

Measuring Estrogen Exposure and Metabolism



March 20–21, 2014

*Leading experts will discuss how to improve and standardize methods
for assessing estrogen exposure and metabolism in epidemiologic
and clinical research—join us!*



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A continuing education service of Penn State College of Medicine.

Purpose/Overview

This workshop is designed to gather opinion leaders to draw conclusions about the best approaches to improve estrogen assays with particular relevance to estrogen exposure and metabolism.

Audience

Health-care and health research professionals are invited to attend.

- Endocrinologists
- Chemists
- Clinical Laboratory Professionals
- Epidemiologists
- ...and others

Objectives

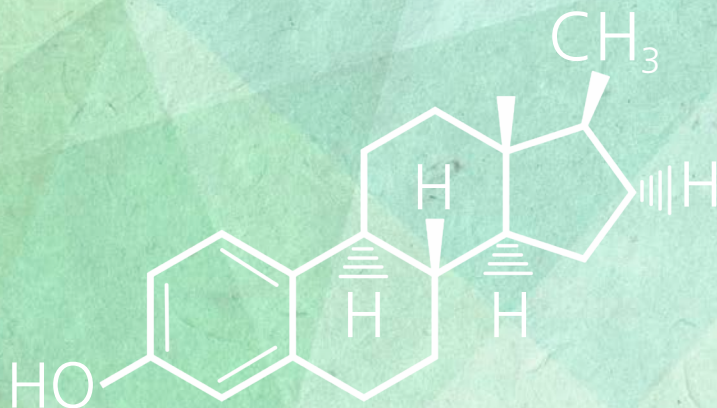
Upon completion of this activity, participants should be able to:

- Compare and contrast estrogen assay methodologies and interpretation of results
- Discuss the importance of accurate estrogen measurement in epidemiologic and clinical studies
- Reach agreement about approaches to harmonize results from individual laboratories
- Develop research strategies based on the agreements reached at the meeting
- Describe the clinical implications of the agreements reached at the meeting

Poster Session

Posters will be featured throughout the workshop. Abstract submissions are due by February 17, 2014. Fellows who author the top five posters are eligible for up to \$500 in travel reimbursements by the Endocrine Society.

Guidelines and online submission information are available on the web at:
pennstatehershey.org/web/ce/home/programs/estrogen





Credit

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

Penn State College of Medicine designates this live activity for a maximum of **13 AMA PRA Category 1 Credit(s)[™]**. Physicians should claim only the credit commensurate with the extent of their participation in the activity.

It is our policy to ensure balance, independence, objectivity, and scientific rigor in all of our sponsored educational programs. Faculty and course directors have disclosed relevant financial relationships with commercial companies, and Penn State has a process in place to resolve any conflict of interest. Complete faculty disclosure will be provided to program participants at the beginning of the activity.

Accommodations

Accommodations are the responsibility of the participant. A block of rooms has been reserved at the Bethesda Marriott at the rate of \$159 (plus taxes) for a single or double room. To receive conference rates, call (301) 897-9400 and mention the name of the conference. Rooms are available on a first-come, first-served basis, so make reservations as early as possible but no later than 2/25/2014. After this date, room rates are subject to availability.

Access

Penn State encourages persons with disabilities to participate in its programs. If you anticipate needing any type of special accommodation or have questions about the physical access provided, please contact Continuing Education in advance of your participation.

Meeting Co-chairs

Laurence M. Demers, PhD, ScD, DABCC, FACB
Penn State College of Medicine

Richard J. Santen, MD
University of Virginia

Regina G. Ziegler, PhD, MPH
National Cancer Institute

Steering Committee

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Laval University

William Rosner, MD
Columbia University

Frank Z. Stanczyk, PhD
University of Southern California

Hubert W. Vesper, PhD
Centers for Disease Control and Prevention

Endorsed by The Endocrine Society

[This publication is available in alternative media on request.](#)

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Meet The Faculty

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Regina G. Ziegler, PhD, MPH

Senior Investigator, Epidemiology and Biostatistics Program
Division of Cancer Epidemiology and Genetics
National Cancer Institute
Bethesda, MD

Program Agenda

Day 1

8:00 a.m. Welcome and Introductions
Laurence M. Demers, PhD, ScD, DABCC, FACB

Estrogen in Health and Disease: the Need for Accurate Measurement of Estradiol

Moderator – Regina G. Ziegler, PhD, MPH

8:15 Endogenous Estrogens and Risk of Female Cancers
Susan E. Hankinson, ScD

8:35 Physiologic Roles of Androgens and Estrogens in
Healthy Adult Men
Joel S. Finkelstein, MD

8:55 Estrogen and Bone Health in Men and Women
Jane A. Cauley, DrPH

9:15 Considerations When Testing Estrogen Effects on Cognition
in the Rodent: A Trip Down Memory Lane
Heather A. Bimonte-Nelson, PhD

9:35 Discussion

10:00 Morning Break

Estrogen Measurement in Clinical Research and Patient Care

Moderator – Richard J. Santen, MD

10:20 Why Circulating Estradiol is So Low After Menopause
and How to Measure It?
Fernand Labrie, MD, PhD

