Sleepwatching INDIA

Indian Society for Sleep Research (ISSR) NEWSLETTER ISSUE 1 01/05/2015

Message from President, ISSR

Dear Members,

I am happy to announce that Indian Society for Sleep Research is going to celebrate its 25th Anniversary in 2017. Prior to this commemorative moment, the Society is going to launch various educational programs to promote the importance of sleep and sleep disorders not only to sleep professionals but also to students, parents and general public.

To mark the beginning of the celebration ISSR announces the launch of half yearly Newsletter starting from May this year. This important and stupendous task has been possible because of the initiative and enthusiasm of our young sleep ambassador Dr. Tripat Deep Singh. Let us extend him our heartiest support with ideas and information to make the Newsletter exciting and educating.

Sleep well, sleep on time.

Dr. Hrudananda Mallick, MD, PhD

ISSR Activities

2012	2013	2014
World Sleep Federation (WSF) Exam 15 July 2012 Written exam No. of Applicants=7	**WSF Exam** 15 July 2013 Online Exam No. of Applicants=5	**WSF Exam** 13 July 2014 Online exam No. Of Applicants=3
National Sleep Medicine Course 13-15 Dec 2012 Bangalore No. of Participants=100 Faculty from USA, Japan, India and Singapore	**National Sleep Medicine Course** 13-15 Dec 2013 Chennai No. of Participants=100 Faculty from USA, Japan, India and Singapore	**Asian Sleep Research Society (ASRS) Conference** 22-24 Sep 2014 Kovalam, Kerala, India No. of Participants=300
Ist National Sleep Technology Course 13 Dec 2012 Bangalore, India No. of Participants=30 Faculty from USA, India and Singapore	**2nd National Sleep Technology Course** 13 Dec 2013 Chennai, India No. of Participants= 60 Faculty from USA and India	**3rd National Sleep Technology Course** 26-27 Sep 2014 Delhi, India No. of Participants= 44 Faculty from USA, India and Singapore
		Workshop on Sleep Medicine at APICON 19 Nov 2014 Puri, Orissa, India No. of Participants=70
		Instituted **Budur Krishna Murthy Young Investigator and Travel award**

For more details on each activity please visit **www.issr.in**

Doctors Certified by World Sleep Federation in India through ISSR

2012	2013	2014
Dr. Tripat Deep Singh	Dr. Pragati Agrawal	Dr. Apar Jindal
Dr. Vikas Mittal	Dr. Pramod Krishnan	Dr. Sujit Jagtap
Dr .Teresa MPC Ferreira	Dr. Haseeb Hasan	Dr. Ghulam Hussain
Lt Col Dr Karuna Datta	Dr. Kripesh Sarmah	
Dr. Nitika Dang	Dr. Ravi Gupta	

ISSR in Pictures

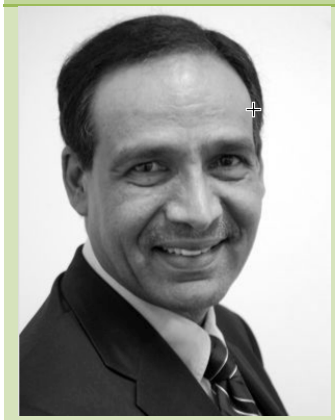
ASIAN SLEEP RESEARCH SOCIETY (ASRS) CONFERENCE Sep 2014

The Indian Society of Sleep Research (ISSR) organized the 8th Congress of the Asian Sleep Research Society, ASRS-2014, at the idyllic beach resort Uday Samudra, Kovalam, Kerala during September 22-24, 2014. Dr HN Mallick, President of ASRS and ISSR & Chair of the ASRS-2014, and Dr Kamalesh K Gulia, the Organizing Secretary of 8th ASRS Congress successfully conducted the 3-days' Congress. The ASRS-2014 was attended by more than 250 eminent sleep experts not only from member Asian countries but also from USA, Canada, France, Australia, Germany, Georgia, Switzerland, Russia and Finland. The Congress commenced with a Young Scientists colloquium. Apart from poster sessions, there were 18 symposia. ASRS-WSF Panel discussion on "Sleep education across the globe" and ASRS Panel discussion on "Scientific landscape and future joint ASRS initiatives" were the highlights of the Congress. The speakers shared their concerns and various initiatives taken by ASRS and WSF.

The 8th ASRS Congress was not just a very productive scientific extravaganza but also a truly enjoyable event with rich cultural delights and culinary treats. The organizers thank the key sponsors AXONET and APEX, exhibitors Nihon Kohden, Somnomedics, ADI Instruments and Gentech Marketing for their generous support. The organizers also thank Ajinomoto Co Inc, Japan for sponsoring the banquet dinner.

The ISSR executive committee members express their heartfelt thanks to all the symposium chairs - speakers, young scientists, the delegates, sponsors for making the ASRS-2014 a grand success.

