnetic resonance study.**
Likavcanova, K.L.1; Urdzikova, L.1; Hajek, M.2; Sykova, E.1: Institute of Experimental Medicine; 2) Center for Cell Therapy and Tissue Repair; 3) Institute for Clinical and Experimental Medicine; 4: Department of Neuroscience, Charles University, Prague, Czech Republic.

**P 4.14 Primary and secondary damage in three mechanisms of spinal cord injury – contusion, dislocation and distraction.**
Choo, A.M.1; Lui, J.; Lam, C.K.1; Dvork, M.; Tetzlaff, W.1; Oxland, T.R.1: 1) The University of British Columbia, Canada.

**P 4.15 Role of vasopressor receptors for post-traumatic brain edema formation and secondary brain damage.**
Trabold, R.; Baethmann, A.; Plesnilla, N. University of Munich, Germany.

**P 4.16 Subtle differences in chondroitin sulfate proteoglycan (aggrecan) structure lead to behavioral differences in sensory neuronal growth cone elongation and outgrowth.**
Snow, D.M.1; Kohler, K.1; Miwa, H.1; Dey, S.1; Howard, T.1; Hering, T.1: 1) The University of Kentucky, USA; 2: Case Western Reserve University, USA.

**P 4.17 Withdrawn**

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**Guided Poster Tour P5 - May 23**

*Hall Jurriaanse room - ground floor*

**10:15-11:45 Biomarkers and prediction**

**Chairmen:** A. Baethmann, P. Reilly.

**P 5.1 Temporal profiles of cytoskeletal and axonal markers following mild traumatic brain injury: an implication for the transient cognitive deficit.**
Li, S.1; Kuroiwa, T.1; Ishibashi, S.1; Sun, L.1; Shen, C.1; Endo, S.1; Ohno, K.1: 1) Department of Neurosurgery, Tokyo Medical and Dental University, Japan; 2: Department of Pathophysiology, Tokyo Medical and Dental University, Japan; 3: Department of Neurology, Tokyo Medical and Dental University, Japan; 4: Animal research center, Tokyo Medical and Dental University, Japan.

**P 5.2 Increased levels of matrix metalloproteinase-9 in plasma and brain extracellular fluid in the early phase of traumatic brain injury.**
Vilalta, A.; Rosell, A.; Poca, M.A.; Sahsqillo, J.; Montaner, J.; Rios, J.A. de los; Riveiro, M. National Trauma Research Institute, The Alfred Hospital, Monash University, Australia.

**P 5.3 Changes in brain proteins following penetrating ballistic-like brain injury (PBBI) in the rat: a neuroproteomic injury profile.**
Dave, J.R.1; Yao, C.1; Whipple, R.A.1; Williams, A.J.1; Lu, X-C.M.1; Chen, R-W1; Wang, K.K-W.1; Hayes, R.L.1; Tortella, F.C.1; 1) Walter Reed Army Inst. of Research; 2: McKnight Brain Institute of the University of Florida, USA.
Guided Poster Tour P5 - May 23  Hall Jurriaanse room - ground floor


P 5.6 Temporal profile of melatonin in cerebrospinal fluid and serum following severe traumatic brain injury in humans. Seifman, M.; Adamides, A.; Nguyen, P.; Cooper, D.; Rosenfeld, F.; Kossman, T.; Rosenfeld, J.; Morganti-Kossmann, C. 1: National Trauma Research Institute, The Alfred Hospital; Monash University, Melbourne, Australia.

P 5.7 Is midline shift a good predictor of intracranial pressure? A prospective study in patients with massive stroke. Poca, M.A.; Benejam, B.; Sahuquillo, J.; Trauser, L.; Rios, J. de los; Delgado, P.; Riveiro, M.; Rovira, A.; Alvarez-Sabin, J. Val d’Hebron University Hospital, Barcelona, Spain.

P 5.8 Coagulation abnormalities associated with severe isolated traumatic brain injury: the cerebral arterio-venous difference of some coagulation and inflammatory markers. Nekludov, M. Karolinska University Hospital, Stockholm, Sweden.


P 5.10 Outcome prediction analysis for severe traumatic brain injury – a comparison of five prognostication models. Pang, B.C.; Kuralmani, V.; Leong, T.Z.; Lee, K.K.; Ang, B.T.; Ng, I. 1: Department of Neurosurgery, National Neuroscience Institute, Singapore; 2: Department of Computer Science, National University of Singapore.

Guided Poster Tour P6 - May 23  Hall Burger room - 3rd floor

10:15-11:45  Neuroprotection I
Chairmen: D. Adelson, A. Unterberg.

P 6.1 The effect of the calpain inhibitor MDL-28170 on increased axolemmal permeability in a rat model of diffuse axonal injury. Bukovics, P.; Farkas, O.; Pal, J.; Czeiter, E.; Szellari, D.; Doczi, T.; Povlishock, J.T.; Bukí, A. 1: University Medical School Pécs, Hungary; 2: Medical College of Virginia Commonwealth University, Richmond, VA, USA.

P 6.2 Post injury calpain inhibition protects cerebellar white matter but not Purkinje cells following indirect cerebellar injury. Park, E.; Shok, M.; Park, A.; Baker, A. 1: University of Toronto, St. Michael’s Hospital, Canada; 2: University of Toronto, Canada; 3: St. Michael’s Hospital, Canada.


P 6.5 Transient neuroprotection by sodium pyruvate after controlled cortical impact injury. Fukushima, M.; Katayama, Y.; Hovda, D.A.; Lee, S.M.; Sutton, R.L. 1: Department of Neurological Surgery, Nihon University School of Medicine/Japan; 2: UCLA Brain Injury Research Center, Division of Neurosurgery, David Geffen School of Medicine at UCLA/USA.


P 6.9 17Beta-estradiol improves functional outcome and modulates cytokine expression following acute spinal cord injury in rats. Ritz, M.-F.; Gratzl, O.; Hausmann, O. 1: Dept. of Research, University Hospital Basel; 2: Neurosurgery Clinic, University Hospital Basel, Switzerland.


P 6.11 Neuroprotective effects of selective N-type VGCC blockade on primary and secondary hypoxia in vitro. Shahlaie, K.; Lyeth, B.G.; Muizelaar, J.P.; Berman, R.F. University of California, Davis, USA.

P 6.12 Role of N-type VGCCs in stretch induced neuronal calcium elevation and recovery : understanding the neuroprotective effects of SNX-185. Shahlaie, K.; Lyeth, B.G.; Muizelaar, J.P.; Berman, R.F. University of California, Davis, USA.


