

World Association of Sleep Medicine & Canadian Sleep Society Congress

**September 10-14, 2011
Quebec City, Canada**

Final Program
(version August 1, 2011)

FRIDAY, SEPTEMBER 9, 2011

On-Site Registration

6:00pm – 9:00pm

SATURDAY, SEPTEMBER 10, 2011

On-Site Registration

7:00am – 8:00pm

Pre-Congress Courses 1-5

8:00am – 12:00pm

C3: Advanced Management of Sleep Breathing Disorders: An Interactive Problem-Based Session

Co-Chairs: Clodagh Ryan, MD (Canada) and Robert Thomas, MD (USA)

Speakers: Clodagh Ryan, MD (Canada); Robert Thomas, MD (USA); Robert Skomro, MD (Canada); Jean-Louis Pépin, MD, PhD (France); Antonio Culebras, MD (USA)

Objectives:

1. Understand the nature of interactions of sleep apnea and cardiac disease.
2. Learn alternative (to positive pressure) approaches to management of chemoreflex pathology in the context of sleep apnea.
3. Receive an update on patterns and management of sleep apnea in selected neurological and neuromuscular disorders.
4. Learn applied ventilation principles for the management of the obesity-hypoventilation syndrome.

Sleep apnea and cardiac disease

Clodagh Ryan, MD (Canada)

Alternative treatments for chemoreflex-mediated sleep apnea

Robert Thomas, MD (USA)

Sleep-related breathing disorders and neuromuscular disease

Robert Skomro, MD (Canada)

Management of positive airway pressure (PAP) therapies in obesity hypoventilation syndrome

Jean-Louis Pépin, MD, PhD (France)

Sleep and stroke

Antonio Culebras, MD (USA)

C2: Understanding Insomnia - New Approaches to Etiology, Diagnosis and Treatment

Chair: Dieter Riemann, PhD (Germany)

Speakers: Jack Edinger, PhD (USA); Simon Kyle, PhD (United Kingdom); Dieter Riemann, PhD (Germany); Daniel Buysse, MD (USA); Phil Gehrman PhD (USA)

Objectives:

1. Understand the concept of hyperarousal as relevant to insomnia pathogenesis.
2. Review current thinking about cognitive models of insomnia.
3. Discuss the differential diagnosis of insomnia syndromes from a pathobiological perspective.
4. Receive a concise overview of cognitive-behavioral therapy for insomnia.

Diagnosis of insomnia / differential-diagnostic process

Jack Edinger, PhD (USA)

Cognitive models of insomnia

Simon Kyle, PhD (United Kingdom)

The hyperarousal concept of insomnia – neurobiological aspects

Dieter Riemann, PhD (Germany)

Pharmacotherapy of insomnia

Daniel Buysse, MD (USA)

Cognitive-behavioral treatment of insomnia: nuts and bolts

Phil Gehrman, PhD (USA)

8:00am – 5:00pm

C1: Advances in the Management of Pediatric Sleep Disorders

Co-Chairs: Shelly Weiss, MD (Canada) and Sanjeev Kothare, MD (USA)

Speakers: Indra Narang, MD (Canada); Judy Owens, MD (USA); Oliviero Bruni, MD (Italy); Roger Godbout, PhD (Canada); Shelly Weiss, MD (Canada); Sanjeev Kothare, MD (USA); Suresh Kotagal, MD (USA); Sona Nevsimalova, MD (Czech Republic)

Objectives:

1. Review common sleep disorders that occur in childhood and adolescence, and understand their management strategies.
2. Understand the differences in the interpretation of pediatric vs. adult polysomnography.
3. Understand the role of pharmacotherapy in the treatment of pediatric insomnia.
4. Review and update knowledge on pediatric sleep disorders in diverse medical conditions (mental health disorders, epilepsy, headaches, traumatic brain injury).

Sleep apnea and its consequences

Indra Narang, MD (Canada)

Polysomnography in pediatrics

Judy Owens, MD (USA)

Non-pharmacological and pharmacological treatment of insomnia in normal infants and children

Oliviero Bruni, MD (Italy)

Treatment of insomnia in children and adolescents with mental health disorders

Roger Godbout, PhD (Canada)

Motor disorders of sleep including PLMS, RLS, and bruxism

Shelly Weiss, MD (Canada)

Epilepsy and sleep

Sanjeev Kothare, MD (USA)

Traumatic brain injury, headache and sleep

Suresh Kotagal, MD (USA)

Narcolepsy and hypersomnolence

Sona Nevsimalova, MD (Czech Republic)

1:00pm – 5:00pm

C4: Ambulatory Sleep Techniques

Chair: Thomas Penzel, PhD (Germany)

Speakers: Heidi Danker-Hopfe, PhD (Germany); Ludger Grote, MD, PhD (Sweden); Robert Thomas, MD (USA); Thomas Penzel, PhD (Germany)

Objectives:

1. Understand usefulness and limitations of ambulatory ECG.
2. Learn about the use of peripheral pulse wave analysis in sleep apnea medicine.
3. Understand how autonomic and respiratory “windows” provide unique insights into sleep physiology and pathology.
4. Receive an update on ambulatory monitoring for sleep apnea diagnosis.

C5: Parasomnias Update 2011

Chair: Jacques Montplaisir, MD, PhD (Canada)

Speakers: Isabelle Arnulf, MD, PhD (France); Ron Postuma, MD (Canada); Anne Germain, PhD (USA); Rosalia Silvestri, MD (Italy); Carlos Schenck, MD (USA)

Objectives:

1. Review the clinical and sleep laboratory characteristics (PSG and video) of REM and non-REM parasomnia.
2. Discuss the differential diagnosis of parasomnia.
3. Update knowledge on the basic mechanisms of REM and non-REM parasomnia.
4. Review psychological and pharmacological treatments of parasomnia.

Sleepwalking

Isabelle Arnulf, MD (France)

REM behavior disorder

Ron Postuma, MD, PhD (Canada)

Nightmares

Anne Germain, PhD (USA)

Sleep-related epilepsy

Rosalia Silvestri, MD (Italy)

Treatment of REM and nonREM parasomnias

Carlos Schenck, MD (USA)

International Restless Legs Study Group

9:00am – 6:00pm

Canadian Sleep Medicine Credentialing Committee

3:00pm – 7:00pm

Public Lectures (French)

3:00pm -5:00pm

Co-Chairs: Julie Carrier, PhD and Célyne Bastien, PhD (in collaboration with La Fondation Sommeil)

3:00pm -4:00pm

Sleep and Pain (J'ai mal! Effets sur le sommeil et l'humeur)

Gilles Lavigne, DMD, PhD

Sleep Apnea (L'apnée du sommeil n'a pas de sexe)

Frederic Séries, MD

4:00pm -5:00pm

Sleep and Menopause (Bien dormir à la ménopause, est-ce possible?)

Josée Savard, PhD

Shift Work (Le travail de nuit: problèmes et stratégies d'adaptation)

Marie Dumont, PhD

SUNDAY, SEPTEMBER 11, 2011

On-Site Registration

7:00am – 6:00pm

Pre-Congress Courses 6-7

8:00am – 12:00pm

C6: The Measurement of Periodic Leg Movements During Sleep (PLMS) and Wakefulness (PLMW)

Co-Chairs: Raffaele Ferri, MD (Italy) and Marco Zucconi, MD (Italy)

Speakers: Lynn-Marie Trotti, MD (USA); Raffaele Ferri, MD (Italy); Marco Zucconi, MD (Italy); Arthur Walters, MD (USA); Richard Allen, PhD (USA)

Objectives:

1. Review and understand the neurophysiology of motor control and limb activation during sleep.
2. Receive an update on measurement principles and methods.
3. Understand the impact of PLMs on the autonomic nervous system.
4. Integrate the new biology of PLMS/PLMW into clinical practice.

The neurophysiology of periodic leg movements during sleep

Lynn-Marie Trotti, MD (USA)

The measurement of periodicity and time structure of leg motor activity during sleep

Raffaele Ferri, MD (Italy)

The analysis of periodic leg movements during wakefulness and the suggested immobilization system

Marco Zucconi, MD (Italy)

The analysis of impact of periodic leg movements on the autonomic nervous system

Arthur Walters, MD (USA)

The measurement of periodic leg movements during sleep by actigraphy

Richard Allen, PhD (USA)

C7: Circadian Rhythms - Beyond Sleep

Chair: Phyllis Zee, MD, PhD (USA)

Speakers: Diane Boivin, MD, PhD (Canada); Steven Shea, PhD (USA); Fred Turek, PhD (USA); Phyllis Zee, MD, PhD (USA)

Objectives:

1. Receive an update on circadian biology beyond sleep processes, including metabolic regulation.
2. Understand the link between circadian rhythms and mood disorders.
3. Understand the role of circadian dysregulation in cardiovascular pathology.
4. Obtain an applied bench-to-bedside perspective of circadian biology.

Circadian rhythms and psychiatric disorders

Diane Boivin, MD, PhD (Canada)

Circadian regulation of cardiovascular function: Implications for cardiovascular disorders

Steven Shea, PhD (USA)

Circadian rhythms and risk for metabolic disorders

Fred Turek, PhD (USA)

Circadian rhythms disorders: From clocks to disease

Phyllis Zee, MD, PhD (USA)

Technologists Program

8:30am – 5:00pm

8:30am – 8:45am

Welcome

Co-chairs: Natalie Morin, RPSGT (Canada) and Sharon Keenan, PhD, RPSGT (USA)

8:45am – 9:30am

Advances in Digital Technology and Sleep

Thomas Penzel, PhD (Germany)

9:30am – 10:15am

Update on Sleep and Control of Ventilation 2011

Richard Horner, PhD (Canada)

10:15am – 10:45am

BREAK

10:45am – 11:30am

CVD and Hypertension - Links with Sleep

Anstella Robinson, MD (USA)

11:30am – 12:15pm

PAP Therapy for Symptomatic and Asymptomatic OSA

Najib Ayas, MD (Canada)

12:15pm – 1:15pm

LUNCH

1:15pm – 2:00pm

Discussion Group: BRPT updates

Co-chairs: Natalie Morin, RPSGT (Canada) and Roger Godbout, PhD, RPSGT (Canada)

Speakers: Bonnie Robertson, RPSGT (USA); Janice East, RPSGT, REEGT (USA)

2:00pm – 2:45pm

Panel Discussion: International Credentialing

Co-chairs: Helen Driver, PhD, RPSGT (Canada) and Sharon Keenan, PhD, RPSGT (USA)

Speakers: Régine Cecchi, RPSGT (France); Mark Norman, RPSGT (Australia); Thomas Penzel, PhD (Germany); Glenn Roldan, RPSGT (USA); Natalie Morin, RPSGT (Canada)

2:45pm – 3:15pm

BREAK

3:15pm – 4:00pm

Pediatric Sleep Disorders

Rafael Pelayo, MD (USA)

4:00pm – 5:00pm

PSG - Data Blitz

Sharon Keenan, PhD (USA) and Max Hirskowitz, PhD (USA)

Students Training Day Program

10:15am – 5:00pm

10:15am – 10:30am

Welcome

Co-chairs: Vincent Moreau, PhD (Canada) and Christian Burgess, PhD (Canada) in collaboration with Célyne Bastien, PhD (Canada)

10:30am – 11:15am

Basic Science Talk: Neurobiology of Sleep

Barbara Jones, PhD, (Canada), CSS/WASM Invited Speaker

11:15am – 11:30am

Canadian Student 1: Error detection is reduced and emotional evaluation of errors is heightened following a night of total sleep deprivation

Ryan Penn, (Canada), CSS Award Winner

11:30am – 11:45am

Canadian Student 2: Spindles and slow waves are associated to verbal learning in older subjects

Marjolaine Lafortune, (Canada), CSS Award Winner

11:45am – 12:00pm

International Student 1: The effect of intranasal hypocretin-1 on glucose tolerance in normal weighted and obese narcolepsy patients

Sara Lena Weinhold, (Germany), CSS Student Travel Award Winner

12:00pm – 12:15pm

International Student 2: Altered cytokines in marathon runners with restless leg syndrome

Sayonara Beatriz Ranciaro- Fagundes, (Brazil), CSS Student Travel Award Winner

12:15pm – 1:15pm

LUNCH BREAK

1:15pm – 2:00pm

Do Circadian Rhythms Put You to Sleep? A Short (personal) History

Ben Rusak, PhD, (Canada), CSS Distinguished Scientist Recipient

2:00pm – 2:15pm

Canadian Student 3: Relationship between circadian rhythms of body temperature, melatonin secretion, and sleep propensity during the follicular and luteal phase of the menstrual cycle

Ari Shechter, (Canada), CSS Outstanding Student Award

2:15pm – 2:30pm

Canadian Student 4: Insomnia and daytime cognitive performance: a meta-analysis

Émilie Fortier-Brochu (Canada), CSS Outstanding Student Award

2:30pm – 2:45pm

Canadian Student 5: Manipulating sleep duration alters cognitive and emotional functioning in children

Jennifer Vriend, (Canada), CSS Student Travel Award Winner

2:45pm – 3:00pm

International Student 3: The relationship between sleep and memory in PTSD

Malgorzata Lipinska, (South Africa), CSS Student Travel Award Winner

3:00pm – 3:30pm

COFFEE BREAK

3:30pm – 4:15pm

Clinical Science Talk: Applications of CBT to Primary and Comorbid Forms of Insomnia

Jack Edinger, PhD (USA)

4:15pm – 5:00pm

Career Development Talk: Post-Doc Fellowship - Making it the Best Days of your Life

Anne Germain, PhD (USA)

Opening Ceremony / Reception

5:30pm – 8:30pm

MONDAY, SEPTEMBER 12, 2011

On-Site Registration

7:00am – 6:00pm

Keynote Lectures

8:00am – 9:00am

Sleep, Health and Circadian Rhythm Disruptions in Modern Society

Charles Czeisler, MD, PhD

Harvard Medical School and Brigham and Women's Hospital, Boston (USA)

Symposia

9:00am – 10:30am

S1: Familial Aggregation of Insomnia – From Phenotypes to Genotypes – How Far Are We?