An Orientation to International Classification of Sleep Disorders- Third Edition



Dr. Deepak Shrivastava MD, FAASM, FACP, FCCP, RPSGT

Deepak Shrivastava trained at State University of New York and University of California, Davis. He received his sleep medicine training at Stanford. He is board certified in Sleep medicine, Pulmonary, Critical Care, Internal medicine and Polysomnography technology

He is a Professor of Medicine, Sleep, Pulmonary and Critical Care. He is a senior faculty at Sleep Medicine Fellowship Program at UC Davis School of Medicine. He is recipient of many Academic and Service awards. He is also in clinical practice of sleep in California since 1989.

He is actively involved in leadership, political advocacy and sleep medicine training of healthcare providers in United States and abroad. He pioneered National Sleep Medicine Course in India with Dr. H N Mallick and full support of Dr. V. Mohan Kumar through ISSR. His FDA guided research in oral appliance therapy compliance monitoring is notable for a breakthrough technology.

In order to find a common language to communicate about human sleep disorders and syndromes, scientists and clinicians have strived over time to develop classification systems based on etiology, patho-physiology, clinical features, and many times expert opinion and consensus.[1] The International Classification of Sleep Disorders (ICSD) [2] is a document similar to other systems like the International Classification of Diseases (ICD-9CM) [3] and the Diagnostic and Statistical Manual of Mental Disorders (DSM-IIIR) and DSM-IV)[4, 5]

Recently released ICSD 3rd edition is built on the foundation laid by the ICSD 2nd edition released in 2005. ICSD is a result of over 100 American Task force members and international members' hard work. ICSD second edition had removed the axial system of the previous ICSD 1st edition and limited its scope to the diagnostic criteria. It also listed only one set of criteria to apply universally. The ICSD 3rd edition has maintained the seven major sections to initially classify the sleep disorders. These include Insomnia, Sleep-

related breathing disorders, Central disorders of hypersomnolence, Circadian rhythm sleep-wake disorders, Parasomnias, Sleep-related movement disorders and other sleep disorders. Since much scientific evidence is still lacking, the ICSD 3rd edition recommends allowing some clinical judgment while establishing diagnosis by meeting all of the defining criteria. ICSD-3 specifically distinguishes the pediatric obstructive sleep apnea. It also refers to American Academy of Sleep Medicine Manual for the Scoring of Sleep and Associated Events.[6] Compared to previous edition, ICSD-3 provides coding information for each listed sleep disorder. The broad International Classification of Diseases (ICD) is transitioning at the time of this writing to its 10th Revision. Some discrepancies are likely to occur after the change is in full effect.[7]

All types of **insomnia** diagnoses are now consolidated under the heading of *chronic insomnia disorder*. It has eliminated old terminology of acute and chronic insomnia, primary versus secondary insomnia and comorbid insomnia. The new classification defines criteria for *chronic insomnia disorder, Short-term insomnia disorder* and *other insomnia disorder*. Current criteria includes (1) a report of sleep initiation or maintenance problems, (2) adequate opportunity and circumstances to sleep, and (3) daytime consequences.

Sleep-related Breathing Disorders are sub-classified in four sections. These include *obstructive sleep apnea (OSA), central sleep apnea syndromes (CSA)*, *sleep-related hypoventilation disorders* and *sleep-related hypoxemia disorder*. The criteria for *OSA* are no different than ICSD-2 and include both signs and symptoms or associated medical or psychiatric disorder along with five or more obstructive respiratory events per hour of sleep. Alternatively, obstructive respiratory events 15/hour would satisfy the criteria, even in the absence of associated symptoms or disorders. An important change from ICSD-2 is that a respiratory event index may be derived from out-of-center sleep testing (OCST) popularly known as Home Sleep Testing (HST). ICSD-3 emphasizes that obstructive respiratory disturbance includes not only obstructive apnea and hypopnea but also *respiratory effort-related arousal*. *Pediatric OSA* criteria have been simplified in the ICSD-3. One of findings of snoring, obstructed breathing, or daytime sleepiness, and hyperactivity etc. must be present. The PSG criterion includes (1) one or more obstructive events per hour of sleep or (2) obstructive hypoventilation, manifested by Pa CO_2 of 50 mm Hg for 25% of sleep time. *CSA Syndromes:* The ICSD-3 has added *treatment-emergent CSA* and avoids using "complex sleep apnea" due to lack of specificity. Criteria for this include five or more obstructive respiratory events per hour of sleep followed by resolution of the obstructive events and emergence of central events. Caution is advised in establishing a diagnosis of treatment-emergent CSA in consideration for other disorders presenting as CSA. It is well recognized that there are many patients with central apnea events during Positive Airway Pressure (PAP) titrations that resolve over time once PAP is well established. Sleep-Related Hypoventilation Disorders: Criteria for sleep-related hypoventilation now require demonstration of elevated PCO_2 levels, either by end-tidal or transcutaneous CO_2. When arterial oxygen desaturation (88% for 5 min) is seen in the absence of CO_2 measurement, the now separate diagnosis of *Sleep-Related Hypoxemia Disorder* should be used. *Obesity hypoventilation syndrome* has been added as a distinct diagnosis and requires demonstration of elevated daytime Pa CO_2 45 mm Hg, and a BMI >30.

