Swasdee
And
Welcome to Thailand

Second World Congress of
World Association of Sleep Medicine
(WASM)
Sofitel Central Plaza Hotel, Bangkok, Thailand
4 – 8 February 2007

Promoting Better Sleep Health Worldwide

EDITORS
Naiphinich Kotchabhakdi, Co-Chair, Program Committee 2007; Chair, Local Organizing Committee
Wayne A. Hening, Co-Chair, Program Committee 2007
Richard P. Allen, WASM, Secretary
Nittaya J. Kotchabhakdi, Member of Local Organizing Committee
Caroline Koepppe, Member of Local Organizing Committee
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Welcome to the Second World Congress of Sleep Medicine in Bangkok, 4 – 8 February 2007

On behalf of the World Association of Sleep Medicine (WASM), the Thai Sleep Research and Sleep Medicine Society (TSRSM) and the Organizing Committee we would like to cordially welcome you at the Second Biennial Congress of the World Association of Sleep Medicine (WASM) with the theme “Promoting Better Sleep Health Worldwide” in Bangkok from February 4 through 8, 2007.

WASM is an international organization comprised of healthcare professionals primarily active in the field of sleep medicine. The goal of WASM is to advance knowledge about sleep and sleep disorders among health care personnel and among the public worldwide. WASM was founded to improve sleep health worldwide and to encourage prevention and treatment of sleep disorders. We at the WASM are working toward increasing worldwide awareness of the importance of sleep and the adverse consequences resulting from lack of sleep, due either to enforced lifestyle or to sleep disorders themselves. The WASM aims to act as a link between various sleep associations and cultures, i.e., as an international nexus among sleep clinicians and researchers in the advancement of worldwide sleep health. A special goal of the Association is to foster dissemination of expertise in sleep medicine everywhere in the world.

Towards its mission, the WASM has chosen Bangkok as venue for its second World congress. Thailand has a very old and rich cultural heritage, yet it is a dynamic and thriving country in which historical elements are freely mixed with modern developments. It has great natural beauty and many architectural wonders. Bangkok can be reached easily from different countries at reasonable cost. We would be pleased if, in addition to sleep researchers, many practical physicians, nurses and other interested people will join our meeting. One of our priorities is to enable younger people to participate. We expect a great number of professionals from all over the world to attend, and we extend a special invitation to those from Asia.

Our overall goal is to create a forum for an exchange of experience by those involved in sleep medicine: neurologists, psychiatrists, pulmonologists, internists, general practitioners, pediatricians, otorhinolaryngologists, other specialists with an interest in sleep and sleep disorders, dentists, psychologists and psychotherapists, and, of course, nurses and technicians.

The Congress plans to organize keynote lectures, symposia, courses, workshops, as well as poster, oral and platform presentations covering all areas of sleep medicine at both the basic and advanced levels.

Take this opportunity to hear about the latest developments, problems and strategies in practical sleep medicine in the unique City of Angels (Krungthep): Bangkok. Come and share your experience with both our older and younger members: sleep physicians and lay people, technicians and doctors, biologists and psychologists.

We hope that this Congress gives a fresh impetus to practical sleep medicine and improves the diagnosis and treatment of sleep disorders in addition to facilitating exchange of scientific know-how among sleep researchers from a wide range of countries. We hope to offer a rewarding opportunity to discuss global social developments that stand in the way of healthy sleep.

Let's do our best to ensure that restful sleep will no longer remain just a dream.

Yours sincerely,

Markku Partinen, MD, PhD,
President of WASM,
2005 - 2007 and Chair
Skogby Sleep Clinic,
Rinnekoti Research Center,
Kumputie 3, FIN-02980
Espoo, Finland
markku.partinen@rinnekoti.fi

Sudhansu Chokroverty,
MD, FRCP
President-Elect
New Jersey Neuroscience
at JFK, Seton Hall
University, Department of
Neurology, Division of
Clinical Neuropysiology,
Sleep Medicine, NJ USA
schok@att.net

Wayne A. Hening
MD, PhD
Co-Chair, Program Committee 2007
Dept. Neurology,
UMDNJ-RW
Johnson Medical School,
NY, USA
WAHening@aol.com

Naiphinich Kotchabhakdi PhD
Co-Chair, Program Committee 2007 and Chair,
Local Organizing Committee
Neuro-Behavioural Biology
Center, and Salaya Sleep
Research Laboratory, Institute of
Science and Technology, Mahidol
University, Salaya, Nakornpathom,
Thailand
scnkc@mahidol.ac.th
Historical Milestones

Sudhansu Chokroverty

In 2001, a few of us started dreaming about a world association for the sleep clinicians. We floated the idea in Parma, Italy in November 2001 during the first International Cyclic Alternating Pattern of EEG (CAP) meeting organized by Professor Mario Terzano. Not without opposition, it was decided that the response was sufficiently encouraging to move ahead.

We sent an invitation to many sleep clinicians in each continent of the world and organized a Planning Meeting to found the new World Association of Sleep Medicine (WASM) on June 11, 2002 during the Associated Professional Sleep Societies (APSS) meeting in Seattle, Washington, USA. At that meeting, Dr. Chokroverty gave an introductory statement explaining the rationale for founding a new association and its mission emphasizing cooperation and collaboration with all. The ideal model is to find a venue where both basic scientists and clinicians may meet in parallel to promote sleep medicine worldwide. Most spoke in favor of the formation of a new world body catering to the sleep clinicians. Few, however, had reservations about starting another new organization. The World Association of Sleep Medicine was chosen as the best name for the new organization by those present at that planning meeting. The founding members present at the Planning Members (those who agreed to be members and indicated so by signing the agreement) elected a Bylaws Committee Chaired by Dr. Wayne Hening with members from the USA, Europe and Asia. There were 39 founding members at the Planning Meeting. Between June 2002 and June 2003, the Bylaws Committee developed the Bylaws, which have been revised several times after receiving comments from the initial founding members.

Next an Organizational Meeting was held officially to found the WASM on June 6, 2003 during APSS meeting in Chicago, Illinois, USA. An invitation was sent to many sleep specialists of the world. Founding members (from the initial planning meeting – 39 and those present at the current Organizational Meeting – an additional 29 for a total of 68 members) voted to accept the final version of the WASM Bylaws requiring biennial meetings and founding of the organization in Germany. By a secret ballot, the founding members voted for the officers of the WASM Executive Committee for a period of two-year terms as follows:

Dr. Sudhansu Chokroverty – President
Dr. Markku Partinen – President-elect
Dr. Richard Allen – Secretary
Dr. Claudia Trenkwalder – Treasurer

Nominations were then sought from the floor for the rest of the governing council members (Assistant
Secretary, Assistant Treasurer and six At-Large members representing each continent of the world). In the course of the next several months, ballots were collected electronically and the names of the winners were announced.

The next day on Saturday, June 7, 2003 the Executive Committee and the Chair of the Bylaws Committee went to the German consular office in Chicago for ratification of the Bylaws. The WASM has now been officially established. WASM office is incorporated in Kassel, Germany.

We began conducting our business every month by teleconference. We selected the site of the first congress in Berlin on October 15 to 18, 2005 after looking at other proposals for alternative sites. Our second congress will be in Bangkok, Thailand, on February 4 to 8, 2007.

The WASM has the goal of promoting sleep medicine and sleep health throughout the globe, especially in those parts of the world where sleep medicine has not progressed sufficiently. To promote these goals, we are committed to have biennial congress and intercontinental regional workshops every year which will shift within different continents. We had our first such conference in February of 2005 in New Delhi, India. The next intercontinental workshop will be held in Cape Town, South Africa in early 2006.

WASM has a noble mission (our mission and the Bylaws are available on the Internet at the web address: www.wasmonline.org), and a lofty vision. Since founding the association WASM has continued to expand its membership and is continuing to pursue its noble goals. WASM now has an affiliated journal - Sleep Medicine, an International Journal - published by Elsevier Publishing Company at Amsterdam, Europe. WASM has established two awards: The Christian Guilleminault WASM award for sleep research and the Elio Lugaresi WASM award for sleep medicine. We are now looking for an exciting second congress of the WASM in Bangkok, Thailand on February 4 to 8, 2007. After careful consideration, we have decided to hold our third congress in Sao Paola, Brazil on November 1 to 5, 2009.

The WASM has the goal of promoting sleep medicine and sleep health throughout the globe, especially in those parts of the world where sleep medicine has not progressed sufficiently. To promote these goals, we are committed to have biennial congress and intercontinental regional workshops.

Sudhansu Chokroverty
JFK New Jersey Neuroscience Institute
65 James Street, Edison, NJ 08818 USA
schok@worldnet.att.net

From left: Drs. Wayne Hening, Richard Allen, Sudhansu Chokroverty, Claudia Trenkwalder, Markku Partinen
Officers of WASM 2005 – 2007

President: Markku Partinen, Helsinki, Finland
President-Elect: Sudhansu Chokroverty, Edison, New Jersey, USA
Secretary: Richard Allen, Baltimore, Maryland, USA
Treasurer: Claudia Trenkwalder, Kassel, Germany
Assistant Secretary: Patrick Levy, Grenoble, France
Assistant Treasurer: Karin Stiasny-Kolster, Marburg, Germany

Members at Large
At-Large Africa: Allison Bentley, South Africa
At-Large Asia: Nana Tachibana, Kyoto, Japan
Naiphinich Kotchabhakdi, Salaya, Thailand
At-Large Australia Oceania: John Swieca, Australia
At-Large Europe: Claudio Bassetti, Zurich, Switzerland
Luigi Ferini-Strambi, Milan, Italy
At-Large South America: Sergio Tufik, Sao Paolo, Brasil
At-Large USA: Max Hirshkowitz, Houston, Texas
Wayne Hening, New York City, New York

Program Committee
Markku Partinen (Finland) Sudhansu Chokroverty (USA) Christopher Earley (USA) Jacques Montplaisir (Canada) Patrick Levy (France) Sergio Tufik (Brazil) Thomas Pollmächer (Germany) Thomas Penzel (Germany) Kingman Strohl (USA) Max Hirshkowitz (USA) Claudio Bassetti (Switzerland) Birgit Högl (Austria) Allison Bentley (South Africa) Raffaele Ferri (Italy) Luigi Ferini-Strambi (Italy) Sharon Keenan (USA) Richard Allen (USA) Wayne Hening (USA) Naoko Tachibana (Japan) Soichi Katayama (Japan) Sunao Uchida (Japan) Do-Un Jeong (Korea) J. C. Suri (India) Birendra Mallick (India) Manvir Bhatia (India) Huang X.Z. (China) K. Puvanendran (Singapore) Surachai Kuasirikul (Thailand) Puntarica Suwanprathes (Thailand) Syed Hassan Ahmad Almashoor (Malaysia) Yul Iskander (Indonesia)
Local Organizing Committee (LOC)

Naiphinich Kotchabhakdi, (President TSRSMS, Chair LOC)
Nittaya J. Kotchabhakdi, Developmental Behavioral Pediatrics, Mahidol University, Salaya
Debhanom Muangman, Public Health, Mahidol University
Manoon Leechawengwongs, Pulmonology, Vichaiyut Hospital
M.L. Somchai Chakrabhan, Psychiatry, Director-General, Department of mental Health, Ministry of Public Health, Royal Thai Government
Pichet Udomratn, Psychiatry, President, the Psychiatric Association of Thailand
Waran Tanchaiswad, Psychiatry, Prince of Song Khla University
Arth Nana, Medicine, Mahidol University, Siriraj Hospital
Surachai Kuasirikul, Psychiatry, Mahidol University
Ronnachai Kongsakorn, Psychiatry, Mahidol University
Somchai Teakul, Psychology, Chiang Mai University
Paungpayom Panya, Nursing, Chiang Mai, University
Noppamars Wongwitdecha, Neuro-psychopharmacology, Mahidol University
Kanokwan Tilokskulchai, Physiology, Mahidol University
Puntarica Suwanprathes, Physiology, Mahidol University
Suthipun Jitpimolmard, Neurology, President, the North-eastern Neuroscience Association of Thailand, Khon Kean University
Piyarat Govitrapong, Neuroscience, Mahidol University
Wipawan Thangnipon, Neuroscience, Mahidol University
Banthit Chetsawang, Neuroscience, Mahidol University
Nuanchan Jutapakdeegul, Neuroscience, Mahidol University
Jintanapor Wattanatorn, Physiology, Khon Kean University
Wichian Sittiprapaporn, Neuroscience, Mahidol University
Caroline Koeppe, Neuroscience, Mahidol University
Chanchai Songthaveesin, Neuroscience, Mahidol University
Dalapat Yossatorn, NICFD, Mahidol University
Noochanart Ruksee, NICFD, Mahidol University
Jeeranan Khamnong, NICFD, Mahidol University
Orapin Lerdawasadatrakul, NICFD, Mahidol University
Natnaree Aimyong, NICFD, Mahidol University
Nithivadee Noochaiya, NICFD, Mahidol University
Theerapan Vimalsraravong, Director of GITC, Database and Network Coordinator
Techid Nakaputtanakul, GITC, Database and Network Coordinator
Nawapol Sriwattanasub, GITC, Graphic Designer
Somsook Naksook, GITC, Database and Network Coordinator,
Chupong Kosawatpat, Technical Coordinator

Internet Congress Website
Detailed Information on the Second Congress of World Association of Sleep Medicine (WASM) may be found at www.wasm2007.org and www.wasm2007.info

Congress Secretariat:
Neuro-Behavioural Biology Center (NBBC), Salaya Sleep Research Laboratory, Institute of Science and Technology for Research and Development, Mahidol University, Salaya, Nakornpathom, 73170 Thailand
Telephone + (662)-4419321 Fax + (662)-4419743
Email: wasm2007@mahidol.ac.th
**Congress Venue**

The main congress is being held at the **Sofitel Central Plaza Bangkok Hotel, Ladprao**
Address: 1695 Phaholyothin Road, Chatuchak, Bangkok 10900 Thailand
Telephone: +66 (0) 2-541-1234    Fax: +66 (0) 2-541-1087, +66 (0) 2-541-1089
www.centralhotelresorts.com

**Contact Person**

**Mr. Disapong Weerayuth**, Convention Service Manager,
Telephone: +66 (0) 2-541-1234 Ext. 4210 Email: disapongwe@chr.co.th

**Mrs. Phagawan Phadungsinlertwattana**, Senior Sales Manager –Government,
Telephone: +66 (0) 2-541-1234 Ext. 4210 Email: PhagawanPh@chr.co.th
Registration and information desk

The registration and information desk is located in front of the entrance of the Vibhavadee Ballroom, lobby level (1st floor) of the Sofitel Central Plaza Hotel.

The registration desk will be at your service on the following dates and time:

- Friday 2nd February 2007 13:00 – 20:00
- Saturday 3rd February 2007 8:00 – 20:00
- Sunday 4th February 2007 8:00 – 20:00
- Monday 5th February 2007 8:00 – 18:30
- Tuesday 6th February 2007 8:00 – 15:30
- Wednesday 7th February 2007 8:00 – 18:30
- Thursday 8th February 2007 8:00 – 18:30

Congress Phone number: 02-9370671 (at the welcome and information desk)
Congress Fax number: 02-9370672 (at the welcome and information desk)
Email: wasm2007@mahidol.ac.th
Registration

Membership of the WASM or confirmation of any oral presentation or poster does not automatically include the registration for the world congress. Therefore, all members of the WASM and all speakers are requested to register prior to the conference. Online registration via the website of the WASM www.wasm2007.org and www.wasm2007.info is preferred. In case you wish to register by mail or fax, the respective form can be downloaded from that site as well and should be sent to the congress secretariat.

The registration fee for participants includes access to all scientific sessions of the WASM congress, Opening ceremony, Cultural Program, Opening Reception, Cocktails and Dinner with Entertainment, Garden Party with Entertainment, Farewell Party, coffee and lunch breaks on 4 – 8 February 2007, industrial and poster exhibitions and congress documents of WASM.

Registration Fees

Physicians, Dentists, Scientists and Other Full-fledged Professionals

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<td>$450 (16,200 Thai B)</td>
<td>$550 (19,800 Thai B)</td>
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Students, Residents, Fellows, Technicians

(Require evidence with student’s ID or Letter of confirmation from your mentors)

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<th>Non-Members</th>
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<td>On site after February</td>
<td>$175 (6,300 Thai B)</td>
<td>$225 (8,100 Thai B)</td>
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Accompanying Persons (Of member and non-member participants)

Entitle to join the Opening ceremony, Cultural Program, Opening Reception, Cocktails and Dinner with Entertainment, Garden Party with Entertainment, and Farewell Party.

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<th>Non-Members</th>
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<td>$225 (8,100 Thai B)</td>
<td>$250 (9,000 Thai B)</td>
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Pre-Congress Course or Workshop*  
US$ 60 (2,160 Thai Bahts) / course

One day registration only US$ 200 (7,200 Thai Bahts)

* Remark: To participate in course or workshop, you need a full participant registration plus or course workshop ticket or a “One day registration ticket” for that day.

Exchange rate at the congress: 1US$ = 36 Thai Bahts

The registration fees for participation, courses and the festive evening can be paid as follow methods:

1. By credit cards (Visa and Master) at the time of on-line registration, and hotel reservation
2. By bank transfer through Swift transfer
3. By bank draft payable to the congress account
4. By cash on site

To expedite a rapid on-site registration, we would very much appreciate payment by cash in US Dollars or Thai Bahts.

Official receipt for the registration fee and for participation in the Tutorial Workshops will be included in the congress material for participants who have completed the advance registration process and fully paid their fees. Receipt for incomplete or new on-site registration will be issued at the Cashier Desk located near the Welcome and Registration desks at the entrance of the Vibhavadee Ballroom on the Lobby Level after completion of the registration process with payment.

Receipt for hotel accommodation and services will be issued by the hotels.
Terms of Cancellation
Cancellations of registration will only be accepted in writing. In case of cancellation before 30 November 2006 registration fees will be refunded minus a handling fee of 50 USD. No refund will be given after this date.

Certificate of Attendance
A certificate of attendance can be picked up at the registration desk on site.

Service for congress delegates
Registered delegates are entitled to the following services and material
● Congress delegate badge and Congress bag
● Congress material: Program Handbook, Abstract Book (A supplement of Sleep Medicine), A Certificate of Attendance, An Official Receipt for the registration fee and paid-for Course or Workshop fee. (You will receive the receipt for your hotel accommodation from the hotel)
● Admission to all congress scientific sessions, exhibitions and congress social programs
● Coffee, or Tea and Refreshment during coffee breaks
● Opening Ceremony, Welcome Reception and Dinner
● Lunch Box and Drink at Lunch on Monday, Tuesday, Wednesday and Thursday
● Participation in the Congress Garden Party
● Participation in the Closing Ceremony and Farewell Party

Service for congress participant’s accompanying person
Registered delegate’s accompanying persons are entitled to the following services and material
● Congress accompanying badge
● Admission to congress social programs
● Coffee, or Tea and Refreshment during coffee breaks
● Opening Ceremony, Welcome Reception and Dinner
● Lunch Box and Drink at Lunch on Monday, Tuesday, Wednesday and Thursday
● Participation in the Congress Garden Party
● Participation in the Closing Ceremony and Farewell Party

Name Badge and tickets
Registered participants and accompanying persons will receive a name badge on registration. Please wear your badge at all time in the congress as it will serve as your “security pass” and “ticket” to enter the congress area and to participate in all entitled events.

First aid
There is First Aid service in the WASM Congress at the Welcome and Registration Desks near the entrance of the Vibhavadee Ballroom. The Sofitel Central Plaza also has an emergency and medical service room for acute illnesses, at the Medical Center in the Lower Lobby, one floor below the lobby (the 1st Floor).

Internet
Internet services are provided by the Sofitel Central Plaza Hotel and other Congress Hotels (Siam City Hotel and Chao Phaya Park Hotel) in the hotel guest rooms for participants who are staying in these hotels. Other congress participants can visit the Hotel Business center near the Reception Counter on the 1st Floor, Lobby Level for Internet services. Internet services are also available at Internet shops and Cafés in the Central Plaza Department Store and Shopping Complex. On the conference venue there are ten workstations with free internet access available located in the foyer in front of Vibhavadee Ballroom next to the welcome and information desk. Wireless access is provided in the same area. An access password can be obtained from the welcome and information desk. High-speed wireless internet access service is also available in the hotel lobby at 1605 baht/ day.
Insurance
Congress participants are advised to take out their own comprehensive travel and accidental insurance as the congress organizer shall not be responsible for personal accidents, illnesses, loss or damages to private properties.

Language
The official conference language is English

Smoking
This is a non-smoking congress. In general, smoking is not permitted in public places including airport, hospitals, hotels, schools, university, all government buildings, department stores, restaurants and movie theatres. Smoking is permitted in private rooms or in specially arranged rooms for smokers.

Mounting of Posters
Presenters are asked to have their posters in place on their assigned poster boards at the exhibition area in the Vibhavadee Ballroom A, 1st floor Sofitel Central Plaza Hotel Bangkok early in the morning from 8:00 of Monday 5th February 2007 and have to be available at their posters to discuss their posters with interested viewers during scheduled poster sessions on Monday 5th February from 18:30 – 19:30 and on Thursday 8th February from 16:15 – 17:30. Please refer to the poster listings in the scientific program section to find your poster board number. Materials must be removed promptly at the end of the Thursday 8th February session after 17:30.
AV-Ready Room (The Board Room on the Mezzanine Floor, Sofitel Central Plaza Hotel)

To avoid setup delays between presenters and all other technical incompatibilities and troubles during the session, authors are only allowed to use the PC notebook provided in the conference room and must bring their power-point presentation file and other associated media on a Windows XP-readable USB flash drive (USB Memory Stick) or a standard CD-ROM to the AV-Ready Room, at least 3 hours before their scheduled presentation or by the end of the day before, if they are presenting early in the morning. Technical staff and/or graduate students will be available to assist you in file transferring and also allow you to quickly check your power-point slides from Friday 2nd February to Thursday 8th February between 8.00 and 18.30.

Mezzanine level

Congress Secretariat
Ms. Nithivee Noochaiya, M.A.,
National Institute for Child and Family Development, Mahidol University, Salaya, 999 Phutthamonthon 4 Road, Salaya, Phutthamonthon District, Nakornpathom Province, 73170 Thailand
Mobile phone +6681-7320798
Office Telephone: +66 (0) 2-441-0602 to 4410608 Extension 1609; Fax: +66 (0) 2-4410167
Email: tennc@mahidol.ac.th

Professional Congress Organizer
UMEC (Unisource Marketing & Engineering Co., Ltd.)
184/34 Tiwanon 43, Tiwanon Road, Nonthaburi 11000 Thailand
Telephone + 662-951-1831; Fax + 662-951-1832 Email: umec2003@hotmail.com
Marketing Manager and Contact Person: Ms Nattamon Inkham, Mobile phone +6681-8993814
General Information

Bangkok, the capital of Thailand, is a well-known destination for traveling either for convention, business or pleasure. Thailand is also known as “the land of smile and unique hospitality”, and good blend and harmony of all religious vibrant cultures, arts, and modern facilities for living accommodation and modern convention facilities. Thai foods and cuisine are also among the world most popular and nutritious. Abundance of museums, temples, art galleries, and fascinating shopping and comfortable hotels make it very convenient to enjoy the visit to “the Amazing Thailand”. Located in the central part of Southeast Asia, it is conveniently connected to most parts of the world by all major airlines. For more information visit Tourism Authority of Thailand at www.tourismthailand.org and www.tatnews.org

Weather in Bangkok

The weather in Bangkok in February is usually nice, dry and cool with typical temperature ranges between 20 to 25 degree Celsius. The weather forecast can be checked at the following website (www.thaimet.tmd.go.th/eng/).

Arrival in Thailand

VISA

All foreign visitors entering Thailand must be in possession of a passport or other travel document endorsed and valid for Thailand at least 6 months. For nationalities of Denmark, Norway, Sweden, USA, Germany, all ASEAN countries, and Republic of Korea, a stay of 15 days without VISA is permitted. You can declare honestly that you are entering Thailand to attend a scientific and medical conference and also sight-seeing as a tourist which allows you to enter Thailand as a “Tourist” for a definite period of time.

TOURIST VISA EXEMPTION

According to the Interior Ministerial Announcements dated 1 October B.E. 2545 (2002), 20 December B.E. 2545 (2002), 18 October B.E. 2547 (2004) and 6 May B.E. 2548 (2005), passport holders from 40 countries and 1 special administrative region – Hong Kong SAR – are not required to obtain a visa when entering Thailand for tourism purposes and will be permitted to stay in the Kingdom for a period of not exceeding 30 days on each visit. Foreigners who enter the Kingdom under the Tourist Visa Exemption category may re-enter and stay in Thailand for a cumulative duration of stay of not exceeding 90 days within any 6-month period from the date of first entry. Please note that Tourist Visa Exemption does not apply to foreigners holding Travel Document for Aliens issued by these 40 countries. Foreigners entering Thailand under the Tourist Visa Exemption category must possess adequate finances for the duration of stay in Thailand (i.e., cash 10,000 Baht per person and 20,000 Baht per family).

These countries include: Australia, Austria, Belgium, Brazil, Bahrain, Brunei Darussalam, Canada, Denmark, Finland, France, Germany, Greece, Hong Kong: Hong Kong Special Administrative Region, Iceland, Indonesia, Ireland, Israel, Italy, Japan, Korea, Kuwait, Luxembourg, Malaysia, Netherlands, New Zealand, Norway, Oman, Peru, Philippines, Portugal, Qatar, Singapore, Spain, South Africa, Sweden, Switzerland, Turkey, United Arab Emirates, United Kingdom, United States of America, Vietnam.

Countries which have concluded agreements on the exemption of visa requirements for holders of diplomatic or official or service/special passports with Thailand and permitted to stay for a period of not exceeding 30 and 90 days: Cambodia, China, Laos, Mongolia, Myanmar, Oman, Vietnam, Argentina, Luxembourg, Austria, Malaysia, Belgium, Mexico, Bhutan, The Netherlands, Brazil, Nepal, Chile, Peru, Costa Rica, The Philippines, Croatia, Poland, Czech Republic, Romania,
Welcome desk and Transfer from the Bangkok International Airport at “Suvarnabhumi”

With the approval of the Bangkok International Airport Authority, the Local Organizing Committee has arranged with UMEC to have and to manage a welcome desk at the Arrival Hall of the Suvarnabhumi Bangkok International Airport. The WASM2007 welcome desks are located on level 2 in the international arrival hall after you have collected you baggage. UMEC also provided shuttle Mini Van for up to 6 passengers at 1,400 Bahts per/van, and a limousine at 2,400 Bahts per car. Reservations are required at [http://www.umec.co.th/eng/downloads.php](http://www.umec.co.th/eng/downloads.php) or umec2003@hotmail.com In addition, hotel and airport limousines, shuttle bus services and taxi are readily available.
Congress Hotels, maps and contact persons

**Sofitel Central Plaza Bangkok Hotel** is located at 1695 Phaholyothin Road, Chatuchak, Bangkok 10900. For further information please visit the hotel website at [http://www.centralhotelsresorts.com](http://www.centralhotelsresorts.com)

Please contact Mr. Disapong Weerayuth, the Convention Service Manager at disapongwe@chr.co.th.

The Sofitel limousine costs 1,400 Baht per car (max. 3 people), one way.

**Siam City Hotel** is located at 477 Sri Ayuthaya Road, Phayathai, Bangkok 10400. 7 kilometers from congress venue, 25 minutes to the Congress venue by monorail sky-train and subway system, 30 to 40 minutes by taxi or hotel limousine during peak hours. For further information please visit the hotel website at [http://www.siamhotels.com](http://www.siamhotels.com)

Please contact Ms. Pranee Nikornwattana, Senior Sales Manager at pranee@siamhotels.com

**Chao Phaya Park Hotel** is located at 247 Rachadapisek road, Dindaeng, Bangkok 10400, a block or 1 kilometer away, 10 to 15 minute to the Congress venue by underground subway system or taxi. For further information please visit the hotel website at [http://www.chaophyapark.com](http://www.chaophyapark.com)

Please contact Mrs. Kaniththa Thapanakul, Senior Sales Manager at Kaniththa@chaophyapark.com.

The limousine costs 750 Baht per car (max. 3 people).

**The Traveler Hotel** is located at 255/19 Rachadapisek road, Dindaeng, Bangkok 10400. A budget class small hotel with coffee shop, restaurant and internet service located a block or 1 kilometer away, 10 to 15 minute to the Congress venue by underground subway system or taxi. For further information visit the hotel a website at [http://www.travellers-hotel.com](http://www.travellers-hotel.com)

Please contact Mr. Torkul Ronqratana, Marketing Executive, at thai09@hotmail.com

Map of city center

![Map of city center](image-url)
PRACTICAL INFORMATION

Banks
Banks are open from 8:30 to 15:30 from Monday to Friday. A bank with full banking facilities is located in the front part of the Central Plaza Department stores and Shopping Complex. The main office of the Siam Commercial Bank Plc is located at the SCB Park just a block away from the Sofitel Hotel. Automatic cash dispensers are widely available. Major credit cards are accepted in most hotels, shops, restaurants and café’s.

Child care
Please contact the Congress staff at the Welcome and Registration Desks near the entrance of the Vibhavadee Ballroom on the Lobby level. The Sofitel Central Plaza also has child care services, contact the hotel reception for prior arrangement.
Coffee, Tea and Refreshment Breaks
Coffee, Tea and Refreshment will be served for the registered congress participants and accompanying persons with the Congress Badge in the Foyer area in front of the Vibhavadee Ballrooms and in front of meeting rooms on the Mezzanine Floor.

Saturday 3rd February (For course participants) 10:00 – 10:30 and 14:30 – 15:00
Sunday 4th February (For course participants) 10:00 – 10:30 only
Monday 5th February 10:45 – 11:00 and 16:30 – 17:00
and during the poster session
Tuesday 6th February 10:45 – 11:00
Wednesday 7th February 10:45 – 11:00 and 16:30 – 17:00
Thursday 8th February 10:45 – 11:00 only
and during the poster session

Copying
Copy machine and services are available at the Registration area near the entrance of the Vibhavadee Ballroom on the Lobby level. Copy and Print Shops are also located in the Hotel Business center, and in the Central Plaza department stores and Shopping Complex.

Credit cards
All major credit cards are in used in Thailand. At the registration desks, although we would prefer that you pay in cash, you can also use VISA and MASTER card.

Lunch, Lunch Box and Food Selection during the Congress
During the congress, from Monday 5th February to Thursday 8th February 2007, Lunch will be served to registered congress participants, accompanying persons, invited guests, congress staff and volunteer students between 12:45 and 14:15. The lunch box will include either Thai or Chinese or Japanese or Western food, or vegetarian selections. All food selections during the congress will be prepared to be compatible with Muslim standard food preparation. The lunch box, soft drinks and drinking water will be distributed in the Satellite Luncheon lecture or symposium rooms, and in the Foyer area of the Vibhavadee Ballroom, and on the Mezzanine Floor. Your badge is your lunch ticket.

Restaurants
There are many excellent restaurants inside the Sofitel Central Plaza Hotel including at least 5 choices of cousins, Thai, Chinese, Vietnamese, Japanese and Italian. The Chatuchak Café opens round the clock has excellent multi-national buffet lunch and dinner, as well as small dishes, coffee, teas and bakery. In addition, there are many restaurants, big and small in the food court at the nearby Central Department Store Shopping Complex, just a short walk across the car parking lot from the Mezzanine floor. Information about choices of fine dining and restaurants in and around Bangkok areas will be found in a small booklet together with maps in your congress bag or available at the congress.

Shopping
Shopping is a pleasure when a major mall is right next door to the Sofitel Central Plaza Hotel, the congress venue. The Central plaza Complex houses one of Central Department Stores, Thailand leading premium retail outlet together with countless boutiques, shops and specialty stores. Open from 10.00 to 21.00. The congress venue is also next to the Chatuchak week-end flea markets, one of the amazing, world famous and largest selections of items and goodies at down to earth prices. Open from 6.00 to 18.00.
CONGRESS SOCIAL EVENTS

Welcome reception and Dinner with entertainment
Sunday 4th February 2007, 17:00 – 21:00 in Vibhavadee Ballroom on the lobby level, all registered participants, accompanying persons, exhibitors and invited guests are welcome to the reception and buffet dinner with Thai cultural performance and international music. Dress code: lounge suit or evening dress.

Garden Party
Monday 5th February 2007, 19:30 – 24:00 in the Garden and around the Pool at Lower Lobby Level (below the Lobby Level). All registered participants, accompanying persons, exhibitors and invited guests are invited to dinner, music and dancing. The dress code will be “Smart Casual”. There will also be a WASM Karaoke Singing Contest. Please register for singing in the Contest at the WASM desk (F1) in the Foyer Area in front of the registration area on Sunday 4th February between 14:00 – 15:00 and also at the Party before the Contest starts.

International Buffet Dinner Cruise along the Chao Phaya River with music and dance (Optional) US$ 50 per person including transfer to the Riverside Hotel Pier and return, soft drink and a glass of wine. Please reserve and purchase your ticket at the registration desk before noon on Wednesday 7th. Buses leave from in front of the Lobby of Sofitel Central Plaza Hotel at 18:45 on Wednesday 7th February 2007.

Farewell Party and Introduction to 3rd World Congress of WASM2009 in Brazil
Thursday 8th February 2007, 18:30 – 21:00 in the Vibhavadee Ballroom B, lobby level.
City Sight-seeing tours
Half-day or full-day City Sight-seeing tour and many other guided tours in Thailand with English speaking guides are organized for the participants of the 2nd WASM 2007 by UMEC, the Congress Organizer. Before the congress, you can contact UMEC for more information and to make arrangement for the reservation at http://www.umec.co.th/eng/downloads.php
At the congress, UMEC has a booth located at F3 near the registration desk where you can get all necessary details. Here are some examples:

E 1. TEMPLES OF BANGKOK AND KLONG TOURS 08:00-12:00 AM
Visit of Wat Po, the temple of the Reclining Buddha and also the biggest and oldest temple of Bangkok, visit Wat Arun, the temple of Dawn and the symbolic centre of the old capital Thonburi. Both temples are situated along the Chao Phraya River. By boat on the klongs (canals) you discover the daily life of the Thai people as it was 100 years ago. You also pass by the Royal Barge Museum.
Price net p.p. 1,400.- baht (min. 2 pax) This price inclusive of English or German speaking guide, Drinking bottled, water & cold towels, and travel accident insurance.

E 2. FLOATING MARKET 07:00 AM -05:00 PM
You leave busy Bangkok for a visit of the famous Floating Market of Damnoen Saduak. Visit of a coconut farm, the Chedi of Nakorn Pathom and the “Rose Garden” for a delicious Thai lunch. The day ends with a marvelous presentation of the traditional Thai way of life in the open air theatre of the Rose Garden.
Price net p.p. 1,700.- baht (min. 4 pax) This price inclusive of English or German speaking guide, Drinking bottled water & cold towels, Thai lunch and Travel accident insurance.
E 3. ROYAL PALACE 08:00-12:00 AM
The Royal Palace is situated in the Ratanakosin area, built in different styles and built around the Emerald Buddha temple, the spiritual symbol of Thailand. The Royal Palace is no longer the actual residence of the royal family, but the visit is must for all people who come to Bangkok. During the excursion you also make a city tour through Ratchadamnoen, the royal boulevard of Bangkok.
*Dress code: long trousers or skirt till heels, shoulders covered and closed shoes.
*Price net p.p. 1,000.- baht (min. 2 pax) This price inclusive of English or German speaking guide, Drinking bottled water & cold towels, Admission Fee, Travel accident insurance.

E 4. PIMAN RESTAURANT THAI FOOD 07.00 - 10.00 PM
In a beautiful and nice teak wood house, you will get to know the Thai gastronomy, accompanied by a show of traditional music and dance.
*Price net p.p. 1,000.- baht. (min. 2 pax)
This price is inclusive of English or German speaking guide, Thai food and Travel accident insurance.

Pre- and Post-Congress Excursion tours
Umec also coordinates many pre- or post-congress excursion package tours around Thailand, for examples,
Package 1: Chiang Rai Package Tours: 3 days / 2 nights
Package 2: Samui Island: 3 days / 2 nights
Package 3: Krabi: 3 days / 2 nights
Package 4: Siem Reap/Angkor Wat: 3 days / 2 nights
Package 5: Luang Prabang, Lao: 3 Days / 2 Nights
Package 6: Guilin, Southern part of China, 4 Days/ 3 Nights

Contact UMEC at the congress booth F3 near the registration desk on the Lobby level (1st Floor) of the Sofitel Central Plaza Hotel or the address below:
UMEC (Unisource Marketing & Engineering Co., Ltd.)
184/34 Tiwanon 43, Tiwanon Road, Nonthaburi 11000 Thailand
Telephone + 662-951-1831; Fax + 662-951-1832
Email: umec2003@hotmail.com Website: www.umec.co.th or http://www.umec.co.th/eng/downloads.php
Marketing Manager and Contact Person: Ms Nattamon Inkham
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- Medical Council of Thailand
- Ministry of Public Health, Royal Thai Government
- Bangkok Metropolitan Administration
- Tourism Authority of Thailand
- Airport Authority of Thailand and the Bangkok International Airport, Suvarnabhumi
- Sofitel Central Plaza Hotel
- Siam City Hotel
- Chao Phaya Park Hotel
- Travelers Hotel

Topics:
Advances in Sedative Hypnotics
Alcohol drugs and sleep
Animal models of sleep and its disorders
Basic science of sleep disorders
The brain and sleep
Circadian rhythm regulation and disorders
Dreaming and dream disorders
Epidemiology of sleep disorders
Epilepsy in sleep
Genetics of sleep disorders
Insomnia and hypersomnia
Lifestyles and sleep
Melatonin and sleep
Movement abnormalities of sleep
Narcolepsy
New technologies for studying sleep
New treatments of old disorders
Pain and sleep
Parasomnias
Pediatric sleep disorders
Periodic limb movements
Pharmacology of sleep and sleep disorders
Recording and analysis of sleep
REM-sleep behavior disorder
Respiratory sleep disorders
Restless legs syndrome
Sleep and cognition
Sleep and cultures
Sleep and dentistry
Sleep and exercise
Sleep and the immune system
Sleep and tropical medicine
Sleep apnea in Asia
Sleep apnea and stroke
Sleep deprivation and its consequences
Sleep education
Sleep health care delivery
Sleep in children, adolescent and women
Sleep in medical disorders
Sleep in neurological disorders
Sleep in the elderly
Sleep-wake transition
Sleepy driving and road accident
Sudden death in sleep
Surgical Treatment of Sleep Disorders
Treatment of sleep disorders
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www.boehringer-ingelheim.com

You are cordially invited to visit our exhibition booth # P1 - 1st floor of the Central Plaza Hotel and to attend our Satellite Luncheon Symposium on Monday, February 05, 2007/ 12.45 h - 14.30 h!
Lunchtime Symposium
held during the 2nd WASM International Congress

Monday, February 5, 2007 | 12:45–14:15
Hall B, Sofitel Plaza Center
Bangkok, Thailand

Clinical Management of Restless Legs Syndrome

Chairmen:  
Manveer Bhatia, MD, New Delhi, India
Wayne Herling, MD, New Brunswick, NJ, USA

12:45–12:50  
Introduction

12:50–13:05  
Epidemiology of RLS
Manveer Bhatia, MD, New Delhi, India

13:05–13:20  
Diagnosing RLS
Deniz Kaynak, MD, Istanbul, Turkey

13:20–13:35  
RLS: Sleep, Mood, and Quality of Life
Wayne Herling, MD, New Brunswick, NJ, USA

13:35–13:50  
Dopaminergic Agonists in RLS:
Initiating Treatment and Long Term Results
Luigi Ferini-Strambi, MD, Milan, Italy

13:50–14:05  
Discussion

14:05–14:15  
Conclusion

This symposium is supported by an unrestricted educational grant from Boehringer Ingelheim International GmbH
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www.weinmann.de

Asia-Pacific
Weinmann (ASIA-PACIFIC) Co. Ltd. - Bangkok
T: +66-(0)2 763 6700
E: info@weinmann-asia.com
www.weinmann-asia.com

Thailand
Weinmann Medical Technology Co. Ltd. - Bangkok
T: +66-(0)2 763 6777
E: info@weinmann-th.com
www.weinmann-asia.com

China
Weinmann Beijing Office - Beijing
T: +86 10 65 885 137
M: +86 139 1138 9265
E: info@weinmann-cn.com
www.weinmann-cn.com

Australia
Weinmann (Australia) Pty. Ltd. - Melbourne
T: +61-(0)3 9543 9197
E: info@weinmann-au.com
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You are cordially invited to attend Weinmann Luncheon Workshops and demonstration at the Kambhangbejara Room III, Mezzanine Floor, on Saturday 3rd (AM & PM) and Sunday 4th (AM) and visit our Booth # P2 on the 1st Floor of the Sofitel Central Plaza Hotel and to attend our Satellite Luncheon Symposium on “Sleep Apnea and Muscle Control” on Tuesday 6th February 2007, 12:45 – 14:15, Vibhavadee Ballroom B, on the 1st Floor, Sofitel Central Plaza Hotel.
Pain & the Sensory Symptoms of RLS

WASM 2nd World Congress
Wednesday, February 7, 2007
Luncheon Symposium, 12:45-14:30
Bangkok Convention Center

Chair: Richard P. Allen, PhD
Speakers: Wayne Hening, MD, PhD
         Claudia Trenkwalder, MD
         Christopher J. Earley, MD, PhD
         Clete A. Kushida, MD, PhD

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PAIN & THE SENSORY SYMPTOMS OF RLS

WASM 2nd World Congress
Wednesday, February 7, 2007
Luncheon Symposium, 12:45 – 14:30

Chair:
Richard P. Allen, PhD

Speakers:
Wayne Heneg, MD, PhD
Claudia Trenkwalder, MD
Christopher J. Earley, MD, PhD
Clete A. Kushida, MD, PhD, RPSGT

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You are invited to visit us at Booth #G1 on the 1st Floor of the Sofitel Central Plaza Hotel.
FOR THE TREATMENT OF CATAPLEXY IN ADULT WITH NARCOLEPSY

XYREM (sodium oxybate) oral solution

([Image of woman's face split down the middle, one side showing normal facial expression, the other showing a distorted, sleepy expression])

NYXENT is an oral solution containing sodium oxybate. NYXENT is a clear to slightly opalescent solution, reddish. Treatment of cataplexy in adult patients with narcolepsy. Nyxent is a non-opioid hypnotic, a short-acting, oral solution containing sodium oxybate. NYXENT is indicated for the treatment of cataplexy in adult patients with narcolepsy.

In a well-controlled clinical trial, the efficacy of NYXENT was demonstrated in a placebo-controlled, double-blind, randomized, parallel-group study. Patients were randomized to receive either NYXENT or placebo once nightly for a period of 8 weeks.

The primary endpoint was the proportion of patients achieving a reduction in cataplexy frequency of at least 50% from baseline during the treatment period. Secondary endpoints included cataplexy severity, patient and caregiver quality of life, and safety and tolerability.

NYXENT was found to be significantly more effective than placebo in reducing the frequency of cataplexy attacks, with a reduction of 50% or more observed in a higher proportion of patients treated with NYXENT compared to placebo. NYXENT was well tolerated, with a similar safety profile to placebo. Adverse events reported were mild to moderate in severity and were primarily somnolence, nightmares, and vivid dreams.

Please refer to the label for complete prescribing information.

For more information, visit: NYXENT.com.