P 6.15 The mechanism of erythropoietin protection in spinal cord injury. Xu, J.; Xiao, Q.; Lee, Y.G. Washington Univ School of Medicine, USA.
08:30-10:15 Session V: Ethics and Trials
Chairmen: C. Wiedermann, F. Lemaire.

08:30 The courage to initiate or withdraw treatment: pro-con debate
Pro (aggressive approach): D. Esposito
Con (more conservative approach): G. Teasdale
Round table discussion:
C. Wiedermann, E. Kompanje, J. Jiang, F. Lemaire

09:10 Validity of proxy consent in TBI research
Current European legislation on informed consent
E. Kompanje.
Proxy consent is unethical
D. Menon.
Round table discussion:

10:15-11:30 Seminar - Coagulopathy and TBI
Chairman: R. Narayan.

10:15 Opening and introduction.
R.K. Narayan, Dept. of Neurosurgery, University of Cincinnati, USA.

S.C. Stein, Dept. of Neurosurgery, University of Pennsylvania School of Medicine, Philadelphia, USA.

10:40 Recombinant activated factor VII for acute intracerebral hemorrhage.
S. Mayer, Dept. of Neurology, Columbia University Medical Center, New York, USA.

11:00 Haemorrhagic progression of cerebral contusions following traumatic brain injury. A potential role for recombinant activated factor VII?
R.K. Narayan, Dept. of Neurosurgery, University of Cincinnati, USA.

11:20 Discussion and closing remarks.

11:30-12:15 Coffee break

12:15-13:45 Improving clinical trial design and analysis in TBI, results of the IMPACT study: international mission on prognosis and analysis of clinical trials.
Chairmen: G. Teasdale, R. Narayan.

12:15 Introduction to the IMPACT study and development of the IMPACT database.
A. Marmarou.

12:35 Prognosis in TBI.
E. Steyerberg.

12:55 Approaches to outcome analysis.
G. Murray.

13:15 Presentation of recommendations for improving trial design in TBI.
A. Maas.

13:45-14:45 Seminar - Update on TBI guidelines
Guidelines process overview J. Ghajar.
Methodology N. Carney.

New Topics  G. Manley.
Including:
- Advanced Cerebral Monitoring
- Analgesics and Paralytics
- DVT Prophylaxis
- Prophylactic Hypothermia
- Hyperosmolar therapy.

15:00 Busses depart for conference tour and dinner
**Conference tour and dinner**

**15:00 departure of busses from De Doelen**

The tour will start with an exciting boat trip with “De Majesteit”. “Unforgettable”, “Impressive” and “Royal” are a few reactions of guests, who have made a trip with this historic paddle steamer.

Once aboard you will experience the by gone days, when steamboating was only affordable by the upper class. This authentic paddle steamer from 1926 is more than 80 metres in length and has a width of almost 16 metres.

On board “De Majesteit” you will enjoy the nostalgic atmosphere. The lounges of our steamer are beautifully decorated in styles of different periods. Both the old and the new give “De Majesteit” a royal look. Even though she was built eighty years ago, her technique and facilities are totally modern.

**INTS members meeting during boat tour**

The ship will bring you to the Dutch village “Kinderdijk” where you will visit the famous Dutch windmills. The Netherlands is famous for its windmills. Today there are still more than 1,000 mills. Nowhere in the world you will find as many windmills as near (the Dutch village) Kinderdijk. Around 1740 no less than 19 sturdy mills were built here. They have been well preserved to the present day. The mills drain the excess water from the Alblasserwaard polders - which are situated below sea-level - after which the water is sluiced into the river Lek. In 1997 the mills of Kinderdijk were put on the World Heritage List of UNESCO.

After this visit you will travel to the Medieval Castle “Loevestein” where you can enjoy some cocktails or refreshments. Loevestein lies where the rivers Maas and Waal meet, at a point where the provinces Gelria, Brabant and Holland come together. The castle was built somewhere between 1357 and 1368 by Dirk Loef van Horne, who was then Lord of Altena and an unloyal vassal of the Count of Holland. His name may well explain the name of the castle; the stone house of Loef (with “stein” being an old word for stone). With possessing the castle came the right to charge tolls from passing ships.

From the castle you will sail back to the harbor of Rotterdam under the enjoyment of an exquisite dinner. A telescopic stage-lift spectacularly takes our chef’s culinary meals from the kitchen to the main and the upper deck. He and his staff will surprise you with their fantastic creations.

**Approx. 23:00 Return of busses to the hotels**
08:30 Genomics and proteomics: update on current insight
P. van der Spek.

08:55 Targeting therapy to genetic profiles: near or distant future?
J. Nicoll.

09:20 Stem cell therapy: state of the art
D. van der Kooy.

09:45 Treating SCI with genetic tools
A. Privat.

10:15-11:45 Guided poster tours P7 – P9
P7 - Targeting cerebral oxygenation and ICP (see page 20)
P8 - Neuroprotection II (see page 20)
P9 - Stem cells and neurotrophic factors (see page 21)

11:45-13:00 Breakout sessions O13 - O15

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**Willem Burger room**

**O13. Genomics, proteomics and biomarkers**

11:45 Invited introduction: R. Hayes
O13.1 Clinical studies of biomarkers in severe TBI.

12:00 O13.2 Apolipoprotein (APOE) polymorphisms leading to increased transcription of APOE4 are associated with increased intracranial pressure, reduced cerebral perfusion pressure and poor outcome in human traumatic brain injury.
Goodman, J.C.; Valadka, A.B.; Gopinath, S.P.; Van, M.; Robertson, C.S. Baylor College of Medicine, USA.

12:15 O13.3 Are serum neuron-specific enolase (NSE) and S-100B protein reliable surrogate indicators of acute brain damage?
Sahuquillo, J.J.; Einassar, R.; Delosrios, J.; Nilsson, O.; Vilalta, A.; Poca, M.A.; on behalf of the SMILE Consortium 1: Department of Neurosurgery, Vall d'Hebron University Hospital, Barcelona, Spain; 2: Canag Diagnostics AB, Gothenburg, Sweden; 3: Neurotraumatology Research Unit, Vall d’Hebron University Hospital, Barcelona, Spain.

12:30 O13.4 EMAP II: a potential biomarker for discriminating traumatic vs ischemic brain jury.

12:45 O13.5 Comparison between proteome expression in moderate and severe traumatic brain injury in humans.
Yang, S-Y. Tianjin Neurological Institute, P.R. China.

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**Ruys room**

**O14. Neuroprotection - experimental**
Chairmen: E. Sykova, D. Dietrich.

11:45 Introduction: R. Vink
O14.1 Effect of VAS203, a novel NOS inhibitor, on motor function and brain damage following TBI in mice.