Central Disorders of Hypersomnolence are often caused by intrinsic CNS abnormalities in control of sleep-wake, although other medical conditions or substances may cause hypersomnolence. *Insufficient sleep* is included in this group of disorders. ICSD-3 defines "daily episodes of an irrepressible need to sleep or daytime lapses into sleep" for disorders, like *narcolepsy* and *idiopathic hypersomnia (IH),* which require demonstration of objective sleepiness by the multiple sleep latency test (MSLT), a mean sleep latency of 8 minutes. ICSD-3 has changed to *"narcolepsy type 1"* and *"narcolepsy type 2."* Although hypocretin deficiency is the hallmark of narcolepsy type 1, the relative unavailability of hypocretin assays to date results in continued dependence on the identification of cataplexy to establish a narcolepsy type 1 diagnosis. In addition to a subjective complaint of sleepiness, narcolepsy type 1 may be diagnosed by the demonstration of either cerebrospinal fluid hypocretin-1 deficiency (110 pg/mL or less than one-third of the normative values) or a mean latency of 8 min on MSLT, with evidence of sleep-onset rapid eye

movement periods (SOREMPs) and clear cataplexy. The ICSD-3 criteria of for both types of narcolepsy include a requirement of either two SOREMPs on MLST, or a SOREMP on the PSG coupled with at least one SOREMP on the MSLT. Narcolepsy type 2 maintains the same MSLT requirements of a mean latency of 8 min and two SOREMPs (or one SOREMP on PSG and one or more on MSLT). Cataplexy must be absent and cerebrospinal fluid hypocretin-1 levels, if measured, must not meet the narcolepsy type 1 criterion. *Idiopathic Hypersomnia(IH):* Criteria for IH remain unchanged; including subjective sleepiness, mean sleep latency of 8 min with fewer that two SOREMPs (including any SOREMP on the PSG from the preceding night), absence of cataplexy and hypocretin deficiency and no other identifiable cause. Demonstration of 660 min average daily sleep time in adults satisfies the criterion for objective sleepiness in lieu of the MSLT findings.

Circadian Rhythm Sleep-Wake Disorders: The criteria for these diagnoses include (1) a chronic or recurrent pattern of sleep-wake rhythm disruption primarily caused by an alteration in the endogenous circadian timing system or misalignment between the endogenous circadian rhythm and the sleep-wake schedule required, (2) a sleep-wake disturbance (insomnia or excessive sleepiness), and (3) associated distress or impairment. For all circadian rhythm disorders except *jet lag disorder*, a duration criterion of at least 3 months has been added.

Parasomnias: The general criteria for disorders of arousal include (1) recurrent episodes of incomplete awakening, (2) absent or inappropriate responsiveness, (3) limited or no cognition or dream report, and (4) partial or complete amnesia for the episode. The criteria for REM Behavior Disorder have been simplified. It require (1) repeated episodes of behavior or vocalization that are either documented by PSG to arise from RÉM or are presumed to arise from REM based on reports of dream enactment, and (2) evidence of REM sleep without atonia on PSG. When REM sleep without atonia is not observed, the diagnosis may be given on a provisional basis when other clinical findings are strongly suggestive.

Sleep-Related Movement Disorders: The *Restless Leg Syndrome* ICSD-3 criteria differ from the International Restless Legs Syndrome Study Group criteria in that distress, associated sleep disturbance, or impairment is required to establish the ICSD diagnosis. *Periodic Limb Movement Disorder* may be diagnosed when the frequency of limb movement is 15/h in adults (5/h in children). The PLMs must be accompanied by sleep disturbance or other functional impairment to establish the diagnosis.[8]
This summarized document has been prepared mainly from reference number 7 and 8 for educational purposes.

1. Buysse D, Young T, Edinger J, et al. Clinicians' use of the International Classification of Sleep Disorders (ICSD): results of a national survey. SLEEP 2003; 1:48-51.
2. American Sleep Disorders Association. International Classification of Sleep Disorders: Diagnostic and Coding Manual. Rochester, MN: American Sleep Disorders Association, 1990.
3. US Department of Health & Human Services. International Classification of Diseases, 9th revision. Washington, D.C.: The Department, 1989.3rd:
4. American Psychiatric Association Committee on Nomenclature and Statistics. Diagnostic and Statistical Manual of Mental Disorders, Third edition, revised. Washington, DC: 1987.
5. American Psychiatric Association. Diagnostic and statistical manual of mental disorders (DSM- IV). Washington, DC: American Psychiatric Association, 1994.4th:
6. Iber C, Ancoli-Israel S, Chesson AL, Jr., Quan SF. The AASM Manual for the Scoring of Sleep and Associated Events: Rules, Terminology and Technical Specifications. Westchester, IL: American Academy of Sleep Medicine, 2007.
7. The International Classification of Sleep Disorders – Third Edition (ICSD-3)
8. Michael J. Sateia , MD, CHEST 2014; 146 (5): 1387 - 139