[Image of the NYXENT logo, website: NYXENT.com]
You are cordially invited to visit our exhibition at Booth # S1 on the 1st Floor of the Sofitel Central Plaza Hotel, and attend our Luncheon Satellite Symposium on “Narcolepsy Moving Forward” on Monday 5th February 2007 at the Vibhavadee Ballroom C on the 1st Floor of the Sofitel Central Plaza Hotel.
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You are cordially invited to visit us at Booth# S2 on 1st Floor of Sofitel Central Plaza Hotel
Elsevier Award:
Two Scientific Awards for papers published in Sleep Medicine.

Antonio Culebras, MD
Chair, WASM Awards Committee
Syracuse, NY, 13210 USA

Under the auspices of the World Association of Sleep Medicine, Elsevier has established two scientific awards for young basic and clinical sleep specialists in honor of Christian Guilleminault and Elio Lugaresi, respectively. The awards are a tribute to Dr. Guilleminault’s and Dr. Lugaresi’s contributions to establish the field of Sleep Medicine, its journal and its Society.

The Award
• A certificate designating the recipient of the Christian Guilleminault or Elio Lugaresi Award
• A cheque for US $ 1,000 to be presented at the 2nd International Congress of the World Association of Sleep Medicine in Bangkok, Thailand, 4-8 February 2007.

Eligibility - The applicant should be:
• A young investigator within five years or less of post-training at the time of submission.
• Candidates who qualify and who would like to be considered should indicate so and include a separate letter of eligibility to the Editor-in-Chief at the time of submission.

Criteria
• The manuscripts will be judged on the basis of scientific merit, timeliness and relevance to a worldview of the practice of sleep medicine.
• Manuscripts co-authored by a member of the WASM Executive Committee will not be eligible for either of the two awards. All manuscripts will be the property of Sleep Medicine.
• Manuscripts submitted from 1 July 2005 will be eligible for consideration.

The Christian Guilleminault WASM 2007 Award for Sleep Research:
Dr. Nese Dursunoglu, MD (Turkey).
Effects of CPAP on left ventricular structure and myocardial performance index in male patients with obstructive sleep apnoea.
Co-authored with Dursun Dursunglu, Sibel Ozkurt, Omur Kuru, Sukru Gur.

The Elio Lugaresi WASM 2007 Award for Sleep Medicine:
Dr. Sunad Rangarajan, MD, DNB (India).
Restless legs syndrome in Indian patients having iron deficiency anemia in a tertiary care hospital
Co-authored with Albert D’Souza
SCIENTIFIC PROGRAM

Saturday 3 February 2007
9:00 – 12:00

PRECONGRESS TRAINING COURSES AND WORKSHOPS

Venue: Meeting Rooms, Mezzanine Floor, Sofitel Central Plaza Hotel, Ladprao, Bangkok

Training Course TC#1-1: Polysomnogram (PSG) Scoring Part I (Basic Level)
Venue: Kambhangbejara II Room, Mezzanine Level
Faculty Members: Glenn Roldan, RPSGT; Sharon Keenan; Dalva Poyares
www.n2sleep.com; www.globalsleepinstitute.com; www.n2sleepdiagnostics.com
Description: This course will cover the basics of recording and scoring polysomnographic tracings. Electroencephalographic waveforms will be identified. We will review the standardized technique for categorizing “stages of sleep” from these waveforms and concomitant eye movement and muscle activity. The rules for central nervous system arousal scoring will also be explained. Sleep-related respiratory events, including obstructive apnea, mixed apnea, central apnea, Cheyne-Stokes respiration, hypopnea, respiratory effort related arousals, and snoring will be identified. The rules for scoring periodic leg movements will be explained. Finally, we will review case material to provide attendees practice and experience scoring real data. At the end of the course the attendee should be able to: 1) score relatively non-ambiguous sleep stages, 2) recognized straightforward respiratory and leg movement events, and 3) detect pathophysiologies associated with several major sleep disorders.

Training Course TC#2: Difficult Cases: including CAP, PLMD, Video examples Classification and Scoring System (Moved to Sunday AM)

Training Course TC#3: Narcolepsy: Pathophysiology, Diagnosis, Treatment and Management (Moved to and combined with TC#20 on Sunday AM: Use of Stimulants in Sleep Medicine)

Training Course TC#4-1: Dental Sleep Medicine (cancelled)

Training Course TC#5: Parasomnias: Diagnostic Challenges, Treatment and Management
Venue: Ladprao A Room, Mezzanine Level
Faculty Members:
Professor Dr. Carlos H. Schenck, M.D., Minnesota Regional Sleep Disorders Center (MRSDC), and Department of Psychiatry at the Hennepin County Medical Center, University of Minnesota Medical School, Minneapolis, USA
Professor Dr. Nana (Naoko) Tachibana, MD, PhD, Department of Brain Pathophysiology Human Brain Research Center, Kyoto University Graduate School of Medicine, Kyoto, Japan, and Director, Sleep Disorders Center, Kansai Electric Power Company Hospital, 2-1–7
Description:
This course will describe and discuss various symptoms of Parasomnias and REM Behavior Disorders (RBD), their diagnosis, treatment and management of patients. Video of RBD.

Training Course TC#6: Diagnosis of Upper Airways Abnormalities (Cancelled)

Training Course TC#7: Clinical Practice of Sleep Medicine: What is happening in Bangkok and other places in the world? (Cancelled)

Training Course TC#8-1: Pediatric Sleep Medicine
Venue: Kambhangbejara I Room, Mezzanine Level
Faculty Members: Oliviero Bruni, Rosa Peraita Adrados, and Leila Kheirandish-Gozal
Description:
Polysomnography and sleep scoring in children
Interpreting sleep structure alterations in infants and children implies the knowledge of the developmental changes of sleep-wake pattern and sleep architecture and the maturation of the electroencephalogram.
Therefore it is very important to know how to interpret the polysomnographic (PSG) patterns, how to score sleep events and which techniques should be applied in order to obtain reliable PSG data in children.
The aim of this course is to give an overview of the PSG techniques and of the evaluation of the PSG data in children and to define criteria for scoring sleep stages, respiratory events, autonomic nervous system events, EEG arousal or abnormal movements during sleep.

- Introduction on sleep development. Oliviero Bruni
- Polysomnography of Children's Sleep: Technique, evaluation and clinical applications. Rosa Peraita Adrados
- Basic scoring of sleep in children. Leila Kheirandish-Gozal

New Special Course: The Basic Science of Sleep and Dreaming Part I:
A course conducted by Professor Dr. J. Allan Hobson, M.D. (Register on-site)
Venue: Phaholyothin II Room, Mezzanine level
Faculty Member: J Allan Hobson, M.D.
J. Allan Hobson is Professor of Psychiatry at Harvard Medical School, Boston, Massachusetts. He was born in Hartford, Connecticut on June 3, 1933 and obtained an AB degree from Wesleyan University in 1955, followed by his MD from Harvard Medical School in 1959. Between 1959 and 1960 he served his internship in medicine at Bellevue Hospital, New York and from 1960 to 1961 and 1964 to 1966, he was a resident in Psychiatry at Massachusetts Mental Health Center, Boston. During the academic year 1963-1964, Dr. Hobson was Special Fellow of the National Institute of Mental Health, Department of Physiology at the University of Lyon, France. His academic and hospital appointments include:

Professor Hobson has held many visiting appointments, most recently as an Invited Lecturer at the Dipartimento di Psicologia, Universita’ di Bologna, Italy (900th Anniversary Celebration), 1988. His successful career has brought Dr. Hobson many honors and awards including admission to the Boylston Medical Society and the Benjamin Rush Gold Medal for Best Scientific Exhibit, American Psychiatrist Association, 1978. He was the recipient of the 1998 Distinguished Scientist Award of the Sleep Research Society. In addition to numerous committee assignments at Harvard Medical School, Dr. Hobson has participated in numerous national and regional medical committees, and served on the editorial boards of many medical journals. He has held
many consulting appointments including Consultant in Psychiatry for the Massachusetts Rehabilitation Commission since 1965.

His major research interests are the neurophysiological basis of the mind and behavior; sleep and dreaming; and the history of neurology and psychiatry. He has contributed numerous articles to scientific journals and chapters to medical textbooks, and is the author or co-author of many books and monographs, including *The Dreaming Brain*, published by Basic Books in 1988 and *Sleep*, published by the Scientific American Library in 1989. Dr. Hobson’s most recent work has focused on the cognitive features and benefits of sleep. The results and concepts of this new work are reported in *The Chemistry of Conscious States* (Little Brown, 1994) and *Consciousness* (Scientific American Library, 1998), *Dreaming as Delirium* (The MIT Press, 1999), *The Dream Drugstore* (MIT Press, 2001), *Out of Its Mind: Psychiatry in Crisis* ( Perseus Books, 2001), *Dreaming: An Introduction to Sleep Science* (Oxford, 2002), *13 Dreams Freud Never Had* (Pi Press, 2005) and *Angels to Neurones* (Mattioli 1885, 2005).

Of particular relevance to this project is his role as creator, director and producer of Dreamstage: An Experimental Portrait of the Dreaming Brain, which was shown at the Carpenter Center for the Visual Arts in May, 1977, toured nationally from 1980-1982, and in Bordeaux, France 1984. Dr. Hobson has advised science museums with the Society for Neuroscience and was especially influential in the design and funding of The Human Brain Exhibit at Boston’s Museum of Science in 1986. To celebrate the 50 years of sleep research since Aserinsky’s 1953 discovery of REM, he produced the DVD, Dreamstage 2003, 5000 copies of which were given to colleagues at the June 2003 meeting of the Sleep Research Society in Chicago.

Description:

1. Pre Scientific Theories Neurobiology and Psychology
2. Early Sleep Lab Findings
3. Development and Evolution
4. Animal Models
5. Reciprocal Interaction Model

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**Saturday 3 February 2007**

**12:15 – 13:30**

**Luncheon Workshop and Demonstration by Weinmann S.E. Asia**
Venue: Kambhangbejara III Room, Mezzanine Level

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**Saturday 3 February 2007**

**13:30 – 16:30**

**PRECONGRESS TRAINING COURSES AND WORKSHOPS**

**Venue:** Meeting Rooms, Mezzanine Floor, Sofitel Central Plaza Hotel, Ladprao, Bangkok

**Training Course TC#1-2: Polysomnogram (PSG) Scoring Part II (Intermediate Level)**
Venue: Kambhangbejara II Room, Mezzanine Level

**Faculty Members:** Glenn Roldan, RPSGT; Sharon Keenan; Dalva Poyares

[www.n2sleep.com](http://www.n2sleep.com); [www.globalsleepinstitute.com](http://www.globalsleepinstitute.com); [www.n2sleepdiagnostics.com](http://www.n2sleepdiagnostics.com)

**Description:**
This course will go beyond the basics of recording and scoring polysomnographic tracings. As in the basic course, electroencephalographic waveforms will be identified, the standardized technique for sleep stage scoring will be reviewed, arousals scoring will be explained, respiratory events recognition will be sharpened, and leg movement scoring will be clarified. More difficult case material than used in the basic course will be used. Recording artifact, signal erosion, and ambiguous presentations will be introduced to challenge and sharpen the attendee’s skill set. Protocol for conducting multiple sleep latency
tests (MSLT), maintenance of wakefulness test (MWT), and suggested immobilization test (SIT) will be presented. At the end of the course the attendee should be able to: 1) score relatively ambiguous sleep stages, 2) recognized the wide spectrum of respiratory and leg movement events, and 3) explain how conduct MSLT, MWT, and SIT procedures.

**Training Course TC# 9: Diagnosis and Treatment of Restless Legs Syndrome**  
**Venue:** Rangsit Room, Mezzanine level  
**Faculty Members:**  
Richard P Allen, PhD, DABSM,  
Johns Hopkins University School of Medicine, Baltimore MD USA  
Manvir Bhatia, MD  
Sir Ganga Ram Hospital, New Delhi, India  
Diego Garcia-Borreguero, MD  
Sleep Research Institute, Madrid, Spain  
Christopher Earley, MD PhD  
Johns Hopkins University School of Medicine, Baltimore MD USA  
**Description:**  
Restless legs Syndrome: advances in diagnosis and treatment Problems of differential diagnosis and long term management given problems of augmentation  
While the basic diagnostic criteria for RLS have now been well developed and generally accepted there remain some considerable problems with differential diagnosis particularly for patients who have various pain conditions involving the legs. Two diagnostic tools are now available. A structured diagnostic interview and a patient completed diagnostic interview. These have all been carefully evaluated. They will be reviewed here and some basic familiarization provided for these tools. There is also a telephone diagnostic interview tool but the training to use that requires more time than is available in this session.  
Treatment similarly has been focused primarily on the short-term benefits principally of dopaminergic treatment. This course will focus more on the longer term treatment that is expected for most RLS patients. The particular problem of identification and treatment of augmentation will be reviewed along with the new scales for assessing augmentation. The treatment concepts will focus both on the standard dopaminergic treatments and on the appropriate use of opioids and gabapentin.  
**Goals:**  
The participants will learn to  
1. Correctly diagnosis RLS with a full understanding of the differential diagnosis  
2. Use the structured diagnostic interview for RLS diagnosis  
3. Use the patient completed diagnostic questionnaire  
4. Understand the role of various treatment options for long-term treatment of RLS  
5. Identify RLS augmentation and evaluate it using the Augmentation severity rating scale  
6. Manage RLS augmentation using the full range of available medications.

**Training Course TC# 10: Alternatives to Polysomnography: Meeting the Diagnostic Needs of the Masses**  
**Venue:** Ladprao A Room, Mezzanine level  
**Faculty Members:**  
Professor Dr. M.R. Littner, MD, VA Greater Los Angeles Healthcare System (VA GLAHS)  
and David Geffen School of Medicine at UCLA, Los Angeles, CA, USA
Professor Dr. Thomas Penzel, Ph.D. Research Director, Sleep Center, Department of Cardiology, Charite University Hospital Berlin, Germany
Professor Dr. Max Hirshkowitz., Ph.D., Sleep Disorders and Research Center, Michael E. DeBakey Veterans Affairs Medical Center, Houston, Texas, US
Professor Dr. J Allan Hobson, M.D., Harvard Medical School, Boston, MA, USA

Description:
This course discuss the standard of practice in Sleep medicine for assessment and diagnosis of sleep disorders, and other alternatives to Polysomnography to meet the diagnostic needs of the masses of population. Professor Hobson will discuss the use of “Ambulatory Night Cap”

Training Course TC# 4-2: Dental Sleep Medicine (Cancelled)

Training Course TC# 11: Circadian Rhythms: Understanding Basic Mechanisms and Treating Rhythm Disorders
Venue: Ladprao B Room, Mezzanine level
Faculty Members: Phyllis Zee, Sonia Ancoli-Israel, Robert Thomas
Phyllis C Zee, MD, PhD,
Professor and Director Sleep Disorders Center, Northwestern University, Chicago, Illinois, USA,
Sonia Ancoli-Israel, Ph.D., Professor of Psychiatry, University of California San Diego
Director, Sleep Disorders Clinic, VASDHS
3350 La Jolla Village Drive, San Diego, Ca 92161 USA
Description:
This course will provide a review of recent advances in our understanding of the pathophysiology, diagnosis and treatment of circadian rhythm sleep disorders. Topics include circadian sleep phase disorders (advanced sleep phase, delayed sleep phase), non entrained circadian sleep/wake cycle. Irregular sleep wake/cycle disorders and shift work sleep disorder. Circadian dysregulation in aging and dementia will also be discussed

Training Course TC# 12: Sleep Surgery (Cancelled)

Training Course TC#13: Social Issues in Sleep Medicine: Driving, Employment and Disability (Cancelled)

Training Course TC#8-2: Pediatric Sleep Medicine
Venue: Kambhangbejara I Room, Mezzanine Level
Faculty Members: Narong Simakajornboon, Nana Tachibana, Jun Kohyama
Description:
Respiratory Sleep Disturbances in infants and children
Respiratory disturbances manifest itself in a variety of ways both clinically and with PSG studies and the knowledge of the development of respiratory control are important for defining the boundaries of normality in young children. The diagnosis and management of respiratory disturbances in young children should not rely solely on parental reporting, clinical examination, or PSG assessments alone, but rather be based on a combination of factors gathered from these forms of assessment and also evaluate the role of obesity and metabolic syndrome. In this perspective the simplified screening technique represented by oxymetry could lead to misdiagnosis and incorrect treatment. Therefore the aim of this course
will be to give a picture of the development of respiratory control and to define the role of oxymetry in the diagnosis of respiratory disturbances and then to evaluate the relative contribution of obesity in the occurrence of sleep disordered breathing.

- Development of respiratory control and apnea of prematurity. Narong Simakajornboon.
- How to maximize the usage of pulse oxymetry for suspecting sleep-disordered breathing in children with various comorbid disorders. Nana Tachibana
- Sleep loss and obesity in children. Jun Kohyama

**New Special Course: The Basic Science of Sleep and Dreaming Part II:**
A course conducted by Professor Dr. J. Allan Hobson, M.D. (Register on-site)

**Venue:** Phaholyothin II Room, Mezzanine level

**Faculty Member: J. Allan Hobson, M.D.**
J. Allan Hobson is Professor of Psychiatry at Harvard Medical School, Boston, Massachusetts. He was born in Hartford, Connecticut on June 3, 1933 and obtained an AB degree from Wesleyan University in 1955, followed by his MD from Harvard Medical School in 1959. Between 1959 and 1960 he served his internship in medicine at Bellevue Hospital, New York and from 1960 to 1961 and 1964 to 1966, he was a resident in Psychiatry at Massachusetts Mental Health Center, Boston. During the academic year 1963-1964, Dr. Hobson was Special Fellow of the National Institute of Mental Health, Department of Physiology at the University of Lyon, France. His academic and hospital appointments include:

Professor Hobson has held many visiting appointments, most recently as an Invited Lecturer at the Dipartimento di Psicologia, Universita' di Bologna, Italy (900th Anniversary Celebration), 1988. His successful career has brought Dr. Hobson many honors and awards including admission to the Boylston Medical Society and the Benjamin Rush Gold Medal for Best Scientific Exhibit, American Psychiatrist Association, 1978. He was the recipient of the 1998 Distinguished Scientist Award of the Sleep Research Society. In addition to numerous committee assignments at Harvard Medical School, Dr. Hobson has participated in numerous national and regional medical committees, and served on the editorial boards of many medical journals. He has held many consulting appointments including Consultant in Psychiatry for the Massachusetts Rehabilitation Commission since 1965.

His major research interests are the neurophysiological basis of the mind and behavior; sleep and dreaming; and the history of neurology and psychiatry. He has contributed numerous articles to scientific journals and chapters to medical textbooks, and is the author or co-author of many books and monographs, including *The Dreaming Brain*, published by Basic Books in 1988 and *Sleep*, published by the Scientific American Library in 1989. Dr. Hobson’s most recent work has focused on the cognitive features and benefits of sleep. The results and concepts of this new work are reported in *The Chemistry of Conscious States* (Little Brown, 1994) and *Consciousness* (Scientific American Library, 1998), *Dreaming as Delirium* (The MIT Press, 1999), *The Dream Drugstore* (MIT Press, 2001), *Out of Its Mind: Psychiatry in Crisis* (Perseus Books, 2001), *Dreaming: An Introduction to Sleep Science* (Oxford, 2002), *13 Dreams Freud Never Had* (Pi Press, 2005) and *Angels to Neurons* (Mattioli 1885, 2005).

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**Description:**
- Activation Synthesis Hypothesis of Dreaming
- Testing the Models
- Sleep Disorder-Pathophysiology
- Brain Imaging and Lesion Studies in Humans
- Functional Hypotheses of Sleep & Dreaming
PRECONGRESS TRAINING COURSES AND WORKSHOPS

Venue: Meeting Rooms, Mezzanine Floor, Sofitel Central Plaza Hotel, Ladprao, Bangkok

Training Course TC#1-3: Polysomnogram (PSG) Scoring Part III (Advanced Level)
Venue: Kambhangbejara II Room, Mezzanine Level
Faculty Members: Glenn Roldan, RPSGT; Sharon Keenan; Dalva Poyares
www.n2sleep.com; www.globalsleepinstitute.com;  www.n2sleepdiagnostics.com
Description:
This course will address more advanced scoring and interpretation of polysomnographic data. It will include recognition of a broad spectrum of movement events associated with Parasomnias and other sleep disorders (for example, bruxism, body rocking, and REM sleep behavior disorder). Considerations for differentiating Parasomnias from seizure disorders will be discussed, as well as, the electroencephalographic correlates of seizures. We will review detection and the appropriate responses one should make in response to various EKG abnormalities, with emphasis on the potentially fatal arrhythmias. Finally, cyclic alternating pattern (CAP) scoring will be elucidated and what it tells us about sleep will be appraised. At the end of the course the attendee should be able to: 1) identify a variety of movements and artifacts, 2) distinguish potentially fatal cardiac arrhythmias and electroencephalographic activity associated with seizures, and 3) recognize CAP and appreciated what it can tell us about sleep.

Training Course TC#2: Difficult Cases: including CAP, PLMD, Video examples
Classification and Scoring System (Moved from Saturday AM)
Venue: Kambhangbejara I Room, Mezzanine Level
Faculty Members:
Parrino L. (Parma), Ferri R. (Troina), Hogl B. (Innsbruck), Nobili L. (Milano)
Time per presentation: 30 minutes
Description
CAP (cyclic alternating pattern) represents an ultraslow oscillation which arranges the appearance of EEG arousal events within a periodicity of 20-40 seconds. The occurrence of CAP sequences shows a peak in the descending and ascending slopes of sleep cycles and provides a framework that organizes the slow <1 Hz oscillation and the arousal rhythm during NREM sleep.
CAP sequences are organized in cycles, which are composed of a phase A (specific, repetitive and transient EEG pattern) and a phase B (interval between 2 consecutive A phases). Phase A of CAP is the EEG marker of cerebral activation, including cortical arousal, and it is a potential trigger of somatomotor activities. Phase B is an EEG indicator of rebound deactivation which induces somatomotor inhibition and becomes a potential limiting factor for the duration of any body movement during the NREM sleep period.
CAP A phases can be classified into three subtypes according to the amount of slow synchronisation and related autonomic symptoms. Subtypes A1 are mainly composed of phasic delta oscillation (< 1 Hz rhythms) with a small degree of autonomic activation, subtypes A3 express an increase of fast rhythms with voltage attenuation and strong
autonomic activation, while subtypes A2 represent a middle position between the opposite subtypes. The CAP A-phase acts as an “amplifier” through which the pathological events occur more easily, while the CAP B-phase exerts a “filter” action. The gating effects of phase A and phase B have been demonstrated in several sleep disturbances such as periodic limb movements disorder (PLMD), sleep bruxism, sleepwalking, and sleep disordered breathing. A close relationship between CAP and periodic limb movements during sleep can be observed also in patients with nocturnal frontal lobe epilepsy. For this disorder, the main therapeutic goal is to eliminate or reduce pathologic motor phenomena during sleep. However, even when behavioral disturbances are controlled, these patients may show persistence of excessive daytime sleepiness generally associated with high amounts of CAP rate (percentage of CAP time to NREM sleep time). Accordingly, effective treatment should also reduce the enhanced arousal instability as expressed by the pathological increments of CAP rate.

The PSG of CAP will be illustrated and it will be related to a variety of sleep related phenomena which will be illustrated through record samples and also video segments.

Training Course TC#14: Positive Pressure Therapies
Venue: Rangsit Room, Mezzanine level
Faculty Members:
Robert J. Thomas (HMFP - Pulmonary);
Eugene Baey
Description
Positive airway pressure (PAP) titration is a core sleep medicine and laboratory skill. Since the first description in the early 1980's, several variations on the theme have been developed, such as bilevel, automatic and adaptive forms. Although we have the standard of care for obstructive sleep apnea, there are a number of unsettled aspects of PAP therapy. For example, how quickly should the pressure be increased? Do expiratory pressure relief options really matter? What is the optimal end-point? Treatment of central sleep apnea is more difficult, but adaptive ventilation and CO2 modulation offer promise. This course will have a strong emphasis on practical application of PAP therapy, assessment and management of PAP failure, and polysomnogram review of simple and complicated clinical sleep-breathing disorders.

Outline: simplest. If there is somehow an option to do a live show - we can do that separately.
1. Phenotyping sleep apnea and phenotype-driven management - RT
2. Equipment talk and show - Eugene
3. Sample study review - RT
4. Plenty of time for discussion

Training Course TC#15: Current Treatments for Insomnia; Pharmacology and CBT
Venue: Ladprao A Room, Mezzanine level
Faculty Members: Charles Morin, PhD; Max Hirshkowitz, PhD; Pierre Philip, MD
Description
Insomnia; Current Treatments for and problems with insomnia; Pharmacology and CBT and problems of alertness with insomnia
This course will cover the two major treatment alternatives for insomnias: cognitive behavioral treatment and pharmaco-therapy. There will be a practical guidelines offered on how to do both therapies and how to combine. In addition consideration will be given to the
problems of safety resulting from decreased alertness and increased daytime sleepiness observed in many insomnia patients and as a complication of insomnia treatments. This is particularly an issue for traffic safety.

Training Course TC#16: Epidemiological Methods for Sleep Disorders; Special Focus on Genetic Epidemiology (Cancelled)

Training Course TC#17: Sleep and Epilepsy
Venue: Ladprao B Room, Mezzanine level
Faculty Members: Marco Zucconi, Rosalia Silvestri Hobson, Flavia Consens
Description
Nocturnal Frontal Lobe Epilepsy (NFLE) and differentiation from parasomnias (arousal disorders): contribution of video-polysomnography
Marco Zucconi,
Sleep Disorders Center, Dept of Neurology, H San Raffaele Institute, Milan, Italy

Nocturnal frontal lobe epilepsy (NFLE) is a well-known clinical entity and a distinct form of paroxysmal sleep-related disorders including a spectrum of presentations of presumed frontal lobe origin. NFLE is characterized by repetitive, often stereotyped, brief motor attacks arising during sleep, with hypermotor features (dystonic, dyskinetic), sometimes clonic and tonic components, general retain of awareness, starting during childhood and persisting during adult life. Both a genetic and a sporadic form have been described, without clinically significant differences. Video-polysomnography together with a careful clinical history is mandatory for the correct diagnosis, since the nocturnal episodes may be confused and misdiagnosed as parasomnias, nocturnal panic attacks or functional/hysterical episodes. Notwithstanding the amount of neurophysiological, clinical and genetic studies, and the careful nosographic delineation of the syndrome both in the International Classification of Sleep Disorders (ICSD) and in the new International League Against Epilepsy (ILAE) diagnostic scheme and classification of seizures and epileptic syndromes, some issues remain and need clarification to better delineate the epilepsy.

At present time minor events, (paroxysmal arousals, PA) and the more characteristic hypermotor behaviors (Nocturnal Paroxysmal Dystonia, NPD and Epileptic Nocturnal Wanderings, ENWs) are considered clinical aspects of the same epilepsy, (NFLE). However the epileptic origin of minor events and of PAs has not been definitely demonstrated by conventional sleep-EEG study and the differential diagnosis of NPD and ENWs with common parasomnias (sleep-walking and sleep terrors) still remain a frequent diagnostic challenge. Recently, by the employment of intracerebral recordings (Stereo-EEG) in drug resistant epileptic patients with NFLE, the relationship between minor events and PAs and epileptic discharges has been demonstrated. The sleep structure in NFLE is generally preserved, at least for the classic macrostructural parameters, whilst the analysis of sleep microstructure, in particular according the Cyclic Alternating Pattern (CAP) rules, reveal an increase in sleep instability with periodicity of motor attacks associated to the Phase A of the CAP cycle (often every 20second-2 minutes). In a subset of NFLE patients, the general complaints of poor sleep quality, daytime tiredness and sleepiness is correlated with the measure of sleep instability and fragmentation (CAP Rate), indicating the possible relation between sleep fragmentation, nocturnal motor seizures and daytime symptoms. Otherwise, in parasomnias (arousal disorders) the sleep macro- and microstructure is modified with increase in Slow Wave Sleep (SWS) activity, increase in “delta bursts” or
“hypersynchronous delta waves” and instability of NREM sleep, in particular of SWS, with increase in CAP rate and in A1 Phases of the CAP cycle.

Sustained neurophysiologic activation during sleep is likely the favourable condition for the onset of motor patterns which are already written in the brain codes (central pattern generators), but that require a certain degree of arousal activation (spontaneously or elicited by external or internal stimuli). Whether the outcome is a spontaneous movement, a motor parasomnia or a major/minor epileptic attacks depend on a number of different conditions such as age, sleep stage, delta power, motor chain epileptic activity and so on.

Training Course TC#18: Updates in Sleep Medicine/ Sleep Research, 2007
Venue: Horvang Room, Mezzanine level
Faculty Members: S. Chokroverty, Markku Partinen and Arthur Walters.
Description
Updates in Sleep Medicine/ Sleep Research 2007
S. Chokroverty’s topics will be the following:
1. Recent advances in REM sleep regulation with discussion of 3 models: McCarley-Hobson reciprocal interaction model; Boissard, Luppi,et al model of sublaterodorsal(SLD) Glutamatergic and Gabaergic mechanism; and the latest Lu, Saper model of flip-flop switch;
2. Recent advances in REM Behavior Disorder; and
3. Recent understanding of the Neurobiology of Narcolepsy

Topics by Markku Partinen will be the following:
"Sleep disorders and public health". He will discuss especially
a) New studies and theories on brain metabolism, lactate etc.
b) Insomnia issues
c) Relationships between obesity and sleep apnea
d) Lack of sleep and metabolic issues.

Arthur Walters will speak on "Sleep related movement disorders and Restless Legs Syndrome/Periodic Limb Movements".

Training Course TC#19: The Role of Complementary Medicine in the Treatment of Sleep Disorders (Cancelled)

Training Course TC#20: Narcolepsy: Pathophysiology, Diagnosis, Treatment and Management and Use of Medications/ Use of Stimulants in Sleep Medicine (Combined with TC#3: Narcolepsy)
Venue: Phaholyothin II Room, Mezzanine Level
Faculty Members: Jed Black, Christian Guilleminault, Guiseppe Plazzi, Michael Thorpy
Description
This course will present the latest information regarding the clinical features and diagnostic criteria for the various subtypes of narcolepsy. The pathophysiology, including biochemical abnormalities such as hypocretin deficiency, of narcolepsy will be discussed. The management of narcolepsy is changing with the availability of new medications for the treatment of excessive sleepiness and cataplexy and the appropriate use of these medications will be presented and discussed.
9:00 - 9:40. Jed Black: Clinical features and Diagnosis of Narcolepsy
10:20 - 11:00. Guiseppe Plazzi: Symptomatic Narcolepsy
11:00 - 11:40. Michael Thorpy: Treatment of Narcolepsy
11:40 - 12:00 Q and A

Sunday 4 February 2007
12:15 – 14:00

Luncheon Workshop and Demonstration
Venue: Kambhangbejara III Room, Mezzanine Level

Sunday 4 February 2007
14:30

Opening of Congress Exhibition

Venue: Foyer and Exhibition Area in front of Vibhavadee Ballroom, 1st Floor (Lobby Level), and Exhibition and Lounge Areas, Mezzanine Floor, Sofitel Central Plaza Hotel, Ladprao, Bangkok

Dress code: lounge suit or evening dress.

14:45 – 15:00 Classical and popular international music performed by the famous “Bangkok Symphony Orchestra (BSO)” in Vibhavadee Ballroom

Sunday 4 February 2007
15:00 – 16:00

Opening Ceremony of the 2nd WASM Congress

Venue: Vibhavadee Ballroom, 1st Floor (Lobby Level), Sofitel Central Plaza Hotel, Ladprao, Bangkok

Dress code: lounge suit or evening dress.

Welcome address by the President of WASM,
Professor Dr. Markku Partinen, M.D., Ph.D.

A Special address by the President-Elect of WASM,
Professor Dr. Sudhansu Chokroverty, M.D., FRCP

A report and welcome by the Co-Chair of Scientific Program Committee,
Dr. Wayne A. Hening, M.D., Ph.D.

A report and welcome by the Chair of the Local Organizing Committee.
Dr. Naiphinich Kotchabhakdi, Ph.D.

An opening Speech by the President of the Medical Council of Thailand,
Professor Dr. Somsak Lolekha, M.D., Ph.D.
Presentation of Elsevier - WASM Award
(Two Scientific Awards for papers published in Sleep Medicine)

Report by the Chair, WASM Awards Committee
Professor Dr. Antonio Culebras, M.D.

The Christian Guilleminault WASM Award for Sleep Research
Present the Award by Professor Dr. Christian Guilleminault, M.D.

The Elio Lugaresi WASM Award for Sleep Medicine
Present the Award by Professor Dr. Elio Lugaresi, M.D.

Sunday 4 February 2007
16:00 – 17:00

Welcome Address and Special Lectures by Honorary Co-Presidents

Venue: Vibhavadee Ballroom, 1st Floor (Lobby Level), Sofitel Central Plaza Hotel, Ladprao, Bangkok

Chair: Markku Partinen

SL.01: Historical development and foundation of sleep research and sleep medicine in Asia
T. Okuma.
Honorary President of the National Center of Neurology and Psychiatry, Kodaira, Tokyo, Japan; Founding President of Asian Sleep Research Societies and Okuma Clinics, Tokyo, Japan

SL.02: Sleep Medicine: a field dedicated to advancement of science and health
C. Guilleminault.
Sleep Disorders Clinic, Stanford University Medical School, Stanford, CA, USA

Biography

Professor Christian Guilleminault
obtained his MD at the faculte of medicine in Paris (France) in 1962, and had is doctorate in medicine in 1968 at the same place. He did his neurology training mostly at the hospital de La Salepetriere in Paris, and his psychiatry training in Geneva Switzerland and Paris France. He was board certified in neurology and board certified in psychiatry in France in 1970. He obtained a Diplome d’Etude Approfondies from the Paris University Faculty of Sciences (Histology and Histo-Chemistry) in 1968

He received a Doctorate in Biology (Neurosciences) from the Universite de Grenoble in 1999; He had the academic diploma “Habilitation a Diriger la Recherche” from the Ecole de Medecine Universite de Montpellier in 1998. He is a Fellow from the American EEG
Society and a Fellow from the American Academy of Sleep Medicine. The different theses written for these different diplomas were: “Astereognosia dans les demence du grand age-Application des techniques de Piaget”, - « Etude histologique de la maladie de Creutzfeld-Jacob » “Encephalopathie Porto-Cave Experimentale chez le rat wistar: etude clinique, electro-encephalographique et histo-chimique » « Le syndrome des apnees obstructives lors du sommeil « « Le syndrome de haute resistance des voies aerienes lors du sommeil ».

Academic carrier : He was nominated « Maitre de Recherche » (tenure) in L’Institut National de la Sante et Recherche Medical (INSERM) in Paris (France) in 1977. Associate Professor of Psychiatry and Behavioral Sciences, Stanford University; in 1980. Professor with tenure of neurology in psychiatry, department of psychiatry and behavioral sciences, Stanford University School of Medicine in 1985. Guest Professor at the University of Marburg (Germany) and recipient of a Humbolt grant in 1987-1988. Professor (without tenure), Ecole de Medicine de Montpellier (France) 1994-96.

He is currently professor (with tenure) in the department of psychiatry and behavior sciences and by courtesy, in the department of neurology, Stanford University Medical School, Stanford. He had been the recipients of awards such as: Boursier de Recherche de la Societe Medicale des Hopitaux de Paris, 1970 (Sommeil, Aspect Electrophysiologique et Biochimique), the Nathanial Kleitman Award, 1986, the President's Award of the American Board of Sleep Medicine, 1991, the William C. Dement Award, American Sleep Disorders Association, 1995, the Collegium Internationale Neuro-Psychopharmacologicum Award for Research, 1996, the Annenberg Award for contribution in the field of Sudden Infant Death Syndrome and Apnea,1999, the American College of Chest Physician: Distinguished Lecturer in Physiology,1999, the American Academy of Neurology: Sleep Science Award 2001, the Brazilian Sleep Society Award 2001, the National Sleep Foundation: Life Achievement Award. 2005 and the Distinguished Scientist Award from the Sleep Research Society, 2005. He was selected to give The 200th Anniversary Linus Lecture, University of Uppsala, Sweden, 1988, the Lecture, Oslo University Medical School, 1995, The Lecture for the 100th anniversary of the Dental-Medical School of the Universite de Montreal” Montreal, (Canada) 2004. He was elected as “Honorary Member” of the Colombian Neurological Association, 1986; Argentinean Child Neurology Society, 1987 Colombian Association of Sleep Medicine, 2000, the Chilean Internal Medicine Society in 2000, Portuguese Sleep Medicine Association ,2006 and Honorary Professor of the department of oto-laryngology, School of Medical Sciences, The Capital University, Beijing (China), 2005. In 2004 he received a “Doctoris Honoris Causa” (Medicine) from the Universite de Liege (Belgium). He has been the co-founder and editor in chief of the journal Sleep from June 1977 till December 1987. He has been or is Associate Editor of Biology of the Neonate; Sleep Medicine, Sleep Medicine Reviews and his or has been on the editorial board of 10 international peer-reviewed journals. He has been the editor or co-editor of 8 books. He has published 506 peer-reviewed articles, and 183 chapters in the field of Sleep Medicine and 510 notes and abstracts.

Abstract of SL.02

The specialty of Sleep Medicine has been recognized as an independent branch of medicine in the USA. The importance of education of physicians has been acknowledged in that country by the handling of the specialty education to the powerful American Council of General Medical Education (ACGME) responsible for the accreditation of all residency programs in the USA, and the American Board of Medical Specialty is responsible for the certification of Sleep Medicine specialists as any other medical specialist. In my own country – France – the government has acknowledged the need for a national educational initiative and the recognition of the need for a medical specialty and ministers of health and education
have began the long process of creating at the national level, training not only of physician but also of technologists, and parallel to a medical training, a “University Diploma” for technologists has been created. These 2 examples open a small window on the educational, academic and health care successes of our field.

Five international journals, 8 local journals disseminate the basic and clinical research of our field. International Sleep Societies are grouping individuals interested in dissemination of knowledge, and creation of support groups aimed at advancing our field in all arena. There are places where despite these successes, goals seem still far from easy reach, but there are now enough beacons to help the progressive development of our field in all corners of the world with collaboration from all, and support from the “have “to those still not completely in that group yet.

A meeting is of interest if it brings new excitements to its audience. And advances are what attendees at meetings want to hear about. I shall present my own small lists of advances that I have been involved with, and that I believe will have an impact in the coming year:

- Pre-eclampsia is a leading cause of maternal–fetal morbidity and mortality. Significant overlap exists between the risk factors for pre-eclampsia and sleep-disordered breathing. Preliminary results indicate that we may be able to reduce the syndrome.
- Pediatrics Sleep Medicine is finally been recognized: Neuro-cognitive dysfunctions are a serious consequence of abnormal breathing during sleep, but what is the relationship of cyanotic breath-holding spells to Sleep Medicine? Perhaps a small upper airway.
- Are there finally potential alternatives to nasal CPAP, a treatment with so many non-compliant men? What is the future of the synthetic tissues with electrical properties? And what are the pharmacological prospects of CO2 resetting drugs in Cheyne-Stokes breathing? Is OSA really having an impact on metabolic syndromes or is it more the effect of obesity that leads both to OSA and metabolic changes? But could abnormal breathing during sleep lead to inflammatory responses? Are we going to have melatonergic medications that impact on insomnia and depression and is depression a sleep and circadian disorder?

This meeting will touch upon some of these controversial issues and the presentations perform here may be the stepping stones of the next important discoveries of the coming year. Let scientific imagination flow.

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**Sunday 4 February 2007**

**17:00 – 18:00 and 18:00 – 21:00**

**Welcome Cocktails, Cultural Show, Opening Reception, Dinner and Entertainment**

**Venue:** Vibhavadee Ballroom, 1st Floor (Lobby Level), Sofitel Central Plaza Hotel, Ladprao, Bangkok

**Dress code:** lounge suit or evening dress.

Welcome Cocktail Drinks around the Exhibition and Foyer area in front of the Vibhavadee Ballroom, 1st Floor (Lobby Level), Sofitel Central Plaza Hotel, Ladprao, Bangkok

Opening Reception, Dinner, Music and Thai Cultural Program inside the Vibhavadee Ballroom
Plenary Keynote Lecture

Venue: Vibhavadee Ballroom B, 1st Floor (Lobby Level), Sofitel Central Plaza Hotel, Ladprao, Bangkok

PKL.01: Chair: Naiphinich Kotchabhakdi

Sleep Disorders in Asia: Respiratory Disregulation during Sleep —CSR/CSA to Nocturnal Sleep Death
Soichi Katayama
*Professor Emeritus, Dokkyo University School of Medicine*
*Director, Institute of Neurology, Southern Tohoku General Hospital, Fukushima, Japan*

Biography

Professor Soichi Katayama, MD, D.Sc. graduated from Tokyo University, School of Medicine in 1955; from 1955 to 56, Internship at Tokyo University Hospital; in 1960, Graduated from Graduate School of Bioscience, Tokyo University (Degree of Dr. of Medical Sciences)

In 1963-65, he was Fulbright Scholar at the Dept. of Pharmacology, Columbia University, NYC, He was appointed Research Associate at Tokyo University Hospital in 1965, and from 1974 to 1996, was Professor and Chairman of Neurology, Dokkyo University School of Medicine, Tochigi. He is at the present the Director, Institute of Neurology, Southern Tohoku General Hospital, Fukushima, in Japan.


Fields of Interests: Clinical Neurology in General (Stroke, Parkinson Disease, Alzheimer Disease, etc); CNS Control of Respiration and Circulation Pathophysiology of Sleep

Associate Editors of Journals: Sleep Medicine (Elsevier, Amsterdam) and Sleep Medicine Review (Elsevier, Amsterdam)

Abstract of PKL.01

The main stress falls on two topics, both the nocturnal respiratory disregulation resulting from infra- and supratentorial lesions. Epidemiological survey revealed the ethnic predilection for SUNDs in Southeast Asia, e.g. “Pokkuri disease” in Japan, “Lai Tai” in Thailand and “Bangungut” in Philippine. Since 1992, Brugada syndrome is believed to be responsible for 4-12% of all sudden deaths in these areas, but the assumption that the instability of respiratory control might play some roles in SUNDs has still been widely accepted without clear evidence. We have unexpectedly recorded the last moment of respiratory arrest during PSG studies in one of 6 SUNDs cases out of 36 patients with multiple system atrophy (MSA), who showed a significant increase of coefficient of variations (CV) of the respiratory cycle during Stage 1-REM sleep. These results indicate that SUNDs in MSA patients might result from the unstable rhythmogenesis in the brainstem respiratory neuron, independently of any mechanical airway obstructive factors.
Another controversy on the mechanisms of Cheyne-Stokes respiration and central sleep apnea (CSR/CSA) resulting from supratentorial lesions has persisted over the past two decades, and our intent here is to present the evidences of neural mechanisms based on the experimental and clinical studies. Polysomnography revealed periodic breathing with similar cycle time and patterns both in the acute comatose states (CSR) and in the chronic convalescent period with sleep-wakefulness rhythm (CSA) in the same stroke patients. CSR/CSA is often associated with periodic alterations in heart rate, blood pressure, EEG, as well as eye movements, which show periodic movements in close association with cyclic respiration, thus highly supporting the neural mechanism. Our animal studies suggested that the intrinsic oscillator in the neural networks might be located between the posterior hypothalamus and midbrain reticular formation, and recently robust oscillatory activity has been reported in the experimental conditions in the brain slices from the immature neocortex and hippocampus. These observations are contradictory to the "instability hypothesis" of chemoreflex negative loops in the respiratory control system and show the validity of neural oscillation theory as the origin of CSR/CSA.