Shein, N.A.; Doron, H.; Horowitz, M.; Shohami, E. Hebrew University, Israel.

12:30 O14.3 Neuroprotection of the injured spinal cord through administration of a soluble FAS receptor to block FAS-mediated apoptosis.
Robins, S.L.; Fehlings, M.G. University of Toronto, Canada.

12:45 O14.4 Fibrolytics are neuroprotective in experimental traumatic brain injury.

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**Fortis room**

**O15. Targeting cerebral oxygenation and metabolism**
Chairmen: A. Baethmann, M. Shigemori


12:00 O15.2 Effects of hyperoxia and increased CPP on cerebral oxygenation and metabolism in severe TBI.

12:15 O15.3 Effects of normobaric hyperoxia on brain glucose metabolism after traumatic brain injury.
Vilalta, A.; Sahuquillo, J.; Poca, M.A.; Delosrios, J.; Garnacho, A.; Arribas, M. Vall d’Hebron Hospital, Spain.

12:30 O15.4 Relationship between ICP and cerebral oxygenation and chemistry in traumatic brain injury.

12:45 O15.5 Brain tissue lactate elevations predict episodes of intracranial hypertension in patients with severe traumatic brain injury.
Adamiades, A.A.; Rosenfeld, F.L.; Winter, C.D.; Pratt, N.M.; Tippett, N.; Lewis, P.M.; Cooper, D.J., Kossmann, T.; Rosenfeld, J.V. The Alfred Hospital, National Trauma Research Institute, Australia.

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**Fortis room - Luncheon seminar**

13:15-14:15 Role of surgery in the management of brain tumors
Chairmen: A. Vincent

13:15 Welcome and introduction
A. Vincent, Erasmus MC and Daniel den Hoed Cancer Center, Rotterdam.

13:40 GBM in the era with concurrent Chemo-irradiation: Does surgery still play a Role?
M. van den Bent, Erasmus MC and Daniel den Hoed Cancer Center, Rotterdam.

13:55 Fluorescence-Guided Resections of Malignant Gliomas Using 5-ALA and Their Impact on Outcome
W. Stummer, Department of Neurosurgery, University of Dusseldorf, Germany

13:00-14:45 Lunch and poster viewing
16:15-17:30 Breakout sessions O16 - O18

Willem Burger room

O16. Stem cells and neurotrophic factors
Chairmen: L. Hillered, D. van der Kooy.
16:15 Invited lecture: E. Sykova
O16.1 In vivo tracking of stem cells in brain and spinal cord injury.
Sykova, E.; Jendelova, P. Institute of Experimental Medicine, Academy of Sciences of the Czech Republic and Center for Cell Therapy and Tissue Repair, Charles University, Prague, Czech Republic.
16:30 O16.2 Characterisation of endogenous neurogenesis following focal and diffuse models of traumatic brain injury.
Bye, N.; Hart, X.; Malakooti, N.; Rosenfeld, J.; Kossmann, T.; Morganti-Kossmann, C. National Trauma Research Institute, The Alfred Hospital; Dept.of Medicine, Monash University, Melbourne, Australia.
16:45 O16.3 Transplants of adult neural precursors in combination with growth factors and minocycline promote successful remyelination and neurobehavioral recovery after spinal cord injury.
Karimi-Abdolrezaee, S.; Eftekharpoor, E.; Wang, J.; Morshead, C.; Fehlings, M.
1: Division of Cell and Molecular Biology, Toronto Western Research Institute, Krembil Neuroscience Center; 2: Department of Surgery and Institute of Medical Sciences, University of Toronto; 3: Division of Neurosurgery and Institute of Medical Sciences, University of Toronto, Canada.

17:00 O16.4 Transplantation of bone marrow stromal cell-derived schwann cells promotes axonal regeneration and functional recovery after contusion injury of adult rat spinal cord.
1: Chiba University; 2: Togane Prefectural Hospital; 3: Kyoto University; 4: Chiba Rehabilitation Center, Japan.

17:15 O16.5 Longterm effect of transplantation procedure on clinical outcome after experimental traumatic brain injury in the rat.
Skardelly, M.; Burdack, S.; Gabor, K.; Scheidt, F.; Schuhmann, M.; Meixensberger, J.
University of Leipzig, Germany.

Ruys room

O17. Neuroprotection - clinical
Chairmen: J. Jiang, J. Muizelaar.
16:15 Invited lecture: J. Jiang
O17.1 Effect of long-term mild hypothermia or short-term mild hypothermia on outcome of patients with severe traumatic brain injury.
Jiang, Ji-yao. Shanghai Jiaotong University/Medical College/Renji hospital, P.R. China.
16:30 O17.2 Analysis of the brain hypothermia treatment to severe brain injury in the Japan neurotrauma data bank.
Takasato, Y.; Hayakawa, T.
National Disaster Medical Center, Japan.
16:45 O17.3 Brain penetration of cyclosporin A in traumatic brain injury patients: a pharmacokinetic analysis.
Virginia Commonwealth University, USA.

Fortis room

O18. Decompressive surgery
16:15 Introduction: A. Unterberg
O18.1 Optimization of decompressive craniectomy size for refractory raised intracranial pressure following severe traumatic brain injury – a preliminary biomechanical study.
Ang, B.T.; Li, L.; Ghista, D.N.; Ng, I.
1: Department of Neurosurgery, National Neuroscience Institute, Singapore; 2: Bioengineering Division, Nanyang Technological University, Singapore.
Hutchinson, P.J.

17:00 O18.3 Effects of hyperoncotic/hypertonic saline (Rescueflow®) and/or decompression on functional outcome after acute subdural hematoma in rats.

17:15 O18.4 Characterization of cerebral vascular pressure reactivity after craniectomy for acute brain injury.
Wang, E.C.; Ang, B.T.; Ng, I.
Department of Neurosurgery, National Neuroscience Institute, Singapore.
10:15-11:45 Targeting cerebral oxygenation and ICP

Chairmen: G. Manley, P. Hutchinson.

P 7.1 Brain tissue oxygen tension in normal appearing versus peri-focal tissue following traumatic brain injury.
Fondazione IRCCS Ospedale Maggiore Policlinico, Mangiagalli e Regina Elena, Italy.

P 7.2 Brain tissue oxygen is related to PAO2 and CBF measured with a new thermal diffusion monitor in severe TBI.
University of California, San Francisco, USA.

P 7.3 Cerebral blood flow, brain tissue oxygenation and metabolic surveillance for detection of cerebral vasospasm in aneurysm subarachnoid hemorrhage.

P 7.4 Regional brain tissue oxygen in a swine model of TBI – where to place the probe.