Chair: Yun-Kwok Wing, MD (China) and Charles M. Morin, PhD (Canada)

Speakers: Yun-Kwok Wing, MD (China); Charles M. Morin, PhD (Canada); Dieter Riemann, PhD (Germany); Mehdi Tafti, PhD (Switzerland);

Objectives:

1. To review current state of evidence on the familial aggregation of insomnia.
2. To discuss potential mechanisms underlying the familial aggregation of insomnia.
3. To outline directions for future molecular genetic studies of insomnia.

Summary:

Family study can provide information for the association and interaction of both genetic and environmental factors of a disease, and hence, plays a critical pivotal role in genetic epidemiology. Thus, the identification of familial aggregation of insomnia may help to identify the underpinning mechanism that contributes to the familial risk of insomnia including genetic predisposition, shared environment factors, co-occurrence of other psychiatric comorbidities and learned behaviors. In this symposium, the emerging data on the familial aggregation of insomnia across the globe will be reviewed. The issues of clinical phenotypes and possible endophenotypes (such as hyperarousal mechanism) of insomnia will be critically re-appraised. The issue on gene-environment interactions of insomnia and possible ways to go ahead for future molecular genetic typing of insomnia will be discussed.

9:00am – 9:20am

Familial aggregation of insomnia – an update

Yun-Kwok Wing, MD (China)

9:20am – 9:40am

Longitudinal course of insomnia – stability of a trait

Charles M. Morin, PhD (Canada)

9:40am – 10:00am

Insomnia – from clinical phenotypes to hyperarousal – is hyperarousal an endophenotype?

Dieter Riemann, PhD (Germany)

10:00am – 10:20am

Insomnia – from environment to genes – how should we go ahead?

Mehdi Tafti, PhD (Switzerland)

S2: Cardiology and Sleep

Chair: Douglas Bradley, MD (Canada)

Speakers: Douglas Bradley, MD (Canada); Jon-Erik Holty, MD (USA); Kannan Ramar, MD (USA); Geraldo Lorenzi, MD, PhD (Brazil)

Objectives:

1. Present the mechanisms and occurrence of cardiac arrhythmia during REM sleep.
2. Document the impact of sleep and its disorders on occurrence of atrial fibrillation.
3. Present the way fluid shift during sleep impacts on heart failure, hypertension and venous insufficiency.
4. Explain how atherosclerosis may be secondary to sleep disorders even beginning very early in life.

Summary:

Sleep interacts with many cardiac functions and may be associated with specific cardiology syndromes or complications: REM sleep can be associated with specific arrhythmias undetected during wakefulness. Atrial fibrillation is affected by sleep and several sleep disorders. Atherosclerosis and its early development can be secondary to specific sleep disorders and the changes may begin very early in life. Finally nocturnal shift of rostral fluid play a role in the pathogenesis of sleep apnea in heart failure hypertension and venous insufficiency. Recognizing the mechanisms involved in each of these interactions of sleep and cardiac function is becoming an increasing important aspect of sleep medicine. Overall more attention should be paid to sleep and its disorders when considering cardio-vascular syndromes and conversely the sleep medicine clinicians need to know more about the interaction of sleep and cardiac function to provide appropriate care for their patients.

9:00am – 9:20am

Influence of fluid shifts during sleep on sleep apnea in heart failure, hypertension and venous insufficiency

Douglas Bradley, MD (Canada)

9:20am – 9:40am

REM sleep can be associated with specific arrhythmias undetected during wakefulness

Jon-Erik Holty, MD (USA)

9:40am – 10:00am

Atrial fibrillation is affected by sleep and several sleep disorders

Kannan Ramar, MD (USA)

10:00am – 10:20am

Atherosclerosis may be secondary to sleep disorders even beginning very early in life
Geraldo Lorenzi, MD, PhD (Brazil)

S3: Recent Advances in Pharmacological Therapeutics of Sleep Disorders

Chair: Jed Black, MD (USA)

Speakers: Dale Edgar, PhD (United Kingdom); Maria-Antonia Quera-Salva, MD (France); Jed Black, MD (USA)

Objectives:

1. Understand the role brain histaminergic neurons play in arousal state control, and how antihistaminergic compounds influence sleep-wakefulness.
2. Learn about combined chronobiotic - antidepressant agents and their action on insomnia and depression.
3. Describe the hypocretin-based hypothesis of cortical hyperarousal in insomnia and the rationale for hypocretin/orexin antagonists as potential sleep aids.

Summary:

Historically, two general pharmacological approaches have been utilized to treat insomnia: enhancement of central nervous system (CNS) GABA-ergic mechanisms, and blockade of monoaminergic activating systems. Over the past few decades, the majority of the pharmaceutical activity has focused on GABA mechanisms. Recently, attention has shifted to CNS monoaminergic and circadian rhythm regulating mechanisms. While antagonists of histaminergic activity, either through traditional antihistamines or tricyclic antidepressants, have been commonly used to treat insomnia, recent advances in CNS histaminergic science has led to renewed interest in the histaminergic system, alone or in concert with other CNS monoaminergic activating systems, as targets for modulation to promote and maintain sleep. Edgar will review current activity related to histaminergic modulation for insomnia treatment within the scientific and pharmaceutical industry. Until recently, most available antidepressants acted via monoaminergic mechanisms. Novel melatonergic compounds demonstrate antidepressant properties. Of these, the most advanced is agomelatine, which combines MT1 and MT2 agonism with 5-HT (2C) receptor antagonism. Agomelatine rapidly improves sleep quality, alertness at awakening and depression. Quera-Salva will review recent work in the evaluation of agents with chronobiotic antidepressant properties for the treatment of insomnia and depression. CNS Hypocretin ligand deficiency has been found in the vast majority of patients with narcolepsy-cataplexy syndrome. The hypocretin system has been shown to play a key role in the regulation of CNS monoaminergic activity. These discoveries have fueled much interest within the pharmaceutical industry to develop agents to block hypocretin receptors as a means of promoting and maintaining sleep. The pharmaceutical industry has preferred the term "orexin" (the alternate name for this system), rather than hypocretin, and a number of orexin antagonists are in development across the industry. Black will review this development activity.

9:00am – 9:25am

Histaminergic modulation of wakefulness and sleep: Translating preclinical discovery to clinical applications

Dale Edgar, PhD (United Kingdom)

9:25am – 9:50am

Chronobiotic antidepressants: Sleep and depression

Maria-Antonia Quera-Salva, MD (France)

9:50am – 10:15am

Hypocretin/Orexin antagonists in Insomnia

Jed Black, MD (USA)

S4: Sleep, Recovery, Regeneration and Performance in Sport: Current Sleep Research and Health Initiatives on Sleep and Exercise

Chair: Charles H. Samuels, MD (Canada)

Speakers: Charles H. Samuels, MD (Canada); Shawn D. Youngstedt, PhD (USA); Cheri D. Mah, MS (USA); Christopher E. Kline, PhD (USA)

Objectives:

1. Describe and explain the current state of knowledge regarding the complex interrelationship between sleep and exercise.
2. Review research methods to investigate the relationship of sleep to exercise in the general population and in athlete populations.
3. Evaluate and predict the impact of sleep restriction, poor sleep quality and circadian dysrhythmia on athletic performance and human health in a clinical population.

Summary:

The bi-directional relationship of sleep to exercise and exercise to sleep has been a subject of debate in the sleep literature for many years. However the sport science community has a long and rich history of exploring the relationship of sleep and circadian dysrhythmia to training and performance in sport. Sport medicine physicians, coaches and trainers have long believed that sleep is the foundation of recovery and regeneration but have had little basic science and epidemiological evidence to support this belief. In the last 10 years sleep researchers have begun to look specifically at the relationship of sleep to training, recovery and performance in high performance athletes who compete at the Varsity, National Team and Olympic level as well as professional athletes in various power and endurance sports. The purpose of this symposium is to bring a group of internationally recognized and published academics from both the Sleep Science/Medicine and Sport Science/Medicine communities to present, discuss and promote interest in this fascinating area of investigation that has substantial implications for the future of athletic training regimens but also for the future of addressing the health implications of a sedentary society.

9:00am – 9:20am

Sleep and the lifecycle of an athlete

Charles H. Samuels, MD (Canada)

9:20am – 9:40am

Does sleep influence athletic performance? A critique of the evidence

Shawn D. Youngstedt, PhD (USA)

9:40am – 10:00am

Sleep extension and athletic performance in collegiate sports

Cheri D. Mah, MS (USA)

10:00am – 10:20am

Circadian rhythms and athletic performance

Christopher E. Kline, PhD (USA)

Coffee Break / Exhibition

10:30am – 11:00am

Technologists Workshops (French)

11:00am – 12:30pm

Complex Sleep Apnea and ASV Titrations

(Apnée du sommeil complexe et titration avec la servo-ventilation adaptée)

Pierre Mayer, MD (Canada)

Oral Paper Presentations (Sessions 1-4)

11:00am – 12:30pm

O1: Insomnia: Epidemiology and Mechanisms

Co-Chairs: Josée Savard, PhD (Canada) and Dan Buysse, MD (USA)

Monthly fluctuations of sleep and insomnia symptoms over the course of a year in a population-based sample

Mélanie LeBlanc (Canada)

Charles Morin (Canada), Lynda Bélanger (Canada), Hans Ivers (Canada), Marie-Andrée Côté (Canada)

Prevalence, course and long-term impact of non-restorative sleep: A five-year community-based follow-up study

Jihui Zhang (USA)

Siu-Ping Lam (China), Shirley Xin Li (China), Mandy Wai-Man Yu (China), Albert Martin Li (China), Yun-Kwok Wing (China)

The nature and prevalence of middle-of-the-night use of prescription hypnotics

Thomas Roth (USA)

Patricia Berglund (USA), Victoria Shahly (USA), Alicia C. Shillington (USA), Judith J. Stephenson (USA), Denise Cooke (USA), Nikhilesh Singh (USA), Ronald Kessler (USA)

Enhanced use-dependent plasticity in primary insomnia

Rachel Marie E Salas (USA)

Joseph Galea (USA), Gabriela Cantarero (USA), Richard Allen (USA), Charlene Gamaldo (USA), Michael Smith (USA), Barbara Lam (USA), Pablo Celnik (USA)

The role of androgen-deprivation therapy and hot flashes in the evolution of insomnia in patients with prostate cancer

Josée Savard (Canada)

Séverine Hervouet (Canada), Hans Ivers (Canada)

Depressive symptomatology, medication persistence, and associated health care costs in older adults with insomnia

Duru Golden Uzoma (Nigeria)

O2: REM Behavior Disorders and Parasomnias

Co-Chairs: Carlos Schenck, MD (USA) and Yves Dauvilliers, MD (France)

REM sleep behavior disorder in a large cohort of Parkinson's disease patients: Frequency and associated factors

Friederike Sixel-Döring (Germany)
Ellen Trautmann (Germany), Brit Mollenhauer (Germany)

Decision making in idiopathic REM sleep behavior disorder

Birgit Hôgl (Austria)
Laura Ehrmann (Austria), Margarete Delazer (Austria), Thomas Mitterling (Austria), Viola Gschliesser (Austria), Laura Zamarian (Austria), Johanna Wenter (Austria), Birgit Frauscher (Austria), Werner Poewe (Austria)

Hippocampal perfusion predicts the emergence of neurodegenerative disease in idiopathic REM sleep behavior disorder

Thien Thanh Dang-Vu (Canada)
Jean-François Gagnon (Canada), Mélanie Vendette (Canada), Jean-Paul Soucy (Canada), Ron Postuma (Canada), Jacques Montplaisir (Canada)

Long term use of sodium oxybate in the treatment of childhood narcolepsy-cataplexy

Meghna Mansukhani (USA)
Suresh Kotagal (USA)

Sleep bruxism and headache in adolescents

Maria Clotilde Carra (Canada)
Nelly Huynh (Canada), Pierre Rompré (Canada), Gilles Lavigne (Canada),

Impaired decision-making in idiopathic REM sleep behavior disorder

Taeko Sasai (Japan)
Takashi Abe (Japan), Tomoyuki Miyamoto (Japan), Yuichi Inoue (Japan)

O3: Sleep Breathing Disorders: Assessment, Morbidity, and Treatment Outcomes

Co-Chairs: John Kimoff, MD (Canada) and Dalva Poyares, MD, PhD (Brazil)

Validated questionnaires and an ambulatory monitor in the diagnosis of obstructive sleep apnea

Effie Pereira (Canada)
Helen Driver (Canada), Steven Stewart (Canada), Michael Fitzpatrick (Canada)

Sleep disordered breathing, objective sleep quality and incident cardiovascular disease in older men: The MrOS sleep study

Katie Stone (USA)
Terri Blackwell (USA), Paul Varosy (USA), Sonia Ancoli-Israel (USA), Douglas Bauer (USA), Kristine Ensrud (USA), Jane Cauley (USA), Reena Mehra (USA), Elizabeth Barrett-Connor (USA), Andrew Hoffman (USA), Susan Redline (USA)

Three years of recall: Clinical profile of OSA treatment

Luciane Mello-Fujita (Brazil)

Camila Furtado Rizzi (Brazil), Elisangela Trevisan Mendonca (Brazil), Fatima Cintra (Bahamas), Terri E Eaver (USA), Sergio Tufik (Brazil), Dalva Poyares (Brazil)

Objective outcomes and use of crap following maxillomandibular advancement surgery for treatment of obstructive sleep apnea

Reginald Goodday (Canada)

Susan Bourque (Canada)

