

Update in EEG, EMG, and Clinical Neurophysiology

Scottsdale Marriott at McDowell Mountains
Scottsdale, Arizona

Sunday – Saturday • January 24-30, 2010



\$75 DISCOUNT for online registration!
Go to www.mayo.edu/cme (offer expires Dec. 29, 2009)

Photo by Mayo Clinic

This course is designed for Neurologists and Physiatrists, as a review of techniques and topics pertaining to Clinical Neurophysiology which include:

- EMG, Nerve Conduction Studies
- EEG
- Evoked Potentials
- Ultrasound in EMG
- Movement Disorder Studies
- Intraoperative Monitoring
- Case-based Clinical Correlations

Photo by Jupiter Images Ltd.

COURSE HIGHLIGHTS

This course is designed for neurologists and physiatrists, as a comprehensive review of techniques and topics pertaining to Clinical Neurophysiology including: basic physiology; pathophysiology; EEG; evoked potentials; EMG; movement disorders; and intraoperative monitoring. There is a focus on clinical correlation of various neurophysiologic tests used for the evaluation of patients with epilepsy, sleep disorders, movement disorders, peripheral nerve and neuromuscular disorders. The program format includes lectures, practical demonstrations, quizzes and panel discussions, videos and workshops for optimal learning. The workshops will afford participants the opportunity to observe and perform hands-on EMG techniques on normal subjects. Presentations will be given by Mayo Medical School physicians from the Department of Neurology in Jacksonville, FL, Rochester, MN and Scottsdale, AZ.

COURSE LEARNING OBJECTIVES

Upon completion of this course, participants should be able to:

- Interpret frequently used clinical neurophysiology studies
- Determine the limits of the clinical neurophysiology tests in the evaluation of patients with disorders of the nervous system
- Integrate the various clinical neurophysiology studies in the evaluation of patients with disorders of the Central nervous system
- Identify various types of EEG patterns and their clinical correlates
- Recognize indications for various types of monitoring procedures for patients with seizures.
- Recognize latest developments in the evaluation of patient in brain death/cardiac death for organ donation

DISCLAIMER

Attendance at this Mayo course does not indicate nor guarantee competence or proficiency in the performance of any procedures which may be discussed or taught in this course.

CREDIT

College of Medicine, Mayo Clinic is accredited by the Accreditation Council for Continuing Medical Education to provide continuing medical education for physicians.

College of Medicine, Mayo Clinic designates this educational activity for a maximum of 64.50 *AMA PRA Category 1 Credits*[™]. Physicians should only claim credit commensurate with the extent of their participation in the activity.

EDUCATIONAL GRANTS

As of this printing, a complete listing of commercial supporters was not available. Appropriate acknowledgment will be given to all supporters at the meeting. Exhibits will be available for viewing at all scheduled breaks.

MEETING LOCATION & ACCOMMODATIONS

Scottsdale Marriott at McDowell Mountains

16770 North Perimeter Drive • Scottsdale, Arizona 85260

Telephone: (480) 502-3836 or (800) 288-6127 • Website: www.marriottscottsdale.com

Hotel rooms in the Phoenix/Scottsdale area are limited. You are urged to make reservations early. A limited block of guest rooms at a special rate of \$179 single/double/triple or quad occupancy per night has been reserved at the Scottsdale Marriott at McDowell Mountains. Group rates will be honored three (3) days prior and three (3) days following the course dates, based upon space availability. To make your reservation call (480) 502-3836 or (800) 288-6127. Be sure to state that you are attending the *Mayo Clinic Update in EEG, EMG, and Clinical Neurophysiology* course.

In order to receive the special rate, reservations must be made before the room block is filled or the expiration date of December 28, 2009. Reservations will be accepted following this date based upon resort room availability, at the contracted meeting rate. Hotel Web site: www.marriottscottsdale.com Attendees are responsible for their own reservations. The standard hotel reservation cancellation policy will apply to individual reservations unless otherwise specified.