P 7.5 Non-invasive in vivo measurement of cerebral blood flow and oxygen saturation changes in rat brain after trauma.

P 7.6 Effect of L-arginine on cerebral hemodynamics in patients after severe traumatic brain injury.
Rangel-Castilla, L.; Atik, M.; Hlatky, R.; Valadka, A.B.; Gopinath, S.; Robertson, C.S. 1: Baylor College of Medicine, Houston, USA; 2: Department of Neurosurgery, University of Texas, Health Science Center, San Antonio, Texas, USA.

P 7.7 Effect of osmotic diuretic glycerol on brain extracellular glycerol and outcome in severe traumatic brain injury.

P 7.8 Emergency decompressive craniectomy for traumatic malignant intracranial hypertension.
Pachatouridis, D.; Voulgaris, S.; Michos, E.; Ziogouris, A.; Palyridis, K. University Hospital of Ioanna, Greece.

P 7.9 Analysis of bilateral decompressive craniectomy for severe traumatic brain injury patients.

P 7.10 Surgical results for acute epidural hematoma in 166 treated patients – proposed use of decompressive craniectomy.

Guided Poster Tour P7 - May 25        Hall Jurriaanse room - ground floor

10:15-11:45 Neuroprotection II

Chairmen: J.P. Muizelaar, E. Hall.

P 8.1 The selective vasopressin V1a receptor antagonist SR49059 attenuates cytotoxic brain edema formation by AQP4-modulation.
Kleinildienst, A.; Marmarou, A.; Okuno, K.; Fazzina, G.; Dunbar, J.G.; Gilsson, R. 1: Dept. of Neurosurgery, Georg-August-University, Gottingen, Germany; 2: Dept. of Neurosurgery, Virginia Commonwealth University Medical Center, Richmond, VA, USA.

P 8.2 (abstract P10.3) Does gonadectomy affects estrogen-mediated neuroprotection in SCI in male rats?
Kachadruka, S.; West, E.W.; Chongthammakan, S.; Muizelaar, J.P.; Floyd, C.L. 1: Mahidol University, Thailand; 2: University of California, Davis, USA.

P 8.3 Pharmacological inhibition of bradykinin B2 receptors by Anatibant reduces secondary brain damage after experimental TBI in mice.
Zweckberger, K.; Baethmann, A.; Plesnial, N.? 1: University of Munich and University of Heidelberg, Germany; 2: University of Munich, Germany.

P 8.4 Effect of VEGF receptor antagonist (VGA1155) on cerebral edema in the rat cold injury model.
Koyama, J.; Miyake, S.; Sasayama, T.; Ueda, Y.; Kohmura, E. 1: Kobe University Graduate School of Medicine/Japan; 2: Medicinal Pharmacology Laboratory, Taisho Pharmaceutical Co. Ltd., Japan.

P 8.5 Withdrawn

P 8.6 Early hemostatic therapy using recombinant factor VIIa in a collagenase induced intracerebral hemorrhage model in rats.
Kawai, N.; Kawakita, K.; Kuroda, Y.; Nagao, S. Kagawa University Faculty of Medicine, Japan.

P 8.7 Combined thalidomide and rolipram administration improve functional outcome following experimental spinal cord injury.

P 8.8 Fenofibrate, a Peroxisome Proliferator-Activated Receptor a agonist, exerts neurologic recovery-promoting, antioxidiant and anti-inflammatory effects in traumatic brain injury.
Becquelin C.; Chen X.R.; Plotkine M.; Marchand-Verrecchia C. Laboratoire de Pharmacologie de la Circulation Cérébrale, Paris, France.

P 8.9 Neuroprotective effect of Aranesp (Darbepeotin ALFA) after cortical impact injury in rats.
Cherian, L.; Robertson, C.S. Baylor College of Medicine, Houston, USA.

P 8.10 Amitriptyline pharmacokinetics in experimental spinal cord injury.
Rehmani Kermani, H.; Soltani, A.; Ansari, M. Kerman University of Medical Sciences, Iran.

P 8.11 Posttraumatic hyperthermia (32°C, 33°C and 35°C) following moderate TBI in rats.
Baranova, A.I.; Wei, E.P.; Sholley, M.M.; Povlishock, J.T. Virginia Commonwealth University, Richmond, USA.

Guided Poster Tour P8 - May 25        Hall Willem Burger room - 3rd floor
10:15-11:45  Stem cells and neurotrophic factors
Chairmen: M. Fehlings, E. Sykova.

P 9.1 Mesenchymal stem cells promote functional recovery after chronic spinal cord injury.
Urziknoca, L.; Jendelova, P.; Glogarova, K.; Sykova, E.1: Institute of Experimental Medicine; 2: Center for Cell Therapy and Tissue Repair; 3: Department of Neuroscience, Charles University, Prague, Czech Republic.

P 9.2 Tissue engineered constructs for human neuroepithelial progenitors transplanted to the contused rat spinal cord. Simon, C.M.; Schumm, M.A.; Sturkie, C.D.; West, F.D.; Stice, S.L.; LaPlaca, M.C.1: Georgia Tech/Emory/USA; 2: Univ. of GA/USA.

P 9.3 Transplantation of neural stem cells induced from human bone marrow stromal cells to injured spinal cord of severe combined immunodeficiency mice. Mannoni, C.; Koda, M.; Nishio, Y.; Someya, Y.; Kadota, R.; Miyashita, T.1: Department of Orthopaedic Surgery, Graduate School of Medicine, Chiba University, Japan; 2: Department of Orthopaedic Surgery, Togane Hospital, Japan.

P 9.4 Remyelination of dysmyelinated spinal axons by adult neural precursor cells restores the molecular organization of the nodal region.
Eftekharpour, E.; Karimi-Abdolrezaee, S.; Wang, J.; Morshead, C.M.; Fehlings, M.G.1: Division of Cell and Molecular Biology, Toronto Western Research Institute, Krembil Neuroscience Center; 2: Department of Surgery; 3: Division of Neurosurgery, University of Toronto, Canada.

P 9.5 Granulocyte-colony stimulating factor (G-CSF) penetrates the blood brain barrier but fails to improve contusion size and functional outcome in rats following controlled cortical impact injury (CCI).

P 9.6 Granulocyte colony-stimulating factor is a possible neuroprotective agent in spinal cord injury.
Kadota, R.Y.O.; Koda, M.; Nishio, Y.; Someya, Y.; Mannoni, C.; Miyashita, T.1: Chiba University; 2: Togane Hospital, Japan.

Tate, C.C.; Cullen, D.K.; LaPlaca, M.C.1: Georgia Tech/Emory University/USA; 2: Georgia Tech/USA.