Targeted hypoglossal neurostimulation (THN) for the treatment of obstructive sleep apnea: Sleep data from a phase 1 safety and efficacy study

Gimbada Benny Mwenge (Belgium)

Differences between intermittent users and adherent patients of CPAP treatment during the initial 6 months of treatment

Rute Sampaio (Portugal)

M. Graça Pereira (Portugal), João Carlos Winck (Portugal)

O4: Restless Legs Syndrome (RLS) and Movement Disorders in Sleep

Co-Chairs: Diego Garcia-Borreguero, MD (Spain) and Yong-Won Cho, MD, PhD (Republic of Korea) and

Thalamo-cortical and subcortical connectivity in Restless Legs Syndrome: A resting state connectivity study using fMRI

Yong Won Cho (Republic of Korea)

Do Hyung Kim (Republic of Korea), Hyuk Won Chang (Republic of Korea), Jeonghun Ku (Republic of Korea)

Iron deficiency produces periodic leg movements during wake and sleep in rats

Yuan-Yang Lai (USA)

Darian Nguyen (USA), Kung-Chiao Hsieh (USA), Jerome Siegel (USA)

Iron deficient anemia population: preliminary report on prevalence and characteristics of Restless Legs Syndrome

Richard Allen (USA)

Michael Auerbach (USA), Christopher Earley (USA)

Behavioral characterization of Btd9 knockout mice - A potential model of restless legs syndrome

Mark DeAndrade (USA)

Li Zhang (USA), Thomas van Groen (USA), Russell Johnson (USA), Karen Gamble (USA), Yuqing Li (USA)

IV iron isomaltoside increases total ventral midbrain (VMB) iron in the iron-deprived murine model of RLS

Erica Unger (USA)

Lars Thomsen (Denmark), Daniela Lawton (USA), Christopher Earley (USA), Richard Allen (USA)

Relationship between interleukin iron levels and Restless Leg Syndrome in marathon runners

Sayonara Beatriz Ranciaro Fagundes (Brazil)

Derlei João Leite Fagundes (Brazil), André LL Bachi (Brazil), Luciane Bizari Coin Carvalho (Brazil), João Eduardo C Carvalho (Brazil), Lucila B. Fernandes Prado (Brazil), Mauro Vaisberg (Brazil), Gilmar Fernandes Prado (Brazil)

Industry Symposium (UCB)

12:30pm – 2:00pm

Restless Legs Syndrome Around the Clock

Chair: Richard Allen, PhD (USA)

Speakers: Richard Allen, PhD (USA); Luigi Ferini-Strambi, MD (Italy); Diego Garcia-Borreguero, MD (Spain); David Rye, MD, PhD (USA)

Objectives:

1. Relate RLS dopamine pathology to the full 24 hour symptom pattern of RLS
2. Review indications of factors related to development of RLS augmentation
3. Present a 5-year prospective study of RLS treatment: a new standard for RLS drug treatment evaluation
4. Review the daytime symptoms of RLS
5. Describe implications of RLS daytime symptoms for diagnosis and treatment of RLS.
6. Review the relation between RLS augmentation and the dose and duration of treatment of RLS.

Summary:

Two major RLS issues generally ignored will be addressed in this symposium. First, daytime symptoms; there has been a growing awareness that RLS disrupts not only the evening and nighttime but also much of the day. The symptoms in the day have been largely ignored in part because they can be masked by activity but also because of the failure to appreciate the nature of the underlying RLS biological abnormalities. Second, long term treatment evaluation; RLS for many people once started persists for the rest of their life. The medication treatment will be for many years and there are indications that longer duration of treatment produces new adverse events. This requires longer term, e.g. 5 –year, prospective studies as a new standard for evaluating RLS medications. It also requires special attention to dose and duration of treatment relation to development of adverse events, particularly RLS augmentation.

12:30pm – 12:50pm

From preclinics to the RLS patient's needs: Is there a rationale for a 24 hours treatment?

Richard Allen, PhD (USA)

12:50pm – 1:10pm

Efficacy and safety of rotigotine transdermal patch: A 5-year prospective, multinational, open-label study

Luigi Ferini-Strambi, MD (Italy)

1:10pm – 1:30pm

Daytime burden in RLS patients: A new paradigm from diagnosis to treatment?

Diego Garcia-Borreguero, MD (Spain)

1:30pm – 1:50pm

Relationship between clinically significant augmentation of RLS and dosage of transdermal rotigotine

David Rye, MD, PhD (USA)

1:50pm – 2:00pm

Questions and answers

Keynote Lectures

2:00pm – 3:00pm

Sleep, Learning, and Cognition

Matthew Walker, PhD

University of California at Berkeley, Berkeley (USA)

Coffee Break / Exhibition

3:00pm – 3:30pm

Poster Presentations

3:00pm – 5:00pm

Insert listing of posters

Symposia

3:30pm – 5:00pm

S5: Dreams and Parasomnias

Chair: Carlos H. Schenck, MD (USA)

Speakers: Tore Nielsen, PhD (Canada); Antonio Zadra, PhD (Canada); Isabelle Arnulf, MD, PhD (France); Carlos H. Schenck, MD (USA)

Objectives:

1. Identify subtypes and correlates of dream-enacting behaviors now known to occur among healthy populations.
2. Learn about the phenomenology of somnambulism and how mental processes can influence sleepwalkers' behaviors.
3. Learn which dreamlike mentations may be associated with sleepwalking and sleep terrors, and the consequences of this association.
4. Learn about the differential diagnosis of dream-enacting behaviors.

Summary:

Dreaming in association with non-RBD motor parasomnias has received insufficient attention clinically and in published reports. Nielsen contrasts the well-established existence and

characteristics of dream-enacting behaviors among parasomnias such as RBD with the yet-to-be fully investigated occurrence of dream-enacting behavior in the general population. He will summarize the most recent literature on non-pathological dream-enacting behaviors and present new findings revealing an association with a self-report measure of imitative behaviors. Zadra notes how until the mid 1960s sleepwalking (SW) was thought to represent a dissociative state related to dreaming. It was subsequently considered as a disorder of arousal in which there occurs a physiological dysfunction in the neural regulation of generalized cortical activation. Although SW is often characterized in terms of its automatic behaviors and retrograde amnesia, ongoing work into the phenomenology of SW indicates that perceptual, cognitive and affective dimensions can play an important role in the subjective experience of adult SW. Zadra will present data indicating that some somnambulistic behaviors are construed by patients as being motivated by an intrinsic sense of urgency or underlying reason that accounts for their actions during their episodes. Arnulf discusses how since SW and sleep terrors (ST) are associated with a low or absent awareness and post-episode amnesia, there is a general consensus against a complex dream activity associated with SW/ST. However, in a study that retrospectively collected the mental content present at the very moment of the abnormal behavior in 43 adults with SW/ST, 71% reported at least one dreamlike mentation associated with a nocturnal motor episode. These mentations were mostly short and unpleasant. In some patients, dream-like mentation was elicited after a video-PSG monitored episode. The patients were mimicking the very behavior they were dreaming about. Schenck will discuss the differential diagnosis of dream-enacting behaviors, including RBD, nocturnal seizures, OSA “pseudo-RBD”, NREM parasomnias (SW, ST, Sleep Related Eating Disorder), and Sleep Related Dissociative Disorders (in which the perceived dream can represent a dissociated memory of past traumatic experiences). Sleep lab video examples will be shown.

3:30pm – 3:50pm

Correlates of non-pathological dream-enacting behaviors

Tore Nielsen, PhD (Canada)

3:50pm – 4:10pm

When sleepwalkers behave strangely: How sleep mentation impacts somnambulistic episodes

Antonio Zadra, PhD (Canada)

4:10pm – 4:30pm

Do sleepwalkers dream while sleepwalking?

Isabelle Arnulf, MD, PhD (France)

4:30pm – 4:50pm

The differential diagnosis of dream-enacting behaviors

Carlos H. Schenck, MD (USA)

S6: Iron and RLS: Translational Research Connecting Molecular, Animal, Clinical and Treatment Studies

Chair: Richard Allen, PhD (USA)

Speakers: Richard Allen, PhD (USA); James Connor, PhD (USA); Erica Unger, PhD (USA); Christopher Earley, MD, PhD (USA); Yong-Won Cho, MD (Republic of Korea)

Objectives:

1. Present advances in understanding the biological basis for iron abnormalities in RLS both at a molecular level of cell functioning and a system level of iron transport regulation to the brain.
2. Present the new iron-murine model of RLS based on selection of appropriate inbred genetic strain, biology, behavior and treatment evaluations.
3. Review the epidemiological risk factors for RLS in relation to iron, age and gender.
4. Provide updated information on the utility and role of oral and IV iron treatments for RLS noting the relation to the iron biology of RLS.

Summary:

The iron abnormalities in RLS have long been recognized since the early work of Ekblom and Nordlander. There have been some really dramatic advances in understanding the iron pathology of RLS both at a cellular and systems level that is relevant for treatment considerations. At the cellular level studies have indicated abnormalities in iron management proteins consistent with abnormalities in mitochondrial regulation that occur both in brain and peripheral tissue. This indicates a somewhat pervasive iron management abnormality expressed more in some tissue, such as dopaminergic neurons. Autopsy and imaging studies have confirmed much of these findings in RLS patients. In addition, recent research has produced new concepts about brain iron regulation and transport of iron into the brain related to both iron status and expression of the risk-genes for RLS. A murine model has also been developed that with iron deficiency produces the iron pattern seen in RLS and its behavioral and iron management proteins further indicate the role of iron and the relative benefits of IV iron for changing brain iron status. Epidemiology data can now be seen to show the iron effects expected from the laboratory studies and provide indications of possible role for early intervention in RLS to improve long term outcomes. These all relate to data and recent experience on oral and IV iron treatments. Clinical experience with these treatments will be presented along with a discussion of possible future RLS treatment development based on the biology of RLS.

3:30pm – 3:35pm

Introduction – Brief history of dopamine, iron and RLS. Epidemiology of iron relation to RLS

Richard P. Allen, PhD (USA)

3:35pm – 3:55pm

Blood-brain barrier and brain iron regulation in RLS

James Connor, PhD (USA)

3:55pm – 4:15pm

Genetically specific murine model of iron and RLS

Erica Unger, PhD (USA)

4:15pm – 4:35pm

Iron abnormalities in RLS: Molecular to systems

Christopher Earley, MD, PhD (USA)

4:35pm – 4:55pm

Advances in IV and oral iron treatment of RLS

Yong-Won Cho, MD (Republic of Korea)

S7: New Technological Advances in OSA

Chair: Christian Guilleminault, MD, PhD (USA)

Speakers: Christian Guilleminault, MD, PhD (USA); Oscar Carrillo, MD (USA); Stephen Schendell, MD, DSS (USA); Song Toh, Eng (Singapore)

Objectives:

1. Inform about new technologies for sleep apnea evaluation.
2. Indicate potential and current role for each technology.
3. Evaluate appropriate use of each of the new technologies.

Summary:

Technical advances serve to improve understanding of sleep apnea (OSA) and its treatment options. Expiratory muscle recordings integrated into regular polysomnograms help diagnose OSA syndromes and calibrate nasal CPAP treatments. Oscar Carrillo has developed this technique for normal controls and patients. 3-dimensional CT is a new investigation tool that allows visually exploring the upper airway before and after surgery for children and adults. Stephen Schendel has used this and various other methods to image the airway. 3-H Rhinometry, new for rhinometry, is based on computational fluid dynamics. It is now the standard accepted by the international rhinology society. Application guidelines were established in 2010. This test is easily performed by non-ENT specialists and it gives important information on nasal resistance (60% of upper airway resistance). This significantly impacts diagnosis and treatment of OSA (including nasal CPAP usage). It can be combined with acoustic rhinometry.

3:30pm – 3:35pm

Introduction and review of current problems

Christian Guilleminault, MD, PhD (USA)

3:35pm – 4:00pm

Expiratory muscle during sleep and nasal CPAP

Oscar Carrillo, MD (USA)

4:00pm – 4:25pm

Imaging the upper airway (3-D CT)

Stephen Schendel, MD, DSS (USA)

4:25pm – 4:50pm

Nasal resistance and 3-H Rhinometry

Song Toh, Eng (Singapore)

Technologists Workshops

3:30pm – 5:30pm

3:30pm – 4:30pm

Medications and Sleep: Effects on PSG

James MacFarlane, PhD (Canada)

4:30pm – 5:30pm

RLS, PLMS and Movement Disorders

Raffaele Ferri, MD (Italy)

Symposia

5:00pm – 6:30pm

S8: Sleep Disorders in Women: Is Gender a Risk Factor?

Co-Chairs: Rosalia Silvestri, MD (Italy) and Helen Driver, PhD (Canada)

Speakers: Roseanne Armitage, PhD (USA); Rosalia Silvestri, MD (Italy); Mauro Manconi, MD, PhD (Italy); Teresa Paiva, MD (Portugal)

Objectives:

1. Discuss gender-related risk factors for sleep disorders.
2. Review gender-specific symptoms within sleep disorders and neuropsychiatric co-morbidity.
3. Consider the impact of sleep disorders on life quality, work and social skills.
4. Discuss therapy tailored according to specific life cycles.

Summary:

Gender is a major factor orienting organic and psychosomatic disorders, their frequency, distribution, presenting symptoms, work and life quality, as well as therapeutic response. Sleep disorders are no exception to this rule even if gender related differences have not always been adequately addressed. Women are more prone to insomnia, secondary to anxiety and mood disorders. Special life cycles connected to fertility, such as pregnancy or menopause, are linked to an increase of organic sleep alterations which may endanger women's health and increase cardiovascular risk, needing therefore a prompt diagnosis and therapeutic strategy.

5:00pm – 5:20pm

Insomnia and depression in women: Gender as a risk factor

Roseanne Armitage, PhD (USA)

5:20pm – 5:40pm

Sleep apnea in women across their life cycle: When and why?

