

Vitamin E and Health

May 22-24, 2004

Jean Mayer USDA Human Nutrition Research Center on Aging
at Tufts University
Boston, Massachusetts

A New York Academy of Sciences Conference

Conference Theme

Vitamin E was identified 80 years ago as a micronutrient essential for reproduction (fertility) in animals. Although widely acknowledged as the most important lipid soluble antioxidant, its precise role(s) in the maintenance of human health is still unclear. Indeed the use of vitamin E in a number of recent poorly designed intervention studies has only added to this uncertainty.

The last major conference entirely devoted to vitamin E was the 1989 New York Academy of Sciences conference. During the last fifteen years, a number of new and novel functions have been identified for the family of vitamin E molecules. There is now new information regarding the role of vitamin E in the regulation of cellular signaling and gene activity, the role of proteins, which specifically bind and guide α -tocopherol to (sub)cellular destinations and the metabolism of individual tocopherols. For example, recent observations of tissue specific functions of vitamin E identified by high-density oligonucleotide microarrays (gene chips) could not have been predicted from the known functions of α -tocopherol. Furthermore, information has and will be emerging for the role of vitamin E in the prevention of infections and treatment of diseases associated with oxidative stress and aging. The objective of this multi-disciplinary conference will be to review the progress in this field since the 1989 conference to gain new insights into vitamin E's function and to develop directions for vitamin E research over the next decade.

Conference Contributions

We gratefully acknowledge educational grants from:

Co-sponsor

Cognis Nutrition and Health

Major Funder

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Supporters

National Institute of Diabetes and Digestive and Kidney Diseases, National Institutes of Health
Jean Mayer USDA Human Nutrition Research Center on Aging at Tufts University

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DSM Nutritional Products, Inc.
Enerex Botanicals Ltd.

Oxygen Club of California
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Vitamin E and Health

A New York Academy of Sciences Conference

PRELIMINARY PROGRAM

FRIDAY, MAY 21

Registration (5:00-7:00 PM)

SATURDAY, MAY 22 (7:30 AM – 7:30 PM)

Registration & Continental Breakfast (8:00 AM)

Welcoming Remarks (8:15 AM)

Rashid Shaikh, Ph.D.

Frank Kelly, Ph.D., Mohsen Meydani, D.V.M., Ph.D., and Lester Packer, Ph.D.

(Plenary presentations are 20 minutes followed by 10 minutes discussion.)

SESSION I. BIOAVAILABILITY AND BIOKINETICS OF VITAMIN E (8:30-10:30 AM)

Chair: *Frank Kelly, Ph.D.*

Vitamin E Trafficking	<i>Maret G. Traber, Ph.D.</i>
Discovery and Characterization of the Cytochrome P450 Omega-hydroxylase Pathway of Tocopherol Catabolism	<i>Robert S. Parker, Ph.D.</i>
Inter-individual Variability in Vitamin E Biokinetics	<i>Frank Kelly, Ph.D.</i>
Vitamin E Biokinetics as a Function of Age	<i>Regina Brigelius-Flohé, Ph.D.</i>

SESSION II. ANTIOXIDANT FUNCTIONS OF VITAMIN E (11:00 AM-1:00 PM)

Chair: *Etsuo Niki, Ph.D.*

Molecular Mechanisms of Vitamin E Transport	<i>Achim Stocker, Ph.D.</i>
Human Vitamin E Deficiency and Tocopherol Metabolism	<i>John K. Lodge, Ph.D.</i>
Alpha-tocopherol and Endothelial NO Synthesis	<i>Regine Heller, Ph.D.</i>
Modulation of Nitric Oxide by Vitamin E	<i>John Keaney, M.D.</i>

Lunch & Poster Viewing

SESSION III. CELL REGULATORY FUNCTIONS OF VITAMIN E (2:00-6:00 PM)

Chair: *Simin Nikbin Meydani, DVM, Ph.D.*

Vitamin E Mediated Signalling and Gene Regulation	<i>Angelo Azzi, M.D.</i>
Vitamin E and Gene Expression in Immune Cells	<i>Sung Nim Han, Ph.D., R.D.</i>
Modulation of Gene Expression by Vitamin E – In Vitro and In Vivo Studies	<i>Gerald Rimbach, Ph.D.</i>
Global Deregulation of Gene-networks by Vitamin E Deficiency In Vivo	<i>Kishorchandra Gohil, Ph.D.</i>
Neuro Protection by Alpha-tocotrienol	<i>Chandan K. Sen, Ph.D.</i>
Tocotrienols and Gene Expression	<i>Kalanithi Nesaretnam, Ph.D.</i>

Overview & Discussion from Day 1 Presentations

Maret G. Traber, Ph.D. & Lester Packer, Ph.D.