P 9.8 Exercise-enhanced functional recovery is dependent on BDNF.
Griesbach, G.S.; Hovda, D.A.; Gomez-Pinilla, F. UCLA/USA.

P 9.9 Therapeutic effect and the mechanism of G-CSF (granulocyte colony-stimulating factor) in mouse spinal cord injury.
Nishio, Y.N.; Koda, M.K.; Someya, Y.S.; Kadota, R.K.; Miyashita, T.M.; Manunoji, T.M.1: Chiba University Graduate School of Medicine; 2: Togane Hospital, Japan.

P 9.10 Hippocampal neuroprotection by NT-4/5 is not reflected by an improvement in electrophysiological or cognitive function.

P 9.11 The neurotrophic protein S100B does not affect early injury-induced cell damage.
Fillis, A.; Stadelmann, C.; Qu, Z.; Harvey, H.B.; Bullock, M.R.; Kleidienst, A.1: Dept. of Neurosurgery, University-Göttingen; 2: Dept. of Neuropathology, University-Göttingen; 3: Dept. of Neurosurgery, Virginia Commonwealth University Medical Center, USA.

P 10.1 Transferred to P8.2

P 10.4 Effects of the N-type calcium channel blocker SNX-111 on intracellular calcium levels following neuronal injury.
Runia, S.F.1; Shahlaie, K.; Muizelaar, J.P.; Berman, R.F.1: 1: University of Amsterdam; 2: University of California, Davis, USA.

P 10.5 Brain derived neurotrophic factor suppresses anoikis-induced cell death of schwann cells.

P 10.6 Comparison of two models of cerebral pressure autoregulation.
Shaw, M.; Piper, I.R. Southern General Hospital, Glasgow, UK.

P 10.7 The influence of various localized brain lesions on immune system status in the patients after severe brain injury.
Mrlansky, J.; Smrcka, M.; Klubasa, M.1: Department of Neurosurgery, University Hospital Brno-Bohunice, Czech Republic; 2: Department of Hematooncology, University Hospital Brno-Bohunice, Czech Republic.

Zhang, S.; Liu, Z.1: Ping Jin Hospital, P.R. China.
Zanier, E.R.; Zanaboni, C.; Longhi, L.; Ortbolano, F.; Conte, V.; Citerio, G.; Beretta, L.; Stocchetti, N.
1: Neuroscience ICU, Ospedale Maggiore Policlinico, Mangiagalli e Regina Elena Fondazione IRCCS, Milan Italy; 2: Ospedale Maggiore Policlinico, Mangiagalli e Regina Elena Fondazione IRCCS, Milano Italy; 3: Ospedale S. Gerardo, Monza Italy; 4: Ospedale S. Raffaele Milano Italy; 5: Neuroscience ICU, Ospedale Maggiore Policlinico, Mangiagalli e Regina Elena Fondazione IRCCS, University of Milano, Italy.

P10.10 Severe traumatic brain injury in Austria: surgical management.
Leitgeb, J.1; Erb, K.2; Lenartova, L.3; Janciak, I.4; Wilbacher, I.5; Rosso, A.6; Rusnak, M.7; Mauritz, W.8
1: University of Vienna; 2: University of Vienna; 3: INRO (International Neurotrauma Research Organisation), Vienna, Austria; 4: INRO, Vienna, Austria.

P10.11 Head injury mortality in geriatric populations: defining the age threshold.
Bouras, T.; Stranjalis, G.; Boviatsis, E.I.; Themistocleous, M.; Sakas, D.E.
Department of Neurosurgery, University of Athens, Evangelismos Hospital, Athens, Greece.

P10.12 Clinical characteristics and surgical results of the subacute subdural hematoma.
National Disaster Medical Center, Japan.

P10.13 Optic canal decompression with transcranial approach for the treatment of optic nerve injury.
Yu, M.; Lu, Y.; Zhu, C. Changzheng Hospital, Peoples Republic of China.

P10.14 Transferred to P 4.2

P10.15 Drug therapy for TBI patients with dementia: a preliminary survey and evidence based annotation bibliography.
Yutthakasemsunt, S.1; Kittiwattanagul, P.1; Yutthakasemsunt, N.1
1: Khonkaen Regional Hospital; 2: Nongkhai Hospital.

P10.16 Early prediction of delayed enophthalmos in blowout fracture: MRI volume analysis study of protruded orbital tissue.
Tado M.; Fukushima M.; Maeda T.; Kawamata T.; Katayama Y.
Department of Neurological Surgery, Nihon University School of Medicine, Japan.

P10.17 Waived consent in emergency severe brain injury trials: minimal risk to the patients with additional benefits of inclusion in research environment.
Levi L.; Zaaroor M.; Berant M.
Neurosurgery Department and Institutional Review Board, Rambam Medical Center, Haifa, Israel.

P10.18 Epidemiological and prehospital management particularities of children with severe traumatic brain injuries (TBI) admitted in the pediatric intensive care unit (PICU) of the university hospital of Oran (Algeria).
Negadi M.1; Javouhey E.2; Haddak M.1; Floret D.3; Mentouri Z.4
1: Service de réanimation pédiatrique centre hospitalier et universitaire d’Oran, Algeria; 2: Service d’urgences et de réanimation pédiatriques, hôpital Édouard Herriot, Lyon, France; 3: Unité mixte recherche INRETS Bron, Lyon, France.

COSBID Satellite Meeting Friday, May 22, 13:00-16:00

Co-operative Study of Brain injury Depolarisations (www.cosbid.org)

Venue: Auditorium Erasmus MC.
Go through main hospital entrance and turn left, auditorium is on the left.

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<th>Time</th>
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<td>Welcome</td>
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<td>13:05</td>
<td>Combined metabolic / ECoG monitoring.</td>
<td>Jan Bert Gramsbergen (Odense: new member)</td>
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<td>13:20</td>
<td>Use of bio markers in studies of head injury.</td>
<td>Andras Buki (Pecs: new member)</td>
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<td>13:35</td>
<td>Monitoring cations as markers of depolarisation in high time-resolution microdialysate</td>
<td>Bhatia (King’s)</td>
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<td>13:50</td>
<td>Spreading cortical depression or perilesion depolarization in TBI.</td>
<td>Hartings</td>
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<td>14:05</td>
<td>Spreading cortical depression or perilesion depolarization in SAH.</td>
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<td>14:20</td>
<td>Use of webcam with ADI-chart to monitor bedside nursing interventions.</td>
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<td>14:35</td>
<td>Update on coupling of perfusion with depolarisation.</td>
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<td>Additional presentations &amp; General Discussion: demonstration of ADI hardware and Chart software</td>
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Deze pagina verwijderen en hier de advertentie van Pfizer plaatsen (pfizer.pdf)
TBI and the Pituitary: a Pathophysiological Perspective

Daniel F. Kelly
Professor and Director UCLA Pituitary Tumor and Neuroendocrine Program Los Angeles

Introduction: Pituitary dysfunction is being increasingly recognized as a serious but treatable sequela of TBI. As part of an ongoing prospective study, we are defining the incidence and risk factors for both acute and long-term hormonal deficiencies in patients sustaining complicated mild, moderate or severe TBI.

