



19th International Cleveland Clinic Epilepsy Symposia

Epileptology:
Comprehensive Review and
Practical Exercises

October 1-3, 2010

Epilepsy Surgery:
Invasive Evaluation

October 3-6, 2010

Symposia Directors

Jocelyn Bautista, MD

Jorge Gonzalez-Martinez, MD, PhD

Ajay Gupta, MD

Dileep Nair, MD

Imad Najm, MD

Overview

Description

The 19th International Cleveland Clinic Epilepsy Symposia will focus on the invasive evaluation of focal epilepsies and a comprehensive update on epilepsy diagnosis and management options. The indications for various invasive methods (subdural grids versus depth electrodes versus intraoperative electrocorticography) will be discussed in light of acquired experiences and data/outcome analyses from leading international epilepsy centers. In addition, there will be in-depth discussions of the major concepts that define epileptogenicity and epileptogenesis. The significance of interictal and ictal epileptic patterns will be highlighted. The role of various EEG, imaging and other non-invasive modalities will also be discussed. Pertinent nursing, socio-economic and psychological/psychiatric issues in patients undergoing invasive evaluation will be outlined.

Target Audience

The symposia are designed for adult and pediatric neurologists and epileptologists, neurosurgeons with an interest in epilepsy surgery in adults and children, psychiatrists, clinical neuropsychologists, social workers and other expert caretakers of patients across all age groups with epilepsy.

Course Objectives

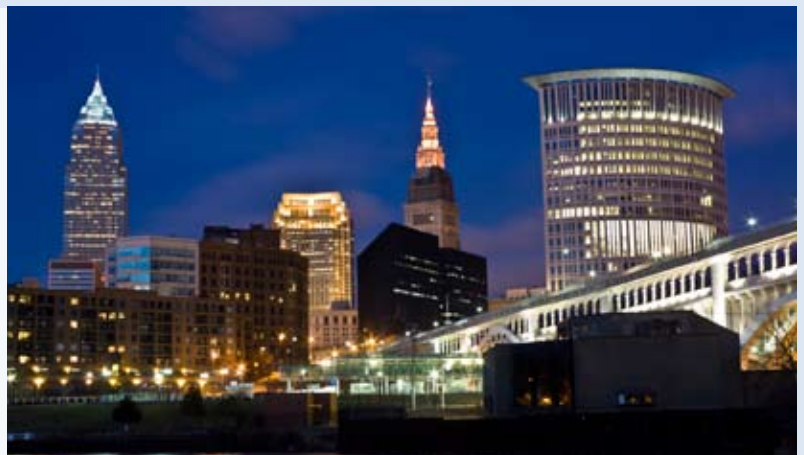
1. Explain the role of EEG in the diagnosis and treatment of epilepsy
2. Discuss the medical management of patients with epilepsy
3. Review the surgical management of patients with epilepsy
4. Recognize the molecular and genetic mechanisms of epilepsy
5. Recognize and manage the psychiatric comorbidities in patients with epilepsy
6. Discuss the fundamental concepts of epileptogenicity and epileptogenesis
7. Discuss the role of non-invasive methods in the design of a surgical strategy for invasive electrode implantation and monitoring
8. Review the indications, techniques and complications of different methods of invasive monitoring in patients with medically intractable focal epilepsies
9. Discuss lessons learned from surgical successes and failures in invasive monitoring

Call for Abstracts

Residents and fellows are invited to submit abstracts describing epilepsy-related research in the following categories: clinical epileptology; epilepsy surgery; epilepsy imaging; neuropsychiatric aspects of epilepsy; and neuropharmacology. Five abstracts will be awarded platform presentations and the registration fees will be waived for the presenting authors. Abstracts may be submitted to:

www.cfcme.org/EpilSurg10abstracts

Deadline to submit is July 30, 2010.