Rosalia Silvestri, MD (Italy)

5:40pm – 6:00pm

RLS in women: Prevalence, symptoms and gender specific risk factors

Mauro Manconi, MD, PhD (Italy)

6:00pm – 6:20pm

Fibromyalgia and headache severely affect sleep in women

Teresa Paiva, MD (Portugal)

S9: Advances in the Diagnosis and Management of Sleep Disorders in Older Adults

Chair: Michael Vitiello, PhD (USA)

Speakers: Claudia Trenkwalder, MD (Germany); Eus van Someren, PhD (Netherlands); Phillis Zee, MD, PhD (USA); Michael Vitiello, PhD (USA)

Objectives:

1. Review the identification and treatment of sleep disorders for patients with Parkinson's disease.
2. Review how poor sleep can be a final common path of many different underlying causes.
3. Describe how clock-related sleep problems may benefit from a brighter environment, but that effects are variable and may take long to develop.
4. Review the recent findings on the relationship between physical activity and sleep quality in older adults.
5. Describe findings of the effects of exercise and social activity programs on sleep quality and cognitive performance.
6. Review the recent findings on the interrelationship between sleep and pain.
7. Describe findings on the effects of cognitive behavioral therapy on sleep quality and perceived pain in older adults with co-morbid osteoarthritis and insomnia.

Summary:

Sleep disorders are very common in older adults and have significant impact on quality of life, morbidity and possibly mortality. Effective diagnosis and management of sleep disorders in older adults are often complicated by the presence of co-morbid illnesses (e.g.; neurological and dementing disorders, pain syndromes) that increase in prevalence with age and in many cases by the long term care environment in which some older adults dwell. This symposium will address issues of effective diagnosis and treatment of sleep and circadian disorders in four populations of community-dwelling and institutionalized older adults.

5:00pm – 5:20pm

Sleep and sleep disorders in Parkinson's Disease: Problems of recognition and treatment

Claudia Trenkwalder, MD (Germany)

5:20pm – 5:40pm

Sand in the machine: Clocks, sleep and brain function in aging and dementia

Eus van Someren, PhD (Netherlands)

5:40pm – 6:00pm

Structured social and physical activity: Impact on sleep and performance in older adults

Phyllis C. Zee, MD, PhD (USA)

6:00pm – 6:20pm

Sleep as analgesic: Cognitive behavioral treatment of pain and sleep disturbance in older adults with comorbid osteoarthritis and insomnia

Michael V. Vitiello, PhD (USA)

S10: Neuromuscular Disorders and Sleep

Co-Chairs: Luc Laberge, PhD (Canada) and Yves Dauvilliers, MD, PhD (France)

Speakers: Luc Laberge, PhD (Canada); Yves Dauvilliers, MD, PhD (France); Jean-Louis Pépin, MD, PhD (France); Giacomo Della Marca, MD, PhD (Italy)

Objectives:

1. How breathing is affected when respiratory muscles are compromised.
2. Which rating scales and tests identify specific breathing and sleep problems.

3. REM sleep characteristics and sleep-related motor activation in myotonic dystrophy.
4. How breathing and sleep problems differ in myotonic dystrophy and facioscapulohumeral muscular dystrophy.

Summary:

Patients with neuromuscular disorders (NMD) are particularly vulnerable to sleep-related dysfunction. Sleep disorders in this patient population though remain poorly recognized by health care providers, and in some instances, by patients themselves. Symptoms of sleep disorders may namely be confused with those of the underlying disease, especially so in multi systemic NMD. Sleep-disordered breathing (SDB) often predates diurnal respiratory failure in NMD patients, necessitating timely recognition and management with non invasive ventilator support. Involvement of the peripheral and/or central nervous system may also impinge upon sleep, with the relative contribution of each varying with the specific disorder. Hence, patients with NMD must be routinely and systematically assessed for sleep-related complaints and SDB and since these constitute treatable complications in an otherwise progressive disease process. Their prompt recognition and treatment may improve quality of life and affect survival in patients. This symposium reviews the mechanisms, diagnostic evaluation, and management of sleep disorders in two of the most common forms of muscular dystrophy among adults, myotonic dystrophy and facioscapulohumeral muscular dystrophy.

5:00pm – 5:20pm

Cognitive dysfunction, impaired vigilance, daytime sleepiness, and fatigue in myotonic dystrophy: A continuum of care?

Luc Laberge, PhD, (Canada)

5:20pm – 5:40pm

Daytime sleepiness and REM-sleep characteristics in myotonic dystrophy

Yves Dauvilliers, MD, PhD, (France)

5:40pm – 6:00pm

Overview of sleep breathing disorders in myotonic dystrophy: Implications in cardiovascular consequences

Jean-Louis Pépin, MD, PhD, (France)

6:00pm – 6:20pm

Sleep disordered breathing in facioscapulohumeral muscular dystrophy.

Giacomo Della-Marca, MD, PhD, (Italy)

Canadian Academy of Dental Sleep Medicine

5:00pm – 6:00pm

Banquet Dinner / Dancing (Ticketed) Chateau Frontenac

7:00pm – 12:00am

TUESDAY, SEPTEMBER 13, 2011**On-Site Registration***7:00am – 6:00pm***Keynote Lectures***8:00am – 9:00am***Sleep-Disordered Breathing in Pregnancy: Effects on the Fetus**

Collin Sullivan, MD, PhD

University of Sydney, Sydney (Australia)

Symposia*9:00am – 10:30am***S11: Sleep and Cancer: From Diagnosis to Survivorship****Chair:** Sonia Ancoli-Israel, PhD (USA) and Josée Savard, PhD (Canada)**Speakers:** Sonia Ancoli-Israel, PhD (USA); Leanne Fleming, PhD (United Kingdom); Josée Savard, PhD (Canada); Ann M. Berger, PhD (USA)**Objectives:**

1. To learn about the significance of sleep disturbances in cancer patients.
2. To gain knowledge on possible associations of sleep disturbances and sleep/wake cycles impairments with other cancer-related symptoms (e.g., fatigue, cognitive impairments).
3. To hear about possible links with physiological factors (e.g., cancer treatments, hormone levels).

Summary:

Research in the past ten years has been extremely helpful in estimating the prevalence of sleep disturbances in cancer and in evaluating the natural course of sleep symptoms across the cancer care trajectory. Nevertheless, there is still much to be learned about which factors are associated with an increased risk of developing sleep difficulties and their possible consequences. Our symposium will present pioneering findings on these questions in newly diagnosed patients all the way to cancer survivors. Leanne Fleming will present on an ongoing longitudinal study of newly diagnosed breast cancer patients. Preliminary data will be presented on the course of sleep status from diagnosis, through active treatment and follow up. Factors explaining why insomnia develops and how poor sleep affects other cancer-related symptoms will also be considered. Sonia Ancoli-Israel will discuss the sleep, fatigue, circadian activity rhythms and cognition in women newly diagnosed with breast cancer. Cognitive impairment is common in women undergoing chemotherapy, called chemobrain, but little is still known about the etiology. Some of the symptoms of chemobrain are similar to symptoms of sleep deprivation. Data will be presented on the longitudinal course of changes in sleep, fatigue and cognition in women with breast cancer. Josée

Savard will be talking about the role of cancer treatments in the evolution of insomnia symptoms. She will present results of a longitudinal study conducted in 962 patients with mixed cancer sites, over an 18-month period following surgery. The final presentation by Ann Berger will focus on sleep and circadian activity rhythms and their relationship with fatigue, functioning, and body mass index in breast cancer survivors 1-year after the first adjuvant chemotherapy treatment. Data will be presented on differences in relationships between variables based on BMI status (normal, overweight, obese).

9:00am – 9:20am

The impact of poor sleep and fatigue on cognition in breast cancer

Sonia Ancoli-Israel, PhD (USA)

9:20am – 9:40am

Understanding the development of persistent insomnia in breast cancer patients

Leanne Fleming, PhD (United Kingdom)

9:40am – 10:00am

The role of cancer treatments in the evolution of insomnia throughout the cancer care trajectory

Josée Savard, PhD (Canada)

10:00am – 10:20am

Circadian activity rhythms, functioning, fatigue, and body mass index in early breast cancer survivors

Ann M. Berger, PhD (USA)

S12: Circadian Aspects to Sleep Regulation: From Molecules to Integrated Functions

Chair: Valerie Mongrain, PhD (Canada)

Speakers: Paul Shaw, PhD (USA); Paul Franken, PhD (Switzerland); Antoine Viola, PhD (Switzerland); Christina Schmidt, PhD (Switzerland)

Objectives:

1. Identify which specific clock molecular elements are involved in sleep homeostasis in flies, mice and humans.
2. Describe the precise contribution of these clock elements to sleep intensity and its rebound after sleep deprivation also in the three species.
3. Emphasize the contribution of circadian and homeostatic interaction onto complex human behaviour and waking quality.

Summary:

Sleep is a required behaviour and sleep loss impairs central nervous system functioning and various other health dimensions. Sleep is governed by a circadian timing system and a sleep homeostat which ensure, respectively, proper adaptation to the light-dark environment and tracking of time spent awake and asleep. More precisely, sleep homeostasis refers to the recovery capacity of sleep which adapts sleep intensity as a function of wakefulness duration. Although it was originally assumed that these two processes act in an independent manner to regulate sleep and wakefulness, recent animal and human data strongly suggest that both processes interact in a non-linear manner. In particular, genes involved in the regulation of circadian timing (i.e. clock genes) have been shown to contribute to the molecular wiring of the homeostatic process. Moreover, at the system level, circadian and

homeostatic interaction has been shown to determine various neural correlates of waking quality. This symposium will present forefront findings from flies, mice and humans regarding the complex molecular and system level connections between the circadian timing system and the recovery process of sleep regulation.

9:00am – 9:20am

The role of clock genes in regulating sleep homeostasis

Paul Shaw, PhD (USA)

9:20am – 9:40am

What is driving Period-2 expression: Corticosterone, wakefulness, the circadian clock, or all of the above?

Paul Franken, PhD (Switzerland)

9:40am – 10:00am

Age-dependent inter-individual differences in sleep homeostasis and circadian rhythmicity

Antoine Viola, PhD (Switzerland)

10:00am – 10:20am

Circadian and sleep homeostatic interaction patterns on human cognition-related cerebral activity

Christina Schmidt, PhD (Switzerland)

S13: Pediatric Sleep Disordered Breathing

Chair: Oliviero Bruni, MD (Italy)

Speakers: Sabine Scholle, MD (Germany); Cheng-Hui Lin, MD (Taiwan); Stacey Quo, DDS (USA); Nelly Hyun, PhD (Canada)

Objectives:

1. Inform about new normative data on polysomnographic analysis of a large group of normal children during sleep.
2. Explain how to evaluate polygraphic breathing patterns that have significant clinical impact but are not integrated in currently accepted polysomnographic evaluation of pediatric SDB.
3. Review orthodontic symptoms that may suggest abnormal breathing during sleep.
4. Present the gains and limits of orthodontic treatments that for pediatric OSA.

Summary:

Children with sleep-disordered breathing may not be recognized and treated when performing polysomnography and applying the currently accepted standards for identification of these events. New normative data on breathing during sleep that identifies apneas and hypopneas have been obtained on a large group of children. These provide new normative standards requiring changes in the criteria for abnormal sleep-disordered breathing. New investigations by Scholle, Lin and others have also outlined the limits of the current sleep-disordered-breathing scoring system, and identified currently unscored patterns indicative of abnormal breathing in children. Several international articles have indicated that the most common treatment of SDB in children (adenotonsillectomy) do not cure children. This is part due to facial anatomic problems inducing orthodontic symptoms that complicate the diagnosis and treatment. Orthodontic evaluation and treatment approaches serve to complement the known treatment of OSA but they also have significant limitations. Quo and

Hyun will review these important and often overlooked orthodontic issues for sleep-disordered breathing in children.

9:00am – 9:20am

Sleep and Breathing in 209 normal German Children: Are the AASM guideline valid?