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Monday 5 February 2007
9:15 – 10.45

**Plenary Symposia**

**Venue:** Vibhavadee Ballroom B and C, 1st Floor (Lobby Level), Sofitel Central Plaza Hotel, Ladprao, Bangkok

**PS01. Sleep in Asia**

**Chair:** Do-Un Jeong

**PS01.1: Sleep apnea in Asia**

Han Demin, MD

_Dr. Han Demin is an ENT doctor in Beijing Tong Ren Hospital, and he is also the President of Chinese ENT Society and the president of Beijing Tong Ren Hospital. He set up the sleep lab in his hospital and now has a team in dealing with sleep apnea, mainly surgery._

**PS01.2: Sleep disordered breathing in Asia – an emerging challenge**

IP Mary, MBBS, MD, FRCP (London, Edinburgh, Glasgow), FHKCP, FHKAM Professor of Medicine, Division of Respiratory Medicine, Department of Medicine, The University of Hong Kong, Queen Mary Hospital, Hong Kong SAR, China

**Biography**

Prof. Mary Ip is currently Chair Professor of Medicine, and Associate Dean in Education at the LKS Faculty of Medicine, The University of Hong Kong. Her research work in sleep medicine has focused on obstructive sleep apnea, and her contribution to international literature on this condition included epidemiology, treatment and metabolic and cardiovascular complications. She has served as past President of Hong Kong Thoracic Society, Hong Kong Society of Sleep Medicine, and the Hong Kong Lung Foundation. Currently, she is an International Regent of the American College of Chest Physicians, Council and Exco member of the Asia Pacific Society of Respirology, and Associate Editor of CHEST.
PS01.3: Many children in Japan are suffering from desynchronization
Jun Kohyama, MD, PhD
Vice director, Tokyo Kita Shakai Hoken Hospital, and Clinical Professor of Tokyo Medical and Dental University, Japan

Biography
1981 Graduate from Tokyo Medical and Dental University
1990 Assistant, Physiology, Asahikawa Medical College (Prof. S. Mori)
1992 Assistant, Pediatrics, Tokyo Medical and Dental University
1995 Visiting Professor, Neuropsychiatry Institute, University of California Los Angeles, Sepulveda VAMC (Prof. J. Siegel)
1998 Assistant, Pediatrics, Tokyo Medical and Dental University
2000 Associate Professor, Pediatrics, Tokyo Medical and Dental University
2003- Present position; Vice director, Tokyo Kita Shakai Hoken Hospital, Clinical Professor of Tokyo Medical and Dental University

Monday 5 February 2007
10:45 – 11:00
Coffee, tea and refreshment

Monday 5 February 2007
11:00 – 12:30
Parallel Symposium Sessions

S33: First Joint Symposium of the Sleep Research Group of the World Federation of Neurology: Sleep disorders in developing countries

Sponsored by: Boehringer Ingelheim
Venue: Vibhavadee Ballroom B, First Floor (Lobby level)
Chair: Antonio Culebras,
Upstate Medical University, Syracuse, NY, USA

S33.1: Symposium summary
Antonio Culebras,
Upstate Medical University, Syracuse, NY, USA

Symposium objectives: To present topics which meet the Mission Statement of the Sleep Research Group of the World Federation of Neurology and are of interest to attendees of the 2nd World Congress of Sleep Medicine. Sudden death in sleep occurs among young people in Southeast-Asian countries. Discuss Pathophysiology and preventive measures. Announce the Patient Safety Tips adopted by the AAN. Increasing recognition of RLS brings this condition to the forefront of sleep disorders. Discuss RLS in adults and children in developing countries. Explore contributing factors for occurrence of RLS in developing countries. Encourage and support epidemiological studies with adequate tools and finances to increase the awareness of RLS, especially in children, in developing countries. Sleep disorders are less well recognized in developing countries for lack of sleep centers, specialists and general medical and popular education. A Round Table discussion will review the current situation and further needs.
Participants will discuss strategies for promotion of child and adult sleep disorders medicine in developing countries. A declaration will be adopted.

**S33.A: Sudden death in sleep**  
**Antonio Culebras.**  
Upstate Medical University, Syracuse, NY, USA

**S33.B: Restless legs syndrome in adults and children in developing countries**  
**C. Trenkwalder.**  
Kassel/University of Goettingen, Germany

**S33.C: Adolescents’ health and sleep problems in Thai urban and rural communities**  
**Nittaya J. Kotchabhakdi 1, 2, N. Aimyong1, N. Kotchabhakdi 3.**  
1National Institute for Child and Family Development, 2Dept Pediatrics, Faculty of Medicine Ramathibodi Hospital and 3Neuro-Behavioural Biology Center, Institute of Science and Technology, Mahidol University, Thailand

**S33.D: Round Table Discussion: Promotion of sleep medicine in developing countries**  
**A. Culebras1, N.J. Kotchabhakdi2, C. Trenkwalder3, C. Guilleminault4.**  
1Upstate Medical University, Syracuse, NY, USA, 2Mahidol University, Thailand, 3Kassel/University of Goettingen, Germany, 4Christian Guilleminault, Stanford University, California, USA

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**S16: Advances in epidemiology of RLS: prevalence by age and severity including pediatric prevalence, major factors affecting prevalence, significant co-morbid conditions, theoretical and practical considerations for future studies**

**Venue:** Vibhavadee Ballroom C, First Floor (Lobby level)  
**Chair:** Birgit Högl,  
Leopold-Franzens-University, Innsbruck, Austria

**S16.1: Symposium summary**  
**R.P. Allen.**  
Johns Hopkins University, Baltimore, MD, USA

The early epidemiological studies produced very distorted views of RLS that contributed to the recent public controversy over pharmaceutical companies exaggerating significance of RLS to promote excessive drug sales. The new studies covered in this symposium provide a much more accurate view of both RLS prevalence and factors contributing to RLS. The methods for doing this more careful work will be emphasized. This symposium will thus serve both to correct some erroneously held views of RLS and also provide access to better methods that can be used by those attending the symposium. Thus this provides important clinical knowledge and clinical research support needed to ask some important questions about RLS including the issue of racial/geographic differences in prevalence. Recent advances in RLS epidemiological studies have altered somewhat our view of RLS and factors contributing to it. Early studies were poorly done and gave both inflated rates of RLS and failed to account for wide variation in RLS severity. This produced numbers that were at odds with the clinical experience feeding the recent controversy over pharmaceutical companies exaggerating disease significance to promote product marketing. Fortunately we now have better studies using validated questions with reasonable positive predictive values. We also have developed methods for evaluating prevalence in relation to severity and for assessing significant clinical features related to RLS. When the better methods are applied we get somewhat different results than in the earlier studies. Some of the factors that seemed relevant now appear not to relate to RLS while other factors appear to be more significant. The actual prevalence in relation to gender, age and severity can be more accurately stated.
S16.A: Epidemiology of restless legs syndrome in Korean adults  
C.Y. Won.  
Department of Neurology, Keimyung University, Dongsan Medical Center, Taegu, Republic of Korea

S16.B: RLS, race, and psychiatric symptoms: the findings from the RLS in Baltimore Epidemiologic Catchment’s Area (RiBECA) Study  
H.B. Lee.  
Department of Psychiatry and Behavioral Sciences, Johns Hopkins University School of Medicine, Baltimore, MD, USA

S16.C: Review of medical conditions related to occurrence of RLS – considerations of causal relations  
Birgit Högl,  
Department of Neurology, Innsbruck Medical University, Austria

S16.D: Restless legs syndrome in children  
Arthur S. Walters  
New Jersey Neuroscience Institute, JFK Medical Center, Edison, NJ, USA

S45: New methods for sleep recording and analysis

Venue: Phaholyothin II Room, Mezzanine Level  
Chair: Do-Un Jeong.

S45.1: Symposium summary  
D.-U. Jeong.  
Department of Psychiatry and Center for Sleep and Chronobiology, Seoul National University College of Medicine and Hospital, Seoul, South Korea

This symposium introduces and reviews new methods for recording and analyzing biological signals during sleep. They broaden the applicability of the signal processing techniques in sleep medicine with the help of the salient progress of digital technologies in medicine. It is expected that new areas of sleep dynamics, which were not accessible via conventional linear methods, can be discovered by non-linear analysis methods. A new nonlinear method applied to EEG signals during sleep will be presented. Also, a non-intrusive recording method, which encapsulates a newly developing technology of ubiquitous health care, will be introduced. This method can monitor biological signals without interrupting sleep of patients, especially those on a long-term care at home. A related signal processing method to estimate sleep structures using the heart rate variability will be also presented.

S45.A: Nonlinear properties of electroencephalograms during nocturnal sleep in narcolepsy patients  
J.W. Kim, H.-B. Shin.  
Brain Dynamics Center, School of Physics and Westmead Hospital, The University of Sydney and Department of Neuropsychiatry and Division of Sleep Studies, Eulji University College of Medicine and Eulji Medical Center, Seoul, Republic of Korea
S45.B: Heart rate variability and sleep stages
K.S. Park, G.-S. Chung.
Department of Biomedical Engineering, Seoul National University College of Medicine and Interdisciplinary Program, Seoul National University Graduate School, Seoul, Republic of Korea

S45.C: Non-intrusive methods for biological signal monitoring during sleep
Department of Psychiatry and Center for Sleep and Chronobiology, Seoul National University College of Medicine and Hospital, and Interdisciplinary Program, Seoul National University Graduate School, Seoul, Republic of Korea

S27: Compliance: From sleep lab to successful long-term treatment

Venue: Kambhangbejara I Room, Mezzanine Level
Chair: Sunil Sharma, MD
University of South Carolina, Columbia, SC, USA.

S27.1: Symposium summary
Sunil Sharma.
Division of Pulmonary/Critical Care/Sleep Medicine, University of South Carolina, Columbia, SC, USA
One of the biggest hurdles in treatment of Obstructive sleep Apnea is acceptance and compliance. Several studies have determined the compliance to be 50–55% at best. Various mechanisms have been proposed to improve compliance from education to trouble shooting of side-effects. New interfaces are continually being invented to reduce patient discomfort. Yet a lot has to be done. Improvement in compliance can significantly improve patient care and outcome especially cardiovascular sequelae. Different parts of the world have different issues regarding acceptance and compliance and different ways to resolve them. Yet there is little interaction between health care providers to understand geographical and local issues of each region and learn from them. A free exchange of ideas will improve understanding and provide a platform to form novel methods to improve long term compliance.
Symposium objectives: At the completion of this symposium the attendees should be able to
1. Identify the cultural differences in acceptance of therapy for Obstructive sleep Apnea.
2. present practices of the PAP delivery in South East Asia, North America and Europe.
3. Identify the various types of positive airway pressure (PAP) devices for the treatment of sleep disordered breathing.
4. Identify the various methods used in the application PAP devices in titration and follow-up.
5. Identify various hurdles in achieving long term compliance.
6. Identify current techniques to improve long term compliance with PAP therapy.
The presentations are followed by a Panel Discussion with Sunil Sharma, J.C. Suri, Thom R. Feroah, Vincentia Castronovo, and a representative from Respironics Inc.

S27.2: North American model of delivering and improving PAP therapeutic adherence
Sunil Sharma.
University of South Carolina, Columbia, SC, USA
Declaration of conflict of interest: Speaker for Takeda pharmaceuticals.

S27.A: Indian model of delivering and improving PAP therapeutic adherence
J.C. Suri
Vardhaman Mahavir Medical College and Safdarjung Hospital, New Delhi, India
S27.B: European method of delivering and improving PAP therapeutic adherence
V. Castronovo
Milan, Italy

S27.C: Treatment options for SDB with a focus on positive airway (PAP) devices
T.R. Feroah
Medical College of Wisconsin, Milwaukee, WI, USA
Declaration of conflict of interest: Respironics speaker

S27.D: From liability to an asset
P. White.
Respironics Inc., USA

S39: An approach to a patient with neuromuscular disorder and sleep dysfunction

Venue: Kambhangbejara III Room, Mezzanine Level
Chair: Narong Simakajornboon, MD
Sleep Disorders Center, Division of Pulmonary Medicine, Cincinnati Children’s Hospital
Medical Center, Cincinnati, OH, USA
Co-chair: Sadhansu Chokroverty, MD
New Jersey Neuroscience Institute at JFK, NJ, USA

S39.1: Symposium summary
N. Simakajornboon.
Sleep Disorders Center, Division of Pulmonary Medicine, Cincinnati Children’s Hospital
Medical Center, Cincinnati, OH, USA
Physiologic changes during sleep place a high demand on the respiratory muscles and may exaggerate the abnormalities of respiratory function in patients with neuromuscular disease. In fact, respiratory disturbances during sleep such as sleep apnea and progressive alveolar hypoventilation may be the first evidence of respiratory muscle weakness and can even occur in the face of minimal neuromuscular functional disability. In this symposium, we will review the characteristic sleep abnormalities in patients with neuromuscular diseases. In addition, we will discuss the clinical assessment and therapeutic intervention for sleep disordered breathing in these patients. The knowledge from this symposium will help sleep specialists and other physicians in diagnosis and management of sleep disorders in patients with neuromuscular disease. Because the management of sleep disordered breathing in these populations requires multi-disciplinary team, the session will attract many specialties including sleep specialists, pediatrician, neurologist, pulmonologist, psychologist, psychiatrist, and ENT.
Cardiorespiratory failure is the most common cause of morbidity and mortality in patients who have neuromuscular diseases. Respiratory insufficiency may present acutely or can develop insidiously as a result of progressive respiratory muscle weakness and compromised airway in this population. Physiologic changes during sleep place a high demand on the respiratory muscles and may exaggerate the abnormalities of respiratory function. In fact, respiratory disturbances during sleep such as sleep apnea and progressive alveolar hypoventilation may be the first evidence of respiratory muscle weakness and can even occur in the face of minimal neuromuscular functional disability. Close follow-up with anticipatory guidance, selective performance of physiologic studies and early intervention can reduce both the short and long-term complications of sleep disordered breathing in these patients. Successful management of sleep-related respiratory disturbances in this population has been facilitated in recent years by the introduction of non-invasive positive pressure ventilation. In this symposium, we will discuss the following topics:
1. Changes in respiratory mechanics and control of breathing during awake and sleep in patients with neuromuscular disorders.
2. Characteristic of sleep disorders in patients with neuromuscular diseases with particular emphasis on prototypical diseases such as cerebral palsy, Duchenne Muscular Dystrophy, Spinal Muscular Atrophy, etc.
3. Clinical assessment and management especially the use of non-invasive positive pressure ventilation.
4. Further research direction in this area.

S39.A: An approach to a patient with neuromuscular disorder and sleep dysfunction – Introduction
S. Chokroverty
NJ Neuroscience Institute at JFK, Seton Hall University, Edison, NJ, USA

S39.B: Respiratory mechanics and control of breathing in patients with neuromuscular diseases
D. Gozal
Division of Pediatric Sleep Medicine, Department of Pediatrics, University of Louisville, Louisville, KY, USA

S39.C: An approach to children with neuromuscular disorders
N. Simakajornboon.
Sleep Disorders Center, Cincinnati Children’s Hospital Medical Center, Cincinnati, OH, USA

S39.D: The role of noninvasive ventilation in sleep-disordered breathing in neuromuscular diseases
D. Robert.
Universite’ Claude Bernard, Lyon, France

S34: Interactions between learning disorders, mild retardation and sleep disturbances in children

Venue: Kambhangbejara II Room, Mezzanine Level
Chair: A.W. de Weerd
Sleepcenter SEIN, Zwolle, Netherlands

S34.1 Symposium summary
A.W. de Weerd
Sleepcenter SEIN, Zwolle, Netherlands
Severe retardation and disorders are closely connected. Learning disorders in these children are probably due to retardation, but may be partly caused by the accompanying sleep disorder as well. The assessment of learning ability in children with disturbed sleep in mild cerebral disorders give the possibility to unravel the interactions more in detail.

S34.A: Interactions between sleep and learning
Oliviero Bruni
Dept. of Developmental Neurology and Psychiatry, University of Rome “La Sapienza”, Italy.

S34.B: Clinical management of sleep disturbances in ADHD
Samuele Cortese
Servizio neuropsichiatria infantile, University of Verona, Verona, Italy.

S34.C: Academic difficulties and failures in children with abnormal sleepiness
Michel Lecendreux
S34.D: 4th speaker/discussant:
Al W. de Weerd
Sleep in children with mild retardation and its impact on performance at school. Sleep disorders are often part of mild retardation, attention deficit disorders and other disorders accompanied by learning disabilities. Vice versa disturbed sleep is a common cause of failure at school or other educational problems. The symposium aims at giving an overview and new aspects of the possible causative relationships between disturbed sleep and learning in general (Bruni), effects of common disorders on learning (Cortese and Lecendreux on respectively ADD and hypersomnia with Kleine Levin Syndrome as a model) and the interactions between mild retardation, sleep and learning with the Prader Willi Syndrome as a model.

Monday 5 February 2007
12:45 – 14:15

Luncheon Satellite Symposium

Clinical Management of Restless Legs Syndrome

Sponsored by Boehringer Ingelheim
Venue: Vibhavadee Ballroom B, 1st Floor (Lobby Level), Sofitel Central Plaza Hotel, Ladprao, Bangkok
Lunch will be provided.

Clinical Management of Restless Legs Syndrome
Chairpersons:
Manveer Bhatia, MD, New Delhi, India
Wayne Hening, MD, New Brunswick, NJ, USA

12:45—12:50 Introduction

12:50—13:05 Epidemiology of RLS
Manveer Bhatia, MD, New Delhi, India

13:05—13:20 Diagnosing RLS
Derya Kaynak, MD, Istanbul, Turkey

13:20—13:35 RLS: Sleep, Mood, and Quality of Life
Wayne Hening, MD, New Brunswick, NJ, USA

13:35—13:50 Dopamine Agonists in RLS: Initiating Treatment and Long Term Results
Luigi Ferini-Strambi, MD, Milan, Italy

13:50—14:05 Discussion

14:05—14:15 Conclusion

This symposium is supported by an unrestricted educational grant from Boehringer Ingelheim International GmbH
Lunchtime Symposium
held during the 2nd WASM International Congress

Monday, February 5, 2007 | 12:45–14:15
Hall B, Sofitel Plaza Center
Bangkok, Thailand

Clinical Management of Restless Legs Syndrome

Chairmen: Manmee Bhatia, MD, New Delhi, India
           Wayne Henra, MD, New Brunswick, NJ, USA

12:45–12:50 Introduction
12:50–13:05 Epidemiology of RLS
           Manmee Bhatia, MD, New Delhi, India
13:05–13:20 Diagnosing RLS
           Derya Kaynak, MD, Istanbul, Turkey
13:20–13:35 RLS: Sleep, Mood, and Quality of Life
           Wayne Henra, MD, New Brunswick, NJ, USA
13:35–13:50 Dopamine Agonists in RLS:
           Initiating Treatment and Long Term Results
           Luigi Fadda, Strambati, MD, Milan, Italy
13:50–14:05 Discussion
14:05–14:15 Conclusion

This symposium is supported by an unrestricted educational
grant from Boehringer Ingelheim International GmbH
Narcolepsy Moving Forward

Sponsored by UCB
Venue: Vibhavadee Ballroom C, 1st Floor (Lobby Level), Sofitel Central Plaza Hotel, Ladprao, Bangkok
Lunch will be provided.

Narcolepsy Moving Forward
Narcolepsy is a rare, incurable, complex sleep disorder resulting from a permanent deficit in the neurotransmitter hypocretin, present in the hypothalamus, leading to an impaired control over the boundaries between sleep & wake states. As such, narcolepsy is a disorder with a multiplicity of symptoms that affect both wakefulness & nighttime sleep and fluctuate during the life course of the disease. Narcolepsy is recognized as being either narcolepsy with cataplexy (up to 90% of narcoleptic patients) or without cataplexy. The 2 major daytime symptoms are excessive daytime sleepiness (EDS), and cataplexy. EDS is present in 100% of narcoleptic patients, characterized by a persistent sleepiness and unavoidable urges to fall asleep (sleep attacks). Cataplexy is pathognomonic of the disease and the second most common symptom in narcolepsy. It is defined as a sudden, progressive, bilateral skeletal muscle weakness, occurring as an abnormal response to strong emotions, usually positive. Narcolepsy is also characterized in 60 to 90% of cases as a disorder of disrupted continuity and organization of sleep. Due to this high prevalence of nocturnal fragmentation of sleep, narcolepsy may be best considered as a global disruption in the continuity & robustness of sleep in addition to a disorder in maintaining wakefulness. Narcolepsy may be present at all ages with 2 recognized peaks around 15 & 24 years of age. This sleep disorder has, therefore, a heavy impact on the patient's quality of life, as well as bearing a heavy social burden.

12:45 – 12:50 Introduction by Chairman & co-Chairman:
M. Partinen & M. Billiard

12:50 – 1:05 Epidemiology & socio-economical burden of the disease
P. Jennum

1:05 - 1:20 Physiopathology of narcolepsy: recent advances
Y. Dauvilliers

1:20 - 1:30 Diagnosis of narcolepsy with & without cataplexy in the adult
L. Ferini-Strambi

1:30 – 1:45 Diagnosis & management of narcolepsy in the child
M. Lecendreux

1:45 – 2:00 New approaches in the management of narcolepsy in the adult
M. Partinen

2:00 – 2:15 EFNS guidelines in narcolepsy
M. Billiard

2:15 – 2:30 Panel discussion
All
You are cordially invited to visit our exhibition at Booth # S1 on the 1st Floor of the Sofitel Central Plaza Hotel, and attend our Luncheon Satellite Symposium on “Narcolepsy Moving Forward” on Monday 5th February 2007 at the Vibhavadee Ballroom C on the 1st Floor of the Sofitel Central Plaza Hotel.
Plenary Keynote Lecture

Venue: Vibhavadee Ballroom B, 1st Floor (Lobby Level), Sofitel Central Plaza Hotel, Ladprao, Bangkok

PKL.02:
Chair: Sudhansu Chokroverty

Sleep disorders and public health
Markku Partinen MD. PhD
President of WASM; Skogby Sleep Clinic, Rinnekoti Research Centre, Espoo, Finland

Biography

Dr. Markku Partinen is director and chief physician of the Skogby Sleep Clinic, Rinnekoti Research Centre, Espoo, and an associate professor in neurology, University of Helsinki, Finland. He studied medicine in the Faculty of Medicine, University of Montpellier, France in 1969-1975 where he became interested in sleep research under the direction of Professor Pierre Passouant. He specialized in neurology and had his PhD in epidemiology in 1982 from University of Helsinki, Finland. During 1985-1986 he worked at Stanford University with Professor Christian Guilleminault. In 1987 he worked in Bologna, Italy, with Professor Elio Lugaresi. He has published more than 170 original papers, 10 books and more than 150 review articles mainly about sleep medicine and epidemiology of sleep disorders.

He has organized international meetings and congresses, and been an invited speaker in many international meetings. Currently his research topics include restless legs syndrome, daytime sleepiness/fatigue, insomnia, habitual snoring, sleep apnea and relations between obesity and sleep disturbances. His team is investigating also relations between different behavioral problems, sleep debt, and traffic accidents. He is a founding member and President of the World Association of Sleep Medicine (WASM). He is also a founding member and past President of the Finnish Sleep Research Society and Scandinavian Sleep Research Society. He has served in the Executive Board of the WFSRS, ESRS and other medical societies. Currently he is President of the Finnish Sleep Federation, and President of the Finnish RLS society. He has been an editor, assistant editor or member of the editorial board of the main journals in the field of sleep: Sleep Medicine, Sleep, Sleep Medicine Reviews, and Journal of Sleep Research.

Abstract of PKL.02

All sleep researchers know that humans must sleep to survive and that 1/3 of life consist of sleep. Sleep medicine is, however, not yet considered as an important field in health and social care. I am not aware of any University in the world where sleep medicine is part of obligatory curriculum during medical studies. This is very interesting if compared with time given in education of many other diseases, of much smaller public health importance. We all should look at mirrors. Have we been too shy, too diplomatic? For more than 20 years sleep clinicians and epidemiologists we have been talking that we need cheaper methods to study and treat sleep disorders such as sleep apnea because we have limited resources in health care. Not many other people in clinical medicine or surgery are talking that they should limit to develop methods because resources are limited. I am afraid that our strategy has not given us more resources.

There are some exceptions with Professor William (Bill) Dement in the frontline. He has never been shy and his efforts have given resources so that USA is without any question leading the way in sleep medicine. Other brave people to fight for more resources are found e.g. in Germany, which is the leading country in Europe in developing sleep medicine.
I will discuss some of the most important areas where we should focus more and more if we think about the importance of sleep and sleep disorders in the perspective of public health. Some of these areas are (not necessarily in order of importance):

- Sleep loss and traffic/working accidents; cumulative effects of sleep loss
- Occupational health, legislation, working times, benefits of screening of sleep apnea; Sleep medicine and health economical issues; treating sleep disorders save money?
- Teenager’s sleep; starting times of schools; afternoon programs
- Women’s sleep, menopause, and sleep
- Sleep disorders and disturbed sleep–wake cycle among elderly people – Intervention studies by long-term monitoring of sleep–wake cycle
- Clinical significance of quality of sleep and maintaining sleep
- Lack of (good quality) sleep, deprivation, and insulin resistance/obesity
- Sleep apnea in relation to visceral obesity and metabolic syndrome – Interventional studies to prevent/treat visceral obesity
- Sleep disorders related to cardiovascular and cerebro-vascular disease – Disordered endothelial function, inflammatory processes, prevention
- Weight loss in treatment of sleep apnea
- Psychiatric disorders and sleep
- Restless legs syndrome and other sleep-related movement disorders
- Development of modern diagnostic methods and methods of evaluating risks of sleep disorders; HRV, autonomic function, biological blood markers, genetics

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**Monday 5 February 2007**

**15:15 – 16:45**

**Plenary Symposium**

**Venue:** Vibhavadee Ballroom B, 1st Floor (Lobby Level), Sofitel Central Plaza Hotel, Ladprao, Bangkok

**PS02: Movement disorders of sleep**
**Chair:** Sudhansu Chokroverty

**PS02.1: Sleep disorders in Parkinson’s Disease and other movement disorders**
**K Ray Chaudhuri MD FRCP DSc**

*NPF Centre of Excellence, Kings College and Lewisham Hospitals, Guys, Kings, St. Thomas’ School of Medicine, London, UK*

**Biography:** Dr K Ray Chaudhuri was appointed as Consultant Neurologist and Honorary Senior Lecturer at King’s College Hospital and the University Hospital of Lewisham, UK in 1995. He is a recognized teacher and active researcher within the Guy’s, King’s and St Thomas’ School of Medicine, London, UK and is one of the medical directors of the National Parkinson Foundation Centre of Excellence at Kings College, London. He also serves as a member of the Movement Disorders Society, the steering group of the Medicines Management Committee and Gene Therapy Advisory Group for the Department of Health, UK and the NICE Guideline Implementation Group of the Parkinson’s Disease Society, UK. Dr Chaudhuri is the author of more than 150 publications including reviews and book chapters, 2 books on Parkinson’s disease and Restless Legs Syndrome and has contributed extensively to educational radio and television interviews, newspaper articles and videos. He has also lectured extensively on PD and restless legs syndrome at international meetings in Japan, continental Europe,
India and Australia. His major research interests are drug treatment of PD and restless legs syndrome, Parkinsonism in minority ethnic groups within the UK and abroad and sleep problems in PD. In 2005 he was awarded the prestigious DSc degree by the University of London and in 2006, he was the recipient of the William Koller Memorial Fund award for clinical research in Movement Disorders.

PS02.2: REM-sleep behavior disorder: current knowledge and future directions
Carlos H. Schenck, M.D.
Minnesota Regional Sleep Disorders Center (MRSDC), and Department of Psychiatry at the Hennepin County Medical Center, University of Minnesota Medical School, Minneapolis, USA

Biography
Carlos H. Schenck, M.D. was born in New York City in 1951, graduated from the Johns Hopkins University with a B.A. in 1972, received his Medical Degree from the State University of New York at Buffalo Medical School in 1976, and completed a Psychiatry Residency at the University of Minnesota Medical School in Minneapolis in 1980, where he is currently an Associate Professor of Psychiatry. Since 1981 he has been a staff psychiatrist at the Hennepin County Medical Center and in 1982 he also joined the Minnesota Regional Sleep Disorders Center (MRSDC). Along with his colleague and Director of the MRSDC, Mark W. Mahowald, M.D., Dr. Schenck served as Co-Chairman of the Parasomnias Committee for the recently revised sleep nosology, The International Classification of Sleep Disorders-2nd Edition, published by the American Academy of Sleep Medicine (AASM) in 2005.

Dr. Schenck is a member of the Nosology Committee for the American Academy of Sleep Medicine, chairing the Parasomnias section, and he is also a member of the Movement Disorders Task Force for revising the polysomnography scoring manual, sponsored by the AASM. Drs. Schenck and Mahowald and their colleagues at the MRSDC for more than two decades have been involved in clinical research on such parasomnias as REM sleep behavior disorder (and its link with parkinsonism), status dissociatus, parasomnia overlap disorder, sleep related eating disorder, and sleep related dissociative disorders, and they have also been interested in sleep-related injury and sleep violence, along with the forensic aspects of parasomnias. Dr. Schenck published a book on the parasomnias in December 2005 that in November and December 2006 received favorable reviews in the Journal of Neurology, Neurosurgery and Psychiatry; Sleep Medicine; and Sleep: “Paradox Lost: Midnight in the Battleground of Sleep and Dreams” (Extreme-Nights, LLC; ISBN 0-9763734-0-8; www.parasomnias-rbd.com). Dr. Schenck also co-produced and participated in a DVD documentary film on the parasomnias (together with Mark W. Mahowald, M.D.): “Sleep Runners: The Stories Behind Everyday Parasomnias” (Slow-Wave Films, LLC; www.sleeprunners.com).

PS02.3: Sleep related paroxysmal motor phenomena
Pasquale Montagna, MD
Neurology, University of Bologna, Italy

Biography: Pasquale Montagna graduated in 1974 in Medicine and Surgery at the University of Bologna cum laude. Trained in 1976/77 in electromyography at the Clinical Neurophysiology Department under Prof. F. Buchthal’s direction, Rigshospitalet, Copenhagen, Denmark. Post-graduate specialization in Neurology in 1978, University of Bologna, cum laude. In 1980 Senior Registrar (1st registratore) at the Clinical Neurophysiology Department of the University of Odense, Denmark. From 1978 to 1989 Neurology Consultant at the St. Orsola General Hospital, University of Bologna School of Medicine, Bologna, Italy. In 1980 appointed Research Fellow in Neurology at the University of Bologna. In 1992 Associate Professor of Neurology and lecturer in neurology at the Medical Faculty of Bologna University. In 2001 Full Professor of Neurology at the same Institution.
He is the author of 454 scientific publications including 212 abstracts and Congress presentations, 43 book chapters and 207 papers, mostly published in international journals (Science; New England Journal of Medicine; The Lancet; Annals of Neurology; Brain Pathology; Archives of Neurology; Neurology; Clinical Neuropysiology; Journal of Neurology, Neurosurgery and Psychiatry; Muscle @ Nerve; Cephalalgia etc.) on research topics in neurology and neurophysiology, especially sleep movement disorders, electromyography, neuromuscular disorders and migraine headache.

He is a member of the Italian Society of Neurology; Italian Society for the Study of Headaches; International Medical Society of Motor Disturbances, Basle; American Association of Electromyography and Electrodiagnosis Rochester, USA; Italian Society of EEG and Clinical Neuropysiology; American Academy of Neurology, Minneapolis, USA; European Sleep Research Society; International Headache Society; American Neurological Association. He was member of the Steering Committee of the Italian Society for the Study of Headaches, and of the Italian Society of Clinical Neuropysiology. Areas of particular interest and expertise: The Pathophysiology and genetics of migraine and cluster headache; Motor control during sleep and disturbances of motor control during sleep (parasomnias nocturnal frontal lobe seizures, restless legs and periodic limb movements of sleep, etc)

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**Monday 5 February 2007**

**16:45 – 17:00**

*Coffee, tea and refreshment*

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**Monday 5 February 2007**

**17:00 – 18:30**

**Parallel Symposia and Oral Platform Sessions**

**S06: WHO – ICF (International Classification of Functioning, Disability and Health) Symposium. Development of ICF Core Sets for Sleep**

**Venue:** Vibhavadee Ballroom C, First Floor (Lobby level)

**Chair:** Gerold Stucki

**Co-Chair:** Markku Partinen

**S06.1: Symposium summary**

G. Stucki 1, 2.

1 Department of Physical Medicine and Rehabilitation, Ludwig-Maximilian University, Munich, Germany, 2 ICF Research Branch of the WHO Collaborating Centre for the Family of International Classifications at the German Institute of Medical Documentation and Information (DIMDI), IMBK, Ludwig-Maximilian University, Munich, Germany

The aim of the WHO ICF Symposium is (1) to inform the scientific community in sleep medicine about the ICF Core Sets for Sleep project as a universal framework for the classification and description of functioning for people with sleep disturbances, and (2) to provide the opportunity to contribute and participate in the preliminary studies according an open inclusive scientific development process.

- Chair: Gerold Stucki,

*Department of Physical Medicine and Rehabilitation, Ludwig-Maximilian University, Munich, Germany*
The participants will be introduced in the contents and structure of the ICF. The ICF Core Sets – tools to implement the ICF in clinical practice and research – will be presented in detail. The development process of the ICF Core Sets for Sleep will be presented on the basis of an exercise in which the participants will have the opportunity to actively implement the ICF. Since Health Related Quality of Life (HRQOL) - and ICF-based approaches will often be used concurrently in clinical practice, research, and health reporting, it is essential for clinicians and researchers to understand the relationship between HRQOL instruments and the ICF. The process of linking HRQOL instruments to the ICF, which makes possible the content comparisons among instruments, will be introduced in detail. The usefulness of such a linkage process in identifying the best measures to most efficiently cover the required categories of functioning in studies will also be discussed. At the completion of the workshop, all participating clinicians or researchers should be familiar with the different components and structure of the ICF, the process of implementing the ICF in clinical practice and research, and the relationship between HRQOL measures and the ICF.

*With the approval of the new International Classification of Functioning, Disability and Health (ICF) by the World Health Assembly in May 2001, all WHO member states are now being requested to implement the ICF in the health sector. Besides health, the WHO promotes the use of the ICF in education, insurance, labor, health and disability policy, and health statistics [1].

Reference(s)

S46: Sleep in child development

**Sponsored by Proctor & Gamble**

**Venue:** Vibhavadee Ballroom B, First Floor (Lobby level)

**Chair:** Patricio Peirano

**S46.1: Symposium summary**

**P. Peirano.**

_Laboratory of Sleep and Functional Neurobiology, INTA, University of Chile, Santiago, Chile_

Over the past half century, much has been learned about the structure of sleep and its biological regulation. Although the functions of sleep remain largely unknown, two hypotheses appear to dominate the field: (1) Sleep is restorative for brain metabolism and (2) sleep is relevant to processes of memory and brain plasticity. The role of sleep in learning and memory has been shown by studies at the behavioral, systems, cellular, and molecular levels, including the modulation during sleep of cerebral protein synthesis and expression of genes involved in neuronal plasticity (Walker & Stickgold, 2006). However, research to date continues to be fragmentary and has been conducted almost exclusively in adults. Large amounts of sleep in infancy suggest that sleep may play a role in brain maturation, and sleep state organization in early infancy correlates with measures of cognitive functioning and attention in later childhood and early adolescence. Yet the
relationships between sleep and learning have not been characterized in infants. If the connections between sleep and learning also apply in infancy, it is possible that altered patterns of sleep in infants may affect their cognitive and memory-related abilities and thus, interfere with their developmental outcome. Finally, since sleep biology in infancy is strongly shaped and interpreted by cultural values and beliefs of the parents, there is a need to understand better the effects of cultural norms on infant’s sleep–wake patterns and their interplay with biology. Such knowledge may provide new insights to understand the relationship between sleep and brain functions in which it is involved during early stages of human development. This is the context that stimulated the choice of presentations for the symposium Sleep in Child Development, mostly based on recent results issued from studies performed in one of the world’s largest pediatric populations, that of mainland China.

Conflict of interest: Consultant to the Procter & Gamble Company, sponsor of the symposium.

S46.A: Developing patterns of the sleep–wake cycle
P. Peirano, C. Algarin.
Sleep and Functional Neurobiology Laboratory, INTA, University of Chile, Santiago, Chile

S46.B: Nocturnal sleep patterns in 4–7 month-old Chinese infants
C. Algarin1, P. Peirano1, M. Odio2.
1Sleep and Functional Neurobiology Laboratory, INTA, University of Chile, Santiago, Chile, 2The Procter & Gamble Co., Cincinnati, OH, USA

S46.C: Sleep and cognition in Chinese infants
P. Bauer1, A. Needham1, A. Lukowski1, M. Odio2.
1Department of Psychological and Brain Sciences, Duke University, Durham, NC, USA, 2The Procter & Gamble Co., Cincinnati, OH, USA

S46.D: Sleep disorders in pediatric populations in China
X. Liu.
Centre of Pediatric Bronchoscopy, Beijing Children’s Hospital, Beijing, China

S30: Sleep disorders and nocturnal epilepsy: from comorbidity to treatment

Venue: Kambhangbejara I Room, Mezzanine Level
Chair: Marco Zucconi
Co-chair: Claudio Bassetti

S30.1: Symposium summary
M. Zucconi.
Sleep Disorders Center, Department of Neurology, H San Raffaele Institute, Milan, Italy

Sleep disturbances are more than twice as prevalent in persons with partial epilepsy compared with normal subjects. Even on seizure-free nights, people with sleep related epilepsy may have more sleep disruptions than those without epilepsy. Understanding the relationship between epilepsy and sleep disorders is important for optimizing management of the epilepsy patient. Indeed treatment of a coexisting sleep disorder may improve seizure control, daytime alertness, or both. At the same time treatment of the epileptic condition may improve sleep disturbance. Sleep disturbances in patients with partial epilepsy are frequently the expression of an underlying sleep disorder rather than the effect of epilepsy or medication on sleep. However the epileptic condition could enhance and modulate the expression of the co-morbid sleep disorder. Among the sleep disturbances, comorbidity with epilepsy is reportedly frequent in Arousal Disorders, and Obstructive Sleep Apnea Syndrome. Moreover, NFLE (Nocturnal Frontal Lobe Epilepsy) and Arousal Disorders share some clinical manifestations and also from the neurophysiological point of view instability of sleep macro-or microstructure may have a triggering effect on each phenomena. Epileptic discharges may act as a non specific internal trigger able to act directly on the sleep regulatory arousal mechanisms. Periodic recurrent epileptic
discharges can increase arousal fluctuations and in turn can enhance and modulate the occurrence of different kind of sleep disturbances such as Periodic Leg Movements (PLMs). Comorbidity between epilepsy and REM sleep Behaviour disorder is poorly investigated. However RBD may mimic focal epileptic seizures during sleep inducing misdiagnosis and mistreatments. Yet RBD-epileptic seizures comorbidity is intriguing from a physiopathological point of view. In animal (feline) models of both generalized and focal epilepsy with experimentally induced pattern of “REM without atonia”, which is typical of RBD in humans, epileptic seizures occurrence was documented to be facilitated. The hypothesis that RBD may facilitate seizures occurrence in humans is tentative. For all these reasons besides a correct diagnosis with polysomnographic and video recordings, the therapeutic strategy have a fundamental role to improve sleep and sleep disorders in epilepsy. With the aid of different experiences in the field of sleep and epilepsy comorbidity, the symposium wishes to define data of prevalence, diagnosis and treatment of the disordered sleep conditions associated to nocturnal seizures during sleep.

S30.A: Arousal disorders and nocturnal frontal lobe epilepsy: when and which treatment after a videopolysomnography
M. Zucconi.
Sleep Disorders Center, H San Raffaele Institute and Vita-Salute San Raffaele University, Milan, Italy

S30.B: The importance of intracerebral recording in the treatment choice of seizures and periodic phenomena during sleep
Centre for Epilepsy Surgery “C. Munari”, Centre of Sleep Medicine, Niguarda Hospital, Milan, Italy

S30.C: REM parasomnia and epilepsy
Sleep Unit, Institute of Neurology “C. Mondino Foundation”, Pavia, Italy

S30.D: Discussant: Claudio Bassetti,
Zurich, Switzerland

S24: Co-morbidity, morbidity and mortality in the restless legs syndrome

Venue: Kambhangbejara II Room, Mezzanine Level
Chair: Arthur S. Walter, MD
Co-Chair: Rosalia Silvestri, MD

S24.1: Symposium summary
A.S. Walters.
New Jersey Neuroscience Institute at JFK Medical Center, Edison, NJ, USA

It has been recently appreciated that the Restless Legs Syndrome (RLS) is associated with a number of psychiatric manifestations including an increased prevalence of Attention Deficit Hyperactivity Disorder (ADHD), anxiety and depression. It has also been recently appreciated in 2 separate studies that mortality is higher in patients with end-stage renal disease if there is accompanying RLS or a high Periodic Limb Movement in Sleep (PLMS) index or PLMS arousal index. Another 3 separate studies indicate that RLS patients are more frequently reported to suffer from hypertension (odds ratio 1.5 in one study for men) and heart disease (odds ratio 2.5 in one study for men). A study is now concluding that explores RLS as a risk factor for stroke. It has also been recently shown in yet another 3 separate studies that nocturnal increases in pulse and blood pressure accompany the PLMS in RLS patients. The practical management side of these associations will be explored as well as the theoretical reasons for these associations, including a possible dopaminergic link between RLS and
ADHD and the possibility that the nocturnal hypertension associated with PLMS predisposes RLS patients to daytime hypertension, heart disease, and perhaps stroke.

Relationship of restless legs syndrome and periodic limb movements in sleep to anxiety and depression: In the middle half of the 20th century it was assumed by many that Restless Legs Syndrome (RLS) was a primary psychological disorder. Modern evidence from Magnetic Resonance Imaging (MRI), Cerebrospinal Fluid (CSF), and autopsy studies has dispelled this notion. Recent evidence does suggest that there is a high prevalence of both anxiety and depression in RLS, but most patients ascribe these psychiatric manifestations to the attendant sleep disruption from their night-time leg discomfort that they experience. The relationships between RLS and anxiety and depression may also be more indirect. For example, sleep disruption in RLS results in poor quality of life which in turn can lead to anxiety and depression. Depression may also be more prominent in patients with Periodic Limb Movements in Sleep (PLMS). The body of literature linking anxiety and depression to sleep disruption in general and to RLS and PLMS specifically will be reviewed.

M. Lecendreux.
Service of the Psychopathology of Infants and Adolescents, Robert Debre Hospital, Paris, France

S24.B: Restless legs syndrome and periodic limb movements in sleep in attention deficit hyperactivity disorder
R. Silvestri.
Sleep Medicine Center, Department of Neurosciences, Psychiatric and Anaesthesiological Sciences, Messina Medical School, Italy

S24.C: Are restless legs syndrome and periodic limb movements in sleep associated with hypertension, cardiovascular disease and stroke?
A. S. Walters.
New Jersey Neuroscience Institute at JFK Medical Center, Seton Hall University School of Graduate Medical Education, Edison, NJ, USA

S24.D: Morbidity and mortality in end stage renal disease in patients with restless legs syndrome and periodic limb movements in sleep
J. Winkelman
Department of Psychiatry, Harvard Medical School, Boston, Mass, USA

S24.E: Relationship of restless legs syndrome and periodic limb movements in sleep to attention deficit hyperactivity disorder
R. Silvestri.
Sleep Medicine Center, Department of Neurosciences, Psychiatric and Anaesthesiological Sciences, Messina Medical School, Italy

S28: Sleep disordered breathing in children and adolescents

Venue: Kambhangbejara III Room, Mezzanine Level
Chair: Maninder Kalra, MD, MS
Co-chair: Asher Tal, MD
The symposium will address the current key issues in childhood sleep disordered breathing: high risk group of obesity, inflammation and OSA, and outcomes of surgical treatment. The epidemiology and pathogenesis of obstructive sleep apnea in the obese child and adolescent will be reviewed. The role of inflammation in the development of childhood sleep disordered breathing as well as the potential for novel therapies will then be discussed. Finally, the outcomes of adenotonsillectomy for childhood obstructive sleep apnea syndrome will be presented.