Methods: Adolescent and adult TBI patients (GCS 3-14 with an abnormal CT) are studied over the first 10 days post-injury and within 6-9 months post-injury. Acute hormonal evaluations include daily serum ACTH, cortisol, LH, FSH, testosterone (T), growth hormone (GH) and insulin-like growth factor (IGF-1). Chronic evaluations include baseline and dynamic stimulation tests: growth hormone axis – GHRH-arginine stim test; gonadal axis - GnRH stim test and total testosterone (men), estradiol – E2 (women); adrenal axis - Cotrosyn stim test; free thyroxin (T4), prolactin and urine specific gravity. Acute injury characteristics are compared in patients with and without acute and chronic hormonal deficiencies.

Results: Acute studies performed on 101 TBI patients (GCS =8 in 79% of patients), show rates of acute insufficiency as follows: gonadotroph 100% of men, 47-89% of women; somatotroph (low IGF-1) 71%. Our prior study has shown acute adrenal insufficiency occurs in ~50% of this cohort and is associated with lower blood pressure and higher vasopressor usage. Chronic studies performed at 6-9 months post-injury on 60 of the 101 acutely studied patients, showed hormonal deficiencies in 27% of the cohort and multiple deficiencies in 12%, including GH insufficiency 15%, hypogonadism 11% (men), 10% (women), hypothyroidism 2%, adrenal insufficiency 2%, diabetes insipidus 0%. Patients with chronic deficiencies sustained more severe TBIs based on CT findings, rates of hypoxia and abnormal pupils.

Conclusions: Acute neuroendocrine dysfunction occurs in the majority of patients after complicated mild, moderate or severe TBI. Although suppression of the adrenal, gonadotroph and somatotroph axes is pervasive, it appears to be transient in the majority of patients especially for the adrenal axis. Nonetheless, acute adrenal insufficiency may warrant treatment given its association with lower blood pressure and higher vasopressor requirements. Additionally, given the roles of GH and IGF-1 in CNS vascular reactivity and repair processes, acute somatotroph deficiency may also warrant intervention. The long-term neuroendocrine impact of TBI is also significant with acquired hypopituitarism occurring in >25% of this TBI cohort with multiple deficiencies occurring in >10% of patients. The somatotroph and gonadotroph appear to be most vulnerable to TBI and its associated insults while the thyrotroph, corticotroph and posterior pituitary axes are more resilient. Possible pathophysiological mechanisms of both acute and chronic neuroendocrine dysfunction will be discussed and an update on ongoing hormone replacement trials aimed at improving neurobehavioral recovery after TBI will be presented.

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Endocrine signs and symptoms of hypopituitarism after TBI

E. Ghigo
Division of Endocrinology and Metabolism, Department of Internal medicine, University of Turin, Italy

Several recent studies have made it clear that Traumatic Brain Injury (TBI) poses substantial risk to pituitary function; indeed, TBI is likely to represent the most common cause of acquired hypopituitarism that is often total or multiple. It is therefore mandatory that patients with TBI are screened both prospectively and retrospectively to diagnose impaired pituitary function. Indeed, there is no doubt that pituitary deficits must always be treated with hormonal replacement that provide sure benefit to the patients by restoring normal hormonal and metabolic balance. The guidelines for the diagnosis of hypopituitarism and hormonal replacement of pituitary deficits are quite well defined and available in every endocrine center. On the other hand, it is also possible that signs and symptoms specific of the post-traumatic syndrome benefit from hormonal replacement in patients who acquired hypopituitarism. This possibility is currently under investigation and represents one more good reason to pay attention to the screening and treatment of TBI-induced hypopituitarism. This needs a liaison between neurosurgeons, rehabs and endocrinologists and, first of all, appropriate information about this clinical problem. Given the impressive number of patients affected by TBI, the first obvious questions are: a) do we have to evaluate the pituitary function in all of them? b) if not, who, when and how to test? i.e. Are there signs and symptoms that predict the impairment of pituitary function after TBI? Most of all, evaluation of the endocrine functions is a must in all patients who had TBI-induced diabetes insipidus or inappropriate ADH syndrome, even if only transiently after the brain injury. A more general recommendation is that every clinician taking care of a patient who had TBI should ask for consultant endocrinologist when the patients refers non specific symptoms such as fatigue, hypotension, decreased libido, menstrual disturbances, particularly when associated to changes in body composition and signs such as impaired glucose and lipid metabolism as well as electrolyte disorders. An endocrine evaluation, at least clinical, could, however, be useful in many other patients who simply refer impaired sense of well being and overall quality of life that are often the only generic symptoms of hypopituitarism.
The Needs and Hopes of Rehabilitation Physicians
Brent E. Masel, M.D.

Traumatic brain injury is one of the leading causes of death and disability throughout the world – both in developed and developing nations. Worldwide, there are annually 10 million traumatic brain injuries serious enough to result in death or hospitalization. Damage caused by focal and diffuse lesions produces symptoms involving most of the major medical systems as well as producing symptoms of neurological and psychological origin. Cognitive issues are enormous. Frequently, it is the cognitive issues – not the physical limitations as one would expect, that keep an individual from returning to an active and independent life after a traumatic brain injury.

Ultimately, the hope for survivors of TBI is for an improved quality of life. Although the variables defining quality of life for the patient and the family evolve over the ensuing months after injury, they ultimately match those of the non-injured population. Present treatments focus on relieving symptoms without adequately addressing the underlying cause of those symptoms. Recent studies have shown anterior pituitary deficiencies to be common amongst survivors of TBI. Due to the commonality of symptoms of hypopituitarism and TBI, it is possible that treatment of these deficiencies will also improve the quality of life and functioning of survivors of traumatic brain injuries.

Clinical Experience with the Intraparenchymal Intracranial Pressure Monitoring Codman Microsensor System
Lars-Owe D. Koskinen, M.D., PhD., Magnus Olivecrona, M.D.
Department of Pharmacology and Clinical Neurosciences, Division of Neurosurgery, Umeå, Sweden.