Events in the Region and World May to Dec 2015

ATS Conference Denver, Colorado	15-20 May 2015 http://conference.thoracic.org/2015/	Sleep and Breathing Barcelona, Spain	16-18 April 2015 http://www.esrs.eu/conferences-events/esrs-congresses-events.html
SLEEP 2015, Seattle, Washington	6-10 June 2015 http://www.sleepmeeting.org/	World Sleep 2015 Istanbul, Turkey	31 Oct-3 Nov 2015 http://www.congrex-switzerland.com/worldsleep2015
14th European Biological Rhythm Congress and 4th World Congress of Chronobiology Manchester, UK	2-6 Aug 2015 http://ebrs-online.org/	3rd ASEAN Sleep Conference Singapore	20-22 Nov 2015
ERS International Congress Amsterdam, Netherlands	26-30 Sep 2015 http://www.erscongress.org/	National Sleep Medicine Course Guwahati, Assam, India	5-6 Dec 2015 www.issr.in
APSR Kuala Lumpur, Malaysia	3-6 Dec 2015 http://www.apsresp.org/congress/2015.php	NAPCON Jaipur, India	4-7 Nov 2015 http://www.napcon2015.org
4th National Sleep Technology Course, AIIMS, Delhi, India	9-10 Dec 2015 www.issr.in	World Sleep Federation Exam, India	26 July 2015 www.issr.in
JSSR Annual Meeting	July 2015	RESPINA, Jakarta, Indonesia	3-5 Sep 2015 www.respina.org
International PSG Course, Bangkok, Thailand	19-22 July 2015 www.sst.or.th		

Polysomnography (PSG) Corner

AASM revised the rules for scoring Respiratory events in 2012 after the first publication defining rules for scoring Sleep and associated events in 2007. AASM again revised the manual for scoring Sleep and associated events in 2014. In the latest revision AASM retained the 2012 revised rules for scoring Respiratory events. In this issue we will compare the 2007 vs 2012 rules for scoring Respiratory events.

	2007 rules for scoring Respiratory events	2012 rules for scoring Respiratory events
Apnea	Drop in peak thermal sensor excursion by > 90% of baseline Duration of event lasts > 10 seconds At least 90% of event's duration meets amplitude reduction criteria for apnea	Drop in peak thermal sensor excursion by > 90% of pre-event baseline Duration of event lasts > 10 seconds **NOTE:** Removed: 90% of event duration must meet amplitude reduction criteria.
Hypopnea	**Recommended (4A Rule)** Nasal pressure signal excursion drop by > 30% of baseline Duration of this drop occurs for > 10 seconds > 4% O2 desaturation from pre-event baseline > 90% event's duration meets amplitude reduction criteria for hypopnea **OR** **Alternative (4B Rule)** Nasal pressure signal drops > 50% of baseline Duration of this drop occurs for > 10 seconds > 3% O2 desat from pre-event baseline or event associated with an arousal > 90% event's duration meets amplitude reduction criteria for hypopnea	**Recommended Rule** Nasal pressure signal excursions drop by > 30% in airflow from pre- event baseline Duration of this drop occurs for > 10 seconds > 3% oxygen desat or event is associated with an arousal **NOTE:** Removed: 90% of event duration must meet amplitude reduction criteria. **Added:** Definitions for scoring obstructive and central hypopnea. Scoring hypopneas as obstructive or central is optional.
Hypoventilation	During sleep, > 10 mmHg increase in PaCO2 during sleep compared to wake supine value	Score a respiratory event as hypoventilation during sleep if EITHER of the below occur a. There is an increase in the arterial PCO2 (or surrogate) to a value >55 mmHg for ≥10 minutes. b. There is ≥10 mmHg increase in

		arterial PCO2 (or surrogate) during sleep (in comparison to an awake supine value) to a value exceeding 50 mmHg for ≥10 minutes.
Cheyne Stoke Respiration (CSR)	> 3 consecutive cycles of cyclical crescendo-decrescendo change in breathing amplitude AND at least one of the following: 1) >5 central apneas and/or hypopneas per hour of sleep 2)Thecyclicalcrescendoanddecrescendochangein breathing amplitude has duration of > 10 consecutive minutes	Score as CSR if BOTH the following are met: 1. episodes of > 3 consecutive central apneas and/or central hypopneas separated by crescendo-decrescendo change in breathing amplitude with a cycle length of > 40 seconds AND 2. There are >5 central apneas and/or central hypopneas per hour of sleep associated with crescendo/decrescendo breathing pattern recorded over > 2 hours of monitoring

This write up is prepared using reference "Iber C, Ancoli-Israel S, Chesson AL, Jr., Quan SF. The AASM Manual for the Scoring of Sleep and Associated Events: Rules, Terminology and Technical Specifications. Westchester, IL: American Academy of Sleep Medicine, 2007" and AASM Scoring Manual version 2.3 for educational purpose only.

Sleep Medicine In India

Dr. Preeti Devnani MD,ABPN,D,ABIM,FAASM is the Clinical Director of the comprehensive Sleep Disorder Clinic at the Jaslok Hospital, Mumbai - She is a specialist in Sleep Medicine and Neurology and is board certified by the American Board of Neurology & Psychiatry and American Board of Sleep Medicine.

Dr. Devnani is the recipient of the Young Investigator Research Award from the World Association of Sleep Medicine 2013. She is also a board member and faculty examiner of the Indian Sleep Disorder Association and Indian Sleep Research Society.

