

SYLLABUS
POST – DOCTORAL FELLOWSHIP PROGRAMMES
IN SLEEP MEDICINE

Objectives of fellowship

A. Clinical Science of Sleep Medicine:

- The Sleep Medicine Fellow will develop thorough knowledge and sound judgment in the diagnosis, treatment and prevention of all sleep disorders
- The Sleep Medicine Fellow will become competent with the technical skills necessary for the performance and interpretation of the diagnostic and treatment procedures used in sleep medicine.

B. Research Skills pertaining to Sleep Medicine:

- The Sleep Medicine Fellow will become familiar with the different research designs and methodologies and data collections and analyses.
- The Sleep Medicine Fellow will develop the needed skills to perform good quality clinical and basic science research in Sleep Disorders

C. Sleep Disorders Center (SDC) Management:

- Fellows in training will learn the administrative skills needed to run and manage a sleep disorders center

Duties & Responsibilities of Fellows in Training:

- Interpret polysomnograms (PSG). This program requires a minimum of 100 PSG interpretations for sleep medicine fellowship completion
- Interpret Multiple Sleep Latency testing (MSLT). This program requires a minimum of 15 MSLT interpretations
- Fellows are encouraged to write at least one article that is preferably a result of the fellow's sleep research project or a relevant case report or review article
- Must attend lecture series and complete required readings

Program Structure

The fellowship program will comprise of four broad areas of sleep medicine

- Pulmonary medicine component – to develop good practical knowledge of applied pulmonary physiology, lung mechanics, pulmonary pathology and apply knowledge in the management of common respiratory sleep disorders.
- Neurology Component – Basic principles, neuroanatomy, neurophysiology with respect to sleep wake generators and neurotransmitter functions along with neurology clinics with relevance to sleep disorders.
- ENT & Dental Component: The fellow would undergo focused training relating to ENT and Dental aspects of sleep disorders.
- Psychosocial Sleep Disorders: The fellow would be taught on the physiological bases of sleep and management of sleep problems secondary to Psychological disorders.

Curriculum details

• Orientation

- oSleep focused history and physical examination
- oIntroduction to the sleep laboratory
- oIntroduction to Polysomnogram scoring
- oIntroduction to Polysomnogram interpretation

• Sleep Clinics

- oSleep Cardio-Pulmonary Disorders
- oNeuroscience, Clinical Neurology & PSG Interpretation
- oOtolaryngology, dental appliances, and allergies
- oPsychiatric and Psychosocial sleep problems

Upon successful completion of one year of training the post doctoral Sleep Medicine fellow would be eligible for the written and viva examination conducted by Tamilnadu Dr. MGR Medical University.

Syllabus

1. Neurophysiology of Sleep

- Anatomy of Brain
- Neurophysiology of Sleep
- Sleep generators & control Mechanisms
- Therapeutics
- Sleep in various neurological diseases

2. Cardio Pulmonary physiology pertaining to sleep

- Anatomy of Breathing
- Lung Physiology
- Lung Pathophysiology
- Ventilation
- Acid Base
- Modification of Breathing Mechanisms by mechanical/External Source
- Basic Cardiac Cycle
- Effect of impairment on Breathing
- Sleep in Cardiac diseases

3. Neurotechnology

• Mechanical Electrical Science

- Electrical Interface – Analog / Digital
- Amplifiers
- DC Connections
- Electrodes
- Nasal thermal pressure sensor electrodes
- Electrical artifact elimination

• Basic Electrophysiology

- Basic EEG wave form Recognition
- Basic Respiratory wave form evaluation
- Basic PSG application
- Scoring Techniques
- Scoring guidelines Old & New
- Pitfalls & Problems
- Multiple Sleep Latency Test (MSLT) & Maintenance of Wakefulness Test (MWT)