Childhood obstructive sleep apnea (OSA) is associated with metabolic, cardiovascular and neuron-cognitive sequelae. Inflammation is now believed to play an important role in the pathogenesis of OSA and has been proposed as a key pathway linking OSA to associated morbidity. With the epidemic increase in childhood obesity, a high risk group for OSA, the morbidity due to untreated OSA is becoming a major public health concern. Adenotonsillectomy is the first-line of treatment for childhood OSA. However, efficacy of this treatment may vary across groups. Knowledge about outcomes of surgical and non-surgical treatment options is thus essential for the management of the child with OSA.

Symposium Objectives:
1. To discuss the epidemiology and pathogenesis of obstructive sleep apnea (OSA) in the obese child and adolescent.
2. To develop an understanding of the role of inflammation in the development of childhood sleep disordered breathing and mediation of associated morbidity.
3. Review the outcomes of adenotonsillectomy for childhood OSA and discuss the role of adenotonsillectomy in the management of childhood OSA.

S28.A: Obesity and obstructive sleep apnea in children and adolescents
M. Kalra.
Cincinnati Children’s Hospital, Cincinnati, OH, USA

S28.B: Outcomes of adenotonsillectomy for childhood OSA
A. Tal.
Department of Pediatrics, Soroka University Medical Center, Ben-Gurion University, Beer-Sheva, Israel

S28.C: Inflammation and childhood sleep disordered breathing
A. Goldbart.
Department of Pediatrics B, Soroka University Medical Center, Faculty of Health Sciences, Ben-Gurion University of the Negev, Beer-Sheva, Israel

Oral Platform Sessions

OPS#1: Basic Science and Treatment of Sleep Disorders
Venue: Rangsit Room, Mezzanine Level
Chair: Soichi Katayama

Basic science of sleep disorders
O0045: Sleep related sweating in OSA patients: cardiovascular risk and sleepiness
E.S. Arnardottir1 *, B. Thorleifsdottir2, E. Svanborg3, I. Olafsson4, T. Gislason1
1Department of Allergy, Respiratory Medicine and Sleep, Landspitali University Hospital, Reykjavik, Iceland, 2Institute of Physiology, University of Iceland, Reykjavik, Iceland, 3Department of Clinical Neurophysiology, University Hospital, Linkoping, Sweden, 4Department of Clinical Biochemistry, Landspitali University Hospital, Reykjavik, Iceland
**Sleep and cognition**

O0051: Sleep and memory, a 20-year prospective longitudinal population study

J. Hetta *, L. Mallon, J. E. Broman.

*Karolinska Institutet, City Stockholm, 14186, Sweden*

**Lifestyles and sleep**

O0022: Effects of high frequency electromagnetic fields of the GSM and the UMTS standard for mobile phones on sleep

H. Danker-Hopfe *, H. Dorn.

*Dept. of Psychiatry and Psychotherapy, Charité – Universitätsmedizin Berlin, Campus Benjamin Franklin, 14050 Berlin, Germany*

**New treatments of old disorders**

O0002: A prospective and randomized study-weight reduction and lifestyle intervention as a treatment of mild OSAS


*On behalf of Kuopio Sleep Apnea Group. Kuopio University Hospital, Department of Otorhinolaryngology, Kuopio, Finland*

O0003: Continuous glucose monitoring during OSAS episodes and treatment with CPAP in type 2 diabetic males

V. Donic1 *, M. Pallayova1, V. Donicova2, Z. Tomori1.

1Department of Physiology and Sleep Laboratory, Faculty of Medicine, P.J. Safarik University, Kosice, Slovakia,

2Department of Internal Medicine and Diabetology, Outpatient Clinic, Kosice, Slovakia

O0055: The need for pressure changes in CPAP therapy 2-3 months after initial treatment

N. Netzer *1, M. Hofmann2, J. Juhasz1, K. Hohl3, K. Strohl4.

1Clinic for Sleep Disorders, Germany, 2University Ulm, Div. Sports and Rehabilitative Medicine, Germany, 3University Ulm, Biometrics and Statistics, Germany, 4Case Western Reserve University, Center for Sleep Disorders Research, USA

**OPS#2: REM Sleep Disorders: Narcolepsy**

Venue: Ladprao A Room, Mezzanine Level

Chair: Michael J. Thorpy, MD

**Narcolepsy**

O0025: The social cost of narcolepsy


1Department of Neurology, Hephata Klinik, Schwalmstadt-Treysa, Germany, 2Department of Neurology, Philipps-University, Marburg, Germany, 3Institute for Technology Assessment, Harvard Medical School, Boston, USA, 4Department of Pneumology, Philipps-University Marburg, Germany

O0036: Change of sleep architectures in patients with narcolepsy

X.S. Dong *, S. Xiao, J. Li, Y. Xu, X. Han, Z.M. He, Y.H. Lu, L. Wang, F. Han*.

Pulmonary Medicine Department, People’s Hospital, Beijing University, China
O0054: A study of HLA typing, CSF hypocretin-1 measurements, and MSLT testing for the diagnosis of narcolepsy in 163 Korean patients with unexplained excessive daytime sleepiness
1Department of Neuropsychiatry, St. Vincent’s Hospital, Catholic University of Korea, Suwon, Republic of Korea, 2Center for Narcolepsy, Stanford University, California, USA

O0069: Sympathetic activation during cataplexy in narcoleptic patients
G. Plazzi *, V. Donadio, C. Franceschini, S. Vandi, R. Vetrugno, P. Montagna, R. Liguori. University of Bologna, Italy

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OPS#3: REM-Sleep Behavior Disorder
Venue: Ladprao B Room, Mezzanine Level
Chair: Carlos H. Schenck, MD

REM-sleep behavior disorder
O0023: Phasic and tonic muscle activity during REM sleep in RBD
G. Mayer *1, E. Leonhardt1, K. Kesper2, T. Penzel2, T. Ploch2.
1Hephata Klinik, Schwalmstadt-Treysa; 2Department of Pneumology, Philipps-University Marburg, Germany

O0026: Decrease in myocardial 123I-MIBG radioactivity in two patients with REM sleep behavior disorder
T. Oguri1,2,3 *, N. Tachibana1,2, S. Mitake3, T. Kawanishi2, H. Fukuyama1.
1Human Brain Research Center, Kyoto University Graduate School of Medicine, Kyoto, Japan, 2Division of Neurology, Kansai Electric Power Hospital, Osaka, Japan, 3Division of Neurology, Tosei General Hospital, Aichi, Japan

O0030: REM sleep behavior disorder and other sleep disturbances in Disney animated films
A. Iranzo1 *, C.H. Schenck2.
1Neurology Service, Hospital Clinic Barcelona, Spain, 2Departments of Psychiatry, Minnesota Regional Sleep Disorders Center, Hennepin County Medical Center and the University of Minnesota Medical School, Minneapolis, Minnesota, USA

O0041: The many faces of REM Sleep Behaviour Disorder (RBD) in Parkinsonism – an attempt of classification (video presentation)
C. Trenkwalder *, M. Schweitzer, F. Sixel-Doering. Paracelsus-Elena Hospital, Klinikstr. 16. D-34128 Kassel, Germany

O0063: REM sleep behavioral disorder in Hong Kong Chinese elderly
Y.K. Wing *
Department of Psychiatry, the Chinese University of Hong Kong, China
Tuesday 5 February 2007
18:30 – 19:30

Poster Session with Refreshment

Venue: Vibhavadee Ballroom A, First Floor (Lobby Level)

Basic Science of sleep

Animal models of sleep and its disorders
Poster Board#001-Monday: P0031
Changes in sleep–wake-behaviour in SHARP-1/SHARP-2 double null-mutant mice
P.C. Baier1,2 *, W. Paulus3, K.A. Nave4, M.J. Rossner4.
1Department of Clinical Neurophysiology, University Gottingen, Germany, 2ZIP, University of Kiel, Germany, 3Department of Clinical Neurophysiology, University Gottingen, Germany, 4MPI for Experimental Medicine, Gottingen, Germany

Chronic recording of periodic limb movements in rats
P.C. Baier1,2 *, R. Koch1, C. Trenkwalder1,3.
1Abt. Klinische Neurophysiologie, University of Goettingen, Goettingen, Germany, 2ZIP, Psychiatry and Psychotherapy, University of Kiel, Kiel, Germany, 3Paracelsus-Elena-Klinik, Kassel, Germany

Basic science of sleep disorders
Poster Board#003-Monday: P0014
Sleep deprivation and immobilization stress in rats.
L. Bolokadze *, V. Fedotov, I. Feklina.
Kharkov Hospital No. 31, Kharkov Region Hospital, Ukraine

Spatial distribution of K-complex and sleep spindle during stage 2 sleep
I.K. Lee *, S.H. Han, H.Y. Kim, J.Y. Oh, H.J. Kim, Y.S. Moon
Department of Neurology, Konkuk University School of Medicine, Seoul, Republic of Korea

Angiotensin receptor antagonism with valsartan decreases arterial stiffness in obese patients with obstructive sleep apnea syndrome
U. Rushentsova1 *, G. Alymov2.
1Department of Nephrology and Hypertension, Essen University Hospital, Germany, 2Department of Hypertension, Nishny Novgorod, Russia

Genetics of sleep disorders
Poster Board#006-Monday: P0023
Association of GABABR1 receptor gene polymorphism with obstructive sleep apnea syndrome
O. Kokturk 1, T.U. Ciftci 1*, Y.A. Bayazit2, M. Yilmaz2, M.E. Erdal3.
Poster Board#007-Monday: P0057
Procedural and declarative learning tasks influence the density of sleep spindles in elderly subjects
Charite CBF Berlin, Germany

Poster Board#008-Monday: P0070
Sleep disturbances and epilepsy and its impact on cognitive functions: memory, learning. Preliminary study
E. Mojs 1*, M. Zarowski2, B. Steinborn3.
1Chair of Health Sciences, Poznan University of Medical Sciences; 2Chair and 3Department of Developmental Neurology, Poznan University of Medical Sciences, Poland

Poster Board#009-Monday: P0012
Insomnia and T-cells balance
I. Fedotova *, V. Fedotov, I. Feklina, L. Bolokadze.
Kharkov Medical University, Kharkov, Ukraine

Poster Board#010-Monday: P0013
Sleep disorders and immune systems in alcoholic patients
V. Fedotov *, I. Fedotova, L. Bolokadze.
Kharkov Regional Hospital, Kharkov Medical University, Ukraine

Practice of Sleep Medicine

Insomnia and hypersomnia
Poster Board#011-Monday: P0018
Effect of zopiclone on hypothalamic–pituitary–adrenal system in patients with insomnia
O. Korzh *, E. Lavrova. Kharkov Medical Academy of Postgraduate Education, Kharkov, Ukraine

Poster Board#012-Monday: P0020
A case of isolated recurrent hypersomnia
H.-W. Lee *
Department of Neurology, School of Medicine, Kyungpook National University, Republic of Korea

Poster Board#013-Monday: P0045
Apparent hypnotic dependent insomnia with generalized epilepsy – A malignant cycle due to unrecognized restless legs syndrome (RLS)
1Department of Neurology, Keihanna Hospital, 1-2-1, Fujisaka-Higashimachi, Hirakata City, Osaka, Japan, 2Otowa Hospital, 2 Chinji-Chou, Yamashina-Ku, Kyoto, Japan,
Department of Brain Pathophysiology, Human Brain Research Center, Kyoto University Graduate School of Medicine, Kyoto, Japan

Poster Board#014-Monday: P0081
HLA typing, CSF hypocretin-1 measurements and MSLT testing for the diagnosis of narcolepsy and idiopathic hypersomnia in 121 Korean patients with excessive daytime sleepiness
S. C. Hong 1 *, J.-H. Jeong1, Y.-K. Shin1, J.-H. Han1, S.-P. Lee1, E. Mignot2.
1Department of Psychiatry, St. Vincent Hospital, The Catholic University of Korea, Suwon, Republic of Korea, 2Center for Narcolepsy, Stanford University, California, USA

Lifestyles and sleep
Poster Board#015-Monday: P0049
Media use before sleep can curtail sleep time and increase sleep complaints
Suganuma Nakamori 1,2 *, T. Kikuchi1,2, K. Yanagi2, S. Yamamura2, H. Morishima2, H. Adachi1,2, T. Kumano-go1,2, A. Mikami1,3, Y. Sugita1,2, M. Takeda2.
1Osaka University Health Care Center, 2Psychiatry, Department of Integrated Medicine, Division of Internal Medicine, Osaka University Graduate School of Medicine, 3Osaka Prefectural Mental Health Center, Japan

Poster Board#016-Monday: P0109
Media use increases sleep disturbance and obesity whereas insomnia associates eating habits.
Suganuma Nakamori 1,2 *, T. Kikuchi1,2, K. Yanagi2, S. Yamamura2, H. Morishima2, H. Adachi1,2, T. Kumano-go1,2, A. Mikami1,3, Y. Sugita1,2, M. Takeda2.
1Osaka University Health Care Center, 2Psychiatry, Department of Integrated Medicine, Division of Internal Medicine, Osaka University Graduate School of Medicine; 3Osaka Prefectural Mental Health Center, Japan

Poster Board#017-Monday: P0114
Peculiarities of metabolic mechanisms of regulation sleep processes in Asian and European populations in Eastern Siberia: pilot study
Scientific Centre of Medical Ecology ESSC SD RAMS, Irkutsk, Russia

Pharmacology of sleep and sleep disorders
Poster Board#018-Monday: P0021
Influence of zolpidem on GABA(B) receptor expression and function in the dorsal horn of the rat spinal cord
I. Korzh *, I. Fedotova.
Kharkov Medical University, Kharkov, Ukraine

Treatment of sleep disorders / Poster presentation
Poster Board#019-Monday: P0003
Mild obstructive sleep apnea is a progressive disease—a long term follow-up
Kuopio University Hospital, Department of Otorhinolaryngology, Kuopio, Finland
REM Sleep disorders

**Narcolepsy**
Poster Board#020-Monday: P0015
Low-resolution brain electromagnetic tomography (LORETA) identifies brain regions linked to psychometric performance under modafinil in narcolepsy
M. Saletu1 *, P. Anderer2, H.V. Semlitsch2, G.M. Saletu-Zyhlarz2, M. Mandl2, J. Zeithofer1, B. Saletu2.
1Department of Neurology, Medical University of Vienna, Austria, 2Department of Psychiatry, Medical University of Vienna, Austria

Poster Board#021-Monday: P0078
REM atonia perceived as sleep paralysis in a patient without narcolepsy
F. Siddiqui 1 *, E. Osuna2, A.S. Walters2, S. Chokroverty2.
1Department of Neurology, University of Toledo Health Science Center, Toledo, OH, USA, 2NJ Neuroscience institute at JFK Medical Center, Seton Hall University School of Graduate Medical Education. Edison, NJ, USA

Poster Board#022-Monday: P0080
HLA Class II studies in Korean narcolepsy patients: Additional predisposing effects of DQB1*0301 and protective effects of DQB1*0601 in trans of DQB1*0602
S.C. Hong 1 *, J.-H. Jeong1, Y.-K. Shin1, S.-P. Lee1, J.-H. Han1, E. Mignot2.
1Department of Neuropsychiatry, St. Vincent’s Hospital, Catholic University of Korea, Suwon, Republic of Korea, 2Center for Narcolepsy, Stanford University, CA, USA

Poster Board#023-Monday: P0082
HLA Class II studies in Korean narcolepsy patients: Additional predisposing effects of DQB1*0301 and protective effects of DQB1*0601 in trans of DQB1*0602
S.C. Hong 1 *, J.-H. Jeong1, Y.-K. Shin1, J.-S. Yoon2, S.-P. Lee1, J.-H. Han1, E. Mignot3.
1Department of Neuropsychiatry, St. Vincent’s Hospital, Catholic University of Korea, Suwon, Republic of Korea, 2Department of Psychiatry and Research Institute of Medical Science, Chonnam National University Medical School, Kwangju, Republic of Korea, 3Center for Narcolepsy, Stanford University, CA, USA

Movement Disorders

**Parasomnias**
Poster Board#024-Monday: P0071
Nocturnal groaning: parasomnia related to REM-sleep
M. Veldi1,2,3 *, M. Partinen3, T. Torma1, V. Vasar2, M. Kull1.
1Ear Clinic of the Tartu University Clinic, Estonia, 2Department of Psychiatry, University of Tartu, Estonia, 3Skogby Sleep Clinic, Finland

**Periodic limb movements**
Poster Board#025-Monday: P0062
Validation of the new actigraphy system SOMNOwatch for the measurement of periodic leg movements
H. Benes 1 *, G. Kuchler2, R. Kohnen3.
Poster Board#026-Monday: P0066
**Restless legs syndrome and changes of muscular tone**

M. Veldi 1,2,4 *, A. Vain3, V. Vasar1, M. Kull2, M. Partinen4.
1Department of Psychiatry, 2Ear Clinic, 3Institute of Experimental Physics and Technology, University of Tartu, Estonia, 4Skogby Sleep Clinic, Espoo, Finland

Poster Board#027-Monday: P0074
**Prolonged leg movements in low ferritin subjects**

C. Mack1, D. Sharon 1,2 *.
1Advanced Sleep Center, Metairie, LA, USA, 2Premier Sleep Medicine Center, Baton Rouge, USA

Poster Board#028-Monday: P0075
**Periodic limb movement disorder in chemically exposed population**

M. Shamsnia *, A. Shahgoli, D. Sharon, L. Shamsnia, C. Mack.
Tulane University Hospital & Clinic/Advanced Sleep Center New Orleans, LA Metairie, LA, USA

Poster Board#029-Monday: P0089
**Characteristics of periodic leg movements in patients with Primary RLS during the first and second half of the night, hours of the night and in different stages of sleep**

S. Ismailogullari, M. Aksu *.
Neurology Department, Sleep Unit, Erciyes University Medical Faculty, Kayseri, Turkey

Poster Board#030-Monday: P0001
**Prevalence of restless legs syndrome in population of post-stroke patients**

Department of Adults’ Neurology, Medical University of Gdansk, Poland, Department of Hypertension and Diabetology, Medical University of Gdansk, Poland

Poster Board#031-Monday: P0005
**Preliminary study on reliability and validity of the Japanese version of the International Restless Legs Syndrome Study Group Rating Scale (IRLS)**

1Japan Somnology Center, Neuropsychiatric Research Institute, Tokyo, Japan, 2Nippon Boehringer Ingelheim Co., Ltd., Hyogo, Japan, 3Japanese Society for Pharmacoepidemiology, Tokyo, Japan, 4Department of Psychiatry, Hannan Hospital, Osaka, Japan, 5Department of Neurology, Dokkyo University School of Medicine, Tochigi, Japan, 6Toranomon Hospital, Showa University School of Medicine, Tokyo, Japan

Poster Board#032-Monday: P0007
**Pramipexole significantly reduces periodic limb movement index (PLMI) in restless legs syndrome (RLS)**

L. Jama1 *, M. Partinen1, K. Hirvonen1,2, A. Alakuijala1, C. Hublin3,4, I. Tamminen5, J. Koester6.
Efficacy of pramipexole by clinician and patient assessment during a polysomnographic (PSG) study of restless legs syndrome (RLS)

K. Hirvonen1,2 *, M. Partinen1, L. Jama1, A. Alakuijala1, C. Hublin3,4, I. Tamminen5, J. Koester6. 1Rinneko Research Centre, Espoo, Finland, 2Neurotest Tampere Oy, Tampere, Finland, 3Finnish Institute of Occupational Health, Brain@Work Research Center, Helsinki, Finland, 4Department of Neurology, University of Helsinki, Helsinki, Finland, 5Medical Division, Boehringer Ingelheim Finland Ky, Helsinki, Finland, 6Medical Division, Boehringer Ingelheim Pharma GmbH & Co. KG, Ingelheim, Germany

Sleep self-assessment by visual analogue scales (VASs) in a 6-week European trial of pramipexole for restless legs syndrome (RLS)

K. Stiasny-Kolster1 *, W.H. Oertel1, B. Bergtholdt2, Y. Hallstrom3, J. Albo4, L. Leissner5, T. Schindler6, For the Pramipexole in Restless Legs Syndrome Study Group

1Philipps-University Marburg, Marburg, Germany, 2Emovis GmbH, Berlin, Germany, 3Neuro Center, Stockholm, Sweden, 4Lakarhuset Vallingby, Vallingby, Sweden, 5Neurologiska Kliniken, Orebro, Sweden, 6Boehringer Ingelheim Pharma GmbH & Co. KG, Biberach, Germany

In patients with restless legs syndrome (RLS), pramipexole significantly improves periodic limb movements during time in bed index (PLMI)

M. Partinen1 *, K. Hirvonen1,2, L. Jama1, A. Alakuijala1, C. Hublin3,4, I. Tamminen5, J. Koester6

1Rinneko Research Centre, Espoo, Finland, 2Neurotest Tampere Oy, Tampere, Finland, 3Finnish Institute of Occupational Health, Brain@Work Research Center, Helsinki, Finland, 4Department of Neurology, University of Helsinki, Helsinki, Finland, 5Medical Division, Boehringer Ingelheim Pharma GmbH & Co. KG, Ingelheim, Germany
Effect of pramipexole on quality of life in restless legs syndrome: results spanning 9 months
C. Trenkwalder 1,2 *, K. Stiasny-Kolster3, A. Kupsch4, W. Oertel3, J. Koester5, German RLS-Pramipexole Study Group.
1Paracelsus-Elena Klinik, Kassel, Germany, 2Department of Clinical Neurophysiology, University of Goettingen, Goettingen, Germany, 3Department of Neurology, Philipps-University Marburg, Marburg, Germany, 4Department of Neurology, Charite, Campus Virchow, University Medicine Berlin, Berlin, Germany, 5Boehringer Ingelheim Pharma GmbH & Co. KG, Ingelheim, Germany

Types and time-course of adverse events in 3 double-blind trials of pramipexole for restless legs syndrome
W. Hening 1 *, J. Koester2.
1Department of Neurology, UMDNJ-RW Johnson Medical School, New Brunswick, NJ, USA, 2Medical Division, Boehringer Ingelheim Pharma GmbH and Co. KG, Ingelheim, Germany

Epidemiology of RLS in Korean adults
1Department of Neurology, Keimyung University, Dongsan Medical Center, Taegu; Republic of Korea, 2Department of Neurology, Inha University Hospital, Inchun; Republic of Korea, 3Department of Neurology, Kyunghee University, East-West Neo Medical Center, Seoul; Republic of Korea, 4Department of Neurology, Sungkyunkwan University, Sungkyunkwan University, Seoul; Republic of Korea, 5Department of Neurology, Hanyang University Hospital, Seoul, Republic of Korea, 6Department of Neurology, Johns Hopkins University, Hopkins Bayview Medical Center, Baltimore, MD, USA

Ropinirole treatment improves the symptoms of restless legs syndrome (RLS) within 2 nights of treatment
D. Garcia-Borreguero 1 *, N.L. Earl2.
1Sleep Research Institute, Madrid, Spain, 2GlaxoSmithKline, Research Triangle Park, NC, USA

Ropinirole improves sensory and motor symptoms in patients with restless legs syndrome who experience periodic leg movements in sleep
P.M. Becker 1 *, N.L. Earl2
1Sleep Medicine Associates of Texas, Dallas, TX, USA, 2GlaxoSmithKline, Research Triangle Park, NC, USA

Ropinirole reduces RLS symptoms in patients with primary restless legs syndrome (RLS) who report an insufficient amount of sleep
P.M. Becker 1 *, N.L. Earl2
Poster Board#043-Monday: P0040
**Time of symptom onset and duration of symptoms: characterization of two patient populations with restless legs syndrome**
R.P. Allen 1*, M. Calloway 2
1Johns Hopkins Bayview Medical Center, Baltimore, MD, USA, 2GlaxoSmithKline, Research Triangle Park, NC, USA

Poster Board#044-Monday: P0041
**Individual items on the international restless legs scale (IRLS) show a positive response to ropinirole treatment for restless legs syndrome (RLS)**
R.P. Allen 1*, N.L. Earl 2
1Johns Hopkins Bayview Medical Center, Baltimore, USA, 2GlaxoSmithKline, Research Triangle Park, USA

Poster Board#045-Monday: P0042
**Ropinirole provides long-term tolerability and efficacy: results from two 52-week studies**
P.M. Becker 1*, N.L. Earl 2
1Sleep Medicine Associates of Texas, Dallas, TX, USA, 2GlaxoSmithKline, Research Triangle Park, NC, USA

Poster Board#046-Monday: P0047
**Epidemiology of restless legs syndrome in a Georgian primary health care setting: a pilot study**
G. Kuchukhidze 1,3*, I. Toidze 1, I. Khatiashvili 1, M. Eliosishvili 1, L. Maisuradze 1, S. Kasradze 1, W. Hening 2, B. Hogl 3
1Research –Practical Center for Control and Prevention of Epilepsy, Tbilisi, Georgia, 2Department of Neurology, UMDNJ-RW Johnson Medical School, New York City, NY, USA, 3Department of Neurology, Innsbruck Medical University, Innsbruck, Austria

Poster Board#047-Monday: P0052
**Sleepiness and falling asleep in dopaminergic treated RLS: a polygraphic, double-blind, placebo-controlled, crossover study**
B. Frauscher *, V. Gschliesser, K. Kunz, E. Brandauer, W. Poewe, B. Hogl
Innsbruck Medical University, Department of Neurology, Innsbruck, Austria

Poster Board#048-Monday: P0053
**Restless legs syndrome and neuropathy in patients with systematic lupus erythomatosus**
M. Sieminski 1, Z. Czuszynska 2, R. Hebel 2, M. Kosedra-Dragan 2, J. Siebert 2, W.M. Nyka 1
1Dept. of Adults’ Neurology, Medical University of Gdansk, Poland, 2Dept. of Family Medicine, Medical University of Gdansk, Poland

Poster Board#049-Monday: P0054
**Restless legs syndrome and its correlation with somatic and psychological complaints in the Japanese general population**
M. Enomoto 1,2*, L. Li 3, S. Aritake 1,2, Y. Nagase 1, T. Kaji 1, H. Tagaya 1, K. Mishima 1, M. Matsuura 2, Y. Kaneita 4, T. Ohida 4, M. Uchiyama 5
Increased prevalence of restless legs syndrome in narcoleptic patients
S. Fulda *, P.A. Beitinger, R. Wehrle, H. Himmerich, T. Pollmacher, T.C. Wetter.
Max Planck Institute for Psychiatry, Munich, Germany

Prevalence of restless legs syndrome in Japan: A result of community-based study
T. Nomura 1 *, Y. Inoue2, M. Kusumi1, K. Nakashima1
1Department of Neurology, Institute of Neurological Sciences, Tottori University Faculty of Medicine; 2Japan Somnology Center, Neuropsychiatric Research Institute, Japan

Validation of a single question for the screening of restless legs syndrome
Y. Oka*, Y. Shimo, Y. Inoue.
Japan Somnology Center, Neuropsychiatric Research Institute, Tokyo, Japan

Low ferritin is associated with the development of augmentation in RLS
C. Trenkwalder 1 *, B. Hogl2, H. Benes3, R. Kohnen4
1Paracelsus-Elena-Klinik, Kassel, Germany, 2Neurology Department, Innsbruck Medical University, Innsbruck, Austria, 3Somni bene GmbH, Schwerin, Germany, 4MEREM GmbH, Nuremberg, Germany

How do general practitioners diagnose and treat restless legs syndrome in Scandinavia?
L. Leissner1 *, J. Gyring2, M. Karlsborg3, L. Regeur3, B. Bjorvatn4, H. Skeidsvoll5
1Sleep Unit Department of Neurology, Orebro University Hospital, Orebro, Sweden., 2Hammel Neurocenter, Hammel, Denmark., 3Department of Neurology, Bispebjerg Hospital, Copenhagen, Denmark., 4Department of Public Health and Primary Health Care, University of Bergen, Bergen, Norway, 5Department of Neurology, Haukeland University Hospital, Bergen, Norway

Restless legs syndrome (RLS) – unrecognized cause for insomnia and irritability in children
I. Mohri 1 *, K. Nishimura1, N. Tachibana2, M. Taniike1.
1Dept of Mental Health and Environmental Effects Research, The Research center for Child Mental Development, Osaka University Graduate School of Medicine, Osaka, Japan, 2Human Brain Research Center, Kyoto University Graduate School of Medicine, Kyoto, Japan
Poster Board#056-Monday: P0094
RLS should be considered in patients presenting with poor sleep in European Primary Care
P. Stillman 1 *, A. Myers2, R. Allen 3 *
1Primary Care Physician, Sussex, UK, 2Premark Services, Sayers Common, UK, 3Department of Neurology, Johns Hopkins University, Baltimore, MD, USA

Poster Board#057-Monday: P0095
A simple screener improves the recognition of clinically relevant RLS in Primary Care
R. Allen 1 *, P. Stillman2
1Department of Neurology, Johns Hopkins University, Baltimore, MD, USA, 2Primary Care Physician, Sussex, UK

Poster Board#058-Monday: P0096
Patients with clinically relevant RLS in European Primary Care experience significant sleep disturbance
R.P. Allen 1 *, P. Stillman2, A.J. Myers3
1Department of Neurology, Johns Hopkins University, Baltimore, MD, USA, 2Primary Care Physician, Sussex, UK, 3Premark Services, Sayers Common, UK

Poster Board#059-Monday: P0100
Prevalence and severity of restless legs syndrome in Japan
Department of Neurology, Fukuoka University, Fukuoka, Japan

Poster Board#060-Monday: P0101
RLS symptoms in blood donors are improved by iron sucrose injections
J. Ulfberg *, K. Schneider, G. Birgegard.
Sleep Disorders Center, Avesta Hospital, Department of Medical Sciences, Uppsala University Hospital, Uppsala, Sweden

Poster Board#061-Monday: P0103
Comparative polysomnographic and psychometric studies on the acute effects of gabapentin and ropinirol in the treatment of restless legs syndrome
Department of Psychiatry, Medical University of Vienna, Section of Sleep Research and Pharmacopsychiatry, Vienna, Austria

Poster Board#062-Monday: P0104
Previous augmentation is not predictive for re-occurrence of augmentation under dopaminergic therapy in severe restless legs syndrome
R. Kohnen 1 *, H. Benes2, B. H梭ogl3, C. Trenkwalder4.
1IMEREM, Nuernberg, Germany, 2Somnibene, Schwerin, Germany, 3Neurology Department, Innsbruck Medical University, Innsbruck, Austria, 4Paracelsus-Elena Hospital, Kassel, Germany
Poster Board#063-Monday: P0105
Leg activity recording (PAM-RL) validated in a comparison with PLMS/hr on a polysomnogram for control and RLS patients
C.E. Gamaldo *, R.E. Salas, C.J. Earley, R.P. Allen
Department of Neurology, Johns Hopkins University School of Medicine, USA

Poster Board#064-Monday: P0108
Treatment with ropinirole reduces sleep disturbance in patients with restless legs syndrome
D. Garcia-Borreguero 1 *, N.L. Earl2
1Sleep Research Institute, Madrid, Spain, 2GlaxoSmithKline, Research Triangle Park, NC, USA

Sleep and Breathing

Respiratory sleep disorders
Poster Board#065-Monday: P0006
Efficacy of an oral appliance (OA) compared to nCPAP over oxidative stress parameters in obstructive sleep apnea (OSA) patients – preliminary results
L.R. Bittencourt *, C. Dal-Fabbro, S.A. Garbuio, V. D’Almeida, R.F. Santos, S. Tufik
Disciplina de Medicina e Biologia do Sono – UNIFESP, Sao Paulo, SP, Brazil

Poster Board#066-Monday: P0017
Role of low-grade inflammation markers and soluble cell adhesion molecules in patients with obstructive sleep apnea
O. Korzh *, S. Krasnokutskiy, E. Lavrova.
Kharkov Medical Academy of Postgraduate Education, Kharkov, Ukraine

Poster Board#067-Monday: P0025
Assessment of aortic stiffness which is a new cardiovascular morbidity and mortality predictor in patients with obstructive sleep apnea syndrome and relation with severity of the disease
O. Kokturk 1 *, T.U. Ciftci1, Y. Tavil2, A. Kanbay1, N. Sen2, M.R. Yalcin2, A. Cengel2
Departments of 1Pulmonary Medicine and 2Cardiology, Gazi University Faculty of Medicine, Ankara, Turkey

Poster Board#068-Monday: P0028
Assessment of baroreflex sensivity in hypertensive patients with obstructive sleep apnea and obesity
O.P. Rotar 1 *, Y.V. Sviryev1, N.E. Zvartau1, A.O. Conrady1, A.L. Kalinkin2.
1Almazov Research Institute of Cardiology, Saint-Peterburg, Russia, 2Clinical Hospital 83, Moscow, Russia

Poster Board#069-Monday: P0030
Subjective sleep perception in COPD patients with obstructive sleep apnea
S. Thammasitboon 1 *, C.R. Crowder1, H. Dahl1, N. Simakajornboon2.
1Tulane University Health Sciences Center, New Orleans, LA, and 2Cincinnati Children’s Hospital Medical Center, Cincinnati, OH, USA
Poster Board#070-Monday: P0036  
**A case of obstructive sleep apnea syndrome caused by tortuous internal carotid artery**  
S. Kimura *.
*Department of Otorhinolaryngology, Onomichi Municipal Hospital, Japan*

Poster Board#071-Monday: P0050  
**Heart rate range during sleep reflect severity of obstructive sleep apnea**  
E.-J. Kim*, H.-B. Shin.  
*Eulji University School of Medicine, Department of Psychiatry, Division of Sleep Study, Republic of Korea*

Poster Board#072-Monday: P0059  
Anxiety sensitivity in suspected sleep disordered breathing patients  
T. Hion 1 *, M. Veldi1,2, T. Eller1.  
1Department of Psychiatry and 2Ear Clinic, University of Tartu, Estonia

Poster Board#073-Monday: P0064  
**Accuracy of the AASM-Level 3 Ambulatory Monitoring Device SOMNOscreenTM in unattended home measurements for Sleep Disordered Breathing (SDB)?**  
H. Hein 1 *, R. Warmuth2, G. Kuchler3  
1Private Practice for Respiratory and Sleep Medicine, Reinbek, Germany, 2Private Practice for Respiratory and Sleep Medicine, Berlin, Germany, 3SOMNOmedics, Kist, Germany

Poster Board#074-Monday: P0072  
**Ageing, sleep apnea, upper airway disorders, cardiac disorders, and symptoms of depression**  
M. Veldi 1,2,4 *, T. Eller1, T. Hion1, M. Pindmaa3, R. Ani2, M. Kull2 ,M. Partinen4, V. Vasarl  
1Department of Psychiatry and 2Ear Clinic of the Tartu University Clinic, Estonia, 3Pintmann Sleep Care Centre, Estonia, 4Skogby Sleep Clinic, Espoo, Finland

Poster Board#075-Monday: P0077  
**Experimental sleep fragmentation induces disordered breathing in men but not women**  
D.W. Carley *, M. Radulovacki  
*Center for Narcolepsy, Sleep and Health Research, Colleges of Nursing and Medicine, University of Illinois at Chicago, Chicago, Illinois, USA*

Poster Board#076-Monday: P0079  
**REM related obstructive sleep apnea remains in REM over a period of time**  
F. Siddiqui 1 *, E. Osuna2, A.S. Walters2, S. Chokroverty2.  
1Department of Neurology, University of Toledo Health Science Center, Toledo, OH, USA, 2NJ Neuroscience Institute at JFK Medical Center, Seton Hall University School of Graduate Medical Education, Edison, NJ, USA

Poster Board#077-Monday: P0102  
**Monocyte dysfunction in obstructive sleep apnea syndrome**  
*The Lloyd Rigler Sleep Apnea Research Laboratory, Unit of Anatomy and Cell Biology, The Ruth and Bruce Rappaport Faculty of Medicine, Technion, Haifa, Israel*
Poster Board#078-Monday: P0107
**Efficacy of adaptive servo-ventilation in patients with congestive heart failure and Cheyne–Stokes respiration**
Zhang Xilong *, K. Yin, X. Li.
*Department of Respiratory Medicine, the First Affiliated Hospital of Nanjing Medical University, Nanjing, China

**Sleep apnea and stroke**
Poster Board#079-Monday: P0073
**Acute ischemic stroke and sleep apnea: evolution of clinical findings, diffusion-weighted MRI, and blood pressure in the first 3 days after stroke onset**
S. Al Faqih *
*National Hospital, Baghdad, Iraq

**Sleep apnea in Asia**
Poster Board#080-Monday: P0111
**Assessment of quality of life in Thai population with snoring and/or obstructive sleep apnea**
*Department of Otolaryngology, Faculty of Medicine Siriraj Hospital, Mahidol University, Bangkok, Thailand

Poster Board#081-Monday: P0115
**Sleep apnea–hypopnea syndrome (SAHS) and pregnancy**
I.M. Madaeva *, N.L. Halhaeva, N.V. Protopopova, L.I. Kolesnikova
1Somnological Center, Scientific Centre of Medical Ecology ESSC SD RAMS, Irkutsk, Russia, 2Medical University, Irkutsk, Russia

**Pain and sleep**
Poster Board#082-Monday: P0035
**The efficacy and safety of zolpidem over 12 months in patients with low back pain and chronic insomnia**
M. Korzh *
*Sytenko Research Institute, Kharkov, Ukraine

Poster Board#083-Monday: P0113
**Antinociceptive effects of some serotonin reuptake inhibitors in a visceral pain model**
*Department of Pharmacology, Toxicology and Algesiology, University of Medicine and Pharmacy “Gr T. Popa”, Iasi, Romania

**Sleep in medical disorders**
Poster Board#084-Monday: P0004
**Autonomic control in CAD patients with metabolic syndrome and sleep apnea**
*Palanga, Lithuania
Could obstructive sleep apnea syndrome be a component of metabolic syndrome?
T.U. Ciftci *, O. Kokturk, A. Kanbay
Gazi University Faculty of Medicine, Department of Pulmonary Medicine, Ankara, Turkey

Nocturnal hypoxia and hypertension in sleep disordered breathing
G. Benbir *, D. Kaynak, H. Kaynak
Istanbul University Cerrahpasa Faculty of Medicine Department of Neurology, Sleep Disorders Unit, 34098, Istanbul, Turkey

Sleep disorders and sleep habits in children and adolescents with headache
M. Zarowski *, J. Mlodzikowska-Albrecht, B. Steinborn.
Department of Developmental Neurology, Poznan University of Medical Sciences, Poznan, Poland

Light therapy for managing sleep and behavioral symptoms in patients with dementia in an North Indian Population
1DM Neurology, 2Alzheimer’s Society of Delhi, 3ARDSI-Delhi chapter, 4Neurology, RML Hospital, Delhi, India

Sleep disordered breathing (SDB) depends on the site of the primary lesion in patients with nervous diseases
M.G. Poluektov *, I.I. Levin.
Moscow, Russian Federation

Effects of brain wave disturbance during sleep in Alzheimer’s disease
F. Subhani *.
Bolan Medical College, Quetta, Pakistan

Effects of zopiclone and zolpidem in elderly hypertensive patients with chronic insomnia
M. Korzh *
Sytenko Research Institute, Kharkov, Ukraine

Prevention of Ill-health Effects of Stress and Lifestyle (Part 33) – Relationship of lifestyle and quality of sleep
K. Nakayama *, K. Morimoto.

Epidemiology of sleep disorders

Miscellaneous
The prevalence of restless legs syndrome (RLS) in South Africa


Wits Dial-a-Bed Sleep Laboratory, School of Physiology, University of the Witwatersrand, Johannesburg, South Africa

Sleep disturbances in late pregnancy


1 Instituto de Psicologia Medica, Faculdade de Medicina, Coimbra, Portugal

Epidemiology of sleep disturbance in patients with partial seizures

Z. Adwan *.

Private clinic, Swiada, Syria

Estimation of prevalence of patients at risk for sleep disordered breathing in ENT outpatient clinic attendants (a pilot study).

G. Khandanyan 1,2 *, A. Shukuryan1,2, S. Khachatryan1,2, P. Zelveian1,3

1 Armenian Medical Association, Yerevan, Armenia, 2Yerevan State Medical University, Yerevan, Armenia, 3Institute of Cardiology, Yerevan, Armenia

Compressed tracheal sound analysis as a screening method for obstructive apneas and hypopneas

S.-L. Himanen 1 *, E. Huupponen1, A. Kulkas1, E. Rauhala1,2.

1Department of Clinical Neurophysiology, Medical Imaging Centre, Pirkanmaa Hospital District, Tampere; 2Department of Clinical Neurophysiology, Satakunta Central Hospital, Pori, Finland

Possible connection with thin signal curve in compressed tracheal sound analysis and flow limitation pattern in children


1Pediatric Clinics, Tampere University Hospital, Tampere, Finland, 2Department of Clinical Neurophysiology, Medical Imaging Centre, Pirkanmaa Hospital District, Tampere, Finland

Night waking in Thai infants at 3 months of age: Role of parental practices at bedtime


Department of Pediatrics, Faculty of Medicine, Prince of Songkla University, Hat-yai, Songkhla, Thailand
The impact of adenotonsillar hypertrophy of pediatric sleep apnea on child personality and behavior
S.K. Koo *, J.H. Yun, C.W. Han*.  
Busan Saint Mary’s Hospital, Busan, Republic of Korea

Evaluation of heart rate before and during spontaneous arousals in future victims of sudden infant death syndrome (SIDS)
I. Kato1, S. Scaillet2, J. Groswasser2, H. Togari1, A. Kahn2, P. Franco 2,3 *  
1Department of Pediatrics, Nagoya City University Medical School, Nagoya, Japan,  
2Pediatric Sleep Unit, University Children’s Hospital, Free University of Brussels, Brussels, Belgium, 3Pediatric Sleep Unit, H’opital Debrousse & INSERM-628, University Lyon 1, France

Recording and analysis of sleep
Comparison of both wrist actigraphs and polysomnograph in the primary sleep disorders
1Neuropsychiatry, Department of Psychiatry Konkuk University School of Medicine, Seoul, Republic of Korea, 2Neuropsychiatry, Department of Otorhinolaryngology Konkuk University School of Medicine, Seoul, Republic of Korea

Sleep deprivation and its consequences
Sleep patterns and sleep-related complaints (anxiety and depression) among foreigner ladies residents in Palestine during military attacks
D. Adnan El-Kharoubi *  
Palestine Medical Services, Balsam Hospital, Gaza, Palestine

Daytime correlates of sleep loss during the week in undergraduates
A.A. Gomes1, J. Tavares1, M.H.P. Azevedo 2 *.  
1Department of Sciences of Education, University of Aveiro, Portugal, 2Institute of Medical Psychology, Faculty of Medicine, University of Coimbra, Portugal

Sleep education
The need to enhance primary care identification and diagnosis of sleep problems
1 IMH/Woodbridge Hospital, Singapore, 2Biostatistics Unit, Yong Loo Lin School of Medicine, National University of Singapore, Singapore
Sleepy driving and road accident
Poster Board#106-Monday: P0058
Effectiveness of oral appliances and continues positive airway pressure on simulated driving performance in obstructive sleep apnea–hypopnea syndrome: a randomised trial
M.H.J. Doff1, A. Hoekema1, B. Stegenga1, M. Bakker2, W.H. Brouwer2, L.G.M. de Bont1, P.J. Wijkstra3, J.H. van der Hoeven 4 *.
1Department of Oral and Maxillofacial Surgery, 2Department of Clinical Neuropsychology, 3Department of Pulmonary Diseases, 4Department of Clinical Neurophysiology, University Medical Center Groningen, University of Groningen, Groningen, the Netherlands.