She has published several articles and is a principal investigator for various clinical trials. Invited to a forum on Indian National Guidelines, INOSA- Obstructive Sleep Apnea -2014, Insomnia National Guidelines-2014

What is the spectrum of disorders that are covered in Sleep Medicine?

Sleep medicine is a vital aspect of health care from the pediatric to the geriatric population. Sleep disorders that are commonly encountered in daily clinical practice include Insomnia, Sleep Related Breathing Disorders such as Obstructive Sleep Apnea, Abnormal Movements associated with sleep called Parasomnias, Restless Legs Syndrome and Circadian Rhythm Disorders such as delayed sleep phase syndrome and shift work syndrome.
Insufficient Sleep Syndrome that results secondary to improper sleep hygiene and sleep procrastination due to increased demanding work schedules, stress or peer pressure is a growing major epidemic in our society.

What is the prevalence of different sleep disorders in India?

We have fast emerging data from the Indian Subcontinent that documents the wide prevalence and burden of Sleep Disorders.

Sleep Disorders at large tend to be under recognized and undiagnosed.

Prevalence of the spectrum of OSA ranges from -13.5 to 19.7 in adult males, 5.6 to 7.4 in adult females
OSAS syndrome ranges from 2.4-7.5 in adult males; 1-2.1 in adult females

Restless Leg Syndrome- 6.25% in adults, 34.37% in anemia, 14.5% in patients on hemodialysis, 1.5 - 6.6% in chronic renal failure, 15.7 % in pregnancy

Prevalence of insomnia varies from 28.1% in adult subjects of 30-60 years; upto 59 % in elderly subjects, 17.3 % in school children.

Insufficient Sleep syndrome/Sleep Deprivation-30.9 % in males, 33.1 % in females - in data from school children

How many professional societies are dedicated to sleep medicine in India?

The professional societies dedicated to sleep medicine in India are –

A. Indian Society for Sleep Research (ISSR) founded in 1992.
B. Indian Sleep Disorders Association (ISDA) founded in 1995.

In the last few years, the multidisciplinary interest in sleep is evidenced by the newer advent of newer associations like-
C. Indian Dental Sleep Association
D. Indian Association of Surgeons for Sleep Apnea (IASSA)
E. The ACE School of Sleep Medicine- Dedicated to the education of healthcare professionals.

ISDA and ISSR are more comprehensive societies with representation at the WASM and WFRS forums.
What are the opportunities for doctors to get certified in Sleep Medicine in India?

Sleep certification fellowships have been offered in India by

A. ISSR-Transitional Board certificate examinations recognized by the WSF
B. ISDA –Fellowship in Sleep Medicine since 2012.

What are the major conferences and training courses regarding Sleep Medicine in India?

The Sleep Medicine Calendar in India for upcoming 2015 in chronological order

1. ACE school of sleep medicine workshops-22nd March, Pune

2. Sleepcon-3rd, 4th and 5th of April 2015 at Hyderabad.

3. ACE school of sleep medicine workshop-26th April, Amritsar.

4. IANCON-1st to 4th October 2015.

5. NAPCON-4th to 7th November 2015.

6. NSMC-National Sleep Medicine Course, 2015, Guwahati, 5th and 6th December.

7. Technician courses by ISDA- One year diploma in sleep medicine for technicians

8. Technician courses by ISSR-Sleep Technician workshop

Which are the main training courses and certifications for Sleep technologists in India?

Certifications for sleep technologists in India-

A. ISSR- Transitional Board Certificate Examination for Indian Sleep technologists.

B. Nithra Institute of Sleep Sciences- Certified polysomnography technician

Which are the International certifications for which Doctors and Sleep technologists in India are eligible?

Doctors are eligible for the following international certifications from India-

A. **ISSR**-Transitional board Certification examinations endorsed by WSF.

For Technicians-

A. **RPSGT-** Registered Polysomnographic Technologist

B. **CPSGT**- Certified Polysomnographic Technician

Could you name few Sleep Medicine Centres in India where doctors and technicians can go for training?

Several hospitals are now encouraging post graduate students to gain exposure in Sleep Medicine including

All India Institute Of Medical Science, National Institute of Mental Health and Neuro Sciences, Sree Chitra Tirunal Institute for Medical Sciences and Technology, Medanta-Medicity, Safadarjung Hospital, Jaslok Hospital and Research Centre, Apollo Hospital, New Delhi, Artemis Hospital, New Delhi; Vallabhbhai Patel Chest Institute, Delhi; St. Johns Medical College Bangalore; Christian Medical College Vellore.

Private free Standing labs include:

Sleep disorders clinic, Mumbai, Neurology and Sleep Centre,Delhi, Vijaya Health Centre, Epilepsy and Sleep Disorders Centre, Chennai, Nithra, Chennai

Could you please list some research sleep labs in India and their main areas of work?

