

# 2017 Noninvasive Vascular Imaging

## Designated for SA-CME

This enduring material activity counts towards the SA-CME requirement for the ABR, similar to a SAM activity

**IAC ACCREDITATION:** All or a portion of this educational activity may meet the CME requirements for IAC Vascular Testing accreditation

**Release Date: June 1, 2017**

### About This CME Teaching Activity

This CME activity offers a comprehensive review of recent developments and issues in noninvasive vascular imaging. Included is discussion on state-of-the-art ultrasound and Doppler techniques used to evaluate the cerebrovascular, abdominal and peripheral vascular systems. In addition, diagnostic pearls and pitfalls, credentialing requirements, venous testing and the clinical applications of transcranial Doppler are featured. Live scanning demonstrations enhance the didactic lectures. Faculty have been chosen for the expertise and outstanding teaching abilities.

### Target Audience

This CME Teaching Activity is intended and designed to offer educational opportunities to radiologists, vascular surgeons, cardiologists, sonographers, and other clinicians interested in learning more about noninvasive vascular ultrasound.

### Scientific Sponsor

Educational Symposia

### Accreditation

**Physicians:** Educational Symposia is accredited by the Accreditation Council for Continuing Medical Education (ACCME) to provide continuing medical education for physicians.

Educational Symposia designates this enduring material for a maximum of 15.25 *AMA PRA Category 1 Credit(s)*<sup>TM</sup>. Physicians should claim only the credit commensurate with the extent of their participation in the activity.

**SA-CME:** Credits awarded for this enduring activity are designated "SA-CME" by the American Board of Radiology (ABR) and qualify toward fulfilling requirements for Maintenance of Certification (MOC) Part II: Lifelong Learning and Self-assessment.

All activity participants are required to pass a written or online test with a minimum score of 70% in order to be awarded credit. (Exam materials, if ordered, will be sent with your order.) All course participants will also have the opportunity to critically evaluate the program as it relates to practice relevance and educational objectives.

**AMA PRA Category 1 Credit(s)<sup>TM</sup>**  
for this activity may be claimed until May 31, 2020.

This CME activity was planned and produced by Educational Symposia, a leader in continuing medical education since 1975.

This activity was planned and produced in accordance with the ACCME Essential Areas and Elements.

### Educational Objectives

At the completion of this CME teaching activity, you should be able to:

- Discuss the newest techniques in the noninvasive diagnosis of endovascular disease, including venous and carotid imaging.
- Assess new developments in vascular imaging.
- Discuss the utility of ultrasound and Doppler imaging when used to evaluate the aorta, carotid arteries, and peripheral vascular system.
- Utilize ultrasound to evaluate abdominal transplants, endostents and dialysis fistula.
- Utilize ultrasound to evaluate the venous system of the upper and lower extremities.
- Describe the appropriate role of ultrasound in the evaluation of the renal and hepatic arteries.

*No special educational preparation is required for this CME activity.*

A CME Teaching Activity

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## Faculty

### **Nirvikar (Nirvi) Dahiya, M.D.**

*Chair, Division of Ultrasound  
Department of Radiology  
Mayo Clinic, Arizona  
Phoenix, AZ*

### **Edward G. Grant, M.D., FACR**

*Professor and Chairman  
Department of Radiology  
Keck Hospital of USC  
USC Norris Cancer Center  
University of Southern California  
Los Angeles, CA*

### **Heather L. Gornik, M.D., RVT, RPVI**

*Medical Director, Non-Invasive Vascular Laboratory, Cleveland Clinic  
Associate Professor of Medicine  
Cleveland Clinic Lerner College of Medicine  
Cleveland, OH*

### **Esther S.H. Kim, M.D., MPH, RPVI**

*Associate Professor of Medicine  
Division of Cardiovascular Medicine  
Vanderbilt Heart and Vascular Institute  
Nashville, TN*