EMG DEMONSTRATION I & II WORKSHOP

Look for e-mail (after January 1) to make your 1st, 2nd, and 3rd choice for the demonstration workshops scheduled for Friday, January 29 and Saturday, January 30. (Participation levels for each demonstration time slot is limited, based on available space).

TRANSPORTATION

Ground Transportation: Hertz is offering a reduced daily rate for participants attending the course. Call (800) 654-2240 and refer to CV Number 03NR0005 when making reservations.

Supershuttle vans offer airport transportation to and from the hotel. To make reservations, call (800) 258-3826 or (602) 244-9000.

PROGRAM

Sunday January 24, 2010 EEG

Moderator: Katherine H. Noe, MD

7:00 AM Registration and Continental Breakfast

Routine Scalp EEG

7:30 Normal EEG in Infants and Children Barbara F. Westmoreland, MD
 8:15 EEG in Normal Adult and Benign Variants Joseph I. Sirven, MD
 8:45 Abnormal EEG in Infants Barbara F. Westmoreland, MD
 9:15 Refreshment Break
 9:30 EEG Quiz . . . Barbara F. Westmoreland, MD and Matthew T. Hoerth, MD
 10:30 Scalp EEG in Partial and Generalized Seizures Jerry J. Shih, MD
 11:30 Complimentary Lunch (*Registrants only*)

Video EEG

12:30 PM Video EEG for Spells and Seizure Localization in Children Elaine C. Wirrell, MD
 1:30 EEG in Status Epilepticus Katherine H. Noe, MD, PhD
 2:30 Quiz (Name that Artifact) Katherine H. Noe, MD, PhD and Matthew T. Hoerth, MD
 3:30 Adjourn

Monday January 25, 2010 EEG

Moderator: Joseph I. Sirven, MD

7:30 AM Continental Breakfast

Video EEG

8:00 Video EEG for Spells and Seizure Localization in Adults Gregory D. Cascino, MD
 9:00 EEG in the ICU (Encephalopathy, Coma and Brain Death) Elson So, MD
 10:00 Refreshment Break
 10:15 EEG Monitoring: Neurological and Neurosurgical Perspectives (Intracranial, Intra-operative) Jerry J. Shih, MD and Richard S. Zimmerman, MD
 11:15 Quiz: Intraoperative/ Intracranial Jerry J. Shih, MD and Richard S. Zimmerman, MD
 Noon Complimentary Lunch (*Registrants only*)

Afternoon Workshops

1:00 PM Tips in Prolong EEG Recordings Elson So, MD

3:30	Refreshment Break
3:45	Video EEG Workshop: Name that Spell Joseph F. Drazkowski, MD
4:15	EEG Written Quiz
4:45	Adjourn

Tuesday January 26, 2010 EEG

Moderator: John N. Caviness, MD

7:30 AM	Continental Breakfast
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Sleep, Movement and Autonomic Neurophysiology

8:00	Evaluation of Sleep Disorders Michael H. Silber, MBChB
10:00	Refreshment Break
10:15	Autonomic Studies Phillip A. Low, MD
12:15 PM	Complimentary Lunch (<i>Registrants Only</i>)
1:15	Physiology of the Cerebral Cortex Gregory D. Cascino, MD
2:15	Deep Brain Stimulation for Movement Disorders Mark K. Lyons, MD and Virgilio H. Evidente, MD
3:15	Refreshment Break
3:30	Neurologic Indications for Botulinum Toxins: Video Overview Charles H. Adler, MD, PhD
4:30	Clinical Neurophysiology for Involuntary Movement John N. Caviness, MD
5:45	Adjourn
6:00	Reception

Wednesday January 27, 2010 EEG & EMG

7:00 AM	Registration and Continental Breakfast
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CNP Fundamentals