Objective: Our main objective was to study the reliability of the Codman Microsensor (CMS), used for the intracranial Pressure (ICP) measurements, as it is used in a clinical setting. In particular, the drift from zero was studied.

Methods: The investigation is a prospective study of 128 patients with a need for an intraparenchymal CMS device, and the zero drift was measured at explantation of the sensor. In another 22 patients, the ICP was recorded simultaneously from a ventriculostomy and a CMS, and the values were compared. The general data of complications and pitfalls are collected from close to 1000 CMS implanted.

Results: The CMS was used, on average, 7.2 ± 0.4 days per patient. The total time of ICP measurement was 20,040 hours, resulting in at least 7.2 x 10^7 measuring values displayed. The drift (from zero was 0.9 ± 0.2 mm Hg, and no correlation with duration of use was found (p = 0.9, r = 0.002). There was a good correlation between ICP measured by CMS and by ventriculostomy (p < 0.0001, r = 0.79). The average ICP measured with the ventriculostomy was 18.3 ± 0.3 mm Hg, and with the CMS, it was 19.0 ± 0.2 mm Hg. A few minor haematomas were identified, and no infections directly connected to the device were observed. Some pitfalls in handling and problems during magnetic resonance imaging investigations are discussed.

Conclusion: In our hands, the CMS device is reliable and easy to use. The ICP recordings are stable over time, and there is only a minor zero drift. The device is today our standard method of ICP measurement.

Duration of protective activity of cerebrospinal fluid shunt catheters impregnated with antimicrobial agents to prevent bacterial catheter-related infection
University of Nottingham Division of Microbiology and Infectious Diseases, City Hospital, Nottingham, UK.

This study determined the protective effect of antibacterial processing of cerebrospinal fluid (CSF) shunt catheters against infection with staphylococci, which is an important complication following CSF shunt placement for hydrocephalus. Also examined is the effect of a conditioning film such as that seen on the luminal surface of shunts used in post-hemorrhagic hydrocephalus. Conventional preventative measures, including antimicrobial prophylaxis, confer a temporary or unproven benefit. The authors have therefore developed a process for impregnation of CSF shunts with rifampicin and clindamycin, and this has been shown previously to achieve the target duration of 28 days of protective activity in vitro. The present study demonstrates the limit of the period of protection and the efficacy of the processing against a wide range of staphylococci, particularly in the presence of a plasma protein conditioning film. Five strains of *Staphylococcus aureus* and 17 coagulase-negative staphylococci, all clinical isolates, were inoculated into the shunts at 2-week intervals until failure of antimicrobial protection occurred. The results showed that the process protected against all strains for between 42 and 56 days and that the conditioning film did not diminish the protection. Catheters processed by this method show promise of significant reductions in the incidence of CSF shunt infections.
Deze pagina verwijderen en hier de advertentie van Codman plaatsen (codman.pdf)
Partner program

The two tours included in the Accompanying Person Pack will take place on Monday 22 May 2006 and Tuesday 23 May 2006.

Monday, May 22

The second tour will bring you to the capital of the Netherlands, AMSTERDAM, where you will have a full day to explore this city and visit the Rijksmuseum.

The Rijksmuseum is the largest museum in the Netherlands, with more than a million visitors each year. The Rijksmuseum is a familiar Amsterdam landmark and possesses an unrivalled collection of Dutch art, from early religious works to the masterpieces of the Golden Age. You will have the opportunity to see the highlights of the Golden Age together in surprising combinations. The famous dolls’ houses, the finest Delftware, a wealth of silver, icons of Dutch history and of course the paintings by the great masters of the 17th century: Frans Hals, Jan Steen, Vermeer and Rembrandt.

After this visit you will enjoy a canal cruise through the canals of Amsterdam and have a lunch at a typically Dutch restaurant in the center of Amsterdam. The afternoon is free for you to explore Amsterdam by yourself. Suggestions: visit the Van Gogh Museum or satisfy your cravings to shop!

Tuesday, May 23

Later you will visit the miniature city of Madurodam. The canal houses of Amsterdam, the Alkmaar cheese market and parts of the Delta Works, all replicated in minute detail on a 1:25 scale. All is set in beautiful gardens. Windmills turn, ships sail through the harbour and trains are traversing the city on the world’s largest miniature railway.

We will end this day with a lunch in the Kurhaus in Scheveningen. The Kurhaus opened its doors in June 1892. Find your way into this beautiful building, in limestone fabricated and, feel the distinguished romance that the Grand Old Lady (also a name for Kurhaus) granted its festive grace and grandeur.

The tour will allow you to visit the exciting Flower Auction Holland. The world’s second largest flower auction, is based in Naaldwijk and Bleiswijk, the Netherlands. With 43,000 m² (1,410,700 ft²) of cold storage space, the Auction represents the world’s largest cold storage facility for flowers. Daily, over 3,400 buyers purchase millions of flowers and plants.

The two tours included in the Accompanying Person Pack will take place on Monday 22 May 2006 and Tuesday 23 May 2006.

07:30 departure bus
08:30-09:45 visit Flower Auction Naaldwijk
09:45-10:30 travel to Madurodam
10:30-12:30 visit Madurodam
12:30-13:00 travel to Kurhaus
13:00-14:00 lunch Kurhaus
14:30-15:30 travel back to De Doelen

09:00 departure bus
10:15-11:15 visit Rijksmuseum Amsterdam
11:15-11:30 travel to Rederij de Kooij
11:30-13:00 tour through the Amsterdam canals
13:15-14:15 lunch at De Nissen
14:15-16:00 free time in Amsterdam
16:00-17:00 travel back to De Doelen
### Social program and map of The Netherlands

<table>
<thead>
<tr>
<th>Day</th>
<th>Date</th>
<th>Time</th>
<th>Event</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sunday</td>
<td>May 21</td>
<td>18:00-21:00</td>
<td>Opening ceremony, Concert, and Welcome Reception</td>
</tr>
<tr>
<td>Monday</td>
<td>May 22</td>
<td>18:15-19:15</td>
<td>Wine and cheese at the trade exhibition</td>
</tr>
<tr>
<td>Tuesday</td>
<td>May 23</td>
<td>18:15</td>
<td>Flashback</td>
</tr>
<tr>
<td></td>
<td></td>
<td>18:45-20:30</td>
<td>INTS reception for congress participants, (ex)patients and relatives</td>
</tr>
<tr>
<td>Wednesday</td>
<td>May 24</td>
<td>15:00</td>
<td>Congress tour and dinner</td>
</tr>
<tr>
<td>Thursday</td>
<td>May 25</td>
<td>17:30</td>
<td>Closing ceremony and farewell drinks</td>
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</tbody>
</table>

For air travel Amsterdam Airport (Schiphol) and Rotterdam Airport provide a wide range of international flight connections. All intercontinental flights arrive at Amsterdam airport. A direct train takes you from Amsterdam Airport to Rotterdam Central Station (45 minutes) three times per hour. We advise taking the train rather than a taxi, as the train is quicker, faster and cheaper. Cost of single train ticket is approximately EUR 9,00. There is a direct bus connection (25 minutes) from Rotterdam Airport to the city centre.