Amongst several emerging institutes involved in sleep, key established in India include

Basic Science- All India Institute Of Medical Science-AIIMS; Sree Chitra Tirunal Institute For Medical Sciences And Technology-SCIMT; National Institute of Mental Health and Neuro Sciences-NIMHANS; Jawaharlal Nehru University-JNU

Clinical Research- All India Institute Of Medical Science-AIIMS; Himalayan Institute of Medical Sciences-HIMT; Jaslok Hospital and Research Centre-JHRC; International Institute of Sleep Sciences-IISS; Nithra Institute of Sleep Sciences,Chennai; Vijaya Health Centre, Epilepsy and Sleep Disorders Centre,Chennai; sleep Disorders Clinic,Mumbai; Vallabhbhai Patel Chest Institute, Delhi; St. Johns Medical College, Bangalore; Christian Medical College Vellore.

What steps need to be taken to incorporate sleep medicine into medical curriculum in India?

Sleep Medicine needs to be inculcated into the medical curriculum more effectively as well as into para medical field such as nursing schools.

I have noticed an increase in efforts in the mode of projects, presentations and symposiums but clearly the print introduction via textbooks needs to be modified for a greater impact.

What is your opinion regarding role of GP's in practicing sleep medicine in india?

Education and involvement of General Physicians in India is of paramount importance. They are at the grass root level and need to identify, educate and direct patients to appropriate centers actively practicing in Sleep Medicine. The ISDA, ISSR and MCI associations must mandate that physicians ordering and interpreting sleep studies are adequately trained and licensed. The commercialization of sleep medicine to aid and drive therapeutic device sales such as CPAP sales needs to be strictly curtailed

Sleepwatcher

Ms. Kuldeep Patial is Sleep Technologist at Vallabhbhai Patel Chest Institute (VPCI) University of Delhi, Delhi with 13 years of experience in the field of Sleep technology. She has scored more than 1000 Sleep studies. She is MPhil in Biochemistry and is currently pursuing her PhD in Sleep disorder and Biochemistry from VPCI. She is co-author in several National and International Sleep publications**.**

I am thankful to Indian Society for Sleep Research (ISSR) for this opportunity to share my experiences with others. This is the first time that any Sleep-Society in India has given the platform to Sleep-technologist to share their experiences.

A. Why did you choose to become Sleep Technologist?

I always wanted to do some novel work. Being a Sleep technologist not only allows me to do service towards mankind by contributing towards a patients journey towards better health but also to explore the unknown areas about the fascinating state of Sleep in which we spend about one third of our life time.

B. What is the most challenging aspect being a sleep technologist?

As a sleep technologist in India there are many challenges =>

1. There are no defined job profiles for Sleep technologists in India.
2. It is not as rewarding when compared to the amount of time and labor it involves.
3. There is no economic support from the institutions to sleep technologists to update their knowledge by attending conferences and CME's. Also the Sleep technologists are not aware of the resources available in the country to update their knowledge.

4. Sleep technologists in most hospitals help with other activities during the daytime and as a result sometimes they end up working during the day as well as the night that disturbs their sleep patterns. It is very important that hospitals should define their duty hours taking into consideration that Level 1 sleep study is a whole night procedure where the Sleep technologist has to stay awake whole night.
5. The Sleep technologist is a technical job and the regulatory agencies should set minimum standards not only for hiring a Sleep technologist and other staff in the sleep lab but also regarding the economic benefits they receive.
6. There is an urgent need for a regulatory body in India who sets the standards for Sleep lab and sleep technologists.

C. What are the career opportunities for sleep technologists in India?

Career opportunities can improve a lot if there is a regulatory body who sets the standards for opening up of Sleep labs and also the educational standards for being a sleep technologist. Right now there are opportunities in hospitals, private sleep labs, in corporate with device manufacturing companies or as freelancer.

D. What is required to improve the quality of Sleep-technologists in India?

1. More CME's should be conducted in India for Sleep-technologists.
2. There is an urgent need for an accredited sleep course in India. The accredited courses available online are very costly.
3. The institutes should economically support the sleep technologists to attend the fixed no. of conferences and CME's per year.
4. There is an urgent need for a regulatory body that sets the standards for setting up of the sleep labs and educational standards to become a sleep technologist.

Seven Essential Updates in Sleep Medicine

A.Insomnia

1. Sleep disturbance and longitudinal risk of inflammation: Moderating influences of social integration and social isolation in the Coronary Artery Risk Development in Young Adults (CARDIA) study. Cho HJ, Seeman TE, Kiefe CI, Lauderdale DS, Irwin MR. Brain Behav Immun. 2015 Feb 28. EPub Ahead of Print.

This longitudinal study looked at the association of Insomnia and short sleep duration with systemic inflammation and the influence of social isolation on this association. The study was conducted in four US cities in 2692 adults in the age group of 33-45yrs over a period of five years. The study found that Insomnia and short sleep duration were significant predictors of systemic inflammation over a period of five years and social isolation had a strong influence on this association. Authors suggested that clinical interventions targeting Insomnia should be done to decrease risk of inflammation in subjects who feel socially isolated.

B. Sleep Disordered Breathing

2. OSA

Obstructive sleep apnea during REM sleep and hypertension. Results of the Wisconsin Sleep Cohort. Mokhlesi B, Finn LA, Hagen EW etal. Am J Respir Crit Care Med. 2014 Nov 15;190(10):1158-67.