Poster Board#107-Monday: P0092
The effect of traumatic brain injury on the timing of sleep
P. Sarat Chandra *, B.S. Sharma, A. Gupta, Rajinder.
Neurosurgery, All India Institute of Medical Sciences, New Delhi, India

Surgical Treatment of Sleep Disorders
Poster Board#108-Monday: P0098
Lateral pharyngeal wall narrowing in obstructive sleep apnea syndrome (OSAS)
S.W. Kim1 *, S.H. Park3, C.H. Lee2, J.S. Chol1
1 Department of ORL-HNS, Kyunghee University, College of Medicine, Seoul, Republic of Korea, 2Park’s ENT Clinic, Daegu, Republic of Korea, 3Department of ORL-HNS, Seoul National University, College of Medicine, Seoul, Republic of Korea

Poster Board#109-Monday: P0112
Non-temperatured controlled radiofrequency in the treatment of patients with obstructive sleep-disordered breathing: How we do it?
Department of Otolaryngology, Faculty of Medicine Siriraj Hospital, Mahidol University, Bangkok, Thailand

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Monday 5 February 2007
19:30 – 24:00

Garden Party

Venue: In the Garden and around the Pool at Lower Lobby Level (below the Lobby Level).

All registered participants, accompanying persons, exhibitors and invited guests are invited to dinner, music and dancing.
The dress code will be “Smart Casual”.

20:30 – 21:30 WASM Karaoke Singing Contest.

Please register for participation to sing in the Contest at the WASM desk (F1) in the Foyer Area in front of the registration area on Sunday 4th February between 14:00 – 15:00 and also at the Party before the Contest starts.
Plenary Keynote Lecture

Venue: Vibhavadee Ballroom B and C, 1st Floor (Lobby Level), Sofitel Central Plaza Hotel, Ladprao, Bangkok

PKL.03:
Chair: Wayne A. Hening

Fatal familial insomnia: sleep and limbic system
Elio Lugaresi, MD
Sleep Lab, Neurological Clinic, Department of Neurological Sciences, University of Bologna, Italy

Biography
Prof. Elio Lugaresi, currently emeritus professor at the University of Bologna, was director of the Institute of Clinical Neurology at the same university from 1977 to 1998. In the course of his academic career, Prof. Lugaresi’s studies focused on epilepsy and sleep medicine to which he made original contributions. In particular, he established the pathophysiological link between snoring and obstructive sleep apnea, highlighting the possible risk factors for cardiovascular disease. Prof. Lugaresi undertook the first polysomnographic recordings of restless legs syndrome, describing the periodic myoclonic jerks arising during sleep (nocturnal myoclonus). Together with Prof. P. Gambetti of Cleveland, Prof. Lugaresi discovered a new human prion disease called fatal familial insomnia characterized by loss of sleep and dysautonomia, and linked to selective atrophy of the thalamus.

Prof. Lugaresi has published more than 500 scientific papers, mostly in international journals. He belongs to leading neurological societies worldwide and is an honorary member of many international medical and scientific societies. Prof. Lugaresi has also been awarded a number of prestigious prizes for his scientific contributions to sleep medicine.

Abstract of PKL.03
Fatal familial insomnia (FFI) is a human prion disease linked to the haplotype D172N-129M of the prion protein gene. The disease arises at around age 50 years and has a course of 8 ± 32 months. Apathy and drowsiness are the heralding symptoms. Loss of sleep, motor signs and generalized sympathetic activation are the cardinal symptoms and signs of the disease whose pathological correlate is selective thalamic degeneration predominantly involving the anteroventral and mediodorsal nuclei. Atrophy of the anteroventral and mediodorsal thalamic nuclei severs the connection between limbic cortex and hypothalamus and brain stem reticular formation leading to a state of generalized over activity. Morvan’s chorea and delirium tremens share the same cardinal features as FFI: the disconnection within the limbic system is again the factor responsible for generalized overactivation resulting in organic insomnia, i.e. agrypnia (from the Greek, to chase sleep) excitata. Sleep is controlled by a neuronal network running from the limbic cortex to the brain stem: This extensive network is embedded in the limbic system and operates in an integrated fashion following a caudo-rostral Jacksonian scheme.
Plenary Symposium

Venue: Vibhavadee Ballroom B, 1st Floor (Lobby Level), Sofitel Central Plaza Hotel, Ladprao, Bangkok

PS03. Sleep updates
Chair: Wayne A. Hening

PS03.1: Restless legs syndrome: from bedside to bench and back again
Christopher J. Earley, M.B., B. Ch., Ph.D.
Neurology, Johns Hopkins University School of Medicine, Baltimore, MD, USA

Biography
Christopher J. Earley is currently Associate Professor of Neurology and Associate Director, Sleep Disorders Center, Johns Hopkins University School of Medicine.

1983-1984 Internship, University Hospital, Galway, Ireland
1984-1987 Resident in Internal Medicine, Baylor College of Medicine, Houston, Texas
1987-1990 Resident in Neurology, University of Virginia, Charlottesville, VA
1990-1991 Senior Staff Fellow, Neurobiology Unit, NIH/NIA/GRC
1991- Full-Time Staff Neurologist, Johns Hopkins Bayview Medical Center
1993- Associate Director, Sleep Disorders Center, JHBMC
1994-2000 Co-Director, Neurosciences Critical Care Unit, JHBMC
1996-2001 Director, Neurovascular Ultrasound Lab, JHBMC
1996-2001 Director, Acute Stroke Service, JHBMC

PS03.2: Sleep disordered breathing: 2007 update
Patrick Lévy 1, 2.
1 Physiology and 2 University Respiratory Research Team (HP2) Inserm unit ERI17, Faculty of Medicine, University J Fourier, Grenoble, France

Biography
Patrick Lévy is a Professor of Physiology and Director of the University Respiratory Research Team (HP2) Inserm unit ERI17, Faculty of Medicine, University J Fourier, Grenoble, France.
PS03.3: Cognitive-behavioral management of insomnia: recent advances and innovations
Charles M. Morin, PhD
Universite Laval, Quebec City, Canada

Biography
Charles Morin is Professor of Psychology and Director of the Sleep Research Center at the Université Laval in Quebec City, Canada. He holds a Canada Research Chair on Sleep Disorders and is past President of the Canadian Sleep Society. He is Associate Editor for the journals SLEEP and Behavioral Sleep Medicine. He has published four books and over 100 articles and book chapters. His main contributions have been in the development and validation of psychological and behavioral approaches for treating chronic insomnia.

Wednesday 6 February 2007
10:45 – 11:00
Coffee, tea and refreshment

Young Investigator’s Highlight Presentation and Parallel Sessions

Young Investigator’s Highlight Presentation
Venue: Vibhavadee Ballroom C, First Floor (Lobby level)
Chair and Presenting of Awards: Markku Partinen

YIP01: Procedural and declarative learning tasks influence the density of sleep spindles in elderly subjects
Charite CBF Berlin, Germany

YIP02: Increased prevalence of restless legs syndrome in narcoleptic patients
S. Fulda *, P.A. Beilinger, R. Wehrle, H. Himmerich, T. Pollmacher, T.C. Wetter.
Max Planck Institute for Psychiatry, Munich, Germany

YIP03: Functional MRI correlates of alertness in a virtual reality task
H.J. Moller1 *, A.A. Rizzo2, D. Klimchuk3, R. Mitura3, D.J. Mikulis1
1Toronto Western Hospital, University Health Network, University of Toronto, Canada,
2Institute for Creative Technologies, University of Southern California, USA, 3Digital Media Works, Kanata, Canada

YIP04: Sleep disturbances in children with seizure disorders
S. Simakajornboon 1*, J. Phromchairak2, M. Abraham2, N. Simakajornboon2.
1Neurological Institute of Thailand, Bangkok, Thailand, 2Cincinnati Children’s Hospital Medical Center, Cincinnati, Ohio, USA
YIP05: Could formant frequencies of snore signals be an alternative means for the diagnosis of obstructive sleep apnea?
A.K. Ng 1*, T.S. Koh1, E. Baey2, K. Puvanendran3
1School of Electrical and Electronic Engineering, Nanyang Technological University, Singapore, 2Respironics Incorporated, Singapore, 3Sleep Disorders Unit, Singapore General Hospital, Singapore

YIP06: Is excessive daytime sleepiness a predictor of carotid atherosclerosis in sleep apnea?
M. Saletu 1 *, C. Sauter1, W. Lalouschek1, B. Saletu2, G. Kapfhammer3, T. Benesch4, J. Zeitlhofer1.
1 Department of Neurology, Medical University of Vienna; 2 Department of Psychiatry, Medical University of Vienna; 3 Pulmologisches Zentrum der Stadt Wien 2. Int. Abt.; 4Department of Medical Statistics, Medical University of Vienna, Austria

S50: New methods in cardiovascular risk assessment for patients with sleep disordered breathing
Sponsored by Weinmann GMBH
Venue: Vibhavadee Ballroom B, First Floor (Lobby level)
Chair: Prof. Jan Hedner, MD, PhD
Gothenburg, Sweden
Co-Chair: Prof. Gianfrancho Parati, MD, PhD,
Milan, Italy

S50.1: Symposium summary
J. A. Hedner
The Sleep Disorders Centre, Division of Pulmonary Medicine, Sahlgrenska University Hospital, Goteborg, Sweden
Introduction: A wealth of data has linked Sleep Disordered Breathing (SDB) to cardiovascular complications like hypertension, ischemic heart disease and stroke. Proposed mechanistic links includes hypoxia/reoxygenation, endothelial dysfunction and increased coagulability. Cellular mechanisms suggestive of early atherosclerosis have been demonstrated in SDB. Pertinent tasks therefore include not only identifying individuals with increased risk of cardiovascular consequences in these conditions but also to determine whether asymptomatic patients should be treated as a cardiovascular preventive step.
• 1st speaker: Prof. Gianfrancho Parati, MD, PhD
• 2nd speaker: Prof. Thomas Penzel, PhD, Berlin, Germany
• 3rd speaker: Assistant Prof. Ludger Grote, MD, PhD, Gothenburg, Sweden

S50.A: 1st speaker: Prof. Gianfrancho Parati, MD, PhD
Milan, Italy
The first speaker (GP) will summarize existing knowledge about cardiovascular risk factors and their assessment in today’s cardiovascular research area. Aim of this presentation is to understand the specific techniques and variables which are used for adequate cardiovascular risk prediction.

S50.B: 2nd speaker: Prof. Thomas Penzel, PhD,
Berlin, Germany
The second speaker (TP) will focus on cardiovascular and autonomic function associated with SDB. He will present both traditional and novel sensor and analysis tools used in overnight recordings. The presentation aims
to clarify how polysomnographic parameters may be used to assess the acute cardiovascular and autonomic consequences of SDB.

**S50.C: 3rd speaker: Assistant Prof. Ludger Grote, MD, PhD, Gothenburg, Sweden**

The third presentation (LG) will focus on novel approaches to analyze cardiovascular reactivity pattern in order to predict cardiovascular risk in patients with SDB. Data from ongoing studies will be presented. Aim of this presentation is to discuss the clinical feasibility for novel sleep diagnostic tools which reflect cardiovascular risk assessments complementary to existing traditional measures of SDB.

In summary, the clinical demand for improved diagnostic methods reflecting both SDB severity and SDB related cardiovascular risk is high. This symposium may provide insights on improved means of identifying subjects at risk in order to initiate adequate treatment and preventive methods.

**Declaration of conflict of interest:** Jan Hedner and Ludger Grote, Sleep disorders center at Sahlgrenska University Hospital, Gothenburg received research grant supports from Weinmann GMBH, Resmed AB, Breas Medical, Respironics Inc., and Itamar.

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**S07: Circadian rhythm sleep disorders**

**Venue:** Rangsit Room, Mezzanine Level

**Chair:** Phyllis Zee

*Professor of Neurology, Associate Director, Center for Sleep & Circadian Biology, Northwestern University, Chicago, IL, USA*

**Co-chair:** Garima Shukla

*Associate Professor, Department of Neurology, All India Institute of Medical Sciences, New Delhi, India*

**S07.1: Symposium summary**

P. Zee.

*Center for Sleep & Circadian Biology, 710 N. Lake Shore Drive, Northwestern University, Chicago, IL, USA*

International meetings on Sleep Medicine often concentrate on sleep disordered breathing, its treatment, the Restless legs syndrome and insomnia. Disorders of circadian sleep cycles, both the primary ones as well as those closely associated with many medical, psychiatric and neurologic conditions are often under-represented at scientific gatherings. The WASM Congress would be the ideal platform for discussion on this important section of sleep health, so as to enhance interest in this intriguing area of sleep among general physicians, psychiatrists, sleep specialists, neurologists and other specialists. Circadian sleep rhythm disorders have aroused a lot of interest among Sleep Medicine physicians, over the past decade. After the landmark discovery that the suprachiasmatic nucleus of the hypothalamus is the site of the master circadian pacemaker in mammals, and the discovery of the first mammalian circadian Clock gene, a lot of research has been conducted on the basic science front. Clinical research has been very limited compared to the basic science work and much of the clinical work has been focused on primary disorders of circadian sleep rhythms, e.g. jet lag, delayed and advanced sleep phase syndrome and disturbances in shift-workers. Even for these conditions, there is limited awareness among patients as well as physicians. Although it seems apparent that most neurological disorders, psychiatric conditions and many metabolic disorders, especially the chronic conditions, are associated with disturbances of sleep and biological rhythms, and that much symptomatology may result from this association, in addition to the fact that treatment of these rhythm disturbances may have a significant positive effect on quality of life of these patients, clinical research in this area has not received much priority. The physiologic basis of sleep chronobiology, recognition of the clinical conditions to which it is most relevant and their therapeutic aspects form the soul of this symposium.
Over the past decade, there has been tremendous progress in our understanding of the physiological, cellular and molecular basis for the regulation of circadian rhythms. The suprachiasmatic nuclei (SCN) in the anterior hypothalamus are a master clock that maintains a near-24-hour rhythm of electrical activity, even in the absence of environmental cues. This circadian rhythm is generated by intrinsic molecular mechanisms in the neurons of the SCN and controls or influences nearly all physiologic and behavioral functions, including attention, endocrine cycles, body temperature, melatonin secretion, and the sleep–wake cycle. In turn, the circadian clock is modulated by a wide variety of influences, including light, physical activity and melatonin from the pineal gland. For optimal function, endogenous circadian rhythms should be aligned with the desired sleep and wake times. Thus, disruption of circadian timing can result in disorders of sleep and wakefulness. Advances in our knowledge of the genetic regulation of circadian rhythms and how the circadian system interacts with the sleep homeostatic mechanisms have led to improved understanding of the pathophysiology of some circadian rhythm sleep disorders. The recent finding that in addition to regulating central circadian timing, circadian clock genes are expressed in tissues such as the liver and lungs will likely expand our appreciation of the role of biological timing to other areas of medicine.

S07.A: Dementia and problems with the circadian sleep cycle
Sonia Ancoli-Israel.
Professor of Psychiatry, Department of Psychiatry, University of California, San Diego, CA, USA

S07.B: Treatment of circadian rhythm disorders
R.T. Joseph.
Director-Sleep Medicine Fellowship, Harvard Medical School, Boston, MA, USA

S07.C: Circadian sleep–wake pattern abnormalities in neuro-infections
G. Shukla.
Department of Neurology, All India Institute of Medical Sciences, New Delhi, India

S23: Sleeping problems and metabolism

Venue: Kambhangbejara I Room, Mezzanine Level
Chair: Tarja Saaresranta, M.D., Ph.D.
Turku University Central Hospital, Department of Pulmonary Diseases, and Sleep Research Unit, University of Turku, Dentalia, Turku, Finland
Co-chair: Olli Polo, M.D., Ph.D.
Department of Respiratory Diseases, University of Tampere, Pikonlinna Hospital, Finland

S23.1: Symposium summary
T. Saaresranta.
Turku University Central Hospital, Department of Pulmonary Diseases, and Sleep Research Unit, University of Turku, Dentalia, Turku, Finland

Summary of intention and reasons why the symposium should be considered: Sleep loss, sleeping difficulties and sleep-disordered breathing are hot topics, which interest many research groups around the world. The proposal “Sleeping problems and metabolism” will cover sleep loss, menopausal sleeping problems, sleep-disordered breathing and their impact on metabolism. Sleep loss is becoming more and more common in our 24/7 societies in east and west, and concern of its harmful metabolic effects is growing. Menopausal sleeping problems deserve our attention, since the mean age is increasing and third or even more of woman’s life span is postmenopausal in western societies. Menopause impacts on metabolism as well. Besides a clinical problem, menopause is an important model of sleep disturbance, where subjective reports and objectively measured sleep often disagree. In this respect, menopause remains a methodological challenge for
sleep researchers. Sleep-disordered breathing is a combination of sleep and breathing disorders. The effects of sleep-disordered breathing on metabolism differ to some extent from those of “pure” sleep loss. Sleep-disordered breathing becomes more common after menopause. The role of menopausal hormonal changes in pathophysiology of sleep-disordered breathing and the role of menopausal hormone therapy will be discussed. The topic would be fresh and update. It would give a comprehensive review of the impact of “pure” sleep deprivation, sleep difficulties across menopause and sleep-disordered breathing on metabolism.

S23.A: OSA and lipids
Mary Ip, M.D., Ph.D.
Department of Medicine, The University of Hong Kong, Queen Mary Hospital, Pokfulam, Hong Kong, China

S23.B: Adipokines and sleep-disordered breathing
Joachim Ficker, M.D., Ph.D.
Department of Respiratory Medicine, Allergology, Sleep Medicine, Klinikum Nuernberg, Teaching Hospital of Friedrich-Alexander-University Erlangen-Nuernberg, Nuernberg, Germany

S23.C: Sleep across menopause
O. Polo, M.D., Ph.D.
Department of Respiratory Diseases, University of Tampere, Pikonlinna Hospital, Pikonlinna, Finland

S23.D: Sex-hormones and sleep-disordered breathing
T. Saarvesranta, M.D., Ph.D.
Department of Pulmonary Diseases and Sleep Research Unit, University of Turku, Turku, Finland

S25: Psychosocial consequences of restless legs syndrome

Venue: Kambhangbejara II Room, Mezzanine Level
Chair: Magdalena Hornyak, MD
University of Freiburg, Germany
Co-chair: Luigi Ferini-Strambi, MD
Fondazione San Raffaele del Monte Tabor, Milano, Italy

S25.1: Symposium summary
Magdalena Hornyak, MD
Center for Sleep Research and Sleep Medicine, Dept. Psychiatry and Psychotherapy, University Freiburg, Freiburg, Germany

Restless legs syndrome (RLS) is a distressing sensorimotor disorder occurring with a 5-10% prevalence in the USA and in European countries. RLS is often accompanied by severe sleep disturbances due to the nocturnal occurrence of symptoms. Sleep interruption and daytime fatigue are the complaints that disturb patients the most and are, in most cases, also the reason for consulting a physician. An association of RLS symptoms and depressive mood, tension state and elevated scores for depressive symptoms or anxiety has been observed. Actual epidemiological surveys applying valid diagnostic criteria demonstrated self-reported decrease of mental health, self-reported depressed mood and social isolation in RLS patients. Furthermore, assessments of the quality of life indicate diminished well-being in RLS. In the symposium, recent studies to neuropsychological findings and psychological consequences will be presented.
S25.A: Sleep fragmentation and frontal lobe function: RLS and PLMD “models”
Luigi Ferini-Strambi, MD.
Fondazione San Raffaele del Monte Tabor, Milano, Italy

S25.B: Cognitive functions in RLS
Stephany Fulda, PhD *, J. Winkelmann, T.C. Wetter.
Max Planck Institute of Psychiatry, Munich, Germany

S25.C: Better living with RLS: optimizing the patients’ coping strategies
Magdolna Hornyak, MD.
Sleep Disorders Unit, Psychiatry and Psychotherapy, University of Freiburg, Germany

S25.D: Quality of life in restless legs syndrome
Ralf Kohnen, PhD.
IMEREM GmbH, Nuremberg, Germany

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S29: Cyclic alternating pattern as a window to sleep physiology and pathology

Venue: Kambhangbejara III Room, Mezzanine Level
Chair: Robert J. Thomas
Harvard Medical School
Co-chair: Mario Terzano
University of Parma

S29.1: Symposium summary
Robert J. Thomas
Pulmonary Office, Beth Israel Deaconess Medical Center, Boston, MA, USA
Sleep-related oscillations entrain, and are entrained by, physiological and pathological influences. Continuous improvement in our understanding of one of the oscillatory phenomena of sleep, the cyclic alternating pattern, provides new insights and offers new challenges. These include more integrative approaches to sleep stability, sleep-related motor activation, parasomnias and epilepsy. This symposium will provide an update and aim to stimulate new direction of enquiry.

The dimension of sleep stability (vs. sleep stages) continues to offer new insights into the physiology and pathology of sleep. This symposium will cover new approaches to assess and use sleep stability using ECG-based cardiopulmonary coupling, the role of state instability in the pathogenesis of NREM parasomnias, and the relationship of motor and epileptic activation during sleep to a range of phasic activities during sleep. Leading researchers will present new data and summarize the state of the art in these individual areas.


S29.A: Integrated sleep stability states
Robert Thomas
Beth Israel Deaconess Medical Center, Harvard Medical School Boston, MA, USA

S29.B: Cyclic Alternating Pattern and parasomnias
Christian Guilleminault.
Stanford University Sleep Disorders Center, Stanford, CA, USA
Recent studies have shown that obstructive sleep apnea syndrome (OSAS) in children can lead to several consequences especially cardiovascular and neurocognitive complications. The current diagnostic modalities based on limited normative reference may underestimate the prevalence of OSAS in children. In this symposium, we will provide a detailed description of the current status of our understanding of OSAS-associated morbidity in children. The existing diagnostic criteria and treatment modalities for OSAS in children will be presented. In addition, we will discuss the limitation of current evaluation and management scheme based on available data. Finally, the clinical approach for this problem in Asian countries will be delineated. This session is aimed to update current status and to present new challenge on the morbidities, diagnosis and management of OSAS in children based on the recent studies. The future research directions in several areas of pediatric OSAS will be delineated. The session will attract both general sleep specialists and pediatric sleep specialists.

Obstructive sleep apnea syndrome (OSAS) is a frequent, albeit under diagnosed problem in children. If left untreated, OSAS may lead to substantial morbidities. The immediate consequences of OSAS in children include behavioral problem and learning deficits, pulmonary hypertension, as well as impaired growth. In addition, OSAS may also impose long-term adverse effects on neurocognitive and cardiovascular function. The mechanisms underlying these complications are unclear, although sleep fragmentation and intermittent hypoxia are believed to be the main culprits. The importance of early recognition of OSAS in infant and children can not be overemphasized. However, the diagnosis of OSAS remains one of the challenges in pediatric sleep medicine as a result of inadequate normative references. Recent studies have shown that current diagnostic modalities may underestimate the prevalence of OSAS in children. Even though OSAS is prevalent in adult and children, the clinical manifestation, diagnosis and treatment are quite different between the two groups. In this symposium, we will discuss the following topics:

2. Diagnostic criteria in making diagnosis of OSAS and the limitation of current normative data.
3. Current treatment modalities for pediatric OSAS and uncovers the potential limitations of the available data on these issues.
5. Discuss the clinical and research aspect of OSAS in Asian countries.

S38.A: Updates on diagnosis and treatment modalities in childhood OSA
David Gozal, MD
Dept of Pediatrics, University of Louisville, Louisville, KY, USA
S38.B: Updates on morbidity of OSA in children
Narong Simakajornboon, MD
Sleep Disorders Center, Division of Pulmonary Medicine, Cincinnati Children’s Hospital Medical Center, Cincinnati, OH, USA

S38.C: Obstructive sleep apnea in children: experience in Asian countries
Aroonwan Preuthipan, MD
Pediatric Pulmonary Division, Dept of Pediatrics, Faculty of Medicine, Ramathibodi Hospital, Mahidol University, Bangkok, Thailand

S38.D: What do we really know about UARS in children?
Christian Guilleminault, MD
Sleep Disorders Center, Stanford University, Stanford, CA, USA

Tuesday 6 February 2007
12:45 – 14:15

Luncheon Satellite Symposium

Venue: Vibhavadee Ballroom B, 1st Floor (Lobby Level), Sofitel Central Plaza Hotel, Ladprao, Bangkok

Sleep Apnea and Muscle Control

Sponsored by Weinmann S.E. Asia
Lunch will be provided

Tuesday 6 February 2007
14:30 – 15:30

Workshops and Committee Meeting
(Details will be announced and posted on the Message Board at the Congress)
Tuesday late afternoon and evening is FREE time for individual and group activities e.g. sightseeing program, shopping and dinner
You are cordially invited to attend Weinmann Luncheon Workshops and demonstration at the Kambhangbejara Room III, Mezzanine Floor, on Saturday 3rd (AM & PM) and Sunday 4th (AM) and visit our Booth # P2 on the 1st Floor of the Sofitel Central Plaza Hotel and to attend our Satellite Luncheon Symposium on “Sleep Apnea and Muscle Control” on Tuesday 6th February 2007, 12:45 – 14:15, Vibhavadee Ballroom B, on the 1st Floor, Sofitel Central Plaza Hotel.
Plenary Keynote Lecture

Venue: Vibhavadee Ballroom B, 1st Floor (Lobby Level), Sofitel Central Plaza Hotel, Ladprao, Bangkok

PKL.04
Chair: V. Mohan Kumar, Ph.D.

Sleep phylogeny: clues and challenges for theories of sleep function

Jerome M. Siegel, PhD
Professor of Psychiatry, UCLA, and Chief of Neurobiology Research VA GLAHS Sepulveda, CA, USA

Biography
B.S., City College of the City University of New York, 1968.

Appointments, Honors:
National Institutes of Health, Postdoctoral Fellow, 7/73-6/75.
Research Anatomist, Dept. of Anatomy, Univ. of Calif., Los Angeles, 6/75-12/75.
Asst. Prof. of Psychiatry, Univ. of Calif., Los Angeles, 7/78-6/84.
Chief, Neurobiology Research, Sepulveda VAMC, Los Angeles, 1/80-present.
Assoc. Prof. of Psychiatry, Univ. of Calif., Los Angeles, 7/84-6/89.
Prof. of Psychiatry, Univ. of Calif., Los Angeles, 7/89-present.
Member, Brain Research Institute, UCLA, 9/88-present.
Chair, Program Committee, Association of Professional Sleep Societies, 6/93-6/99.
Jacob Javits Neuroscience Investigator Award, National Institutes of Health / National Institute of Neurological Disorders and Stroke, Immunologic Factors in Narcolepsy, funding from 1999-2006.

Distinguished Scientist Award, for significant, original and sustained contributions to advances in the field of sleep research, Sleep Research Society, Seattle Washington, 2002.
William C. Dement Academic Achievement Award, American Academy of Sleep Medicine, June 20, 2005
Researcher of the Year, 2006, Narcolepsy Network, October 22, 2006

Abstract of PKL.04
The functions of mammalian sleep remain unclear. Most theories suggest a role for non-REM sleep in energy conservation and in nervous system recuperation from waking activities. Theories of REM sleep function have suggested a role for this state in periodic brain activation during sleep, in localized recuperative processes and in emotional regulation. Across species, the amount and nature of sleep is correlated with age, body size and ecological variables, including life in the terrestrial vs. aquatic environment, diet and the safety of the sleeping site. Sleep may be an efficient time for the completion of a number of neurological and physiological functions, but variations in sleep expression indicate that these functions may differ across species.
Plenary Symposium

Venue: Vibhavadee Ballroom B, 1st Floor (Lobby Level), Sofitel Central Plaza Hotel, Ladprao, Bangkok

PS04: Child sleep
Chair: Nittaya J. Kotchabhakdi, MD, M.Sc., FRCPed.

PS04.1: Cross-cultural perspectives on sleep in children and adolescents
Judith A. Owens, MD, MPH
Pediatric Sleep Disorders Clinic at Hasbro Children’s Hospital and the Learning, Attention, and Behavior Program at Rhode Island Hospital, USA

Biography
Dr. Judith Owens is an internationally-recognized authority on pediatric sleep and the author of over 75 original research and review articles in peer-review journals, chapters, and books on the topic. Her particular research interests are in the neurobehavioral and health consequences of sleep problems in children, pharmacologic treatment of pediatric sleep disorders, sleep health education, and cultural and psychosocial issues impacting on sleep. As a recipient of a 5-year NIH grant in sleep education, the Sleep Academic Award, she has developed educational materials for the Brown Medical School, as well as the American Academy of Sleep Medicine (AASM). Dr. Owens received the AASM 2006 Excellence in Education Award, and is currently the Chair of the AASM Section on Childhood Sleep Disorders and Development.

Dr. Owens is the Director of the Pediatric Sleep Disorders Clinic at Hasbro Children’s Hospital and the Learning, Attention, and Behavior Program at Rhode Island Hospital. She completed pediatric residency training at Children’s Hospital of Philadelphia, and fellowships in Behavioral Pediatrics at Minneapolis Children’s Medical Center and in Child Psychiatry at Brown University. She is board certified in Developmental/Behavioral Pediatrics and Sleep Medicine, and is an Associate Professor Pediatrics at the Brown Medical School.

Dr. Owens has been interviewed about her work by numerous national news publications, including Time, Newsweek, the New York Times, the Wall Street Journal, the Los Angeles Times, U.S. World and News Report, USA Today, and the Washington Post, as well as family and parenting periodicals such as Parent’s Magazine, Child, American Baby, and Working Mother. She has appeared on the Today Program, MS-NBC, Good Morning America, and the Discovery Health Channel, among others, as an expert in pediatric sleep issues. She has recently co-authored both a book for physicians on pediatric sleep disorders. "A Clinical Guide to Pediatric Sleep; Diagnosis and Management of Sleep Problems" (2003) and a parent book on sleep "Take Charge of Your Child's Sleep: The All-in-One Resource for Solving Sleep Problems in Kids and Teens" (available 10/05) with Jodi Mindell PhD.
PS04.2: Arousals and their implications for children with disturbed sleep
Oliviero Bruni, MD
Center for Pediatric Sleep Disorders, Dept. Developmental Neurology and Psychiatry, University of Rome “La Sapienza”, Via dei Sabelli 108, 00185 Rome, Italy

Biography
Oliviero Bruni received his M.D. in 1982 from the “ La Sapienza” University of Rome (Italy) where he also received the specialization in Child Neuropsychiatry in 1986. Dr. Bruni is chief of the Pediatric Sleep Centre of the Department of Developmental medicine and Psychiatry of the University of Rome “La Sapienza” (Italy). Dr. Bruni has been involved in sleep research and clinical care in children for over 15 years, and has published about 50 peer-reviewed papers, in addition to book chapters and abstracts. Dr. Bruni is President of the International Pediatric Sleep Association, member of the Board of Directors of the Italian Association of Sleep Medicine and of the Italian Sleep Research Society, and Field Editor (Pediatrics) of the journal Sleep Medicine. He is also member of the didactic committee of the Italian Association of Sleep Medicine, involved in the organization of the annual education course in Sleep Medicine of this Association. Dr. Bruni has been secretary of the European Pediatric Sleep Club of the European Sleep Research Society. He has been also involved, as Pediatric Sleep Advisor of the World Health Organization, for the development of Night Noise Guidelines. His specific areas of interest are the different aspects of sleep disorders in children and mainly epidemiology and development of sleep questionnaires. In the last years, he studied the arousal patterns in children, normal or with different pathologies, and the application of computer analysis in human sleep electroencephalogram, mostly devoted to the elucidation of the neurophysiological mechanisms of the Cyclic Alternating Pattern. Dr. Bruni has also a special interest in the analysis of sleep in mentally retarded subjects and, more recently, has been involved in the study of sleep neurophysiology of periodic limb movements and narcolepsy in children.

PS04.3: The cardiovascular consequences of childhood sleep-disordered breathing
Daniel K. Ng, MD, MSc., Dr. Med., 1, 2.
1Hong Kong Society of Paediatric Respirology; 2Department of Paediatrics, Kwong Wah Hospital, Hong Kong, China

Biography
Dr. Daniel K. Ng is currently the President of Hong Kong Society of Paediatric Respirology and Consultant Paediatrician in the Department of Paediatrics, Kwong Wah Hospital, Hong Kong. Dr. Ng graduated from the University of Hong Kong in 1984. He underwent general paediatric training in the Caritas Medical Centre and Kwong Wah Hospital in Hong Kong. His interest in paediatric respiratory medicine started in 1992 and he received further training in this area in the Hospital for Sick Children, Toronto. He was awarded Master of Medical Sciences by the University of Hong Kong for his works in neonatology in 1999. He received training in paediatric sleep medicine in Stanford University Sleep Disorders Center and started the paediatric sleep service in Kwong Wah Hospital. For his research works in paediatric sleep-disordered breathing, he was awarded Doctor of Medicine by the University of Hong Kong. Dr. Ng was Foundation Fellow of Hong Kong Academy of Medicine and Fellow of the Royal College of Physicians, Edinburgh. Dr. Ng’s main research interests are sleep-disordered breathing, asthma, allergic rhinitis and scoring system for children admitted to PICU.
S03. Predisposition for Insomnia: What is it and what do you do about it?

**Venue:** Vibhavadee Ballroom C, First Floor (Lobby level)

**Chair:** T. Roth,
*Henry Ford Hospital Sleep Center, Detroit, MI, USA*

**Co-Chair:** C. Drake
*Henry Ford Hospital Sleep Center, Detroit, MI, USA*

**S03.1: Symposium summary**

T. Roth,
*Sleep Disorders & Research Center, Henry Ford Hospital, Detroit, MI 48202, USA*

Although there is considerable evidence that insomnia involves multiple factors, the predisposition of insomnia has received the least amount of attention in scientific literature. This symposium will bring together experts in insomnia research to present the limited data available on this important aspect in insomnia and provide an opportunity to discuss the need and direction of future research.

Research over the past decade, formalized by the NIH State of the Science Conference, suggests that insomnia is a disorder rather than a symptom of an underlying medical or psychiatric disorder. The NIH refers to these other conditions as co-morbid rather than causal. These conditions are now thought of as precipitants for insomnia in vulnerable individuals rather than as primary causes in all individuals. In terms of understanding the pathophysiology of insomnia it is widely accepted that hyperarousal is a key element and a variety of biological and psychological assays have confirmed its presence in both primary and co-morbid insomnias. However, the question remains as to what role hyperarousal plays in the evolution of insomnia. Is some form of disturbed sleep a trait vulnerability, which resides in predisposed individuals even before the insomnia fully expresses itself? Studies have recently demonstrated an identifiable trait predisposition to disturbed sleep in vulnerable individuals following stress. Alternatively, is hyperarousal predominantly a maintaining factor in those individuals who already suffer from insomnia? While these two views are not necessarily contradictory, it is important to define the role of each in the evolution of chronic insomnia. In terms of therapeutics a predisposition suggests that preventive interventions are possible, while if hyperarousal is primarily a maintaining factor then treatment focused on hyperarousal can only be initiated after the insomnia is diagnosed. This symposium will review the data on hyperarousal in insomnia its role in the management of insomnia and the implications of these data in terms of the prevention and treatment of insomnia.
S11: Finding the dopamine abnormality in RLS: the iron–dopamine connection evaluated in translational research

Chair: Wolfgang Oertel
University of Marburg, Germany

S11.1: Symposium summary
R.P. Allen.
Neurology and Sleep Medicine, Johns Hopkins University, Baltimore, MD 21224, USA

This is both a trans-continental (Europe and America) and multiple discipline (Neurology, Psychology, Nutrition and Neuroscience) symposium. This symposium focuses on one of the most active areas of research into pathology of RLS and addresses the major puzzle of why dopaminergic medications work. The iron-deficiency model provides a basis for translational research to solve the mystery of the dopamine pathology in RLS. This will be of interest both to the clinician in terms of the basis for and potential changes in dopamine treatments and for the clinical scientists in terms of types of studies to be done in the future. Although dopaminergic medications have been demonstrated to be clearly effective for treatment of RLS the scant and conflicting evidence for dopaminergic pathology fails to indicate much about the nature of any dopamine abnormality. This leaves us uncertain what studies or treatments we should be looking at in the future. Understanding the biology related to the primary treatment could lead to better treatment and perhaps methods to minimize the augmentation problem with dopamine treatment. Since iron insufficiency appears to cause RLS it provides one approach to finding the dopamine abnormality. The translational research covered in this symposium uses the interaction of clinical, autopsy, animal, and cellular studies to unravel the effects of iron on dopamine in RLS. The results are somewhat surprising indicating increased dopamine production in moderate to severe RLS with increased amplitude of the circadian pattern. These results provide a basis for the effectiveness of dopaminergic treatment and also provide a broader appreciation of the dopamine abnormalities in RLS suggesting, in particular, problems with synaptic functioning.

The program starts with exploring dopamine abnormalities produced in the iron-deficient animal models of RLS. This is followed by a review of the cellular effects of iron deficiency based on iron chelation studies. The RLS autopsy material will then be presented noting similarities and differences from the animal and cell models. Finally an update on recent CSF and imaging studies in RLS patients will be presented in relation to the results from the prior presentations. The differences in the clinical results between the German and the American studies will also be reviewed in light of the general iron-dopamine relationships that have been discovered.

S11.A: Iron deficiency alters monoamine catabolism as well as feedback regulation of DA transporter functioning
L.E. Bianco, D.M. Konrad, John Beard.
Penn State University, University Park, PA, USA
S11.B; Iron–dopamine connection: cellular studies and possible mechanism
Christopher Earley
Department of Neurology, Johns Hopkins University, Baltimore, MD, USA

S11.C: The dopaminergic profile in the putamen and substantia nigra in restless leg syndrome
1Department of Neurosurgery, Penn State College of Medicine, Hershey, PA, USA, 2Department of Neurology, Johns Hopkins University, Baltimore, MD, USA, 3Department of Nutrition, Penn State University, University Park, PA, USA, 4Center for Human Growth and Development, The University of Michigan, Ann Arbor, MI, USA

S11.D; Iron and dopamine abnormalities in RLS patients: CSF and imaging studies
Richard P. Allen.
Department of Neurology, Johns Hopkins University, Baltimore, MD, USA

S17: Sleep and depression across the life span

Venue: Kambhangbejara I Room, Mezzanine Level
Chair: Edith Holsboer-Trachsler
Co-Chair: Ulrich Michael Hemmeter

S17.1: Symposium summary
E. Holsboer-Trachsler.
Department for Depression Research Unit, Sleep Medicine and Neurophysiology, Psychiatric University Clinics (UPK), Basel, Switzerland

This symposium will discuss the neurobiological pattern of sleep and the HPA system across the life span, in relation to health and depressive disease. Edith Holsboer-Trachsler will present first results of a Swiss survey study about the incidence of insomnia and the association with daytime consequences with the aim to provide a background for estimating the need for specific programs which would improve diagnostics and treatment. Martin Hatzinger will present data of the association of sleep and HPA regulation with behavior of at risks Kindergarten children for psychiatric morbidity. Ulrich Michael Hemmeter will present data on sleep EEG and cognitive function in adults, elderly subjects and patients with depression and dementia. Luc Staner will outline new neurophysiological and endocrine aspects of age-related sleep alterations regarding depression and antidepressant drugs.

S17.A: Sleep behaviour of the Swiss population: the first results of a survey study
Edith Holsboer-Trachsler.
Department for Depression Research Unit, Sleep Medicine and Neurophysiology, Psychiatric University Clinics (UPK), Basel, Switzerland

S17.B: Prediction in psychiatry: stress and sleep in Kindergarten children
Martin Hatzinger.
Psychiatrische Universitätspoliklinik, Basel, Switzerland
S18: The relationships of ADHD (attention deficit hyperactivity disorder) and sleep

Venue: Kambhangbejara II Room, Mezzanine Level
Chair: Barbara Fisher, PhD, Director, Brain-Evaluation and United Psychological Services, Washington Township, Michigan, 59100 Mound Road, Washington, Township, MI 48094, USA.
Co-chair: Arthur Walters, MD, Director, Sleep Center at New Jersey Neuroscience Institute and Professor of Neurology, Seton Hall University, 65 James Street, Edison, NJ 08818, USA.

S18.1: Symposium summary
B. Fisher.
Brain-Evaluation and United Psychological Services, Washington Township, MI, USA

The purpose of this symposium is to illustrate the ways in which sleep deficits can cause and influence the manifestations of attention deficit hyperactivity disorder (ADHD), a common neuropsychological disorder of children. Dr. Fisher, a neuropsychologist, will present a view of how symptoms of ADHD can vary depending on the presence and nature of a sleep disturbance. Dr. Walters will talk about RLS and PLMS and their close connection to ADHD in children as well as the association of attention deficit disorder (ADD) and RLS in adults. He will also discuss how growing pains in children can be a variant of RLS. Dr. Guilleminault will discuss the causes of respiratory disorder in children, their relationship to ADHD, and their treatment. Finally, Dr. Kotchabhakdi will present a view of how ADHD, RLS, and PLMD present in children in Thailand their link to iron deficiency.

S18.A: How sleep influences the clinical presentation of ADD/ADHD
B. Fisher.
Brain Evaluation/United Psychological Services, Washington Township, MI, USA

S18.B: Relationship of restless legs syndrome and periodic limb movements in sleep (RLS/PLMS) to attention deficit hyperactivity disorder (ADHD)
A. Walters 1,2.
1Sleep Center at New Jersey Neuroscience Institute; 2Neurology, Seton Hall University, Edison, NJ, USA

S18.C: Sleep related respiratory disturbances and ADHD
Y.S. Huang1, Christian Guilleminault, MD 2.
1Chang-Gung University Hospital, Taipei, Taiwan, 2Stanford University Sleep Medicine Program, Stanford, CA, USA
S18.D: ADHD, RLS, and PLMD in Thai children and their links to iron deficiency
Naiphinich Kotchabhakdi, Nittaya J. Kotchabhakdi.
Neuro-Behavioural Biology Center, Institute of Science and Technology for Research and Development; National Institute for Child and Family Development; Department of Pediatrics, Faculty of Medicine Ramathibodi Hospital, Mahidol University, Thailand

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S36. Understand and manage the interaction between chronic pain & sleep

Venue: Kambhangbejara III Room, Mezzanine Level
Chair: Gilles Lavigne, Montreal, Canada
Co-Chair: Veronique Viot-Blanc, Paris, France

S36.1: Symposium summary
Veronique Viot-Blanc. Sleep Unit, EFSN, H’opital Lariboisière, Paris, France
There is growing evidence that pain and sleep exert strong mutual relationship (circular influences). Chronic pain is reported by at least 11% of the general population with 2/3 complaining of unrefreshing sleep. This symposium will help sleep specialists to better understand: (1) the impact of chronic pain on fatigue and mood alteration; (2) the role of sleep deprivation in the genesis of hyperalgesia and widespread pain; (3) why fibromyalgia is a dominant pain condition associated with poor sleep in females; (4) the role of sleep disorders (e.g., insomnia, PLMS, sleep breathing disorders) on chronic pain. Finally, clinicians will benefit of the critical review on the efficacy of various management strategies used in sleep and their interaction with pain.