### **Ann Marie Kupinski, Ph.D., RVT**

*Associate Professor of Radiology  
Albany Medical College  
President, North Country Vascular Diagnostics  
Albany, NY*

### **Steven A. Leers, M.D., RVT, RPVI, FSVU**

*Associate Professor of Surgery  
Medical Director, UPMC Vascular Laboratories  
UPMC Division of Vascular Surgery  
Pittsburgh, PA*

### **Natalie Marks, M.D.**

*Attending Physician  
Vascular Medicine  
NYU Lutheran Medical Center  
Brooklyn, NY*

### **Laurence Needleman, M.D.**

*Associate Professor of Radiology  
Thomas Jefferson University Hospital  
Philadelphia, PA*

### **Larry N. Raber, RDMS, RVT, RT (R)**

*Neurovascular Laboratory Manager/Imaging Institute  
Cleveland Clinic  
Cleveland, OH*

### **Michelle L. Robbin, M.D., MS, FACR, FSRU, FAIUM**

*Professor of Radiology and Biomedical Engineering  
Chief of Ultrasound  
The University of Alabama School of Medicine*

### **Leslie M. Scoutt, M.D.**

*Professor of Diagnostic Radiology and Vascular Surgery  
Associate Program Director, Diagnostic Radiology  
Chief, US Section  
Medical Director, Non-Invasive Vascular Lab  
Yale School of Medicine  
Yale-New Haven Hospital  
New Haven, CT*

### **Sharlene A. Teefey, M.D.**

*Professor  
Department of Radiology  
Mallinckrodt Institute of Radiology  
St. Louis, MO*

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## Program

### Session 1

Fundamentals of the Carotid Duplex Examination

*Heather L. Gornik, M.D., RVT, RPVI*

Carotid Artery Disease - Beyond Atherosclerotic Disease

*Esther S. H. Kim, M.D., MPH, RPVI*

The Fundamentals TCD - TCI

*Larry N. Raber, RDMS, RVT, RT(R)*

Carotid Duplex Following Endarterectomy and Stenting

*Steven Leers, M.D., RVT, RPVI, FSVU*

Assessment of Aortic Vessels and Vertebral Arteries in the Vascular Lab

*Heather L. Gornik, M.D., RVT, RPVI*

### Session 2

Our Most Challenging Cases of the Past Few Years:

Carotid Duplex Exams

*Panelists:*

*Steven Leers, M.D., RVT, RPVI, FSVU,*

*Esther S. H. Kim, M.D., MPH, RPVI,*

*Larry N. Raber, RDMS, RVT, RT(R)*

Extracranial Carotid Live Scanning

*Larry N. Raber, RDMS, RVT, RT(R)*

*Heather L. Gornik, M.D., RVT, RPVI*

*Esther S. H. Kim, M.D., MPH, RPVI*

Physiological Testing for Claudication and Lower Extremity Peripheral Artery Disease

*Steven Leers, M.D., RVT, RPVI, FSVU*

Lower Extremity Arterial Duplex for Assessment of Native Arteries, Bypass Grafts, and Stents

*Ann Marie Kupinski, Ph.D., RVT*

Recap of the Updated ACC/AHA Guidelines on Peripheral Artery Disease – What the Vascular Clinician Should Know

*Heather L. Gornik, M.D., RVT, RPVI*

### Session 3

Ultrasound Imaging of Arterial Access Complications – Pseudoaneurysms, AVF and Others

*Esther S. H. Kim, M.D., MPH, RPVI*

Vascular Lab Assessment of Upper Extremity Arterial Disorders and Zebra Lower Extremity Arterial Disorders

*Esther S. H. Kim, M.D., MPH, RPVI*

Our Most Challenging Cases of the Past Few Years: Arterial Examinations

*Panelists:*

*Esther S. H. Kim, M.D., MPH, RPVI*

*Steven Leers, M.D., RVT, RPVI, FSVU,*

*Natalie Marks, M.D.*

Arterial Duplex Live Scanning

*Ann Marie Kupinski, Ph.D., RVT*

*Steven Leers, M.D., RVT, RPVI, FSVU*

*Natalie Marks, M.D.*

Spotlight on Vascular Lab Quality: What the Vascular Lab Professional Should Know About Accreditation and Certification