Most OSA patients use CPAP during initial 4-5 hrs in night. REM Sleep is maximum towards early morning. OSA occurring during REM Sleep is cross-sectionally and longitudinally associated with hypertension. NREM AHI was not correlated with occurrence of Hypertension. This finding emphasizes the importance of use of

CPAP during the whole night.

3. PAP Therapy, OSA and HT

Effects of Continuous Positive Airway Pressure Treatment on Clinic and Ambulatory Blood Pressures in Patients With Obstructive Sleep Apnea and Resistant Hypertension: A Randomized Controlled Trial
Muxfeldt ES, Margallo V, Costa LM, Guimarães G, Cavalcante AH, Azevedo JC, de Souza F, Cardoso CR, Salles GF. Hypertension. 2015 Jan 19. [Epub ahead of print]

This study evaluated the effect of CPAP therapy on clinical and ambulatory blood pressure in resistant hypertension and moderate/severe OSA patients. Patients were randomized to CPAP therapy (57) or no therapy (60) for 6 months. The study found that CPAP treatment had no effect on clinic and ambulatory blood pressures in resistant hypertension and moderate/severe OSA patients.

4. Patient Interface

A randomised controlled trial on the effect of mask choice on residual respiratory events with continuous positive airway pressure treatment. Ebben MR, Narizhnaya M, Segal AZ, Barone D, Krieger AC. Sleep Med. 2014 Jun;15(6):619-24.

This study investigated the difference between residual AHI with CPAP treatment using nasal and oro-nasal masks. Twenty one subjects were given nasal and oro-nasal masks alternately for a period of 3 weeks each at same CPAP settings and residual AHI calculated. Residual AHI was higher in all patients using oronasal masks compared to nasal masks. This finding is clinically important in patients who undergo CPAP titration using nasal mask and post titration chose oro-nasal mask. Pressure readjustment may be required when patients switch from nasal to oro-nasal mask post titration.

C. Movement Disorders

5. Restless Leg Syndrome

Comparison of Pregabalin with Pramipexole for Restless Legs Syndrome. Allen PR etal. N Engl J Med 2014; 370:621-631

Over a period of 12 weeks, the improvement in mean scores on the IRLS scale was greater, by 4.5 points, among participants receiving pregabalin than among those receiving placebo (P<0.001). The rate of augmentation over a period of 40 or 52 weeks was significantly lower with pregabalin than with pramipexole at a dose of 0.5 mg (2.1% vs. 7.7%, P=0.001).

Pregabalin provided significantly improved treatment outcomes as compared with placebo, and augmentation rates were significantly lower with pregabalin than with 0.5 mg of pramipexole.

D. Central Disorders of Hypersomnolence

6. Narcolepsy

HLA-DPB1 and HLA Class I Confer Risk of and Protection from Narcolepsy. Ollila HM etal. Am J Hum Genet. 2015 Jan 8;96(1):136-46.

Type 1 narcolepsy, a disorder caused by a lack of hypocretin (orexin), is so strongly associated with human leukocyte antigen (HLA) class II HLA-DQA1(∗)01:02-DQB1(∗)06:02 (DQ0602) that very few non-DQ0602 cases have been reported.

After careful matching of HLA-DR and HLA-DQ in case and control individuals, authors found strong protective effects of HLA-DPA1(∗)01:03-DPB1(∗)04:02 (DP0402; and HLA-DPA1(∗)01:03-DPB1(∗)04:01 and predisposing effects of HLA-DPB1(∗)05:01 in Asians.

E. Sleep and Technology

7. Monitoring sound to quantify snoring and sleep apnea severity using a smartphone: proof of concept. Nakano H; Hirayama K; Sadamitsu Y; Toshimitsu A; Fujita H; Shin S; Tanigawa T. J Clin Sleep Med 2014;10(1):73-78.

In a recent clinical study published in Journal of Clinical Sleep Medicine authors have shown that a smart phone can be used to effectively monitor snoring and OSA in a controlled laboratory setting. They used a smart phone available in Japan (SH-12C, SHARP CORP, Osaka, Japan) to monitor snoring while attached to chest wall and in built mic directed towards the neck. A custom made program on the smart phone acquired ambient sounds.