In Collaboration With:



Faculty

Directors

Jocelyn Bautista, MD
Jorge Gonzalez-Martinez, MD, PhD
Ajay Gupta, MD
Dileep Nair, MD
Imad Najm, MD

Cleveland Clinic Faculty

Andreas Alexopoulos, MD
William Bingaman, MD
Juan Bulacio, MD
Richard Burgess, MD, PhD
Diane Cleary, RN
Tatiana Falcone, MD
Nancy Foldvary-Schaefer, DO
Stephen Hantus, MD
Lara Jehi, MD
Stephen Jones, MD, PhD
Prakash Kotagal, MD
Deepak Lachhwani, MD
Chetan Malpe, MD
John Mosher, PhD
Silvia Neme-Mercante, MD
Paul Ruggieri, MD
Norman So, MD
Andrey Stojic, MD, PhD
George Tesar, MD
Elaine Wyllie, MD
Zhong Ying, MD, PhD

Invited Guest Faculty

Mario Alonso, MD
Mexico City, Mexico

Frederick Andermann, OC, MD, FRCP
Montreal, Canada

Rachel Bialik, RN
Mexico City, Mexico

Andrew Bleasel, MBBS
Sydney, Australia

Carlos Carlotti, MD
Campinas, Brazil

Mar Carreño, MD
Barceloña, Spain

Greg Cascino, MD
Rochester, MN

Fernando Cendes, MD, PhD
Campinas, Brazil

Stephan Chabardes, MD
Grenoble, France

Patrick Chauvel, MD
Marseilles, France

Nathan Crone, MD
Baltimore, MD

Francois Dubeau, MD
Montreal, Canada

Michael Duchowny, MD
Miami, FL

Jean Gotman, PhD
Montreal, Canada

Gerald A. Grant, MD
Durham, NC

Mark Holmes, MD
Seattle, WA

Hans Holthausen, MD
Vogtareuth, Germany

Akio Ikeda, MD
Kyoto, Japan

Csaba Juhasz, MD
Detroit, MI

Philippe Kahane, MD, PhD
Grenoble, France

Giorgio LoRusso, MD
Milan, Italy

Helio Machado, MD
Ribeirao Preto, Brazil

Riki Matsumoto, MD, PhD
Kyoto, Japan

Lorella Minotti, MD
Grenoble, France

Armin Mohamed, MD
Sydney, Australia

Eliseu Paglioli, MD
Porto Alegre, Brazil

Andre Palmi, MD, PhD
Porto Alegre, Brazil

Deepak Pandya, MD
Boston, MA

Aleksandar Ristic, MD
Belgrade, Serbia

Americo Sakamoto, MD
Ribeirao Preto, Brazil

Paul Shkurovich, MD
Mexico City, Mexico

Dennis Spencer, MD
New Haven, CT

Laura Tassi, MD
Milan, Italy

Ingrid Tuxhorn, MD
Cleveland, OH

Walter van Emde Boas, MD
Amsterdam, Netherlands

Howard Weiner, MD
New York, NY

Hung Tzu Wen, MD
São Paulo, Brazil

Peter Widdess-Walsh, MD
West Orange, NJ

Chong Wong, MD
Sydney, Australia

Greg Worrell, MD, PhD
Rochester, MN

Epileptology: Comprehensive Review and Practical Exercises

October 1-3, 2010

Friday, October 1

7:45-8:00 Welcome, Course Introduction

8:00-8:45 Lecture: Mechanisms of Epilepsy

8:45-9:30 Lecture: Genetics of Epilepsy

9:30-10:15 Lecture: EEG Diagnosis of Epilepsy

10:15-10:30 Break

10:30-11:15 Lecture: Pediatric Epilepsy Syndromes

11:15-12:00 Lecture: Adult Epilepsy Syndromes

12:00-13:30 Lunch

13:30-15:00 Parallel Workshops:

1. Pediatric EEG

2. Adult EEG

15:00-15:30 Break

15:30-17:00 Parallel Workshops:

1. Pediatric Seizure Semiology

2. Adult Seizure Semiology

Saturday, October 2

8:00-9:00 Lecture: Medical Management of Adult Epilepsy

9:00-10:00 Lecture: Medical Management of Pediatric Epilepsy

10:00-10:15 Break

10:15-11:00 Lecture: Selection of Adult Epilepsy Surgery Candidates

11:00-11:45 Lecture: Selection of Pediatric Epilepsy Surgery Candidates

12:00-13:30 Lunch

13:30-14:00 Lecture: Surgical Management of Epilepsy

14:00-14:30 Lecture: Invasive Monitoring – Indications and Techniques

14:30-15:00 Break

15:00-16:30 Parallel Workshops:

1. Pediatric Epilepsy Surgery Case Discussions

2. Adult Epilepsy Surgery Case Discussions

Sunday, October 3

8:00-8:45 Lecture: Neuroimaging in Epilepsy

8:45-9:30 Lecture: Epilepsy in Women

9:30-9:45 Break

9:45-10:30 Lecture: Psychiatric Co-morbidities Associated with Epilepsy

10:30-11:15 Lecture: Status Epilepticus and SUDEP

11:30-13:00 Lunch

13:00-14:30 Parallel Workshops:

1. Medical Management of Adult Epilepsy

2. Medical Management of Pediatric Epilepsy

14:30-15:00 Break

15:00-16:30 Parallel Workshops:

1. Management of Psychiatric Co-morbidities

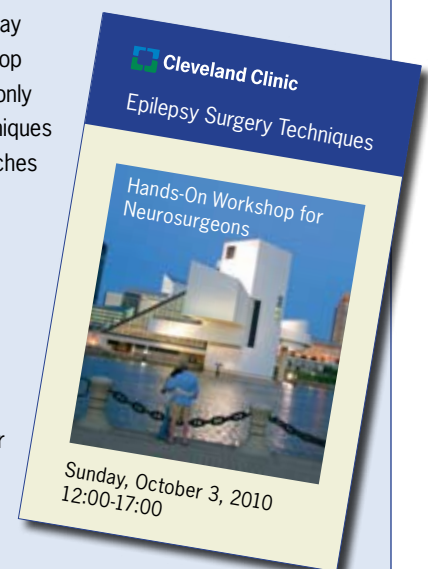
2. Management of Epilepsy in Women

Sunday, October 3, 2010

12:00-17:00 Hands-On Surgical Workshop for Neurosurgeons

Workshop Organizers – William Bingaman, MD and Jorge Gonzalez-Martinez, MD, PhD

This highly successful half-day hands-on dissection workshop demonstrates some commonly used epilepsy surgery techniques that include various approaches to temporal lobe resection and hemispherectomy/disconnection methods. Cleveland Clinic Epilepsy Surgery faculty and world-renowned neurosurgeons in the field of epilepsy surgery will discuss their choices for surgical techniques, and demonstrate their surgical approaches in a highly interactive and hands-on workshop.



Parallel Workshops

Lecture

Surgical Sessions

Epilepsy Surgery: Invasive Evaluation

October 3-6, 2010

Monday, October 4

7:45-8:00 Welcome and Introductory Remarks

Session I Clinical Successes: What Are We Doing Right (Patterns/Location/Pathology)?

- 8:00-8:10 Introduction – Dileep Nair (Moderator)
- 8:10-8:35 Stereo-Electroencephalography (SEEG)
- 8:35-9:00 Subdural Grid Electrodes (SDG)
- 9:00-9:25 Intraoperative Electrocorticography (ECoG)

Session II Clinical Failures: What Are We Missing (Patterns/Location/Pathology)?