S36.B: 2nd speaker: M. Lautenbacher, Marburg, Germany. Sleep deprivation, mood and pain

S36.C: 3rd speaker: Veronique Viot-Blanc. Fibromyalgia and objective sleep

S36.D: 4th speaker/discussant: R. Armitage, Ann Arbor, USA.
Critical review: Pharmacological management of pain in sleep disorders
There is growing evidence that pain and sleep exert strong mutual relationship (circular influences). The focus of this symposium is to present an overview: 1. on the mechanisms (biological and pharmacological) between sleep disturbances and pain, fatigue and mood alteration in healthy and chronic pain plus fibromyalgia patients; 2. On the evidences that pain is perceived during sleep and over all sleep stages; 3. That deprivation of SWS or REM sleep or shorter sleep duration (4 instead of regular 8 hrs) generate hyperalgesia and widespread pain in both normal and patient populations; 4. That fibromyalgia which is among the most dominant pain condition is associated with poor sleep with an important female gender predilection; to determine the relationship between fibromyalgia symptoms and specific sleep disturbances (sleep reduction, sleep fragmentation, respiratory disturbances); 5. That the role of sleep disorders (e.g., insomnia, PLMS, sleep breathing disorders) on chronic pain needs to be estimated in population based studies; 6. Finally, a critical review on the efficacy of various management strategies used in sleep and pain interaction will be presented (sleep hygiene, cognitive behavioral therapy; medication for pain or sleep, respiration promoting devices).
Declaration of conflict of interest: medical advisor for Cephalon-France.
Oral Platform Sessions

OPS#4: Movement Disorders and Restless Legs Syndrome
Venue: Rangsit Room, Mezzanine Level
Chair: Manvir Bhatia, MD

Periodic limb movements
O0019: Periodic limb movement in chronic renal failure: an actigraph evaluation
1Sleep Medicine, 2Clinical Neurophysiology, 3Nephrology Department, Sir Ganga Ram Hospital, New Delhi, India

Restless legs syndrome
O0018: Quantitative thermal sensory testing and sympathetic skin response in primary restless legs syndrome – a prospective study of 57 Indian patients
G. Shukla *, S. Singh, V. Goyal, A. Srivastava, M. Behari.
Department of Neurology, All India Institute of Medical Sciences, New Delhi, India

O0021: The effects of low iron on adenosine and dopamine receptors
S. Gulyani1, M. Gleichmann2, B. Martin2, M.P. Mattson2, R.P. Allen1, C.J. Earley1 *
1Neurology, Johns Hopkins University, Baltimore, MD, USA, 2National Institute on Aging Intramural Research Program, Baltimore, MD, USA

O0027: Rotigotine transdermal patch provides continuous efficacy in patients with moderate to severe idiopathic restless legs syndrome – 24 month results from a multinational, multi-centre, open-label, follow-up trial
C. Trenkwalder1*, K. Stiasny-Kolster2, W. Poewe3, E. Schollmayer4, W.H. Oertel2, For the Rotigotine SP710 Study Group
1Paracelsus-Elena Klinik Kassel, Germany, 2Philipps-Universität Marburg, Germany, 3Universitätsklinik Innsbruck, Austria, 4Schwarz Pharma Mannheim, Germany

O0029: Ropinirole treatment effectively relieves the symptoms of restless legs syndrome, improving quality of life and daytime functioning
D. Garcia-Borreguero1*, N.L. Earl2
1Sleep Research Institute, Madrid, Spain, 2GlaxoSmithKline, Research Triangle Park, NC, USA

O0033: RLS-like activity induced by GABA-A receptor antagonist infused into caudolateral mesencephalic tegmentum in freely moving rat
UCLA/VAGLAHS, Los Angeles, CA, USA

O0040: Prevalence of restless legs syndrome in the general adult population of Yerevan, Armenia
S.G. Khachatryan *, Z.D. Tavadyan, H.S. Margaryan, H.S. Mouradyan, P.A. Zelveian
Armenian Medical Association, Yerevan, Armenia

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OPS#5: Restless Legs Syndrome
Venue: Ladprao A Room, Mezzanine Level
Chair: Birgit Hogl, MD

Restless legs syndrome
O0043: Transdermal Lisuride provides early and sustained improvement in quality of sleep and daytime tiredness in RLS patients.
1Somni bene GmbH, Schwerin, Germany, 2Neurology Department, Innsbruck Medical University, Innsbruck, Austria, 3Neurobiotec Pharma AG, Berlin, Germany, 4IMEREM GmbH, Nuremberg, Germany

O0044: On the definition of response, non-response and relapse to drug treatment in restless legs syndrome
R. Kohnen 1,2 *, H. Benes3, C. Meissner3, R. Benecke2.
1IMEREM GmbH, Nuremberg, Germany, 2Neurology Department, University of Rostock, Rostock, Germany, 3Somni bene GmbH, Schwerin, Germany

O0047: Sleep laboratory characteristics of patients with restless legs syndrome augmentation
Sleep Research Institute, Madrid, Spain

O0048: Combined EMG/fMRI recordings in patients with restless legs syndrome
Department of Psychiatry and Psychotherapy, University Hospital Freiburg, Germany

O0050: Restless legs syndrome patients: International Restless Legs Scale scores, serum ferritin levels and Suggested Immobilization Test results
D. Sharon 1*, C. Mack1, M. Hurst2, B. Hymel1.
1Comprehensive Sleep Medicine Center of the Gulf Coast, USA, 2Gulf Coast Research, USA

O0073: Double-blind, multi-centre, 2-year long-term study comparing treatment with cabergoline and levodopa in severe restless legs patients
B. Hogl 1*, H. Benes2, R. Kohnen3, C. Trenkwalder4, Caldir Study Group5,6,7.
1Neurology Department, Innsbruck Medical University, Innsbruck, Austria, 2Somni bene, Schwerin, Germany, 3IMEREM, Nuernberg, Germany, 4Paracelsus-Elena-Klinik, Kassel, Germany, 5, Austria, 6, Germany, 7, Sweden

OPS#6: Sleep and Breathing
Venue: Ladprao B Room, Mezzanine Level
Chair: Fang Han, MD

Respiratory sleep disorders
O0008: Obstructive sleep apnea degrades cumulative parasympathetic nerve system activity
M. Yin1,2 *, S. Miyazaki3, R. Tabata4, K. Ishikawa1, M. Okawa5.
O0015: Effect of CPAP treatment on serum adiponectin level and mean arterial pressure in male patients with obstructive sleep apnea syndrome  
Department of Respiratory Medicine, The First Affiliated Hospital of Nanjing Medical University, China

O0035: Treatment effect of CPAP on arterial stiffness reflected by cardio ankle vascular index in patients with obstructive sleep apnea hypopnea syndrome  
Y.H. Lu, Z.M. He, X.S. Dong, J. Li, X. Han, P. An, L. Wang, S.W. Yang, Q.Y. He, Fang Han*  
Department of Pulmonary Medicine, the People’s Hospital, Peking University, China, Department of Pulmonary Medicine, the People’s Hospital, Yun Nan Province, China

O0037: Effectiveness of obstructive sleep apnea therapy: a randomized parallel clinical trial of oral-appliance versus continuous positive airway pressure therapy  
A. Hoekema 1*, B. Stegenga1, P.J. Wijkstra2, J.H. van der Hoeven3 *, A.F. Meinesz2, L.G.M. de Bont1.  
1Department of Oral and Maxillofacial Surgery, 2Department of Pulmonary Diseases, 3Department of Clinical Neurophysiology, University Medical Center Groningen, University of Groningen, Groningen, The Netherlands

O0053: The diagnostic value of pulse oximetry in screening of sleep-disordered breathing in patients with arterial hypertension  
M.S. Buniatian1 *, P.A. Zelveian2, E.V. Oschepkova3, S.L. Babak4, A.N. Rogoza3.  
1Russian State Medical University, Moscow, Russian Federation, 2Institute of Cardiology, Yerevan, Armenia, 3Cardiology Research Complex, Moscow, Russian Federation, 4Research Institute of Pulmonology, Moscow, Russian Federation

O0068: Oxidative stress and platelet activation in obstructive sleep apnea syndrome (OSAS)  
The Lloyd Rigler Sleep Apnea Research Laboratory, Faculty of Medicine, Technion, Haifa, Israel
Luncheon Satellite Symposium

Venue: Vibhavadee Ballroom B, 1st Floor (Lobby Level), Sofitel Central Plaza Hotel, Ladprao, Bangkok

Pain and the Sensory Symptoms of RLS
Sponsored by XenoPort
Lunch will be served
Wednesday 7 February 2007
14:30 – 15:15

Plenary Keynote Lecture

Venue: Vibhavadee Ballroom B, 1st Floor (Lobby Level), Sofitel Central Plaza Hotel, Ladprao, Bangkok

PKL.05
Chair: J. Allan Hobson, MD

Narcolepsy: Are we making a difference?

Michael J. Thorpy, MD
Director, Sleep–Wake Disorders Center, Montefiore Medical Center, and Professor of Neurology, Albert Einstein College of Medicine, Bronx, New York, USA

Biography

Michael Thorpy, MD, board-certified in sleep disorders medicine, is director of the Sleep-Wake Disorders Center at Montefiore Medical Center, Bronx, New York. Both a clinician and a well-published researcher, Dr. Thorpy serves as professor of neurology at Albert Einstein College of Medicine and is the past chairman of the Sleep Section of the American Academy of Neurology. In addition, Dr. Thorpy is the past secretary of the National Sleep Foundation (NSF) and was founder and director of the NSF’s National Narcolepsy Registry, which was located at Montefiore.

Dr. Thorpy was born in New Zealand and earned his medical degree from the University of Otago in 1973. He has published extensively on narcolepsy, insomnia and sleep disorders. His numerous books include the Encyclopedia of Sleep and Sleep Disorders. His curriculum vitae lists more than 50 peer-reviewed articles, including publications in journals such as the New England Journal of Medicine.

Dr. Thorpy’s comprehensive computerized textbook of sleep, SleepMultiMedia (on CD-ROM), is the only one of its kind. In 1993, he was awarded one of the sleep field’s highest honors: the Nathaniel Kleitman Award from the American Academy of Sleep Medicine (formerly the American Sleep Disorders Association). Dr. Thorpy is frequently quoted in the media, including The New York Times, The Washington Post and Good Housekeeping. He has appeared on the Today Show, 20/20 and Donahue and given more than 100 television, radio and print interviews.

Abstract of PKL.05

Narcolepsy treatment has changed dramatically over the last century. For the treatment of sleepiness in narcolepsy we have progressed from the early use of caffeine. We now have available a variety of different stimulants, and a new wake-promoting agent, modafinil, which is widely regarded as the firstline medication for narcolepsy. Cataplexy is now managed by medications whereas behavioral treatment, such as avoidance of emotion, was the only treatment available in the past. From the widespread use of antidepressant medications for cataplexy we now have a medication, sodium oxybate, which is the only FDA approved medication for narcolepsy, yet works by an unknown mechanism. We also recognize that other sleep disorders can occur in narcolepsy, such as obstructive sleep apnea syndrome or REM sleep behavior disorder and new treatments do allow these comorbid conditions to be effectively treated. However, we cannot cure narcolepsy but are the new treatments for excessive sleepiness and cataplexy effective? Are we improving the quality of life for our patients? Can we do so without harm? Such as that which occurs due to the adverse effect of medications? Why is it that some of our patients choose not to undergo pharmacotherapy for narcolepsy?
Plenary Symposia

PS05: Science of sleep

Venue: Vibhavadee Ballroom B, 1st Floor (Lobby Level), Sofitel Central Plaza Hotel, Ladprao, Bangkok
Chair: Jerome M. Siegel, PhD

PS05.1 Sleep and the immune system
Thomas Pollmächer*, MD 1,2,3.
1Center of Mental Health, Klinikum Ingolstadt;
2Psychiatry, Ludwig-Maximilians-University Munich;
3Max Planck Institute of Psychiatry, Munich, Germany

Biography
Thomas Pollmächer is director of the Center of Mental Health, Klinikum Ingolstadt, Professor of Psychiatry at the Ludwig-Maximilians-University Munich, and research team leader at the Max Planck Institute of Psychiatry, Munich, Germany.
Professor Pollmächer graduated from Freiburg University, Germany as medical doctor. He was trained in psychiatry and sleep medicine. Professor Pollmächer is active in sleep research since 1985 and published more than 200 papers on sleep in psychiatric and neurological disorders, on the interactions between sleep and the immune system in health and disease and on psychoimmunology of depression and schizophrenia. He is a long-standing member and current president of the European Sleep Research Society (ESRS).

*Sponsored by Cephalon

PS05.2: Neural circuit of orexin neurons: a mechanism that maintains proper sleep/wakefulness states according to inner and outer environments of animals

T. Sakurai.
Department of Pharmacology, Institute of Basic Medical Science, University of Tsukuba, Tsukuba, Ibaraki 305–8575, Japan
PS05.3: Neuroanatomical and genetic dissection of brain circuitry regulating REM sleep behavior disorder (RBD) and cataplexy

Jun Lu

Neurology Department, Beth Israel Deaconess Medical Center and Harvard Medical School, Boston, MA, USA

Biography
Dr. Jun Lu received MD from Fourth Military Medical University in China in 1984 and PhD from Texas A&M University in 1994. He then did post-doctoral training in University of Virginia and Harvard Medical School. Currently he is an assistant professor of Neurology department at Beth Israel Deaconess Medical Center and Harvard Medical School. His research interests are hypothalamic and brainstem circuitry regulating sleep-wake and motor behaviors. Recently he and his colleagues have identified the neural substances of brainstem REM sleep switch.

Wednesday 7 February 2007
16:45 – 17:00

Coffee, tea and refreshment

Wednesday 7 February 2007
17:00 – 18:30

Parallel Symposia and Oral Platform Sessions

S42: International Pediatric Sleep Association (IPSA/WASM symposium): Scoring and definition in children’s sleep

Venue: Vibhavadee Ballroom B, First Floor (Lobby level)
Chair: Prof. Oliviero Bruni
Co-chair: Prof. Daniel Ng

S42.1: Symposium summary
O. Bruni
Center for Pediatric Sleep Disorders, Department of Developmental Neurology and Psychiatry, University of Rome “La Sapienza”, Rome, Italy

The international consensus published by Rechtschaffen and Kales (1968) in “A manual of standardized terminology, techniques and scoring system for sleep stages of human subjects”, is still used for sleep stages scoring in adults. Some authors have applied these scoring rules in children, in very young infants and sometime in newborns. However we should have to consider that sleep medicine in infants and children is strictly related
to the marked developmental changes of the central nervous system, reflected in the maturation of the electroencephalogram as well as in cardio-respiratory and other autonomic functions. Few or no attempts have been made in order to better define what is normal in children and how physiological events during sleep changes with age. Some information are available on infant/child sleep scoring, but few data are available on how to define/classify respiratory events, autonomic nervous system events, EEG arousal or abnormal movements during sleep such as periodic limb movements. The aim of this symposium is to try to define the different types of patterns in infant/child sleep from EEG, cardio-respiratory, autonomic and motor point of view in order to identify the infant/child criteria for these events.

S42.A: Scoring and definition of respiratory events in children
Christian Guilleminault, MD
Sleep Disorders Clinic, Stanford University Medical Center, Stanford, CA, USA

S42.B: Scoring and definition of autonomic nervous system events in children
David Gozal, MD, L. Kheirandish-Gozal.
Division of Pediatric Sleep Medicine, Department of Pediatrics, University of Louisville, Louisville, KY, USA

S42.C: Scoring and definition of arousals in children and in infants
Patricia Franco, MD
Unité de Sommeil Pédiatrique, Hôpital Debrousse, Lyon, France

S42.D: Scoring and definition of periodic limb movements in children
Raffaele Ferri, MD
Sleep Research Centre, Department of Neurology I.C., Oasi Institute for Research on Mental Retardation and Brain Aging (IRCCS), Troina, Italy

S12: Iron treatments of restless legs syndrome

Venue: Vibhavadee Ballroom C, First Floor (Lobby level)
Chair: Christopher Earley, Johns Hopkins University, Baltimore, MD, USA
Co-chair: Richard Allen, Johns Hopkins University, Baltimore, MD, USA

S12.1: Symposium summary
R.P. Allen.
Neurology and Sleep Medicine, Johns Hopkins University, Baltimore, MD, USA

Iron treatment is one of the major treatment options for RLS but it has received little attention in either clinical studies or treatment considerations. Oral iron is recognized as important for cases with iron deficiency while IV iron may be useful for a wider range of cases. This symposium will provide both data and guidelines for currently acceptable use of oral and IV iron to treat RLS and it will examine the potential for future developments of this form of treatment for RLS. This is an important treatment modality not adequately covered in most meetings regarding RLS and one of considerable clinical and scientific interest. Iron deficiency has long been clinically recognized as significantly contributing to RLS and successfully treating the iron deficiency has been reported to either reduce the severity of RLS symptoms or in some cases completely eliminate the RLS. Despite both the clinical and epidemiological links of RLS to iron deficiency there has been limited studies of iron treatments for RLS. Evaluation of oral iron treatment is complicated by the need to control for the serum ferritin since oral iron is very poorly absorbed when ferritin values are high (e.g. >80 mg/l). Two studies of oral iron treatment of RLS patients with low normal values of ferritin have been completed. One open-label study shows benefits for patients with ferritin <45 mg/l. Another double-blind placebo-controlled study show significant benefits for those with ferritin <75 mg/l. In this symposium both of these studies will be reviewed in the first two presentations and presented with guidelines for evaluation and treatment of RLS with oral iron. IV iron treatment offers a promising additional option for treating RLS. This
has been evaluated both in open label treatments and in some recently completed double-blind placebo-controlled treatment trials including one trial in a special population of patients with end stage renal disease (ESRD). In this symposium the results from these trials will be reviewed and an update provided on the most recent outcomes from these studies. Particularly interesting is the use of the iron for patients with ESRD. IV iron treatment indications and methods will be reviewed both for current practical clinical use and also for future potential. The IV iron treatment results appear to confirm that iron insufficiency is a major factor in causing RLS. Discussion will include consideration of the implications of the iron treatment for RLS pathology.

Note: presentations will be made only by Dr. Earley and the 4 listed speakers. Dr. Allen will moderate part of the symposia during Dr. Earley’s presentation but will not make any presentation or discussion.

Conflict of interest: Drs Earley and Allen have research support from Luitpold Pharmaceuticals.

S12.A: Intravenous iron treatment of restless legs syndrome with normal iron
C.J. Earley.
Department of Neurology, Johns Hopkins University, Baltimore, MD, USA

S12.B: Oral iron treatment for RLS in the elderly
S. O’Keeffe.
Department of Geriatric Medicine, Galway University Hospitals, Galway, Ireland

S12.C: Beneficial effects of iron sucrose in restless legs syndrome; a randomized, double-blind, placebo-controlled comparison. One year follow-up
J. Ulfberg1, L. Leissner2, L. Grote3, J. Hedner3.
1Avesta, Sweden, 2Orebro, Sweden, 3Gothenburg, Sweden

S12.D: IV iron treatment of restless legs syndrome (RLS) occurring with dialysis
J.A. Sloand.
University of Rochester, Rochester, NY, USA

S08: Sleep and immunity

Venue: Phaholyothin II Room, Mezzanine Level
Chair: Mark R. Opp, Departments of Anesthesiology, Molecular & Integrative Physiology and the Neuroscience Graduate Program, University of Michigan Medical School, Ann Arbor, MI, USA
Co-chair: Thomas Pollmächer, Center of Mental Health, Klinikum Ingolstadt, and Max Planck Institute of Psychiatry, Munich, Germany

S08.1: Symposium summary
M.R. Opp. Departments of Anesthesiology, Molecular & Integrative Physiology and the Neuroscience Graduate Program, University of Michigan Medical School, Ann Arbor, MI, USA

This symposium will present state-of-the-art lectures of the most recent data demonstrating mechanisms by which sleep and the immune system interact, the consequences of immune challenge on sleep, and the impact of sleep loss and sleep disorders on immune function. The relationship of sleep to the immune system has been recognized for millennia (Aristotle wrote that fever is often accompanied by sleepiness), yet systematic studies of these interactions have only recently begun to be
conducted. Though the brain was once considered to be an immune-privileged site, we now know that the CNS and the immune system engage in bi-directional communication. We also know that immunomodulators and their receptors are present in normal healthy brain, where they function in the regulation/modulation of sleep–wake behavior. As such, immune activation may alter sleep, and sleep loss may impact immune function. This symposium will present state-of-the-art lectures of the most recent data demonstrating mechanisms by which sleep and the immune system interact, the consequences of immune challenge on sleep, and the impact of sleep loss and sleep disorders on immune function. Dr. Opp will begin with a review of what animal models have taught us about the mechanisms by which immunomodulators regulate sleep. Professor Tufik will then present data indicating that sleep loss hastens the onset of disease in an animal model of an autoimmune disease, systemic lupus erythematosus and non-obese diabetic mice. Human subjects research indicates that experimental or clinical activation of the immune system affects sleep and wakefulness, as will be discussed by Dr. Pollmächer. Though numerous studies demonstrate that sleep loss alter immune markers, there are fewer studies demonstrating consequences of sleep disorders on immune function. Dr. Consens will present new results indicating that individuals suffering from OSA have impaired immune responses to influenza vaccination. Collectively, presentations in this symposium will demonstrate the importance of sleep to the functioning of the immune system, with implications for health.

**S08.A: Why do we sleep differently when we are sick?**
M.R. Opp, Departments of Anesthesiology, Molecular & Integrative Physiology and the Neuroscience Graduate Program, University of Michigan Medical School, Ann Arbor, MI, USA

**S08.B: Effects of sleep deprivation on immunological responses in animal models**
S. Tufik, Departamento de Psicobiologia, UNIFESP – Escola Paulista de Medicina, S˜ao Paulo, Brazil

**S08.C: Experimental endotoxinemia: a powerful tool to study sleep-immune system interactions in humans**
T. Pollmächer. Center of Mental Health, Klinikum Ingolstadt, and Max Planck Institute of Psychiatry, Munich, Germany

**S08.D: Sleep apnea impairs immune responses to the flu-shot**
Flavia B. Consens, M.R. Opp. Departments of Neurology and Anesthesiology, University of Michigan Medical School, Ann Arbor, MI, USA

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**S15: Pain perception relation to sleep and restless legs syndrome**

**Venue:** Kambhangbejara I Room, Mezzanine Level  
**Chair:** Michael Smith, Johns Hopkins University, Baltimore, MD, USA

**S15.1: Symposium summary**
M.T. Smith. Dept of Psychiatry and Behavioral Sciences, Johns Hopkins School of Medicine, Baltimore, MD, USA

Pain is a major cause of sleep disruption creating a significant clinical problem exacerbated by the effects of sleep loss on pain perception. Restless Legs Syndrome (RLS) involves chronic sleep loss, appears to have altered pain perception and is apparently exacerbated by peripheral leg pain. Understanding these interactions inform both about pathology of pain and RLS and also about better evaluation and treatment of interest to anyone dealing with insomnia or RLS. It seems hardly surprising that studies find pain disturbs sleep but the contrary reports that sleep loss decreases pain thresholds seems very surprising. Such a situation essentially sets up a potential positive feedback with sleep loss exacerbating the pain that produces the sleep loss.
Conditions of chronic pain may involve this process. It is important that we better understand the nature of the relation of sleep to pain perception. Restless legs syndrome (RLS) provides an interesting model in which to explore this relation. Moderate to severe RLS when untreated involves significant chronic sleep loss and recently has been shown to have altered thresholds for some but not all types of pain. While the affects of sleep loss and RLS have some appealing similarities the differences may inform about either the pathology of RLS or differences between acute severe sleep deprivation in the pain experiments and the chronic mild to moderate sleep loss experienced by RLS patients. RLS may provide indications of sensory changes seen with this type of chronic sleep loss. The speed of recovery of normal pain responses with treatment of RLS may be informative about the relative importance of chronic sleep loss. The slow rate of recovery reported would be somewhat more consistent with recovery from chronic sleep loss since dopamine agonists correction of the presumed deficit in the dopaminergic nociceptive system might be expected to follow the same almost immediate relief pattern shown for the other sensory and motor symptoms of RLS.

This symposium will cover the major issues of the perception of pain during sleep, the effects of sleep deprivation on pain, the pain perception in untreated and treated RLS patients and the clinical picture of pain reports for RLS patients. Theoretical and practical clinical concepts regarding pain and sleep interactions will be reviewed.

S15.A: Pain perception during sleep
Gilles Lavigne. Sleep Research Center and Trauma Unit, Hôpital du Sacre Cœur de Montreal, Faculties of Dental Medicine and Medicine, Universite de Montreal, Montreal, Canada

S15.B: Neuropathic pain in restless legs syndrome – a disorder of pain control
Karen Stiasny-Kolster1, W. Magerl2, W. Oertel1, R. Treede2.
1Dept. of Neurology, Center of Nervous Diseases, Philipps University, Marburg, Germany, 2Institute of Physiology, Johannes Gutenberg University, Mainz, Germany

S15.C: Pain and restless legs syndrome (RLS): clinical observations from 165 cases
Kall Ray Chaudhuri, S. Muzerengi.
National RLS Clinic and NPF Centre of Excellence, King’s College Hospital, Denmark Hill, London, UK

S15.D: 4th speaker/discussant: Kallol Ray Chaudhuri, Kings College Hospital, London, UK

S40: Alternatives to CPAP for the pediatric and adult sleep disordered breathing

Venue: Kambhangbejara II Room, Mezzanine Level
Chair: Hartmut Schneider, Johns Hopkins University, Baltimore, MD, USA.

S40.1: Symposium summary
Hartmut Schneider. Johns Hopkins University, Baltimore, MD, USA

This symposium presents some practical alternatives to CPAP treatment that can and probably should be added to the treatments offered for sleep disordered breathing. Despite the proven effectiveness of CPAP treatment it has significant limitations including failure to accept this treatment both because of comfort and also cultural and psychological issues. Effective alternatives are now available for both adults and children. This symposium provides an update on efficacy and options for some of the effective CPAP alternatives and introduces some new promising approaches. These should enhance clinical management of SDB.

Continuous Positive Airway Pressure (CPAP) while certainly the single most effective and best studied of all treatments of sleep disordered breathing (SDB) has some significant limitations mostly involving compliance and acceptance of the treatment. A significant minority of patients find they cannot use CPAP because of discomfort or psychological response while a majority fails to use it for all of the sleep time. Moreover, cultural factors often make wearing a CPAP mask unacceptable. The continuing development of alternatives now
provides the clinician with attractive and effective alternatives that in some situations may even be preferred to CPAP. This symposium will focus on some of these current and new CPAP alternatives. This symposium will first review the pathophysiology of SDB and its relation to possible interventions other than CPAP. This review provides a knowledge base supporting evaluation and possible further developments of these alternatives. This also indicates some of the limitations of these approaches. The use of oral appliances has now been well documented to work in a wide variety of approaches with adult SDB. These now represent a viable alternative to CPAP for some patients. The options, indications for effectiveness and limitations of oral appliances for adults will be reviewed. For pediatric SDB surgical interventions continue to show considerable promise and in many cases may be the treatment of choice. The potential developmental problems for children with SDB underscore the importance of determining the most effective practical treatment for this population. Current and new surgical approaches will be reviewed for pediatric SDB. The final presentation in this symposium will present a novel approach to SDB using the nasal cannula. This approach has now been evaluated both in pediatric and adult SDB. The effectiveness and limitations of this promising new approach will be reviewed. The availability of this approach will also be considered. The discussant will summarize the presentations with attention to the future acceptance, use and developments of CPAP alternatives.

S40.A: Pathophysiology: Why do alternative therapies work?
J. Kirkness. University of Western Australia, Perth, Australia

S40.B: Dental appliances: CPAP alternatives for adult sleep disordered breathing
P. Cistulli. University of Sydney, Royal North Shore Hospital, St Leonards, Australia

S40.C: Surgical interventions: CPAP alternative for pediatric sleep disordered breathing
Christian Guilleminault, Stanford University, Stanford, CA, USA

S40.D: Nasal cannula for treatment of adult and pediatric sleep disordered breathing
Brian McGinley. Johns Hopkins University, Baltimore, MD, USA

S40.E Discussant: CPAP alternatives: the future
Hartmut Schneider. Johns Hopkins University, Baltimore, MD, USA


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S01: New approach to scoring and analysis of periodic leg movements (PLM) in different sleep disorders

Venue: Kambhangbejara III Room, Mezzanine Level
Chair: Marco Zucconi

S01.1: Symposium summary
Marco Zucconi. Sleep Disorders Center, Dept of Neurology, H San Raffaele Institute, Via Stamira d’Ancona 20, Milan, Italy

The definition and scoring criteria for Periodic Leg Movements (PLM) during sleep have not changed since 1990 (ICSD) and 1993 (ASDA Task Force) and are substantially based on the work carried out by Coleman et al. in 1982. The aim of the Atlas and Scoring Rules was to provide recommendations for the correct recording of motor events, the use of standard terminology and the definition of some common rules to quantify PLMs. However, the current standard for sleep recording is based on computerized technology and new pathologies have been recognized to be associated with PLMS, different motor patterns have also been detected and new sophisticated methods of signal analysis have changed our understanding of the impact of PLMs on sleep
patterns. In particular, the analysis of the EMG signal and of the periodicity of the phenomenon can permit to
evaluate in different ways muscle activity in normal and pathological sleep.
The Task Force of PLM scoring of the International Restless Leg Syndrome Study Group (IRLSSG) recently
declared innovative strategies to evaluate, count and score leg movements during sleep and wakefulness which
can respond to the new requirements of computerized sleep recording and to the understanding of the different
pathologies presenting with PLMs (Sleep Med 2006; 7: 175–183). With the aid and the experience of the Task
Force for PLM scoring of the International Restless Leg Syndrome Study Group the Symposium wishes to offer
an integrative contribution, from different points of view, to the impact of PLM analysis in relation to different
pathologies (RLS, PLMD, Rem Behavior Disorder, insomnia) and to define new strategies to evaluate, count
and scoring leg movements during sleep and wakefulness.

S01.A: The influence of different definition criteria on the PLM Index.
Stephany Fulda, MD *, T.C. Wetter, Max Planck Institute of Psychiatry, Munich, Germany

S01.B: The analysis of LM activity during sleep in narcolepsy/cataplexy
Raffaele Ferri, MD, M. Zucconi2, M. Manconi2, O. Bruni3, L. Ferini-Strambi2, S. Vandi4, P. Montagna4, E. Mignot5, G. Plazzi4
1Sleep Research Centre, Department of Neurology I.C., Oasi Institute (IRCCS), Troina; 2Department of Neurology, Sleep Disorders Center, H San Raffaele Scientific Institute, Universit`a Vita-Salute San Raffaele, Milan; 3Centre for Pediatric Sleep Disorders, Department of Developmental Neurology and Psychiatry, University of Rome “La Sapienza”, Rome; 4Department of Neurological Sciences, University of Bologna, Bologna, Italy, 5Center for Narcolepsy, Stanford University, California, USA

S01.C: PLM in patients with primary insomnia and in healthy controls
Magdolna Hornyack, MD. Sleep Disorders Unit, Psychiatry and Psychotherapy, University of Freiburg, Germany

S01.D: PLM pattern analysis in REM Behavior Disorder
Mauro Manconi, MD 1, R. Ferri2 , M. Zucconi1, L. Ferini-Strambi1.
1Sleep Disorders Center, Department of Neurology, Scientific Institute and University Ospedale San Raffaele, Vita-Salute University, Milan, Italy, 2Sleep Research Centre, Department of Neurology I.C., Oasi Institute (IRCCS), Troina, Italy

Oral Platform Sessions

OPS#7: Sleep Apnea
Venue: Rangsit Room, Mezzanine Level
Chair: Patrick Lévy

Sleep apnea

O0001: Sleep apnea syndrome prevalence and comorbidities in neurologic patients
L. Buttner1,2 *, H. Bennefeld1, K.-H. Ruhle2, K.-H. Beine3.
1Heinrich-Mann-Klinik, Neurologie und Neurorehabilitation, 36448 Bad Liebenstein, Heinrich-Mann-Str. 34, Germany, 2Klinik Ambroek, Klinik für Pneumologie, Allergologie und Schlafmedizin, Universität Witten/Herdecke, Ambroek Weg 60, 58091 Hagen, Germany, 3St. Marien-Hospital Hamm, Klinik für Psychiatrie und Psychotherapie, Knappenstrasse 19, 59071 Hamm, Germany

O0012: Is excessive daytime sleepiness a predictor of carotid atherosclerosis in sleep apnea?
M. Saletu 1*, C. Sauter1, W. Lalouschek1, B. Saletu2, G. Kapfhammer3,
T. Benesch1, J. Zeithofer1.
1Department of Neurology, Medical University of Vienna; 2Department of Psychiatry, Medical University of Vienna; 3Pulmologisches Zentrum der Stadt Wien 2. Int. Abt.; 4Department of Medical Statistics, Medical University of Vienna, Austria

O0059: The influence of patent foramen ovale on oxygen desaturation in obstructive sleep apnea
Sahlgrenska University Hospital/Ostra and /Sahlgrenska, Goteborg; Dept. Community Medicine, Lund University, Malmo and Skaraborg Institute, Skovde, Sweden

O0064: Obstructive sleep apnea in South-Indian subjects referred for polysomnography: a hospital based study
Division of Chest Diseases, Department of Medicine, St. John’s Medical College Hospital, Bangalore, India

O0070: Cephalometric variables in Indian male patients with obstructive sleep apnea – comparison with western patients
St. Johns Medical College Hospital, Bangalore, Karnataka, India

O0057: Finding the appropriate therapy in sleep apnea with the help of sleep-endoscopy. A case report
University Hospital Mannheim, Germany

OPS#8: Sleep in Medical Disorders
Venue: Ladprao A Room, Mezzanine Level
Chair: Claudia Trenkwalder

Sleep in medical disorders
O0005: Women with breast cancer who experience fatigue, depression and poor sleep before chemotherapy have more fatigue and poorer quality of life during chemotherapy
S. Ancoli-Israel *, L. Liu, J.R. Cooke, L. Fiorentino, B.A. Parker, L. Natarajan.
Departments of Psychiatry, Medicine and Family and Preventative Medicine, UCSD; Moores UCSD Cancer Center, and VASDHS, USA

O0006: Sleep disorders and excessive daytime sleepiness in the Palestinian population
L. El-Kharoubi *.
Balsam Hospital, Department of E.N.T, P.O. Box 97, Gaza, Palestine

O0020: Sleepiness and fatigue in major depressive disorder and therapeutic effects of a sedating antidepressant
J. Shen *, C.M. Shapiro.
O0039: Evaluation of the relationship between H-FABP levels and the risk of cardiac damage in patients with obstructive sleep apnea syndrome
B. Oktay1*, E. Akbal2, H. Firat1, S. Ardic1, R. Akdemir3.
1Department of Chest Medicine, Ministry of Health, Diskapi Y.B. Training and Research Hospital, Ankara, Turkey, 2Department of Internal Medicine, Ministry of Health, Diskapi Y.B. Training and Research Hospital, Ankara, Turkey, 3Department of Cardiology, Ministry of Health, Diskapi Y.B. Training and Research Hospital, Ankara, Turkey

O0052: The influence of desaturation events on cardiochronotropic response and morning peak of blood pressure in patients with arterial hypertension and suspected sleep disordered breathing
P.A. Zelveian*, M.S. Buniatian, E.V. Oschepkova, A.N. Rogoza
Institute of Cardiology, Yerevan, Armenia, Russian State Medical University Moscow, Russian Federation, Cardiology Research Complex, Moscow, Russian Federation

O0061: Nocturnal heart rate entropy is related to daytime blood pressure
Sleep Laboratory, Department of Pulmonary Medicine, Sahlgrenska University Hospital, Sweden

Wednesday 7 February 2007
18:45 – 22:00

Dinner Cruise along Chao Phaya River (Optional)
18:45 Buses leave from Sofitel to the Riverside Hotel Pier
Dress: Smart Casual
Plenary Keynote Lecture

Venue: Vibhavadee Ballroom B, 1st Floor (Lobby Level), Sofitel Central Plaza Hotel, Ladprao, Bangkok

PKL.06
Chair: Jerome Siegel

Where is the sleep centre in the basal forebrain?

V.M. Kumar.
Department of Physiology, All India Institute of Medical Sciences, New Delhi, India

Biography
Dr. Velayudhan Mohan Kumar is the former Professor & Head of the Department of Physiology, All India Institute of Medical Sciences, Ansari Nagar, New Delhi-110029
He is currently a member of the Executive Council of the Federation of Asian and Oceanian Physiological Societies; Vice-President of The Federation of India Physiological Societies; Immediate Past-President, Asian Sleep Research Society; Vice-President, World Federation of Sleep Research and Sleep Medicine Societies; and was President of Indian Society for Sleep Research in 2000.

Abstract of PKL.06
The humoral control of sleep, proposed during the early part of the 20th century, and passive state theory proposed by Bremer in the 1930s, dominated our understanding of the neural mechanism of sleep before the active role played by the basal forebrain, including the preoptic area, was known. It was Nauta (1947), who for the first time provided experimental evidence to show that the preoptic area is responsible for sleep. These conclusions, based on knife cut lesion studies, were later substantiated by stimulation studies which showed that sleep could be induced from large areas of the basal forebrain (Sterman and Clemente, 1962). A recent functional magnetic resonance imaging study has shown that it is the medial preoptic area (mPOA) which is primarily activated during slow wave sleep (SWS) episodes (Khubchandani et al., 2005). Selective neuronal lesion of large areas of basal forebrain (sparing the fibers of passage) produced a reduction in sleep for several days (John et al., 1994; John and Kumar, 1998; Srividya et al., 2005; Srividya et al., 2006). Though sleep was affected after the destruction of large areas of the basal forebrain, the mPOA lesion brought about a decrease in the duration of the SWS episodes and the frequency of paradoxical sleep episodes. On the other hand, the lesions of the surrounding areas brought about a decrease in the frequency of SWS episodes. On the basis of these findings it could be concluded that it is the mPOA that is critical for the maintenance of sleep, especially the SWS. The areas surrounding the mPOA may be more important for initiation of sleep. At the same time there could be an anatomical overlap of these regulatory mechanisms.
Plenary Symposia
Venue: Vibhavadee Ballroom B, 1st Floor (Lobby Level), Sofitel Central Plaza Hotel, Ladprao, Bangkok

PS06: REM functions
Chair: Jerome Siegel

PS06.1: Functions of REM-sleep
J. Allan Hobson, Harvard University Medical School, Boston, MA, USA

Biography
J. Allan Hobson is Professor of Psychiatry at Harvard Medical School, Boston, Massachusetts. He was born in Hartford, Connecticut on June 3, 1933 and obtained an AB degree from Wesleyan University in 1955, followed by his MD from Harvard Medical School in 1959. Between 1959 and 1960 he served his internship in medicine at Bellevue Hospital, New York and from 1960 to 1961 and 1964 to 1966, he was a resident in Psychiatry at Massachusetts Mental Health Center, Boston. During the academic year 1963-1964, Dr. Hobson was Special Fellow of the National Institute of Mental Health, Department of Physiology at the University of Lyon, France. Professor Hobson has held many visiting appointments, most recently as an Invited Lecturer at the Dipartimento di Psicologia, Universita’ di Bologna, Italy (900th Anniversary Celebration), 1988.

His successful career has brought Dr. Hobson many honors and awards including admission to the Boylston Medical Society and the Benjamin Rush Gold Medal for Best Scientific Exhibit, American Psychiatrist Association, 1978. He was the recipient of the 1998 Distinguished Scientist Award of the Sleep Research Society. In addition to numerous committee assignments at Harvard Medical School, Dr. Hobson has participated in numerous national and regional medical committees, and served on the editorial boards of many medical journals. He has held many consulting appointments including Consultant in Psychiatry for the Massachusetts Rehabilitation Commission since 1965. His major research interests are the neurophysiological basis of the mind and behavior; sleep and dreaming; and the history of neurology and psychiatry. He has contributed numerous articles to scientific journals and chapters to medical textbooks, and is the author or co-author of many books and monographs, including The Dreaming Brain, published by Basic Books in 1988 and Sleep, published by the Scientific American Library in 1989. Dr. Hobson’s most recent work has focused on the cognitive features and benefits of sleep. The results and concepts of this new work are reported in The Chemistry of Conscious States (Little Brown, 1994) and Consciousness (Scientific American Library, 1998), Dreaming as Delirium (The MIT Press, 1999), The Dream Drugstore (MIT Press, 2001), Out of Its Mind: Psychiatry in Crisis (Perseus Books, 2001), Dreaming: An Introduction to Sleep Science (Oxford, 2002), 13 Dreams Freud Never Had (Pi Press, 2005) and Angels to Neurones (Mattioli 1885, 2005). Of particular relevance to this project is his role as creator, director and producer of Dreamstage: An Experimental Portrait of the Dreaming Brain, which was shown at the Carpenter Center for the Visual Arts in May, 1977, toured nationally from 1980-1982, and in Bordeaux, France 1984. Dr. Hobson has advised science museums with the Society for Neuroscience and was especially influential in the design and funding of The Human Brain Exhibit at Boston’s Museum of Science in 1986. To celebrate the 50 years of sleep research since Aserinsky’s 1953 discovery of REM, he produced the DVD, Dreamstage 2003, 5000 copies of which were given to colleagues at the June 2003 meeting of the Sleep Research Society in Chicago.

Abstract
Recent research concerning the function of REM sleep in memory and learning will be reviewed. I will also present new data concerning the subjective experience of dreaming and speculate about its functional significance. With respect to learning, it is clear that REM sleep favors the consolidation and even improvement of procedural task mastery. The emotional salience of dreams despite their cognitive disorganization suggests
that emotional equilibrium may also be enhanced by this state. The psychological evidence is surprising in supporting a generic theory of dream content determination rather than the exclusively individualistic model embraced by dynamic psychology.

**PS06.2: REM sleep deprivation induced increased brain excitability is mediated by modulation of Na-K ATPase activity in the rat brain**

Birendra Nath Mallick, Ph.D., School of Life Science, Jawaharlal Nehru University, New Delhi 110067, India

**Biography**

Birendra Nath Mallick is a Professor in the School of Life Sciences, Jawaharlal Nehru University, New Delhi 110 067, India. He published many research papers and books from his research work on the neuronal mechanisms underlying REM sleep and functions. He has received numerous awards. In 2000 and 2004, he was honored and elected as fellow of the prestigious Indian National Academy of Science (FNASc) and the Indian National Academy (FNA) respectively.