• Actigraphy

Clinical Sleep Medicine

- Classifications of sleep disorders
- Approach to a patient with sleep disorder
- Sleep disordered breathing
 - oEpidemiology, pathophysiology, clinical presentation, diagnosis and management
 - oConsequences of sleep disordered breathing.
 - oPositive airway pressure therapy (CPAP, BiPAP & Advanced PAP options)
 - oSleep disordered breathing in special situations e.g.
- Pediatric
- Elderly
- Pregnancy
- Disorders of initiation and maintenance of sleep (insomnias)
 - oEpidemiology, pathophysiology, clinical presentation, diagnosis and management
 - oPharmacological treatment of insomnia
 - oNon-pharmacological treatment – Sleep hygiene and cognitive behavior therapy (CBT)
- Narcolepsy and other disorders of excessive daytime somnolence
- Movement disorders during sleep
- Parasomnias
- Circadian Rhythm Disorders
- Sleep in Psychiatric disorders
- Sleep deprivations and its consequences
- Drugs and sleep
- Sleep disorders in children
- Sleep in women
- Sleep disorders in elderly
- Sleep and medical jurisprudence

Lecture Series

1. Neurophysiology of Sleep

Anatomy of Brain

Neurophysiology of Sleep

Sleep generators & control Mechanisms

Therapeutics

Sleep in various neurological diseases

2. Cardio Pulmonary physiology pertaining to sleep

Anatomy of Breathing

Lung Physiology

Lung Pathophysiology

Ventilation

Acid Base

Modification of Breathing Mechanisms by mechanical/External Source

Basic Cardiac Cycle

Effect of impairment on Breathing

Sleep in Cardiac diseases

3. Neurotechnology

Mechanical Electrical Science

Electrical Interface – Analog / Digital

Amplifiers

DC Connections

Electrodes

Nasal thermal pressure sensor electrodes

Electrical artifact elimination

Basic Electrophysiology

Basic EEG wave form Recognition

Basic Respiratory wave form evaluation

Basic PSG application

Scoring Techniques

Scoring guidelines Old & New

Pitfalls & Problems

Multiple Sleep latency Test (MSIT) & Maintenance of Wakefulness Test (MWT)

Actigraphy

4. Clinical Sleep Medicine

Clinical Sleep Medicine

· Classifications of sleep disorders

- Approach to a patient with sleep disorder

- Sleep disordered breathing

- oEpidemiology, pathophysiology, clinical presentation, diagnosis and management

- oConsequences of sleep disordered breathing

- oPositive airway pressure therapy (CPAP, BiPAP & Advanced PAP options)

- oSleep disordered breathing in special situations e.g

- Pediatric

- Elderly

- Pregnancy

- Disorders of initiation and maintenance of sleep (insomnias)

- oEpidemiology, pathophysiology, clinical presentation, diagnosis and management

- oPharmacological treatment of insomnia

- oNon-pharmacological treatment – Sleep hygiene and cognitive behavior therapy (CBT)

- Narcolepsy and other disorders of excessive daytime somnolence

- Movement disorders during sleep

- Parasomnias

- Circadian Rhythm Disorders

- Sleep in Psychiatric disorders

- Sleep deprivations and its consequences

- Drugs and sleep

Sleep disorders in children

Sleep in women

Sleep disorders in elderly

Sleep and medical jurisprudence

Recommended reading and References:

- 1.AASM Scoring guidelines 2007.
- 2.Principles of sleep medicine. 3rd Edition. Kryger, Roth and Dement.
- 3.American Academy of Sleep Medicine, International classification of sleep disorders: Diagnostic and coding manual 2nd edition Ed: Westchester. IL: American Academy of Sleep Medicine, 2005.
- 4.American Board of Sleep Medicine. (Updated 2006; Cited O May 2008). Available from <http://www.absm.org/>
- 5.American Board of Internal Medicine. (Updated 2008; cited May 2008). Available from <http://www.abim.org/certification/policies/imss/sleep.aspx>
- 6.Common Program requirements: Sleep medicine. American Academy of Sleep Medicine (ACGME 2004); <http://www.aasmnet.org>.
- 7.American Academy of Sleep Medicine Accreditation Committee, Standards for accreditation of a sleep disorders center. March 2002; revised edition. Rochester, MN: American Academy of Sleep Medicine, 2002; <http://www.aasmnet.org>.