- 9:25-9:35 Introduction – Jorge Gonzalez-Martinez (Moderator)
- 9:35-10:00 Stereo-Electroencephalography (SEEG)
- 10:00-10:25 Subdural Grid Electrodes (SDG)
- 10:25-10:50 Intraoperative-Electrocorticography (ECoG)

11:00-11:50 The Third Dudley S. Dinner Distinguished Epileptologist's Lecture

Dennis Spencer, MD
Invasive Monitoring in Epilepsy: Past, Present and Future

11:50-13:00 Lunch

Session III Fundamental Concepts: Applications/Limitations

- 13:00-13:10 Introduction – Americo Sakamoto (Moderator)
- 13:10-13:35 Dynamic Aspects of the "Epileptic Zones": Current vs Dormant Epileptogenicity
- 13:35-14:00 Penfield/Jasper Concept
- 14:00-14:25 Talairach/Bancaud Concept
- 14:25-14:50 Neuromodulation of the Epileptic Brain

14:50-15:20 Coffee Break

Session IV Roles of Various Techniques in the Indication and Choice of the Invasive Methods

- 15:20-15:30 Introduction – Fernando Cendes (Moderator)
- 15:30-15:50 Indications for Invasive Monitoring: Candidates and Goals
- 15:50-16:10 Scalp EEG
- 16:10-16:30 Seizure Semiology
- 16:30-16:50 Magnetic Resonance Imaging
- 16:50-17:10 PET Metabolic Imaging
- 17:10-17:30 Ictal SPECT
- 17:30-17:45 Magnetoencephalography (MEG)

17:45 Adjourn

Tuesday, October 5

Parallel Session I

Electrical Markers of Dormant Epileptogenicity: The Issue of Late Postsurgical Recurrence

- 8:00-8:10 Introduction – Andre Palmmini (Moderator)
- 8:10-8:35 SEEG Markers
- 8:35-9:00 Subdural Markers
- 9:00-9:25 Intraoperative ECoG Markers
- 9:25-9:50 Discussion

Parallel Session II

Invasive Indications in Temporal Lobe Epilepsies (Lesional/Non-lesional)

- 8:00-8:10 Introduction – Norman So (Moderator)
- 8:10-8:35 Lesional TLE: Pros and Con
- 8:35-9:00 Non-lesional TLE
- 9:00-9:25 Temporal Plus
- 9:25-9:50 Pseudo Temporal vs Pseudo Extratemporal

Parallel Session III

Measures of Cortical Connectivity

- 8:00-8:10 Introduction – Paul Ruggieri (Moderator)
- 8:10-8:35 Anatomic
- 8:35-9:00 MRI
- 9:00-9:25 MEG
- 9:25-9:50 SEEG/Subdural

9:50-10:05 Coffee Break

Parallel Session IV

Electrophysiologic Surrogate Markers of Epileptogenicity

- 10:05-10:15 Introduction – Richard Burgess (Moderator)
- 10:15-10:30 Interictal Patterns: Intraoperative ECoG
- 10:30-10:45 Interictal/Ictal Patterns: Subdural Grids
- 10:45-11:00 Interictal/Ictal Patterns: SEEG
- 11:00-11:15 Fast Oscillations
- 11:15-11:30 DC Shift
- 11:30-11:45 Direct Stimulation
- 11:45-12:00 Evoked Cortical Responses
- 12:00-12:15 Microelectrode Recordings

Lecture

Sessions

Parallel Sessions

Surgical Sessions

Epilepsy Surgery: Invasive Evaluation

October 3-6, 2010

Tuesday, October 5

Parallel Session V Invasive Evaluation of Extratemporal Lobe Epilepsies (Lesional)

- 10:05-10:15 Introduction – Prakash Kotagal (Moderator)
- 10:15-10:40 Frontal Lobe Epilepsy
- 10:40-11:05 Central Lobe Epilepsy
- 11:05-11:30 Parieto-occipital Lobe Epilepsy
- 11:30-11:55 Mesial/Inter-hemispheric Epilepsy
- 11:55-12:15 Periventricular Nodular Heterotopia

Parallel Session VI Psychiatric/Nursing/Socioeconomic Issues Associated with an Invasive Evaluation