Sabine Scholle, MD (Germany)

9:20am – 9:40am

Current ASSM hypopnea scoring underscores pediatric sleep disordered breathing

Cheng-Hui Lin, MD (Taiwan)

9:40am – 10:00am

Benefits and limits of orthodontic approaches in treatment of pediatric OSA

Stacey Quo, DDS (USA)

10:00am – 10:20am

Symptoms indicating OSA as seen by pediatric dentists and orthodontists

Nelly Hyun, PhD (Canada)

Coffee Break / Exhibition

10:30am – 11:00am

Technologists Workshops (French)

11:00am – 12:30pm

Scoring (Critères d'analyse pour les tracés complexes)

Natalie Morin, RPSGT (Canada)

Oral Paper Presentations (Sessions 5-9)

11:00am – 12:30pm

O5: Aging and Developmental Issues

Co-Chairs: Julie Carrier, PhD (Canada) and Phyllis Zee, MD, PhD (USA)

The epidemiology of sleep and its disorder in chinese children aged 0-5 years

Xicheng Liu (China)

Xiaona Huang (China), Huishan Wang (China), Jingxiong Jiang (China), Lin An (China)

Associations between sleep problems and internalizing troubles: A longitudinal study of the french tempo cohort

Evelyne Touchette (France)

Aude Chollet (France), Cédric Galéra (France), Eric Fombonne (Canada), Bruno Falissard (France), Michel Boivin (Canada), Maria Melchior (France)

Increased slow-wave sleep in response to prolonged exercise after 4 months of endurance training in older men

Michel O. Melancon (Canada)

Dominique Lorrain (Canada), Isabelle J. Dionne (Canada)

Spindles and slow waves are associated to verbal learning in older subjects

Marjolaine Lafortune (Canada)

Jean-François Gagnon (Canada), Véronique Latreille (Canada), Jacques Montplaisir (Canada), Julie Carrier (Canada)

Association between subjective sleep quality and incident cognitive impairment in community-dwelling older men and women

Olivier Potvin (Canada)

Dominique Lorrain (Canada), Hélène Forget (Canada), Micheline Dubé (Canada), Sébastien Grenier (Canada), Michel Préville (Canada), Carol Hudon (Canada)

O6: Chronobiology/Circadian Disorders

Co-Chairs: Ben Rusak, PhD (Canada) and Joseph DeKoninck, PhD (Canada)

Body temperature regulation across menstrual circadian and sleep-wake states

Ari Shechter (Canada)

Philippe Boudreau (Canada), Diane Boivin (Canada)

Cortisol and melatonin rhythms dissociation during an antarctic summer expedition: Evidence for two distinct circadian oscillators

Nathalie Pattyn (Belgium)

Aisha Cortoos (Belgium), Olivier Mairesse (Belgium), Elke De Valck (Belgium), Raymond Cluydts (Belgium), Pierre-Francois Migeotte (Belgium), Xavier Neyt (Belgium)

Night shift work and their association with metabolic syndrome

Juan Carrillo (Chile)

Jacqueline Peters (Chile), Gisella Arellano (Chile), Mariana Dastres (Chile), Claudio Morales (Chile), Jecar Neghme (Chile)

Natural circadian phase-shifts during summer nightwork in police officers

Jeanne Sophie Martin (Canada)

Alexandre Sasseville (Canada), Joëlle Lavoie (Canada), Jérôme Houle (Canada),

Circadian misalignment as an endophenotype for depression

Nevin Zaki (Egypt)

Katharina Wuff (United Kingdom), Russel Foster (United Kingdom), Guy Goodwin (United Kingdom)

Light therapy for treatment of fatigue and sleepiness following traumatic brain injury

Kelly Sinclair (Australia)

Jennie Ponsford (Australia), Steven W. Lockley (Australia), Shantha M.W. Rajaratnam (Australia)

O7: Insomnia Therapeutic Approaches

Co-Chairs: Leanne Fleming, PhD (United Kingdom) and Thomas Roth, PhD (USA)

Is a self-help book better than sleep hygiene advice? A randomized controlled trial of insomniacs

Bjørn Bjorvatn (Norway)
Eldbjørg Fiske (Norway), Ståle Pallesen (Norway)

Effects of cognitive behavioral therapy for stress-induced sleep disturbance and hyperarousal

Shun Nakajima (Japan)
Isa Okajima (Japan), Masaki Nakamura (Japan), Akira Usui (Japan), Shingo Nishida (Japan), Kenichi Hayashida (Japan), Yuichi Inoue (Japan)

Comparative efficacy of behavior therapy and cognitive therapy as single therapies for insomnia: A preliminary report

Charles M Morin (Canada)
Allison Harvey (USA), Lynda Bélanger (Canada), Simon Beaulieu-Bonneau (Canada), Emilie Fortier-Brochu (Canada), Polina Eidelman (USA), Lisa Talbot (USA), Hans Ivers (Canada)

Effect of pregabalin on quantitative electroencephalography (qEEG) during non-REM sleep in patients with fibromyalgia and sleep maintenance difficulties

Frederick J. Wilson (United Kingdom)
E. Malca Resnick (USA), Jon Freeman (USA), Verne Pitman (USA), Pritha Bhadra (USA), Thomas Roth (USA)

SKP-1041 a novel modified-release formulation of zaleplon significantly improves sleep in patients with middle-of-the-night awakening: Results of a phase II double-blind crossover placebo-controlled dose-ranging trial

James K Walsh (USA)
David Seiden (USA), Beth Safirstein (USA), Alan Lankford (USA), Gary Zammit (USA), Jon Freeman (USA), Steven Hull (USA), Russell Rosenberg (USA)

Effect of middle-of-the-night doses of zolpidem sublingual tablet 3.5 mg on next-morning driving performance

Annemiek Vermeeren (Netherlands)
Tim R. M. Leufkens (Netherlands), Cees Van Leeuwen (Netherlands), Anita Van Oers (Netherlands), Eric Vuurman (Netherlands), Nikhilesh N. Singh (USA), Frank Steinberg (USA), Salvador Rico (USA), Eugene Laska (USA), Thomas Roth (USA)

O8: Sleep Deprivation

Co-Chairs: Gilles Lavigne, DMD, PhD (Canada) and Marco Zucconi, MD (Italy)

The association between short sleep duration and weight gain is dependent on disinhibited eating behavior in adults

Jean-Philippe Chaput (Canada)
Jean-Pierre Després (Canada), Claude Bouchard (USA), Angelo Tremblay (Canada)

Manipulating sleep duration alters cognitive and emotional functioning in children

Jennifer Vriend (Canada)
Fiona Davidson (Canada), Sunny Shaffner (Canada), Penny Corkum (Canada), Ben Rusak (Canada)

Association between sleep homeostasis and a synaptic adhesion molecule

Janine El Helou (Canada)

Erika Belanger Nelson (Canada), Stéphane Dorsaz (Switzerland), Thomas Curie (Switzerland), Paul Franken (Switzerland), Valerie Mongrain (Canada)

Paradoxical sleep deprivation potentiates the development of oral dyskinesia in mice: Role of oxidative stress

Juliana Castro (Brazil)

Vanessa Abilio (Brazil), Sergio Tufik (Brazil), Roberto Frussa-Filho (Brazil)

New discoveries in the in vivo influence of corticothalamic feedback in sleep spindles

Maxime Bonjean (USA)

Maxime Lemieux (Canada), Igor Timofeev (Canada), Terrence Sejnowski (USA), Maxim Bazhenov (USA)

Short-term partial sleep deprivation: Effects on emotion regulation of healthy adults

Nanette S. Danielsson (Sweden)

Shane MacDonald (Sweden), Markus Jansson-Fröjmark (Sweden), Steven J. Linton (Sweden), Allison G. Harvey (USA)

O9: Restless Legs Syndrome (RLS) and Movement Disorders in Sleep

Co-Chairs: Claudia Trenkwalder, MD (Germany) and Luigi Ferini-Strambi (Italy)

Randomized double-blind placebo-controlled study on the efficacy and safety of gabapentin enacarbil in Japanese patients with primary restless legs syndrome

Yuichi Inoue (Japan)

Naohisa Uchimura (Japan), Kenji Kuroda (Japan), Koichi Hirata (Japan), Nobutaka Hattori (Japan)

Are restless legs syndrome and periodic leg movements during sleep associated with cardiovascular abnormalities?

Marie-Helene Pennestri (Canada)

Jacques Montplaisir (Canada), Robert Amyot (Canada), Dominique Petit (Canada), Paola A Lanfranchi (Canada)

Is restless legs syndrome an important predictor of subcortical stroke? A prospective study on 117 stroke patients

Anupama Gupta (India)

Garima Shukla (India), Afsar Mohammed (India), Vinay Goyal (India), Achal Srivastava (India), Madhuri Behari (India)

Iron infusion in restless legs syndrome in the third trimester of pregnancy

Juliane Schneider (Switzerland)

Alexander Krafft (Switzerland), Annika Bloch (Switzerland), Astrid Huebner (Switzerland), Monika Raimondi (Switzerland), Christian Baumann (Switzerland), Esther Werth (Switzerland), Claudio Bassetti (Switzerland)

Relationship between clinically significant augmentation of restless legs syndrome (RLS) and dosage of rotigotine transdermal system: Post hoc analysis of a 5-year prospective multinational open-label study

Luigi Ferini-Strambi (Italy)

Ralf Kohnen (Germany), Heike Beneö (Germany), Birgit Hôgl (Austria), Wolfgang Oertel (Germany), Claudia Trenkwalder (Germany), Andreas Fichtner (Germany), Erwin Schollmayer (Germany), Diego García-Borreguero (Spain),

Exome sequencing of two individuals with early onset familial ebom syndrome

Jacinda Sampson (USA)

Lisa Baird (USA), Jeff Stevens (USA), Nori Matsunami (USA), Mark Leppert (USA)

Industry Symposium (Respironics)

12:30pm – 2:00pm

Data Management: Detection and Deployment

Moderator: Cheryl Needham

Speakers: Richard Berry, MD (USA); Sam Kuna, MD (USA)

Objectives:

1. To gain an understanding of differences in methods used to detect breathing events from a device compared to full clinical polysomnography.
2. To gain insight in applying information about therapy efficacy and adherence in managing patients with OSA.
3. Review a patient management pathway utilizing portable diagnostic and device technology to initiate and manage therapy for the OSA patient.

Summary:

This symposium will discuss the comparison of breathing events identified by a CPAP device to a full polysomnograph, as well as, how to use the information to deploy the correct clinical titration and treatment pathway.

12:30pm – 1:10pm

Comparison of event detection vs. polysomnography

Richard Berry, MD (USA)

1:10pm – 1:50pm

Clinical deployment of event detection

Sam Kuna, MD (USA)

1:50pm – 2:00pm

Questions

Canadian Sleep Research Consortium

12:30pm – 2:00pm

Keynote Lectures

2:00pm – 3:00pm

Sleep, Sleepiness, and Safety on the Road

Pierre Philip, MD, PhD

Université de Bordeaux et Centre Hospitalier Universitaire, Bordeaux (France)

Coffee Break / Exhibition

3:00pm – 3:30pm

Poster Presentations

3:00pm – 5:00pm

Insert listing of posters

Symposia

3:30pm – 5:00pm

S14: Chronic Insomnia - From Psychology to Neurobiology

Chair: Dieter Riemann, PhD (Germany)

Speakers: Dieter Riemann, PhD (Germany); Eus van Someren, PhD (Netherlands); Célyne Bastien, PhD (Canada); Daniel Buysse, MD (USA)

Objectives:

1. To understand the hyperarousal concept of insomnia on an integrative level.
2. To delineate the importance of neurobiological methods for the understanding of insomnia.
3. To highlight the importance of novel research approaches and theories for further progress in the field.

Summary:

Chronic insomnia is among the most frequent sleep disorders world-wide and afflicts up to 10 % of the general population. Insomnia not only leads to severe sleep disturbances but beyond is coupled with daytime sequelae like impaired attention, cognition, etc. and in the long run may even be associated with increased risk for depression, cardiovascular disorders and obesity. Till recently, insomnia was mainly conceptualized as a psychological problem resulting from hyperarousal on a cognitive or emotional level. The last decade has seen an increased interest in applying state of the art neurobiological methods to the condition of insomnia. These include spectral analysis of the sleep EEG, cortisol and immunological measurements and imaging methods like MR, fMRI, SPECT or PET. The symposium will cover most recent approaches and studies in the field aiming at the hyperarousal concept by integrating research from different sources. Hopefully, this type of combined and integrative endeavour will shed more light on the psychophysiology of chronic insomnia.

3:30pm – 3:50pm

The hyperarousal concept of chronic insomnia – State of the art

Dieter Riemann, PhD (Germany)

3:50pm – 4:10pm

New ways to understand insomnia: From web-based assessments to brain imaging

Eus van Someren, PhD (Netherlands)

4:10pm – 4:30pm

Insomnia types and information processing during the night: Measures of N1 and P2

Célyne Bastien, PhD (Canada)

4:30pm – 4:50pm

Where in the brain is insomnia? Results of PET studies

Daniel Buysse, MD (USA)

S15: Circadian Adjustment: Does it Help or Hinder Shift Workers?

Chair: Diane Boivin, MD, PhD (Canada)

Speakers: Diane Boivin, MD, PhD (Canada); Shantha M. Rajaratnam, PhD (Australia); Alec J. Davidson, PhD (USA); Drew Dawson, PhD (Australia)

Objectives:

1. Recognize the impacts of disrupted sleep-wake cycles and circadian rhythms in shift-workers.
2. Understand the rationale for interventions designed to correct the phase angle between the endogenous circadian system and the sleep-wake cycle in shift workers.
3. Learn the health consequences of repeated clock shifting in animals.
4. Appreciate the benefits and limitations of approaches that increase the rate of circadian adaptation in shift workers.

Summary:

Shift work often results in acute and repetitive shifts between the circadian system and the sleep-wake schedule. It is believed this circadian misalignment and its associated sleep disruption contribute substantially to shift workers' complaints and their increased risk of developing several medical conditions such as cardiovascular, endocrine, psychological disorders and even cancer. Remodeling the diurnal pattern of light and darkness exposure belongs to sophisticated interventions, specifically designed to correct shift workers' circadian misalignment. However, the repetitive cycling between work and rest days leads to instability in the entrained circadian phase. Observations drawn from animal studies raise justifiable health concerns that call for more research and debate.

Diane Boivin will introduce the symposium, summarize available countermeasures for disrupted sleep-wake cycles and her own studies on the impacts of circadian misalignment in nurses and police officers. Shantha Rajaratnam will present results on the adverse negative consequences of night work in police studies and how circadian adjustment can be achieved rapidly. Alec Davidson will discuss the health consequences of repeated clock shifting in animal models. Drew Dawson will present arguments against interventions that increase the rate of circadian adaptation in shift workers. The symposium will then be open for general discussion.

3:30pm – 3:50pm

Countermeasures for improving shift workers' adaptation

Diane B. Boivin, MD, PhD (Canada)

3:50pm – 4:10pm

Adverse health and safety outcomes associated with shiftwork: Interventions to promote rapid circadian adaptation

Shantha M. Rajaratnam, PhD (Australia)

4:10pm – 4:30pm

Health consequences of circadian disruption in animal models

Alec J. Davidson, PhD (USA)

4:30pm – 4:50pm

Adverse effects of interventions that increase the rate of circadian adaptation in shift workers

Drew Dawson, PhD (Australia)

S16: Sleep Disturbances and Attention-Deficit/Hyperactivity Disorder: Shared Mechanisms and Clinical Implications

Co-Chairs: Samuele Cortese, MD, PhD (France) and Reut Gruber, PhD (Canada)

Speakers: Samuele Cortese, MD, PhD (France); Penny Corkum, PhD (Canada); Reut Gruber, PhD (Canada); Judith Owens, MD (USA)

Objectives:

1. To be aware of the main findings of the literature exploring the comorbidity between sleep disturbances and ADHD.
2. To understand the neurobiological and behavioral hypotheses explaining the comorbidity between sleep disturbances and ADHD.
3. To understand the interplay between medications and sleep disturbances in children with ADHD.
4. To understand the implications of the sleep disturbances associated with ADHD or manifesting as ADHD on daytime functioning.