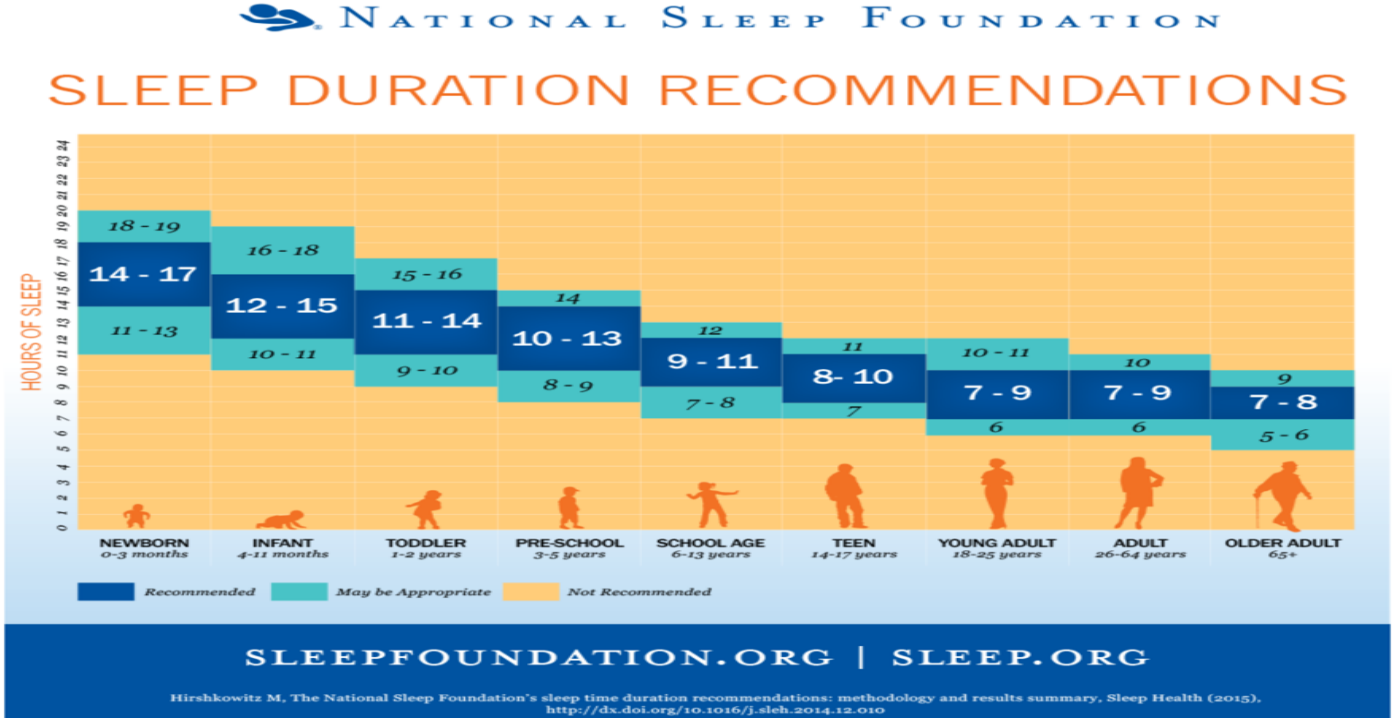
Study was done on 50 subjects who underwent full night sleep study in a Sleep lab. There was a strong correlation between snoring time measured by smart phone and PSG. RDI obtained from smart phone was termed smart-RDI and there was a strong correlation between smart-RDI and AHI obtained from polysomnography.

The authors concluded that smartphone can be used to effectively monitor snoring and OSA in a controlled laboratory environment but this technology remains to be proven in noisy house conditions and further investigations are needed.

These are interesting times where technology has begun to help the Doctors to provide highest level of care in simple and effective ways.

New National Sleep Foundation recommendations for Sleep duration

National Sleep Foundation revised the no. of hours that we need to Sleep at different ages. The panelists included six sleep specialists and representatives from leading organizations including the American Academy of Pediatrics, American Association of Anatomists, American College of Chest Physicians, American Congress of Obstetricians and Gynecologists, American Geriatrics Society, American Neurological Association, American Physiological Society, American Psychiatric Association, American Thoracic Society, Gerontological Society of America, Human Anatomy and Physiology Society, and Society for Research in Human Development, totaling of 18 experts. Researchers also reviewed more than 300 sleep studies to reach consensus.



ISSR Membership

The Indian Society of Sleep Research (ISSR) works to protect sleep health and promote high quality patient care. These goals are dependent on the support of the professionals working in the field. Membership with the ISSR funds the activities executed for the benefit of all who practice sleep medicine or conduct sleep research.

The ISSR works to improve sleep health through advocacy, education, strategic research and practice standards. Issue 1 of the *ISSR Newsletter* describes some of the new initiatives that are helping to achieve this goal.

The Society will have Life members, Regular members and Corresponding members. In addition to membership the members will receive subscription to-

1. Journal of Sleep and Biological Rhythm
2. ISSR News letter

We encourage you to become member of ISSR and members to renew their membership so that we have your support in continuation of the field of Sleep Medicine.

For more details on membership please visit www.issr.in

Professional Sleep Societies and Web links

American Academy of Sleep Medicine (AASM)	www.aasmnet.org
American Association of Sleep Technologist (AAST)	www.aastweb.org
American Board of Sleep Medicine (ABSM)	www.absm.org
World Association of Sleep Medicine (WASM)	www.wasmonline.org
World Sleep Federation (WSF)	www.worldsleepfederation.org
European Sleep Research Society (ESRS)	www.esrs.eu
Australasian Sleep Association	www.sleep.org.au
Asian Sleep Research Society (ASRS)	www.asrsonline.org
Indian Sleep Disorder Association (ISDA)	www.isda.co.in
Indian Society of Sleep Research (ISSR)	www.issr.in
Board of Registered Polysomnography Technologists (BRPT)	www.brpt.org

Letter to the Editor:

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Our readers are invited to write to the editor regarding their views on the published material and also to contribute interesting content or updates in the field.

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