7:30	Electricity, Filters and Circuit Analysis Terrence D. Lagerlund, MD, PhD
8:30	Electrical Safety Terrence D. Lagerlund, MD, PhD
9:30	Refreshment Break
9:45	Electrical Stimulation and Epilepsy Joseph F. Drazkowski, MD
10:30	Physiology of Nerve and Muscle Kevin B. Boylan, MD
11:15	Complimentary Lunch (<i>Registrants only</i>)
12:15 PM	Visual Evoked Potentials Jonathan L. Carter, MD
12:45	Brainstem Auditory Evoked Potentials Jonathan L. Carter, MD
1:15	Somatosensory Evoked Potentials James C. Watson, MD
2:15	Refreshment Break
2:30	Intraoperative Monitoring: Cranial/Spinal/Peripheral Brian A. Crum, MD
3:45	Long Latency Evoked Potentials – LEP and CHEPS Benn E. Smith, MD
4:15	Epidermal Skin Biopsy in Small Fiber Neuropathy Charlene R. Hoffman-Snyder, CNP, NP, RN
4:45	Ultrasonography as a Complement to Electrodiagnosis Andrea J. Boon, MBChB and Matthew J. Pingree, MD
5:15	Adjourn

Thursday January 28, 2010 EMG

Clinical Correlations

8:00 AM	Electrophysiologic Correlates of Nerve Pathology P. James B. Dyck, MD
8:45	Electrophysiologic Correlates of Muscle Pathology Brian A. Crum, MD
9:30	Refreshment Break
9:45	Electrophysiologic Correlates of Neuromuscular Junction Pathology Brent P. Goodman, MD

10:30 **Motor Unit Number Estimates** Jasper R. Daube, MD
11:30 **Complimentary Lunch** (*Registrants Only*)

Nerve Conduction Studies

12:30 PM **Pitfalls of Nerve Conduction Studies (NCS)** Eric J. Sorenson, MD
1:00 **Special Sensory NCS** Mark A. Ross, MD
1:30 **Uncommon Motor NCS Including Proximal and Late Responses.** Mark A. Ross, MD
2:15 **NCS in the Pediatric Population** Nancy L. Kuntz, MD
3:00 **Refreshment Break**
3:15 **Repetitive Simulation: Physiology and Techniques** Brent P. Goodman, MD
4:00 **Electrophysiologic Evaluation of Cranial Nerve Disorders.** Jonathan H. McKinnon, MD
5:00 **Complimentary Dinner** (*Registrants Only*)
6:00 **Case Presentations** Drs. E. Peter Bosch, Mark A. Ross, Matthew T. Hoerth and Jonathan H. McKinnon
8:00 **Adjourn**

Friday January 29, 2010 EMG

7:15 AM **Registration and Continental Breakfast**

Electromyography

7:45 **Quiz and Discussion**
8:15 **Needle Examination Technique** Devon I. Rubin, MD
8:45 **EMG Signal Analysis: Introduction with Video Examples I.** Jasper R. Daube, MD and Devon I. Rubin, MD
9:45 **Refreshment Break**
10:00 **EMG Signal Analysis: Introduction with Video Examples II.** Jasper R. Daube, MD and Devon I. Rubin, MD
11:00 **Needle EMG of Unusual Muscles** Eric J. Sorenson, MD
12:00 PM **Complimentary Lunch** (*Registrants only*)
1:00 **Single Fiber EMG** Brian A. Crum, MD
2:00 **Crafting the EMG Report** Benn E. Smith, MD
2:45 **Refreshment Break**

Demonstrations I

3:00 **Group Demonstrations: Nerve Conduction Studies**
• Common and Uncommon Upper Limb Motor and Sensory NCS
• Common and Uncommon Lower Limb Motor and Sensory NCS
• Cranial Nerve Conduction Studies and Repetitive Stimulation
• Ultrasound in NCS
4:00 **Group Demonstrations: Nerve Conduction Studies**
• Common and Uncommon Upper Limb Motor and Sensory NCS
• Common and Uncommon Lower Limb Motor and Sensory NCS
• Motor Unit Number Estimates
• Ultrasound in NCS
5:00 **Group Demonstrations: Nerve Conduction Studies**
• Common and Uncommon Upper Limb Motor and Sensory NCS
• Common and Uncommon Lower Limb Motor and Sensory NCS
• Somatosensory Evoked Potentials
• Ultrasound in NCS
6:00 **Complimentary Dinner** (*Registrants Only*)
7:00 **EMG Signal Analysis: Demonstration** Jasper R. Daube, MD and Devon I. Rubin, MD
11:00 **Adjourn**