Summary:

ADHD is a common, impairing and treatable neuropsychiatric disorder in children and adults, characterized by difficulties with self-regulation, disinhibition, cognitive impairment and hyperactivity. Sleep problems are reported in an estimated 25% to 50% of subjects with ADHD. Sleep problems in ADHD represent a significant source of stress for the child and family or the adult and may further worsen ADHD symptoms. Biochemically, both ADHD and sleep disturbances have been associated with neurotransmitters dysfunction, particularly those of the noradrenergic and dopaminergic systems. Because of the clinical and scientific relevance of sleep problems to the understanding and management of ADHD, there has been a dramatic increase in research interest in these areas in the last years. However, only a few studies have examined the importance of neurotransmitter actions in regulating sleep and sleepiness in children who have ADHD. Moreover, the mechanisms underlying the association between ADHD and sleep dysfunction, the impact of sleep disturbances on the daytime functioning of individuals with ADHD, and their clinical management are unclear. The symposium will provide the audience with a comprehensive overview of current literature on ADHD and sleep, and the results from recent studies that address these questions. The clinical and research implications will be highlighted.

3:30pm – 3:50pm

The relationship between sleep disturbances and ADHD: Methodological issues, mechanisms, clinical implications, and future directions of research

Samuele Cortese, MD, PhD (France)

3:50pm – 4:10pm

Sleep alterations associated with medications used to treat ADHD

Penny Corkum, PhD (Canada)

4:10pm – 4:30pm

An experimental investigation of the impact of sleep on the daytime functioning of children with ADHD and no comorbid sleep disorders

Reut Gruber, PhD (Canada) and Merrill Wise, MD (USA)

4:30pm – 4:50pm

Primary sleep disorders in children with ADHD

Judith Owens, MD (USA)

Technologists Workshops

3:30pm – 5:30pm

3:30pm – 4:30pm

Dental Effects of CPAP Masks

Fernanda Almeida, DDS, PhD (Canada)

4:30pm – 5:30pm

Patient Education: Sleep Hygiene for Parents and Adolescents

Reut Gruber, PhD (Canada)

Symposia

5:00pm – 6:30pm

S17: Memory and Sleep

Co-Chairs: Stuart Fogel, PhD (Canada) and Luigi Ferini-Strambini, MD (Italy)

Speakers: Luigi Ferini-Strambi, MD (Italy); Olga Prilipko, PhD (USA); Émilie Fortier-Brochu, MPs (Canada); Stuart Fogel, PhD (Canada)

Objectives:

1. Present how different neuronal networks interact during a memory task, and the impairment seen in patient with OSA including impairment of vascular reactivity and local perfusion.
2. Illustrate the impact of treatment with nasal CPAP and slowness of recovery.
3. Describe the specific cognitive impairments associated with chronic insomnia and discuss their clinical significance.
4. Discuss age-related changes in sleep, the cerebral correlates of memory consolidation, and how these changes may adversely affect memory performance in older subjects.

Summary:

Cognitive dysfunction has been associated with different sleep disorders and different tools have been used to investigate these dysfunctions. In obstructive sleep apnea (OSA),

impairment in several cognitive domains, including attention and vigilance decrements, memory gaps, and abnormalities in executive functions have been reported. These functional alterations are likely related to structural tissue damage and metabolic stress occurring in different brain tissue compartments and neural structures. Nasal CPAP and Sham CPAP have been used looking at baseline and post treatment response investigating cognitive function. Prilipko will present results of an fMRI study comparing OSA patients and controls. Also, investigation of vascular reactivity shows that compared to controls OSA patients have less cerebro-vascular reserve and less perfusion compared to controls, with improved cerebral perfusion after two months with CPAP. Neuropsychological impairments in OSA patients are also associated with focal reductions of grey-matter volume in the left hippocampus (enthorinal cortex), left posterior parietal cortex and right superior frontal gyrus. Ferini-Strambi will describe how three months of CPAP treatment appears to be associated with significant improvements involving memory, attention and executive-functioning and be accompanied by grey-matter volume increases in hippocampal and frontal structures. The presentation by Fortier-Brochu will include a recent meta-analysis of neuropsychological performance in individuals with insomnia, which indicates that they perform significantly worse than normal sleepers on tasks assessing working memory, episodic memory and problem solving. The clinical significance of these findings will be discussed. Improved memory performance has been linked to certain electrophysiological signatures of sleep including the slow oscillation and sleep spindles. Slow wave activity and sleep spindles also change with age. Recent evidence suggesting that the age-related changes in the electrophysiological and hemodynamic correlates of sleep-dependent memory consolidation may contribute to age-related changes in memory will be discussed by Fogel.

5:00pm – 5:20pm

OSA, executive functions and memory and cerebral grey matter before and during CPAP

Luigi Ferini-strambi, MD (Italy)

5:20pm – 5:40pm

OSA, working memory, fMRI

Olga Prilipko MD, PhD (USA)

5:40pm – 6:00pm

Cognitive impairment in individuals with insomnia: Focus on clinical significance

Émilie Fortier-Brochu, MPs (Canada)

6:00pm – 6:20pm

Are age-related changes in memory a deficit in sleep-dependent memory consolidation?

Stuart Fogel, PhD (Canada)

S18: Detecting and Scoring Sleep Disordered Breathing in Adults and Children: Is There a Need to Modify Criteria Again?

Chair: Hartmut Schneider, MD, PhD (USA)

Speakers: Hartmut Schneider, MD, PhD (USA); David Rapoport, MD (USA); Richard Berry, MD (USA); Jose Haba-Rubio, MD (Switzerland); Riccardo A. Stoohs, MD (USA)

Objectives:

1. Demonstrate the effects of improving technology on detection and defining sleep disordered breathing.

2. Show how the sleep disordered breathing rates are affected by the various different definitions of events.
3. Advance possible novel approaches to improve standards for detection and definition of sleep disordered breathing in clinical and research populations.

Summary:

The characterization of sleep disordered breathing patterns is based on discrete events such as apnea, hypopnea and respiratory effort related arousals. Arbitrary criteria are set for counting these episodes based on arousal and/or oxyhemoglobin desaturation. Methods for detecting breathing pattern during sleep have markedly improved over the last decade both in adult and pediatric sleep medicine and scoring rules have been modified to reflect some of the improvements in recording techniques. However, there is still considerable controversy of how to best record and score sleep disordered breathing episodes. In this symposium, the strengths and pitfalls of current recording and scoring techniques will be discussed in light of their potential for classifying sleep disordered breathing. Investigators will highlight how distinct approaches for detecting sleep-related disturbances compare. Each presentation will bring forward recommendations for how best to record and define sleep disordered breathing. Thus, the aim of this symposium is to understand the rationale of current definitions and how novel approaches may help to improve the detection and definition of sleep disordered breathing in clinical and research populations.

5:00pm – 5:15pm

Basic methodology for the assessment of respiration during sleep

Hartmut Schneider, MD, PhD (USA)

5:15pm – 5:30pm

Inspiratory flow limitation and sleep related breathing episodes in light of the Chicago criteria

David Rapoport, MD (USA)

5:30pm – 5:45pm

Sleep related breathing episodes in light of the AASM Criteria

Richard Berry, MD (USA)

5:45pm – 6:00pm

AASM vs. Chicago criteria for scoring events in a healthy population

Jose Haba-Rubio, MD (Switzerland)

6:00pm – 6:15pm

Approaches to respiratory characterization during sleep in children

Riccardo A. Stoohs, MD (USA)

S19: How Can We Boost Access to Cognitive Behavioural Therapy for Insomnia? Practical Methods to Reach the Community and Primary Care Patients

Chair: Judith Davidson, PhD (Canada)

Speakers: Leanne Fleming, PhD (United Kingdom); Norah Vincent, PhD (Canada); Jack Edinger, (USA) PhD; Judith Davidson, PhD (Canada)

Objectives:

1. To examine some novel, practical methods for enhancing access to CBT-I.

2. To consider the research results on these methods.
3. To realize the advantages and challenges of these methods.
4. To consider how we can build on promising methods.
5. To come up with ideas to increase access to CBT-I at your own site.

Summary:

This symposium will focus on practical methods, including opportunities and challenges, in making cognitive behavioural therapy for insomnia (CBT-I) more accessible. Access to CBT-I, the most efficacious treatment for chronic insomnia, is extremely limited for a variety of reasons. Insomnia researchers and clinicians need to discuss ideas, methods, and relevant research, for taking CBT-I from the lab to people-at-large. We will look at four approaches to increasing access to CBT-I. The speakers are from three different countries (United Kingdom, USA, Canada) and all have research and clinical experience in testing methods aimed at increased availability of CBT-I. Leanne Fleming will speak about nurse-delivered CBT in community health clinics in Scotland. Norah Vincent will speak about testing online provision of CBT to people with insomnia in the community. Jack Edinger will speak about making CBT-I “friendly” to primary care. Judith Davidson will speak about early intervention, including the use of group CBT-I, in a multidisciplinary primary care setting. There will be a discussion of the successes and challenges of these methods and ideas for building on them.

5:00pm – 5:20pm

Nurse delivered small group CBT for insomnia in community health clinics

Leanne Fleming, PhD (United Kingdom)

5:20pm – 5:40pm

Better sleep – just a mouse-click away: Delivering CBT-I through the internet

Norah Vincent, PhD (Canada)

5:40pm – 6:00pm

Making behavioral insomnia therapy friendly to the primary care environment

Jack Edinger, PhD (USA)

6:00pm – 6:20pm

Nipping it in the bud: Early intervention for insomnia in primary care

Judith Davidson, PhD (Canada)

World Association of Sleep Medicine Membership Meeting

6:30pm – 8:00pm

Canadian Sleep Society Annual Membership Meeting

6:30pm – 8:00pm

St-Lawrence River Cruise

6:00pm – 11:00pm

Snooze Bowl

8:00pm – 11:00pm

WEDNESDAY, SEPTEMBER 14, 2011**On-Site Registration**

7:00am – 6:00pm

Keynote Lectures

8:00am – 9:00am

Insomnia, Therapy and Health Policies

Kevin Morgan, PhD

Loughborough University, Leicestershire (United Kingdom)

Symposia

9:00am – 10:30am

S20: Biomedical Innovation in Sleep Medicine

Chair: Ronald Chervin, MD (USA)

Speakers: Ronald Chervin, MD (USA); David White, MD (USA); Thomas Roth, PhD (USA); Matt Vaska, MS (USA)

Objectives:

1. Inspire sleep researchers and clinicians to consider opportunities for biomedical innovation that could accelerate improvement in diagnostic and therapeutic approaches to sleep disorders.
2. Raise awareness of academic, corporate, entrepreneurial, and collaborative mechanisms by which novel ideas can be generated, explored, developed, or translated into new products.
3. Stimulate clinicians to find appropriate partners, settings, and support that will enable innovative solutions to common, everyday challenges encountered in clinical practice of sleep medicine.

Summary:

Sleep medicine is inspired by a wide array of diagnostic and therapeutic approaches. The field relies on cutting-edge digital, technological, pharmacologic, prosthetic, and surgical advances from academia, industry, and academic-corporate collaborations. This unique symposium will explore opportunities through which sleep specialists can advance biomedical innovations that meaningfully improve sleep and alertness. Ronald Chervin, Director of the University of Michigan Sleep Disorders Center, will discuss emerging collaborations between sleep medicine specialists and engineers at academic institutions, where capstone senior projects, invention and development courses, medical innovation centers, and technology innovation fellowships can lead to imaginative or even disruptive technological advances. David White, Chief Medical Officer, Philips Respironics, will describe corporate strategies to invent and translate new concepts that shape clinical practice and its

effectiveness. Thomas Roth, Director of the Sleep Disorders and Research Center at Henry Ford Hospital, will explain how the clinical and clinical trial experience of a sleep specialist can steer the pharmaceutical industry toward top neuroscience and clinical priorities. Matt Vaska, Founder and CEO of Apnicure, Inc., will illustrate how entrepreneurial ventures can advance completely novel therapeutic devices with the help of top talent and agile resources, outside traditional academic and large corporate environments.

9:00am – 9:20am

Opportunities for sleep biomedical innovation within the ivory tower

Ronald D. Chervin, MD, MS (USA)

9:20am – 9:40am

Tomorrow's technology: Innovation within a corporate infrastructure

David P. White, MD (USA)

9:40am – 10:00am

Potential impact of sleep clinicians on directions pursued by large pharmaceuticals

Thomas Roth, PhD (USA)

10:00am – 10:20am

Meeting the challenge of sleep disorders: Opportunities and pitfalls for the entrepreneur

Matt Vaska, MS (USA)

S21: Epidemiology of Sleep Disorders

Chair: Maurice Ohayon, MD, PhD (USA)

Speakers: Yun Kwok Wing, MD (China); Mélanie LeBlanc, PhD (Canada); Seung Chul Hong, MD, PhD (Republic of Korea); Maurice Ohayon, MD, PhD (USA)

Objectives:

1. To understand the epidemiology of sleep disorders and their interactions with other diseases.
2. To identify potential moderating factors altering the trajectory of insomnia
3. To identify risk factors for sleep apnea and their impact on the prevalence of sleep apnea
4. Understand the impact and consequences of excessive sleepiness.