- George Tesar (Moderator)
- 10:05-10:15 Social Impact of Epilepsy on Society
 - 10:15-10:40 Invasive Evaluation in Patients with Psychiatric Co-Morbidities
 - 10:40-11:05 Invasive Evaluation in Children (Special Considerations)
 - 11:05-11:30 Socioeconomics of Invasive Evaluation
 - 11:30-11:55 Nursing Issues Related to Invasive Evaluation
 - 11:55-12:15 Discussion

12:15-13:00 Lunch Break

Case Discussions I

- 13:00-14:30 The Invasive Approach to Temporal Lobe Epilepsies

Surgical Workshop I (SEEG/Depths/Foramen Ovale)

- Moderator: Jorge Gonzalez-Martinez
- 13:00-13:30 Principles of SEEG: Indications, planning and implantation techniques
 - 13:30-14:00 Depth electrodes: Indications and Techniques
 - 14:00-14:30 Foramen Ovale: Indications and Techniques

Case Discussions II

- 14:45-16:15 The Invasive Approach to Extratemporal Lobe Epilepsies

Surgical Workshop II Pitfalls, Controversies, and Management of Complications in Invasive Monitoring

- Moderators: William Bingaman and Eliseu Paglioli
- 14:45-15:15 Intraoperative ECoGs
 - 15:15-15:45 Subdural Grids and Strips
 - 15:45-16:15 SEEG

Round Table Discussion

- 16:30-18:30 The Invasive Evaluation of Nonlesional Epilepsies
Moderators: Dileep Nair and Andre Palmi

18:30 Adjourn

Wednesday, October 6

Parallel Session VII Neurophysiologic Eloquent Cortex Mapping

- 8:00-8:10 Introduction – Riki Matsumoto and Dileep Nair (Moderators)
- 8:10-8:35 High Gamma Eloquent Cortex Mapping
- 8:35-9:00 Cortical Stimulation Mapping
- 9:00-9:25 Cortico-Cortical Evoked Potentials Functional Mapping
- 9:25-9:50 Event Related Potentials Mapping
- 9:50-10:10 Discussion

Parallel Session VIII Invasive Evaluation in Pediatric Epilepsy

- 8:00-8:05 Introduction – Ajay Gupta and Helio Machado (Moderators)
- 8:05-8:30 Invasive Indications in Children
- 8:30-8:55 When Can Invasives Be Avoided in Children?
- 8:55-9:20 Cortical Dysplasia
- 9:20-9:45 Tumors
- 9:45-10:10 Tuberos Sclerosis

Parallel Session IX Alternative Noninvasive Techniques for Localization of Epileptogenicity

- 8:00-8:10 Introduction – Richard Burgess and Jean Gotman (Moderators)
- 8:10-8:30 MRI
- 8:30-8:50 MEG
- 8:50-9:10 Receptor Imaging – PET
- 9:10-9:30 EEG High Density Arrays
- 9:30-9:50 EEG-Triggered fMRI
- 9:50-10:10 Discussion

10:10-10:30 Coffee Break

Case Discussions III

- 10:30-12:00 Invasive EEG in Children

Case Discussions IV

- 10:30-12:00 Use of MEG/fMRI

12:00 Adjourn

Sessions

Parallel Sessions

Surgical Sessions

Case Discussions

Call for Abstracts

The **Cleveland Clinic Epilepsy Surgery Symposium** organizing committee invites meeting attendees to submit abstracts describing original epilepsy-related research.

The committee is also happy to announce the institution of the Cleveland Clinic Epilepsy Center Research Award. This award is offered to meeting attendees from within the United States and abroad whose abstracts provide a significant contribution to the Symposium's general theme and the understanding of epilepsy mechanisms and treatments.

Five winners will be selected by the organizing committee. The winners will have their meeting registration fee waived and will be provided free accommodation in the meeting hotel's headquarters,

as well as the opportunity to present their data in a dedicated session and ceremony.

Our goal is to encourage young researchers in the field of epilepsy by providing them with an opportunity to showcase and discuss their results with experts in the field, and provide ground for further investigations.