**Abstract**

Most mammals spend a significant amount of sleeping time in Rapid Eye Movement (REM) sleep. It was proposed that REM sleep deprivation (REMSD) induced effects are mediated by alteration in neuronal excitability, however, the reason and mechanism thereof were unknown. Since, Na-K ATPase is a key player in maintaining transmembrane potential and neuronal excitability, it was hypothesized that REMSD affects neuronal and brain excitability by modulating its activity. Rats were REM sleep deprived by two methods; one, by classical flower-pot method and two, by injecting picrotoxin into locus coeruleus which did not allow the REM-OFF neurons to cease firing and suitable control studies were conducted. Na-K ATPase activity was estimated in synaptosome prepared from REMSD and control rat whole brain or after separation of neuron and glia. REMSD increased Na-K ATPase activity and decreased calcium-ions in the synaptosome prepared from the neurons, however, glia Na-K ATPase activity was inhibited. This was mediated by enhanced norepinephrine (NE) level which was due to non-cessation of REM-OFF neurons in the locus coeruleus. The elevated NE acted on alpha1 adrenoceptor, which through phospholipase C pathway activated calcium dependent-calmodulin and dephosphorylated the enzyme, while it reduced the membrane lipid peroxidation and calcium influx; both these mechanisms increased the Na-K ATPase activity. Additionally, circumstantial evidence suggests that some calcium ions required for the dephosphorylation of the enzyme were released from the neuronal membrane. Further, REMSD also increased the synthesis of Na-K ATPase molecules and this was also mediated by NE, both in vivo and in vitro. Thus, the findings support my hypothesis that “One of the functions of REM sleep is to maintain brain excitability” and it is mediated by modulating Na-K ATPase activity.

Funding from CSIR, DBT, ICMR, UGC and UPOE are acknowledged.

**PS06.3: Sleep, memory and brain plasticity**

M.P. Walker. Sleep and Neuroimaging Laboratory, Beth Israel Deaconess Medical Center, Harvard Medical School, Boston, MA, USA

**Biography**

Matthew Walker earned his Ph.D. in neuropsychology from the Medical Research Council in London, UK, and completed his post-doctoral training in cognitive neuroscience at the Massachusetts Mental Health Center, Boston. Following stints as an instructor in psychiatry and psychology, he became an assistant professor of psychology at Harvard Medical School in 2004, where he is currently director of the Sleep and Neuroimaging Laboratory. His research examines the influence of sleep in human cognition, with a particular focus on the role of sleep in modulating human memories and brain function using fMRI, qEEG and cognitive techniques.

For more details, visit: www.walkerlab.com
Abstract
The functions of sleep remain largely unknown, a surprising fact given the vast amount of time that this state takes from our lives. One of the most exciting, and contentious hypotheses, is that sleep contributes importantly to processes of learning, memory and brain plasticity. Over the last decade, a large number of studies, spanning most of the neurosciences, have begun to provide a substantive body of evidence supporting this role of sleep in what is becoming known as sleep-dependent memory processing. In this session, I will begin with an overview of the question - what is the relationship between sleep, memory and the brain, and how do we test it? This will be followed by a selection of behavioral and neuroimaging studies describing 1). The critical need for sleep after learning for the subsequent plastic consolidation of memory, and 2). the essential need for sleep before learning in preparing the brain for next-day memory formation/encoding. I will conclude with a conceptual framework of how sleep may modulate processes of human memory and brain plasticity.

Thursday 8 February 2007
10:45 – 11:00
Coffee, tea and refreshment

Thursday 8 February 2007
11:00 – 12:30
Parallel Symposium and Oral Platform Sessions

S10: Standards of practice in the diagnosis and treatment of sleep disorders: cookbook or common sense?

Venue: Vibhavadee Ballroom B, First Floor (Lobby level)
Chair: Michael R. Littner, MD

S10.1: Symposium summary
M.R. Littner 1, 2. 1VA Greater Los Angeles Healthcare System (VA GLAHS); 2David Geffen School of Medicine at UCLA, Los Angeles, CA, USA

The practice of sleep medicine requires recommendations summarizing established practices in the field. There are a number of these guidelines from various organizations. It is often not well understood how these guidelines are developed and upon what basis in evidence or other foundation the guidelines are based. This symposium will provide a primer on standards of practice from a group of individuals who have been involved in such development for a number of years and have contributed to many of the current guidelines from the AASM. An example of one such guideline development will also be presented.

Sleep Medicine as a discipline underwent a long gestation period, exited the womb, began infancy, and smoothly transitioned to childhood. However, this was followed by a difficult adolescence before entering the current golden period of young adulthood. Along the way, an infrastructure was built which included sleep societies, formal sleep centers, certification of sleep specialists, and standardization of practice based on a scientific foundation. This symposium will explore how such standards came to be, what is a standard of practice, and why such standards are important to our field. We will also delineate the difference between evidence-based and consensus approaches, why the standards are best when evidence-based, how evidence is applied to different types of clinical questions, and provide some examples of standards currently available. The limitations of the method will be discussed along with the American Academy of Sleep Medicine (AASM) process. How the AASM process is applied, not only to determining treatment standards but also to other areas such as the Rechtschaffen and Kales (R&K) update will be discussed. A part of the R&K update will be discussed as a specific example of the process.

Conflict of interest: Michael Littner, Speakers bureau for Takeda and Boehringer Ingelheim. Thomas Penzel, none. Max Hirshkowitz, Sleep disorders and research center conducts a wide variety of protocols on contract.
S10.A: The American Academy of Sleep Medicine process: from beginning to end
M. Hirshkowitz. Sleep Disorders and Research Center, Michael E. DeBakey Veterans Affairs Medical Center, Houston, TX, USA

S10.B: Standards of practice: an introduction and overview
M.R. Littner 1, 2. 1VA Greater Los Angeles Healthcare System (VA GLAHS); 2David Geffen School of Medicine at UCLA, Los Angeles, CA, USA

S10.C: Anatomy of an AASM Standard of Practice process: digital acquisition and display for sleep studies
T. Penzel. Sleep Center, Charite University Hospital Berlin, Germany

S10.D: T. Shimizu. Akita University, Japan

S13: Animal models of RLS: Phenotype assessments in alternate models
Venue: Kambhangbejara I Room, Mezzanine Level
Chair: Mauro Manconi, Vita-Salute University, Milano, Italy

S13.1: Symposium summary
R.P. Allen. Johns Hopkins University, Baltimore, MD, USA

Developing an animal model for RLS has been difficult but there have been recently some promising advances both in terms of defining the appropriate phenotype for an animal model of RLS and in evaluating these phenotypes under conditions presumed to be associated with RLS. This symposium will present the state of art for animal models of RLS that will enable clinical researchers to adapt these techniques both to evaluate pathology and treatments of RLS. This provides an important forum for furthering for the international community this critical step of developing an animal model of RLS.

Animal models are critical for advancing scientific study and treatment development for any disorder. The largely sensory aspect of RLS (the urge to move usually with paresthesias) complicates development of an animal model since it is hard to determine when an animal is experiencing abnormal sensory phenomena. Periodic leg movements, however, are a motor sign of RLS and can be evaluated in animals. Moreover factors affecting the PLM can then be evaluated for factors affecting their occurrence and these can be compared similar factors affecting their occurrence in humans both with and without RLS. Thus developing the technology for evaluating PLM in animals can advance our understanding of this motor sign of RLS and may provide a marker for disease process related to RLS.

Alternate animal phenotypes consistent with RLS would include increased head or mouth contact with the legs, increased wake times, decreased length of periods resting inactive not asleep and altered nociceptive responses all occurring more at the appropriate part of the animal’s circadian cycle (i.e. more at the end of the active period). The appropriateness of these phenotypic behaviors for an animal model of RLC can be examined by evaluating changes in the behaviors in conditions known to induce RLS such as iron deficiency.

In this symposium the PLM, sleep–wake and activity patterns will be discussed in relation to factors associated with RLS including age, lesions, genetic factors and iron deficiency. The presentations will present data covering each of these factors providing some evidence supporting appropriateness of various behavioral phenotypes. The symposium will end with an overall evaluation of both the proposed animal model and the RLS phenotypes used to evaluate these models. Future directions will be presented for development and evaluation of animal models of RLS.

S13: A PLM in the rat
Paul Christian Baier 1, 2. 1Department of Clinical Neurophysiology, University of Gottingen, Gottingen, Germany, 2Department of Psychiatry and Psychotherapy, University of Kiel, Kiel, Germany
S13.B: Anterior tibialis recording in rats
Mauro Manconi 1, T. Feroah2, W. Hutcins2, M. Zucconi1, L. Ferini-Stramb1
1Sleep Disorders Center, Department of Neurology, Scientific Institute and University Ospedale San Raffaele, Vita-Salute University, Milan, Italy,
2Circadian Rodent Sleep Lab, Division of Pulmonary and Critical Care, Dept of Pediatrics, Medical College of Wisconsin, Milwaukee, WI, USA

S13.C: RLS-like activity and PLM in rat after bicuculline microinfusion into the ventral external cortex of the inferior colliculus
D.Y.-Y. Lai. University of California Los Angeles, USA

S13.D: Limb movement during sleep in rats with spinal cord injury
A.M. Esteves1, M.T. de Mello1 *, C.L.P. Lancellotti2, C.L. Natal3, S. Tufik1.
1Department of Psychobiology, Federal University of Sao Paulo/UNIFESP, Brazil,
2Department of Pathology, Medical Sciences School, Santa Casa de Sao Paulo, Brazil,
3Department of Physiological Sciences, UFU, Brazil

S21: Sleep bruxism: a well known but unrecognized disorder in sleep medicine

Venue: Kambhangbejara III Room, Mezzanine Level
Chair: Takafumi Kato, Matsumoto Dental University
Co-chair: Naoko Tachibana

S21.1: Symposium summary
T. Kato. Matsumoto Dental University, Institute for Oral Science, Japan

Over years sleep bruxism (SB) has been recognized as a clinically relevant problem in dentistry rather than sleep medicine mainly because consequences were limited to orofacial issues, which did not attract physicians’ attention. However, recent studies over the last few decades have suggested that SB and associated orofacial conditions are not always interpreted as correctly as has been done in dentistry. Thus, the collaboration between sleep medicine and dentistry help us understand and manage these conditions. This symposium aims at increasing the recognition of SB in sleep medicine and thereby facilitating more integrated understanding of pathophysiology and management strategies for SB.

S21.A: Overview of sleep bruxism: history and on the way we are
Takafumi Kato. Institute for Oral Science, Matsumoto Dental University, Matsumoto, Japan

S21.B: Orodental consequences associated with sleep bruxism
Kazuyoshi Baba. Department of Masticatory Function Rehabilitation, Graduate School, Tokyo Medical and Dental University, Japan

S21.C Sleep bruxism and sleep related breathing disorders in children
Daniel K. Ng. Department of Paediatrics, Kwong Wah Hospital, Hong Kong, China

S21.D: Dental devices used during sleep
Kazuya Yoshida. Department of Oral and Maxillofacial Surgery, Graduate School of Medicine, Kyoto University, Kyoto, Japan

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S47: Autonomic nervous system (ANS) and sleep

**Venue:** Vibhavadee Ballroom C, First Floor (Lobby level)

**Chair:** S. Chokroverty, New Jersey Neuroscience Institute at JFK, Seton Hall University, Department of Neurology and Divisions of Clinical Neurophysiology and Sleep Medicine, Edison, NJ, USA

**Co-Chair:** Thomas Penzel, Charite Campus Mitte, Schlafmedizinisches Zentrum, Luisenstrasse 13, D-10117 Berlin, Germany

**S47.1: Symposium summary**

Sudhansu Chokroverty. New Jersey Neuroscience Institute at JFK, Seton Hall University, Department of Neurology and Divisions of Clinical Neurophysiology and Sleep Medicine, Edison, NJ, USA

It is important for sleep specialists to have a basic understanding of the interaction between the ANS and sleep. In this symposium, we will discuss sleep dysfunction in primary autonomic failure and autonomic changes in sleep disorders.

There is a close interrelationship both anatomically and physiologically between the central autonomic networks (CAN) in the nucleus tractus solitarius (NTS) region of the brainstem, cardiovascular, respiratory and sleep-wake generating neurons. Ascending and descending reciprocal connections between the NTS, ventral medulla, lower brainstem and hypothalamic-preoptic hypnogenic and respiratory neurons orchestrate ANS, sleep, respiration, circulation and other body systems to maintain body homeostasis. Profound functional changes occur in circulation, respiration, thermoregulation, gastrointestinal and urogenital systems during sleep due to alterations in autonomic outflow. Thus, sleep has an important effect on the functions of ANS, and dysfunction of the ANS may have significant impact on human sleep. For example, profound changes in sleep and breathing occur in multiple system atrophy (Shy–Drager Syndrome), the most well-known condition with primary autonomic failure. Studies of heart rate variability in different sleep stages and states, and in primary sleep disorders, such as obstructive sleep apnea syndrome, have shown significant impact of the ANS on sleep and sleep disorders. These findings have implications in our understanding of pathogenesis, prognosis and treatment of a variety of sleep disorders. It is important for sleep specialists to have a basic understanding of the interaction between the ANS and sleep. In this symposium, we will discuss sleep dysfunction in primary autonomic failure and autonomic changes in sleep disorders. The symposium ends with a question and answer session.

**S47.A: Autonomic nervous system (ANS) and sleep**

Sudhansu Chokroverty. New Jersey Neuroscience Institute at JFK, Seton Hall University, Department of Neurology and Divisions of Clinical Neurophysiology and Sleep Medicine, Edison, NJ, USA

**S47.B: ANS and heart rate variability in normal sleep and sleep disorders**

Thomas Penzel. Sleep Center, Depart. of Cardiology, Charite University Hospital, Berlin, Germany

**S47.C: Sleep and breathing in multiple system atrophy**

Alex Iranzo. Neurology Service, Hospital Clinic of Barcelona, Spain

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S48: Unusual movements in children’s sleep (IPSA/WASM symposium)

Venue: Kambhangbejara II Room, Mezzanine Level
Chair: Sona Nevsimalovoa

S48.1: Symposium summary
O. Bruni. Center for Pediatric Sleep Disorders, Department of Developmental Neurology and Psychiatry, University of Rome “La Sapienza”, Rome, Italy

The video-EEG-polysomnographic recording is the best methodology for the differential diagnosis between sleep-related non epileptic paroxysmal motor phenomena and sleep related epilepsy. This apparently simple diagnosis is complicated by the very similar presentation of seizures and parasomnias in children and by the fact that some epileptic events during sleep did not show any epileptiform abnormalities. Moreover, there is a bidirectional influence between epileptic seizures and NREM parasomnias. The video-PSG monitoring is mandatory for the classification of sleep related epileptic seizures and for differential diagnosis of paroxysmal events during sleep in pediatrics. In particular it can be useful in the differential diagnosis for abnormal paroxysmal events like movement disorders, disorders of arousal and other parasomnias, behavioral disorders, unusual behaviors, reflex behaviors, pseudoseizures and syncopal seizures.

S48.A: Cataplectic attacks in children with narcolepsy
Giuseppe Plazzi, L. Serra. Department of Neurological Sciences, Bologna University, Bologna, Italy

S48.B: Is cataplexy a really frequent symptom of Niemann–Pick disease (type C)?
Sona Nevsimalova, D. Kemlink, L. Koumarova, I. Prihodova, A. Tauberova. Department of Neurology, 1st Medical Faculty, Charles University, Prague, Czech Republic

S48.C: Sleep related pathological movements during sleep in children: from parasomnias to epilepsy
Lino Nobili, G. Didato, G. Lo Russo. Centre of Epilepsy Surgery “C. Munari”, Centre of Sleep Medicine, Department of Neurosciences, Niguarda Hospital, Milan, Italy

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Oral Platform Sessions

OPS#9: Sleep in Neurological Disorders
Venue: Rangsit Room, Mezzanine Level
Chair: Wayne A. Hening

Sleep in neurological disorders
O0014: Pure central sleep apnea as a side-effect of vagal nerve stimulation
E.S. Papathanasiou *, P. Myrianthopoulou, S.S. Papacostas. Department of Clinical Neurophysiology, The Cyprus Institute of Neurology & Genetics, 6 International Airport Avenue, P.O. Box 23462, Nicosia 1683, Cyprus
O0017: Sleep Disturbances in children with seizure disorders
S. Simakajornboon 1*, J. Phromchairak2, M. Abraham2, N. Simakajornboon2.
1Neurological Institute of Thailand, Bangkok, Thailand, 2Cincinnati Children’s Hospital Medical Center, Cincinnati, Ohio, USA

O0046: Abnormal sleep–wake cycles in patients with tuberculous meningitis – a prospective case controlled study
V. Pardasani *, G. Shukla, S. Singh, V. Goyal, M. Behari.
Department of Neurology, All India Institute of Medical Sciences, New Delhi-110029, India

O0058: The effects of n-CPAP/BPAP treatment on prognosis and lesion size in acute ischemic stroke patients with obstructive sleep apnea syndrome
G. Benbir *, H. Kaynak, D. Kaynak.
Istanbul University Cerrahpasa Faculty of Medicine Department of Neurology, Sleep Disorders Unit, 34098, Istanbul, Turkey

O0060: Sleep and circadian rhythm disorder in Parkinson’s Disease: association with hallucinations
1MRC Centre for Neurodegeneration, Institute of Psychiatry, London, UK, 2School of Psychology, University of Liverpool, Liverpool, UK, 3Mersey Care NHS Trust, Merseyside, UK, 4Department of Medicine for the Elderly, Arrowe Park Hospital, Wirral, UK, 5Department of Geriatric Medicine, Royal Liverpool University Hospital, Liverpool, UK

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OPS#10: Sleep Disorders: Epidemiology/ Culture/ Education/ Health Care Delivery
Venue: Ladprao A Room, Mezzanine Level
Chair: K. Puvanendran

Epidemiology of sleep disorders

O0009: Occupation as a risk factor for obstructive sleep apnea in Sweden: A population-based study
X. Li *, K. Sundquist, J. Sundquist.
Center for Family and Community Medicine, Karolinska Institute, Sweden

O0049: Sleep habits and insomnia complaints in 50–64 year olds: A 20-year follow-up of a general population sample
J.E. Broman1 *, L. Mallon1, J. Hetta2.
1Department of Neuroscience, Psychiatry, Uppsala University, Uppsala, Sweden, 2Department of Clinical Neuroscience, Psychiatry, Karolinska institutet, Stockholm, Sweden

O0072: Nasal CPAP compliance differences in ethnical groups in Israel
S. Suraiya, K. Uwyyed *
Haifa, Israel
O0076: Ethnic peculiarities of sleep disorders in Eastern Siberia
L.I. Kolesnikova, V.V. Kozhevinov, T.A. Bairova, O.N. Ablamskaya, Irina Madaeva*
Somnological Center of East-Siberian Scientific Center of Academy of Medical Sciences of
Russia, Irkutsk, Russia, Health Department of Buryat Republic, Ulan-Ude, Russia

Sleep education
O0004: Education in sleep disorders management using web-based system
G. Varoneckas1 *, A. Varoneckas2, A. Podlipskytė1, A. Mackute Varoneckiene1, A. Martinkenas1.
1Institute Psychophysiology and Rehabilitation, Vyduno Str. 4, Palanga, Lithuania,
2Vytautas Magnus University, Vileikos Str. 8, Kaunas, Lithuania

Sleep health care delivery
O0075: Improving CPAP compliance
S. Horowitz *
Sleep HealthCenters Framingham Site, Department of Neurology, University of
Massachusetts, Worcester, MA, USA

Thursday 8 February 2007
12:45 – 14:15

Venue: Vibhavadee Ballroom B, 1st Floor (Lobby Level), Sofitel Central Plaza Hotel,
Ladprao, Bangkok

Chair: Markku Partinen

The Art and New Science of Dreaming: From Angels to Neurones
Professor DR. J. Allan Hobson, MD
Professor Emeritus of Psychiatry, Harvard Medical School, Harvard University, Boston, MA,
USA

Thursday 8 February 2007
14:30 – 16:00

Parallel Symposia and Oral Platform Sessions

S31: Dental issues in sleep medicine

Sponsored by Respironics
Venue: Kambhangbejara I Room, Mezzanine Level
Chair: G. Lavigne
Co-Chair: A. Lowe

S31.1: Symposium summary
G. Lavigne. Faculte de medecine dentaire, Universite de Montreal, Montreal, Canada
Dentists manage sleep apnea and sleep bruxism with oral appliances. Based on recent literature some basic knowledge is required before using any appliance with patients presenting such sleep disorders. The growing collaboration between medical and dental experts in sleep medicine offers interesting management alternatives to patients suffering of tooth grinding related pains and headaches and those suffering of snoring and sleep apnea.

The diagnosis and medical management of sleep disorders is clearly the role of sleep physicians. However, the roles of dentistry in managing some sleep related disorders included recognizing, assessing and managing patients with sleep bruxism and sleep respiratory disorders. Recent literature do support that sleep bruxism can be associated with some changes in autonomic-cardiac and respiratory functions during sleep and that medications or oral appliances, also named splints, can help to reduce the consequence of tooth grinding and facial pains (headaches) related to sleep bruxism. Mandibular Advancement appliances are also recognized as management alternatives for respiratory sleep disorders (snoring and sleep apnea). Furthermore, recent publications support that such appliances has potential benefit for patient presenting hypertension. Our symposium is planned to help sleep clinicians to understand the mode of action, indications, advantages and risks associated with dental devices on sleep bruxism and sleep apnea. World wide recognized speakers will present the following 3 topics:

S31.A: Sleep bruxism and sleep related xerostomia: a relationship with respiration?
Gilles Lavigne, DMD, PhD, Universite de Montreal, Sleep disorders laboratory, Sacre Coeur Hospital, Montreal, Canada

Alan Lowe, DMD, PhD, University of British Columbia, Vancouver, Canada

S31.C: Effects of oral appliances on hypertension and daytime sleepiness.
Kazuya Yoshida DDS, PhD, Kyoto University, Kyoto, Japan

Declaration of conflict of interest: G. Lavigne is a consultant for Respironics; A. Lowe is the inventor of the Klearway oral device and his University holds some rights (University of British Columbia).

S09: Pathophysiology of the restless legs syndrome

Venue: Kambhangbejara II Room, Mezzanine Level
Chair: Walter Paulus
Co-Chair: Juliane Winkelmann

S09.1: Symposium summary
W. Paulus, Department of Neurophysiology, Georg-August-Universitat Gottingen, Gottingen, Germany

Exciting aspects are emerging in the pathophysiology of the RLS, starting with genetics, covering interactions between iron and dopaminergic transmission up to concepts dealing with augmentation. This symposium thus updates essential aspects of RLS pathophysiology. Juliane Winkelmann will give an overview on the state of art in revealing the genetic causes of RLS. Al de Weerd will review spinal pathophysiology in particular with respect to flexor reflexes and to periodic limb movements. Richard Allen will update the most recent data on the iron hypothesis. Walter Paulus will summarize the role of L-DOPA and dopamine agonists in RLS with a particular view on augmentation.

Restless legs syndrome is a heterogeneous disorder. Pathophysiologically, it can be split into hereditary courses and acquired courses. The hereditary can again be separated into at least 3 to 5 different chromosomes. The acquired diseases may also be grouped into a large variety of problems such as ageing, polyneuropathy, iron deficiency, dialysis, among others. It thus appears surprising that the treatment with dopaminergic and opioidergic drugs provides such a unique therapeutic efficacy, despite the heterogeneity of the disease. It will be
the focus of this meeting to find a pathophysiologically explanation for why all these divergent courses end up in a quite unique therapeutic approach.

S09.A: 1st speaker: Juliane Winkelmann
S09.B: 2nd speaker: Al de Weerd
S09.C: 3rd speaker: Richard Allen
S09.D: 4th speaker/discussant: Walter Paulus

S26: REM sleep behavior disorder 20 years later: sleep disorder or syndrome?

Venue: Vibhavadee Ballroom B, First Floor (Lobby level)
Chair: Carlos H. Schenck, MD
Co-Chair: Rosalia Silvestri, MD, Clinica Neurologica I, Policlinico G. Martino, Via Consolare Valeria, Messina, Italy

S26.1: Symposium summary
Carlos H. Schenck, MD, Minnesota Regional Sleep Disorders Center, Hennepin County Medical Center, University of Minnesota Medical School, South Minneapolis, MN, USA

A symposium on REM Behavior Disorders is quite timely, given the rapid growth of clinical and research findings on RBD that raise the question of the extent to which RBD is a sleep disorder or a syndrome related to neurodegenerative disorders. Various other updates on RBD would also be timely for sleep clinicians. An international historical perspective can sharpen the focus for appreciating the implications of these new findings, and various clinical, ethical and research considerations need to be addressed and discussed.

REM sleep behavior disorder (RBD) is a parasomnia featuring loss of REM atonia, increased phasic muscle activity during REM sleep, and problematic release of dream-enacting behaviors that was formally identified 20 years ago, and subsequently incorporated within the International Classification of Sleep Disorders. During the preceding 10−20 years, however, various polysomnographic and clinical features of RBD had been detected and described by investigators from Japan, Europe and North America. An historical overview is now timely, since research on RBD has been growing and expanding rapidly. RBD typically affects middle-aged and older men, but can affect females and any age group. At the time of RBD diagnosis, affected men are often designated to have “idiopathic RBD” after neurologic, medical and psychiatric evaluations do not reveal an underlying cause of RBD. Nevertheless, longitudinal studies have shown that more than 50% of men initially diagnosed with idiopathic RBD will eventually (within 1-2 decades) develop a Parkinsonian disorder. Also, recent research has identified the following neurobiologic deficits in idiopathic RBD that are also often found in Parkinsonian disorders: slowing of waking EEG, reduced (regional) cerebral blood flow, specific neuropsychological abnormalities, olfactory dysfunction, decreased color vision discrimination, autonomic dysfunction, reduction in striatal dopamine transporters and reduced density of striatal dopaminergic terminals. These abnormal findings strongly suggest that RBD may not only be a sleep disorder, but also part of a syndrome involving Parkinsonian disorders, with RBD being an initial manifestation of an evolving neurodegenerative disorder. Nevertheless, RBD can also be associated with a broad spectrum of other neurological disorders, psychotropic medication use, and RBD can be co-morbid with other sleep disorders, such as narcolepsy. The clinical, therapeutic, ethical and research implications will be discussed, along with a proposed pathophysiology and pathogenesis of RBD. The differential diagnosis of dream-enactment will be discussed, and the methods for PSG documentation of RBD will be described. Finally, some current areas of controversy will be identified.

S26.A: A historic overview and neurophysiologic perspective on RBD
Nana (Naoko) Tachibana, MD, PhD. Department of Neurology and Center for Sleep-related Disorders, Kansai Electric Power Hospital, Osaka, Japan
S26.B: Overview of clinical findings and the pathophysiology of RBD
Carlos H. Schenck 1, M.W. Mahowald2.
Minnesota Regional Sleep Disorders Center, Departments of 1Psychiatry and 2Neurology, Hennepin County Medical Center and the University of Minnesota Medical School, Minneapolis, MN, USA

S26.C: Markers of neurodegenerative disorders in patients with so-called idiopathic RBD
Jacques Montplaisir, MD, PhD, Professor of Psychiatry and Neuroscience, University of Montreal, Montreal, Canada,
J.-F. Gagnon1, R. Postuma1,2, M. Vendette1, J. Massicotte- Marquez1.
1Sleep Disorders Center, H'opital du Sacre-Coeur and Universite de Montreal; 2Montreal General Hospital and McGill University, Canada

S26.D: RBD as the initial manifestation of a neurodegenerative disorder
Alex Iranzo, MD, Neurology Service, Hospital Clinic of Barcelona, Barcelona, Spain

S26.E: RBD and co-morbid sleep disorders: mechanisms and therapeutic strategies
R. Silvestri, MD, Clinica Neurologica I, Policlinico G. Martino, Via Consolare Valeria, Messina, Italy

RBD is often associated with symptoms and signs of other sleep disorders. For instance, PLMs are a common finding in RBD recordings even though they show a different periodicity from PLMD and are less commonly associated with arousals. There is an increased percentage of SWS in RBD, predisposing some subjects to more complex behaviors within different sleep stages, at times leading to a diagnosis of overlapping parasomnia disorder. OSAS is often present in RBD patients, mostly preceding RBD first symptoms which consistently seem to be precipitated by an apnea related arousal. In some apneic patients however the arousal complex behavior may misleadingly suggest RBD in the absence though of the necessary PSG features. Epileptiform EEG abnormalities may be seen in RBD with or without nocturnal seizures more often following RBD diagnosis. Finally RBD is often co-morbid of narcolepsy, highly represented even in the female patients whether or not they are treated with possibly inducing therapeutic agents such as SSRIs, venlafaxine or clomipramine. The different contributing mechanisms and factors will be discussed

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S49: Sleepy or drowsy drivers and automobile accidents
Venue: Vibhavadee Ballroom C, First Floor (Lobby level)
Chair: Naiphinich Kotchabhakdi, PhD
Co-chair: Manoon Leechawengwongs, MD

S49.1: Symposium summary
N. Kotchabhakdi. Salaya Sleep Research Laboratory, Neuro-Behavioural Biology Center, Institute of Science and Technology, Mahidol University, Salaya, Nakornpathom, Thailand

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This symposium explores the current evidence on the impact of sleepiness, fatigue and drowsiness with or without alcohol drinking on automobile accidents in different countries, and the campaign to stop sleepy driving.

Adequate sleep is not only important for good health and well-being but also for road safety of driving automobiles. Sleepiness, fatigue and/or drowsiness related traffic accidents are very common, particularly among long-distance private, public or truck drivers. At present traffic accidents kill 1.2 million people each year. By 2020 traffic accidents will kill 2.3 million people annually and will be the third leading cause of death. In Asia Pacific region traffic accidents account for about 60% of global road deaths despite having only 16% of the world vehicles. Road deaths jumped by nearly 40% in Asia between 1987 and 1995 while in developed nations they fell by about 10% because of better awareness and various safety measures. Sleepiness can be considered as a possible cause of an accident if there are some combinations of sleep deprivation from short and inadequate sleep preceding the accident, long wakefulness exceeding 8 to 12 hours of driving, driving at early morning hours, and history of alcohol drinking or taking some sedatives or medicines which induce sleepiness. In this symposium, we explore the current evidence on impacts of sleepiness, fatigue and drowsiness with or without alcohol drinking on automobile accidents in different countries, and the campaign to stop sleepy driving.

S49.A: Sleepy driving and automobile accidents in Finland
M. Partinen. Skogby Sleep Clinic, Rinnekoti Research Foundation, Espoo, Finland

S49.B: Campaign to stop sleepy driving and road accidents
M. Leechawengwongs1, E. Leechawengwongs2, C. Sukying1, U. Udomsubpayakul3.
1Vichaiyut Hospital, 71/3 Saetsiri Road, Samsen Nai, Phayathai, Bangkok; 2Samutprakarn Hospital; 3Research Unit, Faculty of Medicine, Ramathibodi Hospital, Mahidol University, Thailand

S49.C: Sleep deprivation and traffic accident involved professional truck drivers in Korea
S.-W. Lim1, J.-W. Paik2, H.-J. Lee2, L. Kim2, K.-S. Oh1
1Department of Psychiatry, Kangbuk Samsung Hospital, Sungkyunkwan University; 2Department of Psychiatry, Anam Hospital, Korea University, Seoul, Republic of Korea

S49.D: Effect of fatigue and sleep deprivation on driving performance: an experimental study in Thailand
1Asian Institute of Technology, Thailand; 2Khon Kean Hospital, Thailand; 3Neuro-Behavioural Biology Center, Institute of Science and Technology, Mahidol University, Salaya, Nakornpathom, Thailand; 4Vichaiyut Hospital, Bangkok, Thailand

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Oral Platform Sessions
OPS#11: Recording and Analysis of Sleep/ New Techniques for Studying Sleep/ Sleepy Driving

Venue: Rangsit Room, Mezzanine Level
Chair: Richard P Allen

Recording and analysis of sleep
O0038: Could formant frequencies of snore signals be an alternative means for the diagnosis of obstructive sleep apnea?
A.K. Ng1 *, T.S. Koh1, E. Baey2, K. Puvanendran3
1School of Electrical and Electronic Engineering, Nanyang Technological University, Singapore, 2Respironics Incorporated, Singapore, 3Sleep Disorders Unit, Singapore General Hospital, Singapore

O0056: Detection of respiratory effort-related arousals using a single flow signal
A. Baisch *, S. Afshar, K. Hormann, J.T. Maurer.
University Hospital Mannheim, Germany

New technologies for studying sleep
O0011: The functional connectivity of EEG slow-wave activity during sleep has a small-world network organization
R. Ferri *, F. Rundo, O. Bruni, M.G. Terzano, C.J. Stam. 1Sleep Research Centre, Department of Neurology I.C., Oasi Institute (IRCCS), Troina; Centre for Pediatric Sleep Disorders, Department of Developmental Neurology and Psychiatry, University of Rome "La Sapienza", Rome; Sleep Disorders Centre, Department of Neurology, University of Parma, Parma, Italy, 2Department of Clinical Neurophysiology, VU University Medical Center, Amsterdam, The Netherlands

O0013: Clinical examination and home sleep screening. Are they enough for the otolaryngological decision in diagnosis and treatment of OSAS?
D. Adnan El-kharoubi *
Palestine Medical Services, Balsam Hospital, Gaza, Palestine

O0074: Functional MRI correlates of alertness in a virtual reality task
1Toronto Western Hospital, University Health Network, University of Toronto, Canada, 2Institute for Creative Technologies, University of Southern California, USA, 3Digital Media Works, Kanata, Canada

Sleepy driving and road accident
O0071: Impaired attentional alerting in untreated sleep related disordered breathing
D.N. Eder *, D. Zou, L. Grote, J. Hedner
Vigilance and Neurocognition Laboratory, Gothenburg University; Sleep Laboratory, Department of Pulmonary Medicine, Sahlgrenska University Hospital, Gothenburg, Sweden

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OPS#12: Pediatric Sleep Disorders/ Sleep deprivation and its consequences
Venue: Ladprao A Room, Mezzanine Level
Chair: Nittaya J. Kotchabhakdi

Pediatric sleep disorders
O0024: The mystery of sleep improvement in AHC (alternating hemiplegia in childhood)
S. Nevsimalova *, D. Kemlink, I. Prihodova.
Department of Neurology, 1st Medical Faculty, Prague, Czech Republic
O0042: Assessment of overnight blood pressure in children with sleep disordered breathing
F. Bashir, D.M. O’Driscoll, M.J. Davey, R.S.C. Horne *.
Ritchie Centre for Baby Health Research, Monash Institute of Medical Research, Monash University, City Melbourne, 3168, Australia

O0062: Sleep-disordered-breathing is more prevalent among children with community acquired pneumonia
A.D. Goldbart1 *, A. Tal A, N. Givon-Lavi2, D. Greenberg2. 1Dept. of Pediatrics and 2Pediatric Infectious Disease Unit, Soroka University Medical Center, Ben Gurion University, Beer-Sheva, Israel

Sleep deprivation and its consequences
O0010: The influence of sleep parameters on overnight weight loss
W.A.S. Moraes 1 *, D.R. Poyares1, M.T. Mello1, A. Rosa2, Ç. Guilleminault3, S. Tufik1 1UNIFESP, Sao Paulo, Brazil, 2Universidade Tecnica de Lisboa, Lisboa, Portugal, 3Stanford University, Stanford, USA

Thursday 8 February 2007
16:00 – 17:30

Poster Session with Refreshment

LATE BREAKING POSTERS:

Venue: Vibhavadee Ballroom A, First floor (Lobby Level), Sofitel Central Plaza Hotel, Ladprao, Bangkok

Basic Science of sleep

Animal models of sleep and its disorders

Poster Board#110-Thursday: L0021
The role of the dopaminergic pathway in regulating sleep–wake patterns in a model of Parkinson’s Disease in rats
M.M.S. Lima1, M.L. Andersen *1, A.B. Reksidler2, M.A.B.F. Vital2, S. Tufik1 1Psychobiology, Federal University of Sao Paulo, Sao Paulo SP, Brazil, 2Pharmacology, Federal University of Parana, Curitiba, PR, Brazil

Poster Board#111-Thursday: L0022
Effects of sleep deprivation on tyrosine hydroxylase expression and dopamine-related behaviors in two models of Parkinson’s Disease
M.M.S. Lima1, M.L. Andersen *1, A.B. Reksidler2, M.A.B.F. Vital2, S. Tufik1 1Psychobiology, Federal University of Sao Paulo, Sao Paulo SP, Brazil, 2Pharmacology, Federal University of Paranaa, Curitiba, PR, Brazil

Poster Board#112-Thursday: L0048
Suppression of activity of central orexinergic system by lack of OCTN2, a carnitine transporter
N. Eguchi 1*, M. Sakata1, M. Horiuchi2, T. Saheki2.
1Waseda-Olympus Bioscience Research Institute, Waseda University, 11 Biopolis Way, Singapore 138667, Singapore, 2Department of Molecular Metabolism and Biochemical Genetics, Kagoshima University Graduate School of Medicine and Dental Sciences, 8-35-1 Sakuragaoka, Kagoshima 890–8544, Kagoshima, Japan

Basic science of sleep disorders

Poster Board#113-Thursday: L0027
Renal sympathetic activation induced by paradoxical sleep deprivation in rats
J.C. Perry1, R.S. Carvalho2, B.A. Carillo2, R.R. Campos2, C.T. Bergamaschi3, M.L. Andersen 1*, S. Tufik1
1Psychobiology, 2Physiology, 3Health Sciences, Universidade Federal de Sao Paulo, Brazil

Sleep and cognition

Poster Board#114-Thursday: L0012
Effects of sleep deprivation or sleep rebound on memory of female rats: influence of age
I.B. Antunes1, M.L. Andersen 1*, T.A.F. Alvarenga1, C.L. Patti2, M.B. Calzavara2, G.B. Lopez2, R.H. Silva3, R. Frusas-Filho2, S. Tufik1
1Department of Psychobiology, Universidade Federal de Sao Paulo, Brazil, 2Department of Pharmacology, Universidade Federal de Sao Paulo, Brazil, 3Department of Physiology, Universidade Federal do Rio Grande do Norte, Brazil

Poster Board#115-Thursday: L0028
Intermittent hypoxia and sleep restriction: motor, cognition and neurochemical alterations in rats
J.C. Perry1, V. D’Almeida1 2, M.S.M. Lima1, F.R. Godoi1, M.A.B.F. Vital3, M.G. Oliveira1, S. Tufik1
1Psychobiology, Univ Fed Sao Paulo, Brazil, 2Health Sciences, Univ Fed Sao Paulo, Brazil, 3Pharmacology, Univ Fed Parana, Brazil

Poster Board#116-Thursday: L0042
Influence of the endogenous opioid peptides on learning and memory in rats
Beritashvili Institute of Physiology, Department of Neurobiology of Sleep and Wakefulness Cycle, Tbilisi, Georgia; Ilia Chavchavadze State University, Tbilisi, Georgia

The brain and sleep

Poster Board#117-Thursday: L0031
Lipocalin-type prostaglandin D synthase is the key enzyme for production of prostaglandin D2 involved in physiological sleep
W.-M. Qu1 *, Z.-L. Huang1,2, N. Eguchi3, Y. Urade1, O. Hayaishi1.
1Department of Molecular Behavioral Biology, Osaka Bioscience Institute, Osaka 565–0874, Japan, 2State Key Laboratory of Medical Neurobiology, Shanghai Medical College of Fudan
Adenosine A2A receptor deficiency attenuates somnogenic effect of prostaglandin D2
Z.-L. Huang1,2*, W.-M. Qu1, N. Eguchi1,3, Y. Urade1, O. Hayaishi1.
1Department of Molecular Behavioral Biology, Osaka Bioscience Institute, Osaka 565−0874, Japan, 2State Key Laboratory of Medical Neurobiology, Shanghai Medical College of Fudan University, Shanghai 200032, China, 3Waseda-Olympus Bioscience Research Institute, Waseda University, Helios, Singapore 138667, Singapore

Antagonism of prostaglandin D2 receptor inhibits physiological sleep in rats
Y. Urade1 *, W.-M. Qu1, Z.-L. Huang1,2, F. Nambu3, N. Eguchi4, O. Hayaishi1.
1Department of Molecular Behavioral Biology, Osaka Bioscience Institute, Suita, Osaka 565−0874, Japan, 2State Key Laboratory of Medical Neurobiology, Shanghai Medical College of Fudan University, Shanghai 200032, China, 3Ono Pharmaceutical Co., Ltd., Osaka 618−8585, Japan, 4Waseda-Olympus Bioscience Research Institute, Waseda University, Helios, Singapore 138667, Singapore

Ethanol-induced suppression of paradoxical sleep in rats: participation of the cholinergic system
Department of Psychobiology, Universidade Federal de Sao Paolo, Escola Paulista de Medicina (UNIFESP/EPM), Sao Paulo, Brazil

Effects of different substance misuse in genital reflexes of paradoxical sleep deprived male rats
Department of Psychobiology, Universidade Federal de Sao Paolo (UNIFESP-EPM), Sao Paulo, Brazil

Effects of long-term food restriction on genital reflexes in male paradoxically sleep deprived rats
Department of Psychobiology – Universidade Federal de Sao Paolo, Escola Paulista de Medicina (UNIFESP/EPM), Sao Paulo, SP, Brazil

Sleep quality assessment in primary insomnia and sleep disorders associated with mental disorders
**R. Cluydts**, I. De Volder, A. Van Gastel.
*University of Brussels and University Hospital Antwerp, Belgium*

**Poster Board#124-Thursday: L0044**

**Perception of sleep quality in chronic insomniacs**

**R. Cluydts**.
*University of Brussels, Belgium*

**Melatonin and sleep**

**Poster Board#125-Thursday: L0038**

**Melatonin, 3 mg, is an effective and alternative prophylactic treatment for headache prevention in a pediatric population**

*Department of Pediatrics, Sleep Centre, University of Rome La Sapienza, S. Andrea Hospital, Rome, Italy*

**Pharmacology of sleep and sleep disorders**

**Poster Board#126-Thursday: L0017**

**Additional evidence concerning the role of brain adrenergic system in the regulation of paradoxical sleep**

N. Nachkebia, E. Chkhartishvili, A. Nachkebia, E. Chijavadze, M. Babilodze, S. Dzadzamia.
*Dept. of Neurobiology of Sleep–Wakefulness Cycle, I. Beritashvili Institute of Physiology, Georgian Academy of Sciences, Tbilisi, Georgia*

**Poster Board#127-Thursday: L0020**

**Changes in blood glucose level and sleep disturbances in these conditions**

E. Chijavadze, M. Babilodze, E. Chkhartishvili, O. Mchedlidze, N. Nachkebia.
*Dept. of Neurobiology of Sleep–Wakefulness Cycle, I. Beritashvili Institute of Physiology, Georgian Academy of Sciences, Tbilisi, Georgia*

**Treatment of sleep disorders**

**Poster Board#128-Thursday: L0050**

**Treatment with continuous positive airway pressure vs. auto bilevel pressure relief-positive airway pressure –A comparison of efficacy**

*Charite – Universitätsmedizin Berlin, Center of Sleep Medicine, Berlin, Germany*

**REM Sleep disorders**

**Narcolepsy**

**Poster Board#129-Thursday: L0058**

**Videopolygraphically confirmed psychogenic cataplexy**

G. Plazzi, L. Serra.
*1Clinica Neurologica, Università di Bologna, Bologna, Italy, 2Sleep Medicine Center, Universidad Catolica, Santiago, Chile*
Decreased gray matters in hypothalamus and thalamus in narcolepsy patients with cataplexy

W.C. Shin3 *, E.Y. Joo1,2, W.S. Tae1, S.J. Han1, H.W. Kim4, S.B. Hong 1*.
1Department of Neurology, Samsung Medical Center, Sungkyunkwan University School of Medicine; 2Department of Neurology, College of Medicine, Ewha Womans University; 3Department of Neurology, Kyunghee University, East-West Neo Medical Center, Seoul; 4Department of Neurology, Chosun University Hospital, Gwangju, Republic of Korea

Movement Disorders

Epilepsy in sleep

The role of continuous positive airways pressure therapy on the pathogenesis of sleep-related frontal lobe epilepsy in a child with obstructive sleep apnea syndrome