*Steven Leers, M.D., RVT, RPVI, FSVU*

### Session 4

Recognizing Common Artifacts and Interpretive Pitfalls in Carotid and Arterial Testing

*Ann Marie Kupinski, Ph.D., RVT*

Venous Duplex for Assessment of Lower Extremity DVT and Suspected PE Guidelines, Algorithms, and Nuts and Bolts of the Exam

*Nirvikar (Nirvi) Dahiya, M.D.*

Acute Versus Chronic DVT – How Do You Tell?

*Heather L. Gornik, M.D., RVT, RPVI*

Upper Extremity Venous Evaluation

*Ann Marie Kupinski, Ph.D., RVT*

Venous Duplex Assessment for Reflux and Role in Planning Venous Ablation Procedures

*Steven Leers, M.D., RVT, RPVI, FSVU*

Duplex Guidance for Foam Sclerotherapy Helps Provide Best Clinical and Aesthetic Results

*Natalie Marks, M.D.*

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## Program

### Session 5

Our Most Challenging Cases of the Past Few Years:  
Venous Duplex Exams

*Panelists:*

*Nirvikar (Nirvi) Dahiya, M.D.*

*Heather L. Gornik, M.D., RVT, RPVI*

*Esther S. H. Kim, M.D., MPH, RPVI*

Advanced TCD Applications and Cases –Embolic  
Monitoring, TCD Bubble Studies, and Assessment of  
Cerebrovascular Reserve

*Larry N. Raber, RDMS, RVT, RT(R)*

Hemodialysis Access Evaluation – Pre and Post

*Ann Marie Kupinski, Ph.D., RVT*

Making the Case for Duplex Guided Arterial Procedures –  
BAM, Lower Extremity Angioplasty, and other

*Natalie Marks, M.D.*

Non-Vascular Entities the Vascular Reader Must Know  
(Incidentals, Mimics)

*Nirvikar (Nirvi) Dahiya, M.D.*

Live Abdominal Duplex Exam and Anatomy Review

*Ann Marie Kupinski, Ph.D., RVT*

*Nirvikar (Nirvi) Dahiya, M.D.*

*Heather L. Gornik, M.D., RVT, RPVI*

### Session 6

Assessment for Renal and Mesenteric Artery Stenosis  
and Renal Transplants

*Heather L. Gornik, M.D., RVT, RPVI*

Assessment of Abdominal Aortic Aneurysm and Duplex  
Following AAA Repair

*Esther S. H. Kim, M.D., MPH, RPVI*

Hepatoportal Examination and Evaluation of Hepatic  
Transplants

*Nirvikar (Nirvi) Dahiya, M.D.*

Live TCD Scan

*Larry N. Raber, RDMS, RVT, RT(R)*

*Heather L. Gornik, M.D., RVT, RPVI*

*Ann Marie Kupinski, Ph.D., RVT*

*Ester S. H. Kim, M.D., MPH, RPVI*

### Session 7

Ultrasound Evaluation of the Aorta

*Leslie M. Scoutt, M.D.*

Pearls and Pitfalls in Vascular Imaging

*Michelle L. Robbin, M.D., MS, FACR, FSRU, FAIUM*

Renal Doppler

*Sharlene A Teehey, M.D.*

### Session 8

Carotid Ultrasound

*Edward G. Grant, M.D., FACR*

Contrast Enhanced Ultrasound: A Problem Solver

*Michelle L. Robbin, M.D., MS, FACR, FSRU, FAIUM*

Peripheral Vascular Disease

*Laurence Needleman, M.D.*

CME Teaching Activity

## 2017 Noninvasive Vascular Imaging

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