7:00 AM Continental Breakfast

Approach to Selected Clinical Disorders

7:15 Quiz

7:45 Carpal Tunnel Syndrome James C. Watson, MD

8:30 Brachial Plexopathy Matthew T. Hoerth, MD

9:00 Peripheral Neuropathy Benn E. Smith, MD

9:30 Refreshment Break

9:45 Ulnar Neuropathies Mark A. Ross, MD

10:15 Lumbosacral Plexopathy P. James B. Dyck, MD

10:45 Motor Neuron Disease Eric J. Sorenson, MD

11:30 Neuromuscular Junction Disease Devon I. Rubin, MD

12:30 PM Complimentary Luncheon (*Registrants Only*)

1:30 EMG Approaches to Pediatric Disorders Nancy L. Kuntz, MD

2:15 Localization with EMG Brent P. Goodman, MD

3:00 Refreshment Break

Demonstrations II3:15 **Group Demonstrations: Needle Electrode Examinations**

- Technique of the Needle Examination
- Lower Limb Common and Uncommon Muscles
- Quantitative Electromyography
- Ultrasound in EMG

4:15 **Group Demonstrations: Needle Electrode Examinations**

- Upper Limb Common and Uncommon Muscles
- Lower Limb Common and Uncommon Muscles
- Single Fiber Electromyography
- Ultrasound in EMG

5:15 **Group Demonstrations: Needle Electrode Examinations**

- Upper Limb Common and Uncommon Muscles
- Lower Limb Common and Uncommon Muscles
- Technique of the Needle Examination
- Ultrasound in EMG

7:00 **Course Adjourns****FACULTY**

Charles H. Adler, MD, PhD

Andrea J. Boon, MBChB

E. Peter Bosch, MD

Kevin B. Boylan, MD

Jonathan L. Carter, MD

Gregory D. Cascino, MD

John N. Caviness, MD

Brian A. Crum, MD

Jasper R. Daube, MD

Joseph F. Drazkowski, MD*

P. James B. Dyck, MD

Virgilio H. Evidente, MD

Brent P. Goodman, MD

Matthew T. Hoerth, MD

Charlene R. Hoffman-Snyder, CNP, NP, RN

Nancy J. Kuntz, MD

Terrence D. Lagerlund, MD, PhD

Phillip A. Low, MD

Mark K. Lyons, MD

Jonathan H. McKinnon, MD

Katherine H. Noe, MD, PhD

Matthew J. Pingree, MD

Mark A. Ross, MD

Devon I. Rubin, MD

Jerry J. Shih, MD

Michael H. Silber, MBChB

Joseph I. Sirven, MD

Benn E. Smith, MD*

Elson So, MD

Eric J. Sorenson, MD

James C. Watson, MD

Barbara F. Westmoreland, MD*

Elaine C. Wirrell, MD

Richard S. Zimmerman, MD

* Course Co-Directors

FACULTY DISCLOSURE – As a provider accredited by ACCME, College of Medicine, Mayo Clinic (Mayo School of CPD) must ensure balance, independence, objectivity and scientific rigor in its educational activities. Course Director(s), Planning Committee Members, Faculty, and all others who are in a position to control the content of this educational activity are required to disclose all relevant financial relationships with any commercial interest related to the subject matter of the educational activity. Safeguards against commercial bias have been put in place. Faculty will also disclose any off-label and/or investigational use of pharmaceuticals or instruments discussed in their presentation. Disclosure of this information will be published in course materials so those participants in the activity may formulate their own judgments regarding the presentation.

REGISTRATION FORM

2010S792
AMA

Update in EEG, EMG, and Clinical Neurophysiology

January 24-30, 2010

Registration at the standard tuition may be completed using this form and faxing it to **(480) 301-8323**. Or you can mail it to: *Mayo Clinic, Mayo School of CPD, 13400 East Shea Boulevard, Scottsdale, Arizona 85259.*

An e-mail confirmation will be sent upon receipt of payment and completed registration. If you do not receive your confirmation, or if you have any questions, please e-mail us at mca.cme@mayo.edu or call **(480) 301-4580**.