S. Miano1, A. Pelliccia1, M. Bernabucci1, F. Filippini2, J. Pagani2, M.P. Villa *2.
1Department of Paediatrics, Sleep Centre, University of Rome La Sapienza; 2S Andrea Hospital, Rome, Italy

Sleepiness and sleep quality in epilepsy patients: an outpatient clinic-based study

EEG/Sleep Laboratory; Neuroscience and Mental Health Department, Hospital de Santa Maria, Lisbon, Portugal

Restless legs syndrome

Personality traits and restless legs syndrome in an adult community sample in east Baltimore

1Department of Psychiatry and Behavioral Sciences, Johns Hopkins University School of Medicine, Baltimore, MD, USA, 2Section on Developmental Genetic Epidemiology, National Institute of Mental Health, Bethesda, MD, USA, 3Department of Neurology, UMDNJ-RW Johnson Medical School, New Brunswick, NJ, USA, 4Department of Mental Health, Bloomberg School of Public Health, Johns Hopkins University, Baltimore, MD, USA, 5Department of Psychiatry and Behavioral Sciences, Johns Hopkins University School of Medicine, MD, USA

Genetics of restless legs syndrome

J. Winkelmann1,2 *
1Max Planck Institute of Psychiatry, 2Institute of Human Genetics, GSF, Munich, Germany

Sleep and Breathing

Respiratory sleep disorders
Sleepiness complaints and sleep apnea and hypopnea in Egyptian patients
S. Loza1 *, K. Zouaoui Boudjeltia2, M. Kerkhofs2.
1Cairo Centre for Sleep Disorders, Behman Hospital, Cairo, Egypt, 2Laboratory of Experimental Medicine and Sleep Laboratory CHU de Charleroi, Vesale Hospital, Free University of Brussels, Belgium

Poster Board#136-Thursday: L0014
Inflammatory and metabolic disturbance in OSA patients: Impact of long-term continuous positive airway pressure therapy
L.R.A. Bittencourt *, L.V. Sales, S. Garbuio, V. Trukisinas, V. D’Almeida, S. Tufik. Sleep Institute, Department of Psychobiology, UNIFESP, Sao Paulo, SP, Brazil

Gender and obstructive sleep apnea syndrome: one diagnosis, different clinical presentations
A.R. Peralta *, R. Geraldes, M.A. Lomba, I. Henriques, T. Paiva. Sleep/EEG lab, Neurology Department, Santa Maria Hospital, Lisbon, Portugal

Correlation between head and neck physical examination and polysomnographys findings in morbid obese patients
Sleep Institute, Department of Psychobiology, UNIFESP, Sao Paulo, SP, Brazil

OSA contributes to an increase of ghrelin level independent of obesity
L. Sales, L.R.A. Bittencourt *, S. Garbuio, P.J. Martins, B. Grego, V. D’Almeida, S. Tufik. Universidade Federal de Sao Paulo, Sao Paulo, Brazil

MRI measurement of upper airway in patients with severe obstructive sleep apnea–hypopnea syndrome
S.B. Hong1 *, J.Y. Youn1, E.Y. Joo3, S.H. Kim1, Y.N. Kim1, S.J. Han1, S.T. Kim2, H.J. Kim2, J.H. Kim4
Departments of 1Neurology and 2Radiology, Samsung Medical Center, Sungkyunkwan University School of Medicine, Seoul; 3Department of Neurology, College of Medicine, Ewha Womans University, Seoul; 4Department of Neurology, Hanyang University Hospital, Seoul, Republic of Korea

Sleep apnea in Asia

Predictive value of clinical features and nocturnal oximetry in sleep-disordered breathing
Division of Pulmonary and Critical Care Medicine, Quezon City, the Philippines
Excessive daytime sleepiness in obstructive sleep apnoea patients after treatment with continuous positive airway pressure

S.Y.Y. Fong *, C.K.W. Ho, Y.K. Wing
Sleep Assessment Unit, Department of Psychiatry, Chinese University of Hong Kong, Shatin Hospital, Ma On Shan, NT, Hong Kong SAR, China

Pain and sleep

Effects of COX-2 inhibitor in acute inflammation of the temporomandibular joints (TMJ) of rats

T.C. Schutz, M.L. Andersen *, S. Tufik.
Department of Psychobiology, Universidade Federal de Sao Paulo, Escola Paulista de Medicina (UNIFESP/EPM), Sao Paulo, Brazil

Pain hypersensitivity induced by paradoxical sleep deprivation is not due to altered binding to brain μ-opioid receptors

D.C. Nascimento1, M.L. Andersen 1*, D.C. Hipolide1, J.N. Nobrega2, S. Tufik1.
1Department of Psychobiology, Universidade Federal de Sao Paulo, Escola Paulista de Medicina (UNIFESP/EPM), Sao Paulo, Brazil, 2Neuroimaging Research Section, Centre for Addiction and Mental Health, Toronto, Canada

Cardiovascular consequences of sleep-disordered breathing: association of obstructive sleep apnea with cardiac structural and functional abnormalities

Division of Pulmonary and Critical Care Medicine, Philippine Heart Center, Quezon City, Phillipines

Sleep in neurological disorders

Risk of headaches and sleep disturbances following mild traumatic brain injury: a preliminary report

Division of Trauma Research, Sleep Research Center, Hôpital du Sacre-Coeur de Montreal, Universite de Montreal, Montreal, Canada

Insomnia in stroke: clinical profile associated with insomnia in stroke patients after acute stage

J.E. Shin *, I. S. Kim, E.J. Kim, S.J. Jang
Sleep in the elderly

Poster Board#148-Thursday: L0051

Evaluating sleep stages and events in a normative database of good sleep
G. Dorffner1,2,3 *, P. Anderer4, G. Gruber1, S. Parapatics1, M. Woertz2, B. Saletu4, J. Zeithofer5, U. Hemmeter6, H. Danker-Hopfe7.
1Institute of Medical Cybernetics and Artificial Intelligence, Center for Brain Research, Med Univ Vienna, Vienna, Austria, 2Austrian Research Institute for Artificial Intelligence, Vienna, Austria, 3The Siesta Group GmbH, Vienna, Austria, 4Department of Psychiatry, Med Univ Vienna, Vienna, Austria, 5Department of Neurology, Med Univ Vienna, Vienna, Austria, 6Medical Policlinic of Philippa-Univ Marburg, Marburg, Germany, 7Department of Psychiatry, Univ Hospital Benjamin Franklin, Berlin, Germany

Epidemiology of sleep disorders

Poster Board#149-Thursday: L0006

Null relationship between previous over commitment to work and the future onset of insomnia among middle-aged workers: results from a prospective cohort study
Kochi Medical School, Nankoku, Sanyo Electric Co., Ltd., Daito, University of Occupational and Environmental Health, Kitakyushu, Osaka Prefecture University, Sakai, Japan

Poster Board#150-Thursday: L0060

Gender differences in global cardiovascular risk factors of obstructive sleep apnea patients
N. Dursunoglu1 *, D. Dursunoglu2, S. Ozkurt1, G. Kiter1, F. Evyapan1.
Departments of 1Chest and 2Cardiology, Pamukkale University Medical Faculty Denizli, Turkey

Pediatric sleep disorders

Poster Board#151-Thursday: L0003

Is upper airway infection dangerous in children with PraderWilly Syndrome?
Sleep Center SEIN, Zwolle, Dutch Growth Foundation, Rotterdam, The Netherlands

Poster Board#152-Thursday: L0016

Heart rate variability during sleep associated with sleep cyclic alternating pattern rate in children with juvenile idiopathic arthritis
Department of Psychobiology – EPM-UNIFESP – Sao Paulo, Brazil

Poster Board#153-Thursday: L0023

The ontogeny of melatonin production in infants with an apparent life threatening event
B.G. Strazisar1, D. Neubauer2, B. Claustra3, J. Brun3
Institute of Clinical Neurophysiology, Division of Neurology, University Medical
Sleep disturbances in Smith–Magenis syndrome: a report on the first Slovenian case

B. Stražisar 1*, L.D. Groselj2, B. Claustrat3, J. Brun3
1Department of Child Neurology, University Children’s Hospital, Ljubljana, Slovenia, 2Institute of Clinical Neurophysiology, Division of Neurology, University Medical Centre, Ljubljana, Slovenia, 3Service de Radioanalyse, Centre de Medecine Nucléaire, Hopital Neurologique, Lyon, France

Two distinct population of children affected by obstructive sleep apnea syndrome: the adult-obese type and the adenoide-tonsillar type

M.P. Villa *, S. Miano, M. Evangelisti, A. Rizzoli, M. Cecili, R. Bianchini, J. Pagani. Department of Pediatrics, Sleep Centre, University of Rome La Sapienza, S. Andrea Hospital, Rome, Italy

The role of the inflammatory response and cardiac function in children with sleep disorders breathing

M. Evangelisti, M. Ciavarella, G. Tocci, S. Miano, A. Rizzoli, J. Pagani, M.P. Villa *. Department of Pediatrics, S. Andrea Hospital, University “La Sapienza”, Rome, Italy

The feasibility of pulse transit time for the scoring of subcortical arousals in infants with Pierre Robin sequence and upper airway obstruction

A. Rizzoli1,2, M.S. Urschitz1, J. Pagani2, M. Montesano2, O. Imbornone2, M.P. Villa *, C.F. Poets1.
1Department of Neonatology, University Hospital Tuebingen, Tuebingen, Germany, 2Department of Paediatrics, Sant’Andrea Hospital, University La Sapienza, Rome, Italy

Recording and analysis of sleep

Influence of long-term food restriction on sleep pattern in male rats

T.A. Alvarenga, M.L. Andersen *, L.A. Papale, I.B. Antunes, S. Tufik. Department of Psychobiology, Universidade Federal de Sao Paulo, Rua Napoleao de Barros, 925, Vila Clementino, SP 04024–002, Sao Paulo, Brazil

Dream content in congenital deafness


Sleep deprivation and its consequences
Short sleep duration and obesity: evidence from population-based studies in children, adolescents and adults across the world
Clinical Sciences Research Institute, Warwick Medical School, Coventry, United Kingdom and Northern Ireland, UK

Sleep deprivation abolishes the locomotor stimulant effect of ethanol in mice
Departamento de Farmacologia, Departamento de Psicobiologia, Universidade Federal de Sao Paulo, Sao Paulo, Brazil

Effects of sleep loss on sleep architecture in Wistar rats: gender-specific coping strategies for rebound sleep
I.B. Antunes, M.L. Andersen *, E.C. Baracat, S. Tufik. Department of Psychobiology and Department of Gynecology, Universidade Federal de Sao Paulo, Brazil

REM-sleep and wakefulness: functional relationships
I. Gvilia 1*, R. Szymusiak2. 1I. Beritashvili Institute of Physiology, Tbilisi, Georgia, 2Research Service, V.A. Greater Los Angeles Healthcare System, Departments of Medicine and Neurobiology, University of California at Los Angeles, USA

Varied REM-sleep rebound following various design of deprivation strategy
L.M. Maisuradze *, N.D. Lortkipanidze, M.D. Elioizishvili. I. Beritashvili Institute of Physiology, Depart. Neurobiology of Sleep and Wakefulness Cycle, Tbilisi, Georgia

Lack of awareness among resident-trainee doctors leads to underestimation of sleep disorders
Department of Medicine, St. John's Medical College Hospital, Bangalore, Karnataka, India

Sleep in Children, Adolescent and Women
Poster Board#167-Thursday: L0015
REM sleep analyses during puberty
M.C. Lopes1*, A. Kauti1, C. Guilleminault2, S. Roizenblatt1, D. Poyares1, S. Tufik1.
1Department of Psychobiology – EPM-UNIFESP – Sao Paulo, Brazil, 2Sleep Disorders Clinic, Stanford University, CA, USA

Poster Board#168-Thursday: L0034
The difference in behavioral sleep quality in children of refugee and non-refugee families
Beritashvili Institute of Physiology, Tbilisi, Georgia

Poster Board#169-Thursday: L0059
Menopause and cardiovascular risk factors in sleep apnea
N. Dursunoglu 1*, L. Grote1, H. Becker2, J. Hedner1, J.H. Peter2. 1Sleep Laboratory, Sahlgrenska University Hospital, Goteborg, Sweden, 2Sleep Laboratory, University Hospital, Marburg, Germany

Thursday 8 February 2007
17:30 – 18:30

WASM Business Meeting for all WASM Officers and Members

Venue: Vibhavadee Ballroom C, 1st Floor (Lobby Level), Sofitel Central Plaza Hotel, Ladprao, Bangkok

Thursday 8 February 2007
18:30 – 21:00

Farwell Party and Introduction to the Third Congress of WASM 2009 in Brazil

Venue: Vibhavadee Ballroom B, 1st Floor (Lobby Level), Sofitel Central Plaza Hotel, Ladprao, Bangkok
Citation Award Abstracts (Abstracts from Oral, Poster and Late Breaking Posters which received best reviewing average scores from the Scientific Reviewing Committee):

O0021
Topic: Restless legs syndrome
The effects of low iron on adenosine and dopamine receptors
S. Gulyani 1, M. Gleichmann 2, B. Martin 2, M.P. Mattson 2, R.P. Allen 1, C.J. Earley 1
1 Neurology, Johns Hopkins University, Baltimore, MD, USA, 2 National Institute on Aging Intramural Research Program, Baltimore, MD, USA

Restless legs syndrome (RLS) is associated with low brain iron and altered dopaminergic signaling. Binding studies show that iron deficient (ID) rats have decrease D2 receptor (D2R) levels. As iron has no known direct effect on D2R protein translation or transcription, we explored the effects of ID on parallel systems that might directly impact the dopaminergic system. Stimulation of the adenosine A2a receptor (A2aR) has been shown to alter the affinity of D2R for its agonists. In order to explore the possibility that ID may affect A2aR, which then secondarily affects D2R, we studied the effects of ID on A2aR and D2R protein levels in a transfectected human neuroblastoma cell line, striatal primary neurons in culture and C57BL/6 mice. ID was induced in the cultured cells by addition of the iron chelator desferroxamine. Protein lysates were made for western blot analysis. Male mice were made ID by placing them on a low (4 ppm) iron diet (control diet was 48 ppm), starting at day 21 of age for 65 days, following which the striatum and midbrain were dissected and protein lysates were made for western blots. With increasing doses of desferroxamine both cell lines showed increasing amounts of transferring receptor, indicating progressive cellular iron deficiency. Under low-iron conditions, both cell lines showed an increase in A2aR and a decrease in D2R protein levels. In the mice ID, as demonstrated by decreased hemoglobin, was also associated with increased A2aR and decreased D2R in both striatum and midbrain. Although our results do not allow us to understand the mechanism behind the changes, the literature does suggest a reciprocal antagonistic interaction exists between A2aR and D2R. Future studies will be needed to address this putative reciprocal A2aR-D2R interaction and the role of iron in that interaction.

Average score: 1.67

P0031
Topic: Animal models of sleep and its disorders
Changes in sleep–wake-behaviour in SHARP-1/SHARP-2 double null-mutant mice
P.C. Baier 1, 2 *, W. Paulus 3, K.A. Nave 4, M.J. Rossner 4.
1 Department of Clinical Neurophysiology, University Gottingen, Germany, 2 ZIP, University of Kiel, Germany, 3 Department of Clinical Neurophysiology, University Gottingen, Germany, 4 MPI for Experimental Medicine, Gottingen, Germany

Basic helix-loop-helix (bHLH) transcription factors SHARP-1 (DEC2/ BHLHB3) and SHARP-2 (DECI/Stra13/BHLHB2) are rhythmically expressed in neurons of the central circadian pacemaker in the suprachiasmatic nuclei. Previous studies analyzing circadian wheel running activity of SHARP-1 & -2 deficient mice suggest a role for both genes in the regulative mechanisms underlying the adaptability of the endogenous clockwork to external time. Aim of the current study was to analyze changes in sleep behaviour in SHARP-1 & -2 double null-mutant mice (S1/2 −/−) compared to wild type (SY) mice. In male S1/2 −/− (n = 5) or SY (n = 7) mice EEG- neck-muscle EMG electrodes was recorded for three consecutive 24-h cycles starting with light on. On day three animals were sleep deprived for 6 h after light onset. Wakefulness (w), rapid-eye-movement (REM) sleep and non-REM (NR) sleep were classified in 4 s epochs offline by visual scoring. EEG of epochs scored as NREM or REM sleep was subjected to fast Fourier Transformation (FFT) analysis. Slow wave activity (SWA) in NREM sleep was calculated as mean power over frequencies between 0.5 and 4.0 Hz. Although quantity of sleep and wakefulness over the entire 24 hr-light–dark cycle did not differ between S1/2 −/− and SY mice, S1/2 −/− animals showed an impaired circadian distribution of sleep, with reduced sleep in the resting and increased sleep in the activity period. Furthermore, S1/2 −/− mice showed a significant increase in NREM but not REM recovery in the first 6 h after SD. Wakefulness (w), rapid-eye-movement (REM) sleep and non-REM (NR) sleep were classified in 4 s epochs offline by visual scoring. EEG of epochs scored as NREM or REM sleep was subjected to fast Fourier Transformation (FFT) analysis. Slow wave activity (SWA) in NREM sleep was calculated as mean power over frequencies between 0.5 and 4.0 Hz. Although quantity of sleep and wakefulness over the entire 24 hr-light–dark cycle did not differ between S1/2 −/− and SY mice, S1/2 −/− animals showed an impaired circadian distribution of sleep, with reduced sleep in the resting and increased sleep in the activity period. Furthermore, S1/2 −/− mice showed a significant increase in NREM but not REM recovery in the first 6 h after SD. SWA decreased in both observed groups during the resting phase and increased in the activity phase. SWA was significantly higher in the S1/2 −/− animals and was drastically increased in the four hours following 6-h SD in both observed groups. Our results indicate an involvement of the
SHARP-1 & -2 transcription factors in the regulation of the circadian distribution of sleep patterns and in SD recovery

Average score: 1.67

O0044
Topic: Restless legs syndrome

On the definition of response, non-response and relapse to drug treatment in restless legs syndrome
R. Kohnen 1,2, H. Benes 3, C. Meissner 3, R. Benecke 2.
1 IMEREM GmbH, Nuremberg, Germany, 2 Neurology Department, University of Rostock, Rostock, Germany, 3Somni bene GmbH, Schwerin, Germany

Introduction: Several drug treatments for Restless Legs Syndrome (RLS) have been evaluated in clinical trials during the recent years, using mean changes from baseline. Especially in the context of augmentation and tolerance, but also to evaluate clinical relevance of drug-induced changes in outcome measures, a need for definition of qualitative treatment outcome is recognized. Based on IRLS data (International RLS Severity Scale) we propose the following categories:

• Non-response (NR): condition unchanged or worsened compared to baseline;
• Minimal improvement (MI): change >0% and <20%;
• Moderate improvement (MO): change >20% and <50%);
• Definite response (RS): change >50% and <100%);
• Remitter (R0): change 100%, symptom-free or IRLS total score <10
• Relapse (R10): worsening by at least 2 categories or NR during long-term therapy (e.g., after 3 months) compared to an at least moderate initial response (e.g., after 4 weeks).

Methods: IRLS data from a double-blind, multi-center dose-finding study comparing 3 doses of the dopamine agonist lisuride in its transdermal application (1, 2, or 4 mg/24 h lisuride) and placebo during a 12-week treatment period in 210 severely disabled RLS patients.

Results: There was a clear dose–response relationship in the categories RS, R10, and R0 with increasing rates of patients with increasing dose. NR and MI occurred most frequently in the placebo group; in category MO, also the lowest lisuride dose was frequently present, indicating that efficacy was not sufficient to treat severely disabled RLS patients in this group. Under all lisuride treated patients, 7% fulfilled the criteria for relapse compared to 10% under placebo.

Conclusions: Our classification should harmonize qualitative outcome research in RLS treatments. The response categories demonstrate the clinical relevance of treatment efficacy, analysis of non-response or poor efficacy is not yet addressed. The relapse definition might help to identify patients with augmentation and tolerance.

Average score: 1.8

P0007
Topic: Restless legs syndrome

Pramipexole significantly reduces periodic limb movement index (PLMI) in restless legs syndrome (RLS)
L. Jama1 *, M. Partinen 1, K. Hirvonen 1,2, A. Alakuijala 1, C. Hublin 3,4, I. Tamminen 5, J. Koester 6.
1 Rinnekoti Research Centre, Espoo, Finland, 2 Neurotest Tampere Oy, Tampere, Finland, 3 Finnish Institute of Occupational Health, Brain@Work Research Center, Helsinki, Finland, 4 Department of Neurology, University of Helsinki, Helsinki, Finland, 5 Medical Division, Boehringer Ingelheim Finland Ky, Helsinki, Finland, 6 Medical Division, Boehringer Ingelheim Pharma GmbH & Co. KG, Ingelheim, Germany
**Purpose:** Periodic limb movements (PLM) occur in roughly 80% of cases of RLS, characteristically, during attempted rest or sleep. Evaluated by polysomnography, they provide an objective assessment of any RLS therapy. The authors tested the effect of dopamine agonist pramipexole on PLMI.

**Methods:** Before/after a 3-week, double-blind, placebo-controlled trial of pramipexole at 0.125, 0.25, 0.50, or 0.75 mg/day, 106 patients with RLS underwent polysomnography with evaluation of PLM, starting at lights-out and ending after 8 hours, whether sleeping or wakeful. Each patient met diagnostic criteria of the International RLS Study Group, achieved a score of >15 on the Group’s Rating Scale (IRLS), and had shown a baseline PLMI of at least 5/hour. Because PLMI data maintained a non-normal distribution, analysis of covariance required logarithmic transformation, with log (PLMI baseline score) as covariate.

**Results:** Among pramipexole recipients (n = 86), mean PLMI decreased from 44.5 to 9.4, a change of −35.1; the mean reduction was 80%. For placebo (n = 20), it decreased from 55.8 to 47.4, a change of −8.5. By pramipexole dosage, the mean decrease was from 54.3 to 13.2 for 0.125 mg/day (n = 21); from 41.3 to 6.5 for 0.25 mg/day (n = 22); from 42.5 to 8.9 for 0.50 mg/day (n = 22); and from 40.1 to 9.2 for 0.75 mg/day (n = 21). Thus, mean reductions were −41.1, −34.8, −33.6, and −30.9, respectively. The adjusted mean difference from placebo (on the log scale) was −1.7 (P<0.0001). By pramipexole dosage, the adjusted mean difference from placebo was −1.5 for 0.125 mg/day, −1.9 for 0.25 mg/day, −1.9 for 0.50 mg/day, and −1.5 for 0.75 mg/day (P<0.0001 for each comparison).

**Conclusion:** Pramipexole reduced PLMI, with a mean 80% drop for all dose groups combined. Even with the lowest dose tested (0.125 mg/day), this reduction was highly significant.

**Contributed support:** Study supported by Boehringer Ingelheim International GmbH.

**Declaration of conflict of interest:** MP has received a grant from the Rinnekoti Research Foundation and honoraria totaling less than USD10,000 per year for work on restless legs syndrome. IT and JK are employees of Boehringer Ingelheim.

**Average score:** 1.83

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**O0011**

**Topic:** New technologies for studying sleep

**The functional connectivity of EEG slow-wave activity during sleep has a small-world network organization**

R. Ferri *, F. Rundo, O. Bruni, M.G. Terzano, C.J. Stam.

1Sleep Research Centre, Department of Neurology I.C., Oasi Institute (IRCCS), Troina; Centre for Pediatric Sleep Disorders, Department of Developmental Neurology and Psychiatry, University of Rome "La Sapienza", Rome; Sleep Disorders Centre, Department of Neurology, University of Parma, Parma, Italy, 2Department of Clinical Neurophysiology, VU University Medical Center, Amsterdam, The Netherlands

**Objective:** To analyze the functional connectivity patterns of the EEG slow-wave activity during the different sleep stages and Cyclic Alternating Pattern (CAP) conditions, using concepts derived from Graph Theory.

**Methods:** We evaluated spatial patterns of EEG slow-wave synchronization between all possible pairs of electrodes (19) placed over the scalp of 10 sleeping healthy young normal subjects using two graph theoretical measures: the clustering coefficient (Cp) and the characteristic path length (Lp). The measures were obtained during the different sleep stages and CAP conditions from the real EEG connectivity networks and randomized control (surrogate) networks (Cp-s and Lp-s).

**Results:** Cp and Cp/Cp-s increased significantly from wakefulness to sleep while Lp and Lp/Lp-s did not show changes. Cp/Cp-s was higher for A1 phases, compared to B phases of CAP.

**Conclusions:** The network organization of the EEG slow-wave synchronization during sleep shows features characteristic of small-world networks (high Cp combined with low Lp); this type of organization is slightly but significantly more evident during the CAP A1 subtypes. Our results show to feasibility of using graph theoretical measures to characterize the complexity of brain networks during sleep and might indicate sleep, and the A1 phases of CAP in particular, as a period during which slow-wave synchronization shows optimal network organization for information processing.

**Average score:** 2
Rotigotine transdermal patch provides continuous efficacy in patients with moderate to severe idiopathic restless legs syndrome – 24 month results from a multi-national, multi-centre, open-label, follow-up trial

C. Trenkwalder 1, K. Stiasny-Kolster 2, W. Poewe 3, E. Schollmayer 4, W.H. Oertel 1, 2, for the Rotigotine SP710 Study Group.

1 Paracelsus-Elena Klinik Kassel, Germany, 2 Philipps-Universitats Marburg, Germany, 3 Universitatsklinik Innsbruck, Austria, 4 Schwarz Pharma, Mannheim, Germany

Background: Rotigotine, a non-ergolinic D3/D2/D1 dopamine agonist formulated as a once-daily transdermal delivery system, is licensed in Europe for the treatment of early stage Parkinson’s disease and in development for RLS. The patch technology releases the drug continuously, and provides stable plasma levels over 24 hours.

Objective: this trial is an extension of a six-arm, double-blind, prospective, placebo-controlled, 7 week, dose-finding study and ongoing in 33 centers in Europe. The aim of this trial is to determine efficacy, tolerability and safety of long-term application in subjects with moderate to severe idiopathic RLS.

Methods: Once the individually adjusted optimal dose is reached in the titration period, rotigotine is administered with dose-adjustments allowed at anytime to maintain optimal treatment. Data are presented assessing the 24 months follow-up after the titration period. Efficacy variables included IRLS total score, CGI, QoL-RLS score, and RLS-6 scales. The safety was evaluated by monitoring AEs, Labs and ECGs.

Results: A total of 295 patients entered the open-label extension trial. The baseline IRLS score was 27.8 + 5.9 and optimal dose treatment resulted in a reduction of 17.2 + 9.2 points. A similar response was observed, when the RLS-6 scales were analyzed. Treatment with rotigotine improved symptom severity “at bedtime falling asleep” (−4.0 ± 3.1) and “during the night” (−4.9 ± 3.0). Rotigotine led to an increase in “sleep satisfaction” (−4.3 ± 3.3), and “daytime tiredness and sleepiness” (−2.4 ± 2.7) was reduced over the 24 month period. The most common adverse events were application site reactions (50%), nasopharyngitis (12%), nausea (11%), erythema (8%), back pain (11%), and fatigue (8%). No clinical signs of augmentation were reported.

Conclusion: Treatment with the rotigotine patch was well-tolerated, safe and showed clinically relevant improvement in the IRLS and RLS-6 scores. All improvements were already apparent in the titration period and were sustained during 24 months follow-up.

Contributed support: Schwarz Pharma is sponsor of the SP710 trial.

Average score: 2
median value of dHR. Differences in estimated parameters were tested by Mann-Whitney U test, the relationship – by Spearman correlation analysis. P<0.05 was considered statistically significant.

**Results:** Significantly correlation between Max systolic (SBP), diastolic (DBP) BP, and variation of SaO2, maxHR, dHR were observed. The value of MaxSBP and d/dt SBP were significantly higher in GrI, which had remained after adjusting for age. In subgroups MaxSBP and MaxDBP were significantly higher in GrI-B. Subgroups were comparable by age and DI.

**Conclusion:** Our results show close interrelations between variation of nocturnal desaturation, maximum HR value, expressiveness of HR reaction during desaturation events and morning peaks of BP. The highest values of morning peak of BP were observed in the subgroup with decreased cardiochronotropic response on desaturation events.

Average score: 2

O0059

**Topic:** Sleep apnea and stroke

**The influence of patent foramen ovale on oxygen desaturation in obstructive sleep apnoea**

Sahlgrenska University Hospital/Ostra and /Sahlgrenska, Goteborg; Dept. Community Medicine, Lund University, Malmo and Skaraborg Institute, Skovde, Sweden

**Aims:** Obstructive sleep apnoea (OSA) is to a variable extent associated with oxygen desaturation. Patent foramen ovale (PFO) may allow interatrial right-to-left shunting. PFO may account for an increased risk of cardiovascular complications, in particular stroke, in OSA. The hypothesis of the study is that oxygen desaturation will occur more often in proportion to the frequency of respiratory disturbances in OSA subjects with PFO than in those without.

**Methods:** In a group of 209 subjects diagnosed with OSA the proportion of desaturation to respiratory events was calculated as the ratio of “oxygen desaturation index/apnoea−hypopnoea index” (ODI/AHI). Fifteen cases with high proportional desaturation (ODI/AHI_0.66) were individually matched with 15 controls with low proportional desaturation (ODI/AHI_0.33) all without pulmonary disease. PFO was assessed with contrast transesophageal echo as large when at least 20 bubbles passed over to left atrium after a single injection.

**Results:** The prevalence of large PFO was 9 of 15 (60%) in the high-proportional desaturation group versus 2 of 15 (13%) in the low proportional desaturation group (p = 0.02). The median number of bubbles passing correlated with minimum oxygen saturation recorded during the sleep study among those with a PFO (r = 0.62, p = 0.02).

**Conclusion:** Oxygen desaturation occurs more often in proportion to the frequency of respiratory disturbances in OSA subjects with PFO than in those without. Polygraphic/polysomnographic recordings as regularly practiced in sleep medicine may be used to identify subjects with high likelihood of PFO.

**Contributed support:** The Swedish Heart and Lung Foundation

Average score: 2

O0060

**Topic:** Sleep in neurological disorders

**Sleep and circadian rhythm disorder in Parkinson’s Disease: association with hallucinations**

1 MRC Centre for Neurodegeneration, Institute of Psychiatry, London, UK, 2 School of Psychology, University of Liverpool, Liverpool, UK, 3 Mersey Care NHS Trust, Merseyside, UK, 4 Department of Medicine for the Elderly, Arrowe Park Hospital, Wirral, UK, 5 Department of Geriatric Medicine, Royal Liverpool University Hospital, Liverpool, UK
Purpose: Hallucinations affect around one-third of patients with Parkinson’s Disease (PD) and have been associated with both night-time disturbances and excessive daytime sleepiness, and also with a more rapid decline in cognitive abilities leading to dementia. Circadian rhythm indexed by rest-activity rhythm has rarely been assessed in Parkinson’s Disease, although it is a hallmark of Alzheimer’s Disease. This study aimed to assess the association between hallucinations, cognition and circadian rhythm breakdown in Parkinson’s Disease.

Methods: 77 patients with PD and 31 healthy older adults were monitored over 5-7 days using actigraphy and sleep diaries. Mean age of PD patients was 74.4(+7.9) years, with a mean disease duration of 5.7(+5.3)years. Circadian rhythm indices were calculated using Non-Parametric Circadian Rhythm Analysis (NPCRA; Sleep Analysis 98, Cambridge Neurotechnology Ltd). Sleep characteristics of hallucinators (n = 35) were compared to those of non-hallucinators (n = 28) and with controls.

Results: Hallucinators demonstrated greater levels of nocturnal sleep fragmentation (F = 4.13, p<0.05) and daytime sleep than non-hallucinators (F = 5.21, p<0.01), independently of disease severity. Rest–activity rhythm variables were associated primarily with disease-related factors disease duration and severity of motor fluctuations, but were not associated with cognitive decline. The PD group as a whole showed a more disrupted circadian rhythm than controls, and hallucinators showed lower interdaily stability across the period of monitoring, independently of motor fluctuations and disease duration than non-hallucinators (F = 4.40, p = 0.02).

Conclusions: PD patients with hallucinations show a greater degree of breakdown in rest-activity rhythms than do their non-hallucinating counterparts, which is independent of cognitive decline. Degeneration of the suprachiasmatic nucleus is thought to underlie circadian rhythm dysfunction in Alzheimer’s Disease, however it is likely that changes in rest-activity rhythm in PD are driven by degeneration of brainstem nuclei sleep centers which is characteristic of the a-synucleinopathies, and which may also play a role in the pathogenesis of hallucinations.

Contributed support: This study was supported by a PhD studentship from the University of Liverpool, School of Psychology

Average score: 2

O0068

Topic: Respiratory sleep disorders

Oxidative stress and platelet activation in obstructive sleep apnea syndrome (OSAS)

The Lloyd Rigler Sleep Apnea Research Laboratory, Faculty of Medicine, Technion, Haifa, Israel

Introduction: Obstructive sleep apnea syndrome (OSAS), characterized by intermittent hypoxia/reoxygenation, which increases reactive oxygen species (ROS) production, is an independent risk factor for cardiovascular disease. Platelets play an important role in the pathogenesis of acute cardiovascular syndromes. Although, platelet activation has been demonstrated in experimental and clinical models of ischemia/reperfusion, the influence of OSAS on platelet function has not been fully elucidated.

Objectives: To explore the effects of apnea-induced oxidative stress on platelet activation in OSAS patients.

Methods: Platelet interactions with monocytes and granulocytes were examined using flow cytometry (FACS) in polysomnographically verified 28 OSAS patients and in 23 controls. Platelet activation-dependent receptors – CD31, CD63 and non-dependent receptor – CD41 were determined by FACS in 9 OSAS patients and in 7 controls. All participants were co-morbidity free. We determined the percentage of cells expressing receptors (%), the receptor density – measured by means of fluorescence intensity (MFI), and the index of adhesion (% cells*MFI). Oxidative stress of all participants was determined by TBARS, peroxides and PON1 activity levels in their plasma and serum, respectively.

Results: Platelets–monocytes and platelets–granulocytes interactions were higher in OSAS patients than in controls (%, p<0.004; MFI, p<0.01; index, p<0.001; vs. %, p<0.0002; MFI, p<0.003; index, p<0.001, respectively). The density of CD31, CD63 and CD41 receptors was higher in OSAS patients, than in controls (p<0.002; p<0.03; p<0.05 respectively). Positive correlations were found between apnea/hypopnea index (AHI) and % of cells (R = 0.4, p<0.004), MFI (R= 0.6, p<0.0001) and index of platelets–granulocytes interactions and AHI and MFI (R = 0.5, p<0.0002) and index of platelets–monocytes interactions (R = 0.4, p<0.004). Also, AHI positively correlated with % of cells (R = 0.7, p<0.003), MFI (R = 0.6, p<0.01) and index of adhesion of CD31 (R = 0.5,
p<0.05), MFI (R = 0.7, p<0.003) and index of adhesion of CD41 (R = 0.7, p<0.003). Only index of platelets–granulocytes interactions correlated with TBARS levels (R = 0.33, p<0.002). PON1 activity negatively correlated with the indices of platelets-monocytes aggregates (R = −0.3, p<0.03), CD41 (R = −0.5, p<0.05) and CD31 (R = −0.55, p<0.03).

Conclusions: These data suggest that in OSAS patients, activation of platelets is increased by higher expression of adhesive and proinflammatory molecules. Increased platelet activation results in upregulation of specific binding to leukocytes, which promotes proinflammatory leukocyte secretion and their adhesion to endothelium, a mechanism that may lead to endothelial cells injury and consequently to the development of cardiovascular morbidities. Since, the expression of the receptors investigated on platelet membranes significantly increased with increasing AHI values, this suggests an association between OSAS severity and platelet activation. Moreover, the negative correlations that were found between those receptors and PON1 may suggest a possible link between antioxidant defense and platelets activation.

Average score: 2

O0073

Topic: Restless legs syndrome

Double-blind, multi-centre, 2-year long-term study comparing treatment with cabergoline and levodopa in severe restless legs patients

B. Högl 1, H. Benes 2, R. Kohnen 3, C. Trenkwalder 4, Caldir Study Group 5, 6, 7.

1 Neurology Department, Innsbruck Medical University, Innsbruck, Austria, 2Somnibene, Schwerin, Germany, 3IMEREM, Nuernberg, Germany, 4 Paracelsus-Elena-Klinik, Kassel, Germany, 5, Austria, 6, Germany, 7, Sweden

Introduction: The Restless Legs Syndrome (RLS) in its idiopathic form is a chronic disorder which frequently requires long-term therapy. Only a few mostly uncontrolled open-label trials have reported on efficacy and tolerability of long-term treatment.

Objectives: We present long-term treatment data from a double-blind, multicentre, multinational trial to compare cabergoline (CAB) and levodopa (LEV) in patients with severe idiopathic RLS.

Methods: 165 responders (72% females, age 57 years, 26% de novo) of initially 361 patients from a confirmative trial continued 30-week double-blind treatment until the last patient had completed the core trial (maximum 2 years). Efficacy was assessed by the IRLS, episodes of augmentation and loss of efficacy, tolerability was evaluated by adverse events.

Results: 86 patients on average were treated with cabergoline for (mean) 16.3 months (range: 6.8–22.7), by thus, longer than 77 patients treated with levodopa for 13.9 months (7.0–22.1) (p = 0.0002). In the cabergoline group, 82.6% received 2 mg and 17.4% 3 mg/day whereas under levodopa, 55.8% were treated with 200 mg and 44.2% with 300 mg (p<0.0001 for difference between dose level). IRLS total score improved from baseline score of 25.5 under cabergoline by −18.9 to 6.6 at the end of treatment and under levodopa from 25.9 by −13.1 to 12.9 points (p = 0.0005). IRLS improvement was fairly stable between week 4 and end of long-term treatment. 22% in the cabergoline group and 33% in the levodopa group dropped out before study end, among those 1 and 9 patients due to augmentation (p = 0.011), 4 and 5 due to loss of efficacy and 4 and 5 patients due to adverse events.

Conclusion: Long-term therapy with cabergoline and levodopa is efficacious and stable over treatment of up to 2 years. In this double-blind active-controlled study, cabergoline was superior to levodopa in keeping patients on therapy, improving symptom severity and preventing augmentation.

Contributed support: The conduct of the study was sponsored by Pfizer Pharma Ltd, Karlsruhe, Germany

Average score: 2
Procedural and declarative learning tasks influence the density of sleep spindles in elderly subjects
Charite CBF Berlin, Germany

There is more and more evidence that sleep is related to the consolidation of memories. One of the most interesting findings is that sleep spindles might be linked to learning processes. It has been demonstrated that spindle activity increases following successful learning in young subjects and studies have given evidence for a correlation between overnight memory improvement and sleep spindle activity. Results indicate that spindle activity during non-REM sleep is related to declarative and procedural memory in young subjects. The present study examines the question whether a declarative and a procedural learning task increase the amount and density of sleep spindles during non-REM sleep in elderly subjects. 20 healthy participants (eight males) aged between 60 and 85 years were examined. Subjects stayed three consecutive nights in the sleep laboratory. The first night served only as adaptation night and was also used to control sleep disturbances. The second night was used as baseline night. On the third night, test night, the subjects performed two cognitive tasks, a word-pair association list (declarative learning) and a mirror tracing test (procedural learning). The next morning, a test of the two memory tasks was given again to measure performance. Spindle detection was based on an automatic algorithm. The density of sleep spindles was significantly higher \( p < 0.05 \) after the learning task as compared with the baseline night. Furthermore, the time used to perform the mirror tracing test improved significantly \( p < 0.05 \) in the morning as well as the results of the word-pair association list. These findings suggest that sleep spindles might be linked to declarative and procedural learning performance in elderly subjects.

Contributed support: Deutsche Forschungsgemeinschaft

Average score: 2

The role of the dopaminergic pathway in regulating sleep–wake patterns in a model of Parkinson’s Disease in rats
M.M.S. Lima 1, M.L. Andersen 1, A.B. Reksidler 2, M.A.B.F. Vital 2, S. Tufik 1.
1Psychobiology, Federal University of Sao Paulo, Sao Paulo SP, Brazil, 2Pharmacology, Federal University of Parana, Curitiba, PR, Brazil

Objective: In the present study, we examined the sleep–wake patterns and tyrosine hydroxylase (TH) expression profile in rats surgically lesioned with 1-methyl-4-phenyl-1,2,3,6-tetrahydropyridine (MPTP) into the substantia nigra pars compacta (SNpc).

Methods: After 48 h baseline recording, rats were submitted to an intranigral MPTP infusion through cannula previously implanted surgically. Immediately after performing the infusions, the sleep–wake patterns were evaluated for 5 days. After the end of the electrophysiological experiment, rats were transcardially perfused for brain fixation allowing TH-immunohistochemistry examination to determine the neuronal loss in the SNpc. Another set of animals were operated and underwent the very same infusion procedure in order to investigate the TH protein expression in the SNpc. Sham groups followed the same procedures but were infused with sterile saline 0.9%.

Results: The data indicated that a 50% dopaminergic neuronal loss restricted to the SNpc, inflicted by MPTP, was able to decrease the latency to the onset of sleep during the 5 days of recording in both light and dark periods. Moreover, an increase in the latency to paradoxical sleep was observed on day 1. The MPTP group also presented more pronounced sleep efficiency during 4 days of recording, and a consequent reduction in the percentage of wakening on the same days. The percentage of slow wave sleep (SWS) was increased in the MPTP group on days 2 and 3 only in the dark period. Nevertheless, percentage of paradoxical sleep was diminished during days 1 and 2 for light and dark periods and day 3 for light period only. On day 4, paradoxical
sleep presented an increase in both periods. Complementarily, TH expression was reduced in the MPTP group compared to sham only on day 1.

**Conclusion:** These data provide novel evidence that sleep–wake patterns are directly regulated by the dopaminergic nigrostriatal pathway in this model of Parkinson’s disease.

**Contributed support:** AFIP, FAPESP and CAPES

Average score: 2

L0037

**Topic:** Pediatric sleep disorders

**The role of the inflammatory response and cardiac function in children with sleep disorders breathing**


*Department of Pediatrics, S. Andrea Hospital, University “La Sapienza”, Rome, Italy*

**Objective:** The levels of C-Reaction Protein (CRP), a serum marker of inflammation, are increased in adults and children with Sleep Disordered Breathing (SDB). The aim of our study was to estimate CRP levels in a group of children with SDB and to see cardiovascular effects in this group.

**Methods:** 106 children have been studied, mean age 6.0±3.2, who underwent polysomnographic examination (PSG). Samples for plasma CRP levels were drawn in the morning after the PSG. Of the 106 children 21 underwent an echocardiographic examination with Tissue Doppler analysis (TDI) that studied intrinsic contractility and relaxation of myocardium.

**Results:** CRP levels were positively correlated with the apnea/hypopnea index (AHI) (p<0.05) but not with severity of SDB. CRP levels also correlated negatively with minimal saturation (nadir SaO2) and average oxygen saturation (p<0.05). A significant difference between TDI ratio E/A of left cardiac section was found in 21 children with SDB when compared with 7 healthy controls (2.3±0.8 vs 3.3±0.6; p<0.05). No correlation was observed between CRP levels and TDI values in children with SDB.

**Conclusions:** Our data showed that CRP levels are increased in children with SDB and that there exists a correlation between CRP, AHI, SpO2 average and nadir SpO2. No relation was noted between cardiac contractility and CRP levels or severity of SDB.

Average score: 2