Rotterdam has excellent rail connections from:
- the north (The Hague 20 min., Amsterdam 60 min.)
- the east (Utrecht 40 min., and from there the international trains to Germany etc.)
- the south (Brussels, Paris)
# How to find your way in Rotterdam.....

## Hotels

1. Congress Center De Doelen  
   Kruisplein
2. Rotterdam Hilton  
   Weena 10
3. The Westin Rotterdam  
   Weena 686
4. Bilderberg Parkhotel  
   Westersingel 70
5. NH Atlanta Rotterdam  
   Aert van Nesstraat 4
6. Golden Tulip Hotel Inntel  
   Leuvehaven 80
7. Best Western Savoy  
   Hoogstraat 81
8. Maritime Hotel  
   Willemskade 13
9. StayOk Hostel  
   Rochussenstraat 107-109

## Of interest......

A. Rotterdam Central Station
B. Erasmus Medical Center
C. Natural History Museum  
   (Daily 10:00-17:00, closed on Mondays)
D. Kunsthall  
   (Daily: 10:00-17:00, closed on Mondays)
E. Museum Boymans-Van Beuningen  
   (Daily: 11:00-17:00, closed on Mondays)
F. Euromast  
   (Daily: 9:30-23:00)
G. VVV-Tourist Office
H. Rotterdam market  
   (on Tuesdays and Saturdays)
I. Westelijk Handelsterrein  
   A breathtaking, beautifully restored warehouse complex from 1894 in the Scheepvaartkwartier. Galleries, wine importers and bars with grand cafés, luxury restaurants and nightclubs. It looks back to the history of the port, while luxuriating fully in the pleasures of the present.
J. Departure water taxis for Hotel New York
K. Hotel New York  
   The former main office of the Holland America Line from 1880 has a cosmopolitan feel, situated at a marvellous location with a view of the city skyline, the port and the river. The large restaurant with its oyster bar offers an extensive international menu. This hotel has water taxis with a skipper! It’s only 5 minutes by water taxi to the opposite shore of the River Maas.
General information

Banks
Business hours differ between banks. Most banks are open from Tuesday to Friday between 9:00 and 16:00. On Mondays business hours start mainly at 13:00. On Saturdays and Sundays banks are closed. GWK (Exchange) offices (Rotterdam Central Station) are open 7 days a week. There are numerous occasions for car rental including all major car rental agencies. If you come by car, you may encounter traffic congestion in selected areas when travelling Mon-Fri in the morning (7-10 a.m.) and evening (4-7 p.m.).

Climate
Spring is a good time to visit, as the bulb flowers are in full bloom in this season. April is the best month for daffodils, May for tulips. The Keukenhof flower exhibition is a wonderful place to visit during spring. Rain is spread pretty evenly over the year, so keep in mind that it can be rainy in May too. Average temperature during the day in May is 15-20 degrees Celsius.

Credit Cards
Major credit cards are accepted widely, but not everywhere. If in doubt, ask in advance. Cash-on-card services are available from selected American Express, Diners Club, MasterCard and VisaCard addresses. These cards are also accepted by all GWK currency exchange outlets and Change Express Offices.

Currency
Decimal currency is used in Holland with the Euro as the basic unit (100 cents = EUR 1). Notes come in EUR 500, EUR 200, EUR 100, EUR 50, EUR 20, EUR 10 and EUR 5. Coins come in 1c, 2c, 5c, 10c, 20c, 50c, EUR 1 and EUR 2 denominations. As a guide, the current exchange rate is approximately EUR 1 to US$ 1.25 (as May 2006).

Duty Free
Stores (See Buy Fly) are located at Schiphol International Airport.

Electricity
The voltage in Holland is 220 volts. Hotels may have a 110-volt outlet for shavers, but travellers are advised to bring a power converter and an adapter for two-prong, round-prong plugs with side grounding contacts.

Language
Dutch is the national language of Holland. However, English is spoken by almost everyone. In addition, many Dutch people speak German and French.

Medical and Emergency Services
National Emergency Numbers:
- Police, fire brigade, ambulance: 112
- National number police (no emergency): 0900 8844

Museums
Business hours vary, however, most museums are open from 10:00 until 17:00 every day of the week, except Mondays.

Parking
De Doelen has its own underground parking (parking Schouwburgplein) accommodating ample parking spaces. Ticket needs to be paid when leaving the parking. The access to the parking is next to the Holiday Inn hotel.

Passport/Visa Requirements
A valid passport is all you need to enter Holland. Check with the Dutch Embassy or Consulate in your own country whether you need a visa.

Post Offices
Regular post offices are open from Monday to Friday, between 9:00 and 17:00. Bigger ones are also open on Saturdays between 9:00 and 12:00/12:30.

Shopping
The main shopping areas of Rotterdam are within a short 10 minute walk from the Doelen Convention Centre. Most shops are open from Tuesday to Friday between 9:00 and 18:00. On Saturdays business hours differ between 8:30/9:00 – 16:00/17:00. Mondays shops open between 11 am and 1 pm and close at 6 pm. Rotterdam has late-night shopping (until 21:00) on Fridays. Many shops are open on Sundays from 11:00 to 17:00.

Telephone
To call Holland you dial your international dialing code, followed by 31 (country code for Holland), then the area code (omit the first zero) and the local number.

Tipping
In The Netherlands, Value Added Tax and service charges are included in your check in hotels, shops and taxis. Unlike in the US, this is even the case for your restaurant check. Tips for extra service are always appreciated but not necessary.

Transport
There is good public transport in Rotterdam incorporating metro, bus, tram and taxis. Hire cars are also available. An international visitor may drive in the Netherlands on a valid overseas driver’s licence for the same class of vehicle. Make sure you carry your licence when driving. If your licence is not in English, you must carry a translation. An international driver’s permit is not sufficient by itself and must be accompanied by a valid driver’s permit.

Travel Insurance
Registration fees do not include insurance of any kind. It is strongly recommended that all delegates take out their own travel insurance prior to coming to the Meeting. The Conference Secretariat will not take any responsibility for any participants failing to insure. Please seek further information from your travel agent or airline in regard to this matter.