No refund will be granted unless a written notice of cancellation is received. If registration must be canceled, tuition less a \$75 administrative fee, will be refunded when notification is received on or before January 11, 2010. No refunds will be made after this date.

Although it is not Mayo Clinic's policy to limit the number of registrants for a course, conference room facilities may necessitate closure of enrollment. Early registration is strongly recommended. Walk-in registrations cannot be guaranteed.

Mayo Clinic will not be responsible for expenses incurred by individuals who are not confirmed for courses with a closed registration status. Costs incurred by the registrant such as airline/ hotel fees or penalties are the responsibility of the registrant.

ON-LINE SYLLABUS: Your registration fee includes: an electronic version of the syllabus, plus access to an on-line detailed syllabus, available one week prior to the course and you can view, save, print the syllabus before or up to 60 days after the course. If you want to order a paper copy (additional fee) check the box at the bottom of this registration form.

Your type of practice: Solo Group University Resident/Fellow Retired Other: _____

Years in practice: 0-4 5-10 11-15 16-25 > 25

Course Registrant List (Check only if you want your name removed)

I do not want information (ie, name, degree, city, and state) to appear on the course registrants' list.

Registration Please print. Use duplicate form for multiple registrations.

Name of Registrant – first, middle, and last name		Institution	
Degree/Certification		Medical Specialty	
Preferred mailing address is: (select one) <input type="checkbox"/> Work/Business <input type="checkbox"/> Home			
Address			
City		State/Province	ZIP/Postal Code
Country	Email		
Daytime Telephone		Fax	

\$75 DISCOUNT from standard tuition for online registration!

Go to www.mayo.edu/cme (offer expires December 29, 2009)

Note: When registering on-line, please be sure to "check-out" after your profile is completed/updated.

Standard Tuition

- | | | |
|---|---------|----------|
| <input type="checkbox"/> Option 1: EEG + EMG (Sunday – Saturday) | \$1,300 | \$ _____ |
| <input type="checkbox"/> Option 2: EEG Only (Sunday – Wednesday) | \$875 | \$ _____ |
| <input type="checkbox"/> Option 3: EMG Only (Wednesday – Saturday) | \$975 | \$ _____ |
| <input type="checkbox"/> Yes, I would like to order a paper copy of the course syllabus | | |
| EEG Syllabus | \$30 | \$ _____ |
| EMG Syllabus | \$45 | \$ _____ |

Note: Due to printing deadlines, this option will not be available January 11, 2010

Optional Course Event: **Evening Reception** (2 Total complimentary)

Total # of Adults: _____	_____ (additional \$45)	\$ _____
Total # of Child 5-12 yrs: _____	_____ (additional \$15)	\$ _____
Total # of Child 1-4 yrs: _____	_____ (N/C)	

Payment Information (US Funds Only)

<input type="checkbox"/> Check is enclosed in the amount shown at right – make checks payable to Mayo Clinic CPD		Payment Total
Credit Card (select one)	Account Number	Exp. Date (mm/yy)
<input type="checkbox"/> Discover <input type="checkbox"/> MC <input type="checkbox"/> Visa		
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Mark Your Calendar for these Upcoming CPD Opportunities:

- Hospital Medicine Update – November 4-7, 2009
- Robotic Surgery in Gynecology Series – November 11, 2009
- Interactive Surgery Symposium – February 7-12, 2010
- Symposium on Anesthesia and Perioperative Medicine – February 17-20, 2010
- Gastroenterology & Hepatology 2010 – February 22-26, 2010
- Women's Health Update – March 3-6, 2010
- Clinical Reviews: A Family Practice and Internal Medicine Update – March 24-27, 2010
- Multidisciplinary Update in Pulmonary & Critical Care Medicine – April 7-11, 2010
- Clinical Neuro, Neuro/Surgery and Psychiatry – July 7-10, 2010

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