All other accepted abstracts will be shown in a poster session.

Abstracts may be submitted at www.cfcme.org/EpilSurg10abstracts.
Deadline for submission is **July 30, 2010**.

The Third Dudley S. Dinner Distinguished Epileptologist's Lecture



Dennis Spencer, MD

Dr. Spencer is the Harvey and Kate Cushing Professor and Chair of the Department of Neurosurgery at Yale University School of Medicine. He is a graduate of Washington University School of Medicine and completed his neurosurgical residency at Yale in 1977. He joined the Yale neurosurgery faculty following his

residency, and became Chief of neurosurgery in 1987. He has an international reputation in the surgical treatment of neurological diseases causing epilepsy and developed a widely used neocortical sparing surgical approach for patients with temporal lobe epilepsy.

The primary focus of Dr. Spencer's clinical work is surgery for medically intractable epilepsy, seizure disorders associated with brain tumors, and pituitary tumors. Besides chairing the Department of Neurosurgery, he directs the Epilepsy Surgery and Pituitary Tumor Programs.

His research has brought together basic scientists and clinicians around a program concerning energetics, glutamate metabolism and the neurobiological study of human epileptogenic tissue. Study techniques include 4T MRS, C13 intraoperative glucose turnover studies, and in vivo and in vitro electrophysiology and microdialysis, immunohistochemistry, confocal and EM microscopy, and molecular biology. In particular, laboratory discoveries are correlated with the epileptogenic substrate in order to help define human epilepsy pathogenesis and potential therapies.

Dr. Spencer was the 1999 recipient of the American Epilepsy Society's Research Award in Clinical Investigation, and the 2006 Society of Neurological Surgeons' Grass Award for Excellence in Research. He is past Chairman of the American Board of Neurological Surgery, Vice Chairman of the Neurosurgery Residency Review Committee, President of both the American Epilepsy Society (2008) and the Society of Neurological Surgeons (2007-2008), and he served as interim Dean of the Yale School of Medicine 2003-2004.



Dudley Dinner, MD (1947-2007) came to the Cleveland Clinic in 1979 as the first fellow in clinical neurophysiology and epilepsy and then joined the Epilepsy Section as staff neurologist and epileptologist. He played a leading role in establishing the epilepsy surgery program, evoked potentials and intraoperative monitoring. Dr. Dinner made many valuable contributions to understanding the usefulness of the intra-carotid amytal (WADA) test and the functional anatomy of the supplementary motor area cortex. He established and directed the sleep disorders center. Dr. Dinner published numerous scientific papers, invited reviews, editorials and chapters and also edited the book *Sleep and Epilepsy*. His vast knowledge and experience was a source of strength for both the epilepsy surgery and sleep programs at the Cleveland Clinic. He was very active in the American Clinical Neurophysiology Society and was Associate Editor of the *Journal of Clinical Neurophysiology*. His wisdom and kind, gentle spirit provided guidance and encouragement to patients, colleagues, epilepsy fellows and neurology residents.

General Information

Location

InterContinental Hotel and Bank of America Conference Center
9801 Carnegie Ave, Cleveland, OH 44106
Telephone: 877-707-8999 or 216-707-4100

A block of rooms has been reserved at the InterContinental Hotel at the special group rate of \$189 per night plus tax. Reservations must be made by Friday, September 24, 2010 in order to qualify for this rate.

Information

For further information about this activity, contact Martha Tobin at
Local: 216-445-3449
Toll Free: 800-223-2273 x53449
Email: tobinm@ccf.org

Deadline for Registration and Cancellation

Register at www.ccfme.org/epilepsy10. Deadline for registration for the symposium is **5:00 pm (EST), Monday, September 27, 2010**. A request for a refund must be received in writing by September 27, 2010. No refunds will be given after September 27, but registration is transferable through October 6, 2010. A \$50 cancellation fee will be deducted from the refund for all cancellations.

If you register by mail, please allow up to three weeks for your registration to be processed.