10:40 Estradiol Measurement in Translational Studies of Breast Cancer
Per Eystein Lønning, MD, PhD

11:00 Measurement of Estrogens in Patients on Aromatase Inhibitors
James N. Ingle, MD

11:20 Discussion

11:45 Lunch – Posters will be available for viewing

Accurate Measurement of Estradiol, Especially at Low Concentrations

Moderator – Laurence M. Demers, PhD, ScD, DABCC, FACB

- 1:15 Estrogen Measurement: Radioimmunoassay to Mass Spectrometry
Ravinder J. Singh, PhD
- 1:35 The Importance of Chromatographic Resolution When Analyzing
Steroid Biomarkers
Jim Settlage, PhD
- 1:55 The Centers for Disease Control and Prevention's Hormone
Standardization Program to Improve Estradiol Testing
Hubert W. Vesper, PhD
- 2:15 Discussion
- 2:40 Afternoon Break

New Insights in the Measurement of Steroid Hormones

Moderator – Nigel J. Clarke, PhD

- 3:00 Steroid Hormone Results from Different Assays in Relation
to Breast Cancer Risk and Body Mass Index (BMI)
Tim Key, DPhil
- 3:20 The Centers for Disease Control and Prevention Steroid
Hormone Reference Methods
Julianne Cook Botelho, PhD
- 3:40 Inclusion of Endogenous Hormone Levels in Risk Prediction
Models of Postmenopausal Breast Cancer
Shelley Tworoger, PhD
- 4:00 Discussion
- 4:30 Poster Session
- 6:00 Adjournment

Program Agenda

Day 2

8:00 a.m. Welcome and Announcement of Poster Awards
Laurence M. Demers, PhD, ScD, DABCC, FACB

Estrogen Metabolism and Cancer: Is it Important to Measure Estrogen Metabolism in Epidemiologic and Clinical Studies?

Moderator – William Rosner, MD

8:15 Mechanisms of Estrogen Carcinogenesis
James D. Yager, PhD

8:35 Estrogen Metabolites and Breast Cancer
Richard J. Santen, MD

8:55 Epidemiologic Studies of Estrogen Metabolism and Breast Cancer
Regina G. Ziegler, PhD, MPH

9:15 Discussion

9:40 Morning Break

Different Laboratory Approaches to Measuring Estrogen Metabolites

Moderator – Hubert W. Vesper, PhD

10:00 Pre-ionized Derivatives for LC-MS Analysis of Estrogens and Androgens in Postmenopausal Women
Ian A. Blair, PhD

10:20 Profiling of Steroids and their Metabolites by Orbitrap LC-MS
Adrian A. Franke, PhD

10:40 Measuring Estrogens and Estrogen Metabolites in Human Biological Fluids
Xia Xu, PhD

11:00 Comparison and Critique of Estrogen Metabolism Assays Using LC or GC-MS/MS
Martin Hansen, PhD

11:20 Discussion

11:45 Lunch – Posters will be available for viewing

Alternative Approaches to Measuring Estrogen Exposure

Moderator – Michael McPhaul, MD

- 1:15 Relationship Between Normal and Cancerous Breast Tissue and Circulating Steroid Hormone Levels
Frank Z. Stanczyk, PhD
- 1:35 Methodological Considerations in Estrogen Assays of Breast Fluid and Breast Tissue
Robert T. Chatterton, PhD
- 1:55 Recombinant Cell Bioassay for Estrogen: Development and Applications
Karen Oerter Klein, MD
- 2:15 Free Estradiol: Problems and Hopes
William Rosner, MD
- 2:35 Allosteric Regulation of Steroid Bioavailability by Sex Hormone Binding Globulin (SHBG): Accurate Calculation of Free Testosterone
Ravi Jasuja, PhD
- 2:55 Discussion
- 3:20 Afternoon Break

Development of Guiding Principles

- 3:40 Discussion of Clinical Guidelines
Moderator – Richard J. Santen, MD
- 4:30 Discussion of Research Directions
Moderator – Regina G. Ziegler, PhD, MPH
- 5:20 Adjournment

Fee

► **\$199 per person**

Includes:

- Instruction
- Handout Materials
- Refreshments
- Lunch
- Internet Access
- Parking

Cancellation Policy

Cancellations received by:

► **March 12, 2014** will incur a \$25 processing fee.

No refunds after:

► **March 13, 2014**

Substitute attendees are accepted at any time.

The University reserves the right to cancel or postpone any course or activity because of insufficient enrollment or other unforeseen circumstances.

Please provide a cell phone number so we can reach you in the event of last-minute change or cancellation. If a program is cancelled or postponed, the University will refund registration fees but cannot be held responsible for any related costs, charges, or expenses, including cancellation/change charges assessed by airlines or travel agencies. Preregistered participants will be notified if a program is filled or cancelled.

Registration

Register online, by fax, or by mail. Registrations will be confirmed by email upon receipt of payment, authorization to bill, or a credit card guarantee.

If you do not receive a confirmation within two weeks, call 717-531-6483 to confirm your registration. Walk-ins and late registrations will be accepted if space is available.

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Measuring Estrogen Exposure and Metabolism

March 20–21, 2014 / J5440-14-Y

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Degree/Credentials

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