Summary:

The content of this symposium is highly relevant to the field of sleep medicine. The first presentation (YK Wing) will address the persistence and impact of insomnia on health using a 5-year longitudinal study conducted with Hong Kong Chinese children and their parents. The second presentation (M. LeBlanc) will summarize the current status of an ongoing longitudinal study of insomnia in Canada and present new data on moderators (e.g., treatment, life events) of its natural course over time. The third presentation (SC Hong) will focus on the epidemiology of sleep apnea in South Korea. More specifically, risk and protective factors will be addressed along with observed changes in the prevalence of sleep apnea and its risk factors over an eight-year period. The last presentation (MM Ohayon) will be centered on the epidemiology of excessive sleepiness both in terms of excessive quantity of sleep and deteriorated quality of wakefulness, how it interacts with sleep disorders, organic diseases and mental disorders.

9:00am – 9:20am

A 5 year longitudinal course and health impact of insomnia on Chinese children and their parents

Yun Kwok Wing, MD (China)

9:20am – 9:40am

Natural history of insomnia: Factors moderating the course of insomnia over time

Mélanie LeBlanc, PhD (Canada)

9:40am – 10:00am

Sleep Apnea Longitudinal Study on a 8-year Period in South Korea

Seung Chul Hong, MD, PhD (Republic of Korea)

10:00am – 10:20am

Prevalence and risk factors for excessive sleepiness in the US population

Maurice M. Ohayon, MD, PhD (USA)

S22: Sleep-Wake Disturbances after Traumatic Brain Injury

Chair: Nadia Gosselin, PhD (Canada)

Speakers: Simon Beaulieu-Bonneau, MPs (Canada); Samar Khoury, MSc (Canada); Michael Makley, MD (USA); Shanthakumar Rajaratnam, PhD (Australia); Philipp Valko, MD (USA)

Objectives:

1. Describe sleep, sleepiness and fatigue complaints after traumatic brain injury.
2. Understand the causes of sleep-wake disturbances in patients with traumatic brain injury.
3. Propose treatment for sleep-wake disturbances in this population.
4. Identify priorities in sleep and traumatic brain injury research.

Summary:

Traumatic brain injury (TBI) is a major public health concern in part because its incidence is estimated at more than 600/100 000 individuals, but also because it can result in long-term cognitive, physical, neurobehavioral and psychological impairments. Sleep-wake disturbances, particularly fatigue, hypersomnia, and insomnia, are among the most severe, the most persistent and the most disabling symptoms after TBI. They affect at least 50% of this population and are present across the range of TBI severity. However, whether post-traumatic sleep-wake disturbances improve or persist over time remains unclear. The cause of posttraumatic sleepiness is still elusive, but recent evidence suggests that it can possibly be explained by a complex interaction between brain lesions, neurotransmitter and hormonal changes, hypocretin level, aging, pain and genetic predispositions. Delayed or attenuated circadian rhythms may also cause sleep problems and vigilance decrements. Psychological factors such as anxiety, depression, and maladaptive habits are probably important contributors to the development and persistence of sleep-wake disturbances after TBI. A few therapeutic trials have been conducted on posttraumatic sleep-wake disturbances. Treatment with stimulants may be effective for sleepiness, but alleviation of fatigue and hypersomnia remains difficult to achieve.

In this symposium, the definition, diagnosis, epidemiology and general symptoms associated with TBI will be introduced. Subjective and objective measures of sleep disturbances and fatigue performed in early and chronic TBI patients will be reviewed. Physiological correlates of acute and chronic sleep-wake disturbances in TBI will be presented. Circadian rhythm

dysfunctions observed after TBI as well as their impact on sleep quality and sleepiness will be discussed. Finally, treatment options, with an emphasis on pharmacological intervention, will be presented.

9:00am – 9:15am

Long-term sleepiness and fatigue symptoms following moderate/severe traumatic brain injury

Simon Beaulieu-Bonneau, MPs (Canada)

9:15am – 9:30am

Sleep and pain interaction in mild traumatic brain injury patients

Samar Khoury, MSc (Canada)

9:30am – 9:45am

Sleep in early brain injury recovery

Michael Makley, MD (USA)

9:45am – 10:00am

Sleep and circadian rhythm disruption associated with traumatic brain injury

Shanthakumar Rajaratnam, PhD (Australia)

10:00am – 10:15am

Posttraumatic sleep-wake disturbances: causes and treatment

Philipp Valko, MD (USA)

Coffee Break / Exhibition

10:30am – 11:00am

Technologists Workshops (French)

11:00am – 12:30pm

Oral appliances: introduction and indications in OSA treatment

(Orthèse dentaire: introduction et indications pour le traitement du SAS)

Luc, DMD, MSc (Canada)

Oral Paper Presentations (Sessions 10-13)

11:00am – 12:30pm

O10: Sleep and Public Health

Co-Chairs: Torbjörn Akersdedt, PhD (Sweden) and Pierre Philip, MD, PhD (France)

Teen sleep media exposures and physical activity: Results from the 2007 and 2009 youth risk behavior surveys

Caris Fitzgerald (USA)

Erick Messias (USA), Daniel Buysse (USA)

Night-work shifts and inflammatory markers

Khosro Sadeghniaat-Haghighi (Iran)
Omid Aminian (Iran)

Importance of the sleepiness and fatigue prevention for reducing occupational accidents in a Brazilian mining company

Felipe Vieira (Brazil)
Sergio Barros (Brazil)

The Australian Centre for Education in Sleep (ACES), program: Sleep education trials for middle school students in Australia and New Zealand

Sarah Blunden (Australia)
Geoff Kira (New Zealand), Michelle Hull (New Zealand), Ralph Maddison (New Zealand)

Sleep duration does not predict major adverse cardiac events in the swedish national march cohort study

Anna Westerlund (Sweden)
Rino Bellocco (Sweden), Madeleine Svensson (Sweden), Johan Sundström (Sweden),
Torbjorn Akerstedt (Sweden), Ylva Trolle Lagerros (Sweden)

Power naps in night time driving: First results of an investigation under natural conditions

Doris Moser (Austria)
Gerhard Kloesch (Austria), Marion Seidenberger-Wutzl (Austria), John Dittami (Austria),
Josef Zeitlhofer (Bahamas)

O11: Psychiatric and Neurological Disorders Affecting Sleep/Waking

Co-Chairs: Colin Shapiro, MD (Canada) and Yun-Kwok Wing, MD (China)

Antiepileptic therapy in NFLE patients: Effects on macrostructural and microstructural PSG parameters

Fernando de Paolis (Italy)
Giulia Milioli (Italy), Andrea Grassi (Italy), Silvia Riccardi (Italy), Elena Colizzi (Italy), Liborio Parrino (Italy), Mario Giovanni Terzano (Italy)

Sleep and wake disorders associated with traumatic brain injury: Impact of successful management on recovery of cognition and communication

Catherine Wiseman-Hakes (Canada)
Angela Colantonio (Canada), Nora Cullen (Canada), Chanth Seyone (Canada), Marc Narayansingh (Canada), Brian Murray (Canada)

Quantitative EEG in REM sleep and NREM sleep in combat OEF/OIF veterans

Daniel Cohen (USA)
Jennifer Alman (USA), Amy Begley (USA), David Cashmere (USA), Jean Miewald (USA),
Anne Germain (USA)

Atypical topographical distribution and density of K-complexes: A possible cause of poor sleep in autism

Sabine Michaëlle Duplan (Canada)
Élyse Chevrier (Canada), Laurent Mottron (Canada), Roger Godbout (Canada)

Insomnia and daytime sleepiness are risk factors for depressive symptoms in the elderly

Isabelle Jaussent (France)

Jean Bouyer (France), Marie-Laure Ancelin (France), Tasnime Akbaraly (France), Karine Pérès (France), Karen Ritchie (France), Alain Besset (France), Yves Dauvilliers (France)

Self-reported sleep problems and neuropsychological performance in ADHD

Barbara Fisher (USA)

Danielle Garges (USA), Stephany Fulda (Germany)

O12: Sleep Breathing Disorders

Co-Chairs: Richard Horner, PhD (Canada) and Max Hirshkowitz (USA)

New insights into monocyte differentiation in sleep apnea patients

Larissa Dyugovskaya (Israel)

Andrey Polyakov (Israel), Slava Berger (Israel), Peretz Lavie (Israel), Lena Lavie (Israel)

Tumor growth and circulating VEGF induced by intermittent hypoxia in a mouse model of sleep apnea

Ramon Farre (Spain)

Isaac Almendros (Spain), Josep Montserrat (Spain), Marta Torres (Spain), Daniel Navajas (Spain)

Sleep disordered breathing and cognition: The mediating role of weight

Karen Spruyt (USA)

David Gozal (USA)

Sleep breathing disorders at patients with acromegaly

Michail Agaltsov (Russian Federation)

Irena Ilovayskaya (Russian Federation), Irina Trigolosoza (Russian Federation), Anna Vinogradova (Russian Federation), Svetlana Fedorova (Russian Federation), Alexander Dreval (Russian Federation)

Elevated pancreatic polypeptide (PP) levels in obstructive sleep apnea

Fanny Delebecque (USA)

Lisa Morselli (USA), Rachel Leproult (USA), Karla Temple (USA), Harry Whitmore (USA), Jameese Sykes (USA), David Ehrmann (USA), Eve Van Cauter (USA)

Obstructive sleep apnea and allergic rhinitis: Impact of treating upper airway inflammation on sleep parameters

Veronique-Isabelle Forest (Canada)

Basil Petrof (Canada), Najat Binotham (Canada), Qutayba Hamid (Canada), François Lavigne (Canada)

O13: Narcolepsy

Co-Chairs: Francisco Javier Puertas, MD (Spain) and Mehdi Tafti, PhD (Switzerland)

Neural substrates of awakening probed with genetically targeted optical control of hypocretin neurons

Antoine Adamantidis (Canada)

The effect of intranasal hypocretin-1 on glucose tolerance in normal weighted and obese narcolepsy patients

Sara Lena Weinhold (Germany)
Mareen Seeck-Hirschner (Germany), Alexander Nowak (Germany), Robert Gôder (Germany), Paul Christian Baier (Germany)

Clinical differences between childhood and adulthood narcolepsy

Sona Nevsimalova (Czech Republic),
Jitka Buskova (Czech Republic), David Kemlink (Czech Republic), Iva Prihodova (Czech Republic), Jelena Skibova (Czech Republic), Karel Sonka (Czech Republic)

Executive functions in narcolepsy

Sophie BAYARD (France)
Valérie Decock Cochne (France), Muriel Croisier Langenier (France), Sabine Scholz (France), Yves Dauvilliers (France)

Postprandial blood glucose concentrations are increased in patients with narcolepsy with cataplexy as compared with healthy controls

Paul C Baier (Germany)
Sarah L. Weinhold (Germany), Sarah Burkert (Germany), Mareen Seeck-Hirschner (Germany), Robert Gôder (Germany), Dunja Hinze-Selch (Germany), Manfred Hallschmid (Germany)

Silent snoring, an enigma!

Vijayakrishnan Paramasivan (India)

WASM/ESRS Symposium

12:30pm – 2:00pm

Neurogenic Hypersomnia

Co-Chairs: Christian Guilleminault, MD, PhD (USA) and Claudio Bassetti, MD (Switzerland)

Speakers: Claudio Bassetti, MD (Switzerland); Pierre-Hervé Luppi, PhD (France); Seiji Nishino, MD, PhD (USA); Maurice Ohayon, MD, PhD (USA)

Objectives:

1. Know the wide variation in neurophysiology and clinical presentation of the hypersomnias.
2. Understand the interaction of REM sleep regulation and their relation not only to the clinical features of narcolepsy, particularly cataplexy, but also REM behavior disorder, Parkinsonism and specific brain-stem lesions.
3. Know the significance of histaminergic system relation to some hypersomnias.
4. Know the prevalence of idiopathic hypersomnia in the general population obtained from a representative sample from European Community and the USA.

Summary:

Hypersomnia often presents one of the more challenging treatment problems in sleep medicine and it carries with it significant morbidity including health problems and risks of major accidents. The range of hypersomnia related to neurological factors varies from the well defined narcolepsy with cataplexy to the more mixed clinical patterns with difficulties staying awake during the day. The non-narcoleptic-idiopathic-hypersomnias are the most challenging diagnostic, etiogenic and therapeutic syndromes. Several classifications have been suggested based on clinical presentations. The clinical features seen in these disorders

of excessive sleepiness mostly serve to identify the major types of hypersomnia and guide researches on their underlying neurophysiological impairments. The latest clinical subdivision based on clinical analyses and neurophysiological tests -including sleep related investigations- will be reviewed by Claudio Bassetti. Narcolepsy with cataplexy has been well defined but we are only now beginning to appreciate the REM sleep mechanisms and how they change to produce both cataplexy and REM behavior Disorder. New discoveries by Pierre-Hervé Luppi about REM-sleep regulation have changed our understanding of the pathological processes for these REM sleep related disorders. In addition many of the neurogenic hypersomnias show in human, indications of histaminergic abnormalities, with or without hypocretin deficiency that may account for the sleep-wake problems. Seiji Nishino will present current findings in this regard and discuss their overall significance. Idiopathic hypersomnia disorder has been seldom investigated in the general population. Maurice Ohayon will examine prevalence of Idiopathic hypersomnia in several European countries and the U.S. (sample $n > 35,000$ for about 750 millions people). In these studies excessive sleepiness was a frequent complaint with rates ranging from 12% to 28% depending on the country. Idiopathic hypersomnia prevalence ranged between 0.3% and 0.5%.