For questions about registration, please call 216-448-0777 or email cmeregistration@ccf.org.

Sunday, October 3, 2010

8:00-17:00 **Ethics of Invasive Brain Testing: Limits and Responsibilities**

Symposium Organizer – Paul Ford, PhD

This one-day symposium is intended to engage neurologists, neurosurgeons, psychiatrists, advance care nurses, physician assistants, and ethicists in addressing practical ethical challenges related to invasive brain testing. (See insert for full description.)



Accreditation

For Physicians

The Cleveland Clinic Foundation Center for Continuing Education is accredited by the Accreditation Council for Continuing Medical Education to provide continuing medical education for physicians.

The Cleveland Clinic Foundation Center for Continuing Education designates this educational activity for a maximum of 38.5 *AMA PRA Category 1 Credits™*. Physicians should only claim credit commensurate with the extent of their participation in the activity.

Participants claiming CME credit from this activity may submit the credit hours to the American Osteopathic Association Council on Continuing Medical Education for Category 2 credit.

Faculty Disclosure Statement

The Cleveland Clinic Foundation Center for Continuing Education has implemented a policy to comply with the current Accreditation Council for Continuing Medical Education Standards for Commercial Support requiring resolution of all faculty conflicts of interest. Faculty declaring a relevant commercial interest will be identified in the activity syllabus.

Americans with Disabilities Act

The Cleveland Clinic Foundation Center for Continuing Education fully intends to comply with the legal requirements of the Americans with Disabilities Act. If you need assistance, please notify Martha Tobin at 216-445-3449 or tobinm@ccf.org at least two weeks prior to the activity.



Registration

2010 Epilepsy Symposia

October 1 - 6, 2010

Go to: www.cfcme.org/epilepsy10

Once you register online, please do not mail or fax in a registration form.

Complete the information below if registering by mail or fax:

PLEASE PRINT

Course 020675
Office Use Only
Fee _____
Date _____
M.O.P. _____
CXL/Fee _____

Last Name	First Name	MI	Degree
Company			
Address			
City	State	Zip	
Phone	Fax		
Specialty	E-Mail		

I require a vegetarian meal

	Epileptology Course Only Oct 1-3	Epilepsy Surgery Course Lectures Only Oct 4-6	Epileptology and Epilepsy Surgery Course Combined Oct 1-6	Epilepsy Surgery Course Lectures and Hands-On Lab for Neurosurgeons Only Oct 3-6	Ethics of Invasive Brain Testing: Limits and Responsibilities Only Oct 3
	A	B	C	D	E
Physicians or Neurosurgeons	\$295.00	\$349.00	\$595.00		\$60
Residents, Fellows, PhD, Nurses, PAs, APNs	\$149.00	\$199.00	\$295.00		\$60
Comprecare # _____	\$191.75	\$226.85	\$386.75	\$516.75	\$39
Cleveland Clinic Alumnus	\$177.00	\$209.40	\$357.00	\$477.00	\$36
Neurosurgeons				\$995.00	\$60
Neurosurgery Resident or Fellow				\$495.00	\$60

Fee includes: registration materials, AM & PM break refreshments, and box lunches.

Payment must be received prior to admittance to the symposium. Purchase orders are not accepted.

Total amount enclosed or to be charged: \$ _____

PAYMENT

Make check payable to: Cleveland Clinic Educational Foundation

or charge the following account: Visa MasterCard American Express Discover

Card Number _____ Exp: Date _____

Signature (not valid without signature)

3/4 Digit V-Code, on back of card

If paying by check, registration should be MAILED to:

Cleveland Clinic Educational Foundation
P.O. Box 931653 • Cleveland, OH 44193-1082

Any questions regarding registrations should be e-mailed to cmeregistration@ccf.org or call 216-448-0777.



The Cleveland Clinic Foundation
Neurological Institute, S-40
9500 Euclid Avenue
Cleveland, OH 44195

Cleveland Clinic
Over 75 Years of Excellence in
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