12:30pm – 12:50pm

Clinical spectrum and neurophysiology

Claudio Bassetti, MD (Switzerland)

12:50pm – 1:10pm

REM regulation in narcolepsy

Pierre-Hervé Luppi, PhD (France)

1:10pm – 1:30pm

Histamine in hypersomnias

Seiji Nishino, MD, PhD (USA)

1:30pm – 1:50pm

Epidemiology of idiopathic hypersomnia

Maurice Ohayon, MD, PhD (USA)

Wayne Hening Memorial Lecture

12:45pm – 1:45pm

Motor Control and Dyscontrol in Sleep

Chair: Claudia Trenkwalder, MD (Germany)

Speaker: Sudhansu Chokroverty, MD

JFK New Jersey Neuroscience Institute, Edison (USA)

Objectives:

1. Review motor control of normal sleep.
2. Understand what happens when normal motor control breaks down.
3. Distinguish how to tell one jerk from another.
4. Understand role of multiple muscle recordings during overnight polysomnographic study.

Summary:

There is a progressive decrement of voluntary muscle tone in an orderly manner as one progresses from wakefulness to non-REM sleep stages 1 to 3 and REM sleep. Mild muscle

hypotonia during NREM sleep results from a combination of disfacilitation of brainstem motor neurons and probably slight hyperpolarization of motor neurons. Marked suppression of voluntary muscle tone during REM sleep is caused by three fundamental mechanisms: inhibitory post-synaptic potentials causing hyperpolarization of motor neurons (major mechanism); disfacilitation of brainstem motor neurons; and decreased intracortical facilitation. Hypocretinergic neurons facilitate motor activity during wakefulness but are disfacilitated during sleep. When multiple checks and balances placed on multiple levels of motor pathways during sleep break down, strange and bizarre motor events may emerge causing abnormal jerks, shakes and screams during sleep. Failure of motor control in REM sleep may cause rapid eye movement behavior disorder, whereas a failure of motor control in NREM sleep may cause partial arousal disorders, periodic limb movements in sleep, hypnic jerks, propriospinal myoclonus, hypnagogic foot tremor, and alternating leg muscle activation. A failure of motor control in both NREM and REM sleep may result in rhythmic movement disorders, sleep bruxism, and catathrenia.

Keynote Lectures

2:00pm – 3:00pm

Neural Regulation of Homeostatic Sleep Mechanisms

Barbara Jones, PhD

Montreal Neurological Institute and McGill University, Montreal (Canada)

Coffee Break / Exhibition

3:00pm – 3:30pm

Poster Presentations

3:00pm – 5:00pm

Insert listing of posters

Symposia

3:30pm – 5:00pm

S23: Access and Management of Obstructive Sleep Apnea

Chair: Najib Ayas, MD (Canada)

Speakers: Charles Atwood, MD (USA); Robert Skomro, MD (Canada); Frederic Séries, MD (Canada); Meir Kryger, MD (Canada, USA)

Objectives:

1. Discuss diagnostic algorithms for OSA.
2. Consider the role of portable monitoring and in-laboratory assessments for the diagnosis and treatment of OSA.
3. Evaluate therapeutic options for weight-loss in obese patients with OSA.
4. Be aware of the healthcare cost and the benefit of appropriate management of OSA.

Summary:

Obstructive Sleep Apnea (OSA) is associated with increased healthcare utilization, morbidity and mortality. Appropriate diagnosis and management of OSA varies depending on resources available. This symposium will address key areas regarding the diagnosis and management of patients with OSA. Atwood, who has been involved in a large randomized controlled trial of portable monitoring, will discuss the available scientific data comparing ambulatory monitoring to sleep laboratory monitoring in patients with suspected sleep apnea. The potential role of home-based diagnostic testing followed by home-based autoCPAP titrations (compared to in-laboratory polysomnography) will be addressed by Skomro, especially from a Canadian perspective. With a discussion on procedures for the appropriate use of home-based testing, particularly in areas with limited access to polysomnography. Obesity is a major risk factor for OSA and Sériès will discuss how these patients should be chosen for specific weight loss therapies (e.g., lifestyle, medications, surgery). Untreated OSA leads to increased resource utilization in healthcare systems with reductions in healthcare utilization following compliance with therapy. Kryger will highlight the importance of earlier diagnosis and treatment of OSA.

3:30pm – 3:50pm

Portable monitoring for the diagnosis of OSA: A summary of recent randomized trials
Charles W. Atwood, Jr, MD (USA)

3:50pm – 4:10pm

The role of home-based diagnosis and treatment of OSA: A Canadian perspective
Robert Skomro, MD (Canada)

4:10pm – 4:30pm

Obesity, OSA and weight loss therapies
Frédéric Sériès, MD (Canada)

4:30pm – 4:50pm

Healthcare utilization and benefits of improved awareness of OSA
Meir Kryger, MD (Canada, USA)

S24: Shift Work – Update About Complaints, Tolerance, and Treatment

Chair: Bjorn Bjorvatn, MD (Norway)

Speakers: Torbjörn Akerstedt, PhD (Sweden); Bjorn Bjorvatn, MD (Norway); Lee Di Milia, PhD (Australia); Kenneth P. Wright Jr, PhD (USA)

Objectives:

1. Provide an update on sleep and sleepiness during shift work.
2. Discuss the prevalence and correlates of shift work disorder.
3. Provide an overview of individual differences in tolerance to shift work.
4. Present an update of the different treatment options for shift work related complaints.

Summary:

Shift work, and especially night work, disrupts the relationship between the body's internal clock and the environment, and is associated with shortened sleep, increased sleepiness, impaired performance and increased accident risk. The number of shift workers is increasing. About 20% of the workforce is engaged in shift work that includes night work. Society has

changed towards a 24-hour society where time no longer sets limits for human activity. This symposium will provide new and updated data related to shift work. First, an overview and update on sleep and sleepiness during shift work will be given. Second, data about the newly defined diagnosis of Shift Work Disorder (SWD) will be presented. So far there are few studies on this disorder. Some people tolerate shift work well, whereas others develop serious problems. Such individual differences in tolerance to shift work will be addressed during the third lecture in the symposium. Treatment of shift work related complaints may involve the workers' sleep, sleepiness and/or circadian rhythm. The last lecture will provide an update on the treatment options for shift work related complaints. This symposium brings together speakers from three different continents and all are actively involved in shift work studies.

3:30pm – 3:50pm

Shift work, sleep and sleepiness

Torbjörn Åkerstedt, PhD (Sweden)

3:50pm – 4:10pm

Shift work disorder

Bjørn Bjorvatn, MD (Norway)

4:10pm – 4:30pm

Individual differences in tolerance to shift work

Lee Di Milia, PhD (Australia)

4:30pm – 4:50pm

Treatment of shift work related complaints

Kenneth P. Wright Jr., PhD (USA)

S25: New Basic and Clinical Research Findings in Idiopathic RBD and Parkinsonian RBD

Chair: Carlos Schenck, MD (USA)

Speakers: Pierre-Herve Luppi, PhD (France); Jean-François Gagnon, PhD (Canada); Alex Iranzo, MD, PhD (Spain); Valerie Cochen De Cock, MD, PhD (France)

Objectives:

1. Identify the neuronal dysfunctions responsible for RBD.
2. Review the tests assessing cognitive deficits and the neuropsychological profile associated with mild cognitive impairment and dementia.
3. To learn new research findings on predictors of imminent risk for emergent parkinsonism in patients with idiopathic RBD.
4. To observe the improvement of the quality of movement during RBD vs. awake in patients with Parkinson's Disease and Multiple System Atrophy, and to explore its possible mechanisms.

Summary:

Research publications on idiopathic RBD (iRBD) and on RBD associated with parkinsonian disorders continue to grow at an accelerated rate, and so it is timely to share important new findings with sleep clinicians and researchers, and other interested clinicians. Luppi will present a current update on the neuronal network responsible for muscle atonia during REM sleep. Neurons generating REM sleep atonia are now known to be glutamatergic neurons localized in the pontine sublaterodorsal tegmental nucleus. Various scenarios will be

presented that could be responsible for the induction of RBD. Luppi will first propose that RBD is due to the neurodegeneration of descending SLD neurons, and then introduce the notion that it could be due to neurodegeneration of glycinergic/GABAergic neurons hyperpolarizing motoneurons during REM sleep. Gagnon will review how poor performance on cognitive tests is well documented in RBD, and present data on how mild cognitive impairment (MCI) is a frequent feature of RBD, with a predominant attention/executive dysfunction. A comprehensive neuropsychological evaluation remains the “gold standard” to detect MCI in RBD. However, some screening tests, such as the Montreal Cognitive Assessment and Mattis Dementia Rating Scale, are valid to detect MCI in RBD. Moreover, a substantial number of patients with RBD develop dementia of the Lewy body dementia subtype. Iranzo will present data from recent published studies on predictors of imminent parkinsonism in idiopathic RBD. Cochen De Cock will present data from two recent published studies on how patients with RBD associated with Parkinson’s Disease (PD) or Multiple System Atrophy (MSA) surprisingly demonstrate that the quality of their movements, speech and facial expression is improved during RBD compared to movements, speech and facial expression while awake. The underlying mechanism of this improvement remains unclear. A restoration of the dopaminergic loop could be involved in PD, but the fact that this improvement also exists in MSA where patients are levodopa-resistant suggests another mechanism.

3:30pm – 3:50pm

The neuronal network responsible paradoxical sleep and its dysfunctions causing REM sleep behavior disorder

Pierre-Hervé Luppi, PhD (France)

3:50pm – 4:10pm

Cognitive impairment in REM sleep behavior disorder

Jean-François Gagnon, PhD (Canada)

4:10pm – 4:30pm

RBD as the first manifestation of a neurodegenerative disease

Alex Iranzo, MD, PhD (Spain)

4:30pm – 4:50pm

The improvement of movement, speech and facial expression during REM Sleep Behaviour Disorder in Parkinson's Disease and Multiple System Atrophy

Valérie Cochen De Cock, MD, PhD (France)

Technologists Workshops

3:30pm – 5:30pm

3:30pm – 4:30pm

Cyclic Alternating Pattern - EEG

Célyne Bastien, PhD (Canada)

4:30pm – 5:30pm

Quality Assurance and Inter-Rater Reliability

Reta Wright-Kinghorn, MA, RPSGT (Canada)

Closing Ceremony

5:30pm – 6:00pm

Farewell Social Event

6:00pm – 7:00pm

WASM - CSS 2011 (Program-at-a-Glance)

Friday, September 9		Monday, September 12		Tuesday, September 13		Wednesday, September 14	
6:00pm-9:00pm	On-Site Registration	7:00am-6:00pm	On-Site Registration	7:00am-6:00pm	On-Site Registration	7:00am-6:00pm	On-Site Registration
Saturday, September 10		8:00am-9:00am	Keynote Lecture 1 (Charles Czeisler)	8:00am-9:00am	Keynote Lecture 3 (Collin Sullivan)	8:00am-9:00am	Keynote Lecture 5 (Kevin Morgan)
	On-Site Registration	9:00am-10:30am	Symposia 1-4	9:00am-10:30am	Symposia 11-13	9:00am-10:30am	Symposia 20-23
8:00am-12:00pm	Pre-Congress Courses 1-2	10:30am-11:00am	Coffee Break /Exhibition	10:30am-11:00am	Coffee Break /Exhibition	10:30am-11:00am	Coffee Break /Exhibition
	Pre-Congress Course 3	11:00am-12:30pm	Technologist Workshop (French)	11:00am-12:30pm	Technologist Workshop (French)	11:00am-12:30pm	Technologist Workshop (French)
1:00pm-5:00pm	Pre-Congress Course 3 (con'd)	11:00am-12:30pm	Oral Paper Presentations	11:00am-12:30pm	Oral Paper Presentations	11:00am-12:30pm	Oral Paper Presentations
	Pre-Congress Courses 4-5	12:30pm-2:00pm	Industry Symposium (UCB)	12:30pm-2:00pm	Industry Symposium (Respironics)	12:30pm-2:00pm	WASM/ESRS Symposium
3:00pm-5:00pm	Public Lectures (French)	2:00pm-3:00pm	Keynote Lecture 2 (Matthew Walker)	2:00pm-3:00pm	Keynote Lecture 4 (Pierre Philip)	12:45pm-1:45pm	Hening Memorial Lecture (Sudhansu Chokroverty)
Sunday, September 11		3:00pm-3:30pm	Coffee Break /Exhibition	3:00pm-3:30pm	Coffee Break /Exhibition	2:00pm-3:00pm	Keynote Lecture 6 (Barbara Jones)
7:00am-6:00pm	On-Site Registration	3:00pm-5:00pm	Poster Presentations	3:00pm-3:30pm	Poster Presentations	3:00pm-3:30pm	Coffee Break /Exhibition
8:00am-12:00pm	Pre-Congress Courses 6-7	3:30pm-5:00pm	Symposia 5-7	3:00pm-5:00pm	Symposia 14-16	3:00pm-5:00pm	Poster Presentations
8:30am-5:00pm	Technologist Program	3:30pm-5:30pm	Technologist Workshop	3:30pm-5:00pm	Technologist Workshop	3:30pm-5:00pm	Symposia 24-26
10:15am-5:00pm	Student Training Program	5:00pm-6:30pm	Symposia 8-10	3:30pm-5:30pm	Technologist Workshop	3:30pm-5:30pm	Technologist Workshop
5:30pm-8:30pm	Opening Ceremony / Reception	7:00pm-12:00am	Banquet Dinner / Dancing (Ticketed) Chateau Frontenac	5:00pm-6:30pm	Symposia 17-19	5:30pm-6:00pm	Closing Ceremony
				6:30pm-8:00pm	WASM Membership Meeting	6:00pm-7:00pm	Farewell Social Event
				6:30pm-8:00pm	CSS Annual General Meeting		
				6:00pm-11:00pm	St-Lawrence River Cruise		
				8:00pm-11:00pm	Snooze Bowl		

EXHIBITION OPEN 10:00-17:00

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