Poster Session & Reception (6:00-7:30 PM)

SUNDAY, MAY 23 (7:30 AM – 4:35 PM)

Registration & Continental Breakfast (7:30 AM)

(Plenary presentations are 20 minutes followed by 10 minutes discussion.)

SESSION IV: PROTECTION FROM OXIDATIVE STRESS AND INJURY (8:00-10:00 AM)

Chair: Ute Obermueller-Jevic, Ph.D.

Vitamin E and Oxidative Stress of Exercise	Malcolm J. Jackson, Ph.D., DSc.
Vitamin E and Transcription Regulation in Inflammatory Diseases	Joseph Lunec, Ph.D., DSc, FRCP
The Role of Vitamin E in Photoprotection of the Skin	Jens J. Thiele, M.D.
Vitamin E in LDL Oxidation	Roland Stocker, Ph.D.

SESSION V: VITAMIN E AND VASCULAR NETWORKS (10:30 AM-12:00 PM)

Chair: Sampath Parthasarathy, Ph.D.

Vitamin E Modulation of Vascular Function	Mohsen Meydani, D.V.M., Ph.D.
Anti-Inflammatory Effects of Alpha-tocopherol	Ishwarlal Jialal, M.D., Ph.D.
The Role of Vitamin E in the Understanding and Treatment of Diabetic Complications	George L. King, M.D.

Lunch & Poster Viewing

SESSION VI: PREVENTION, PROTECTION AND TREATMENT OF DISEASES (1:00-4:35 PM)

Chair: Mohsen Meydani, D.V.M., Ph.D.

Vitamin E and Prevention of Respiratory Infections in the Elderly	Simin Nikbin Meydani, DVM, Ph.D.
Tocopherols and the Treatment of Colon Cancer	William L. Stone, Ph.D.
SELECT - The Selenium and Vitamin E Cancer Prevention Trial	Eric A. Klein, M.D.
Vitamin E in Pre-eclampsia	Lucilla Poston, Ph.D.
Vitamin E in Neurodegenerative Disorders: Alzheimer's Disease	Anatol Kontush, Ph.D.
Vitamin E in Neural and Visual Function	David P.R. Muller, Ph.D.

Overview & Discussion from Day 2 Presentations

Mohsen Meydani, D.V.M., Ph.D. & Roland Stocker, Ph.D.

SPIRIT OF BOSTON HARBOR CRUISE & DINNER (5:00-9:30 PM)

(optional event by subscription)

Please join us for an optional dinner cruise on Sunday evening, May 23, on historic Boston Harbor. For details and rates see conference specifics.

MONDAY, MAY 24 (7:30 AM – 12:15 PM)

Registration & Continental Breakfast (7:30 AM)

(Plenary presentations are 20 minutes followed by 10 minutes discussion.)

SESSION VII: EPIDEMIOLOGICAL AND INTERVENTION STUDIES (8:00-9:30 AM)

Chair: Walter Willett, M.D., Dr.P.H.

Effect of Vitamin E Supplementation on Human Atherosclerosis	Jukka T. Salonen, M.D., Ph.D.
Vitamin E and Cardiovascular Disease: Observational Studies	J. Michael Gaziano, M.D., MPH
Vitamin E for the Treatment of Cardiovascular Disease: Is There a Future?	Francesco Violi, M.D.

SESSION VIII: PLENARY ROUND TABLE DISCUSSIONS (10:00 AM-12:15 PM)

Coordinators: Lester Packer, Ph.D., Mohsen Meydani, D.V.M., Ph.D., and Frank Kelly, Ph.D.

Panel A: Future Directions in Preclinical Vitamin E Research

Panelists: Helmut Sies, M.D., Ph.D., Klaus Kraemer, Ph.D., Maret G. Traber, Ph.D., Angelo Azzi, M.D., Francesco Violi, M.D., Etsuo Niki, Ph.D., Govind T. Vatassery, Ph.D., Nesrin Kartal Özer, Ph.D.

Panel B: Future Directions in Clinical Vitamin E Research

Panelists: Jeffrey B. Blumberg, Ph.D., Sampath Parthasarathy, Ph.D., Simin Nikbin Meydani, DVM, Ph.D., Paul Knekt, Ph.D., Ishwarlal Jialal, M.D., Ph.D., Francesco Violi, M.D.

The Way Forward	Lester Packer, Ph.D.
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Light Lunch (12:15 PM)

Adjourn

CONFERENCE SPECIFICS

Conference Location

The auditorium at The Jean Mayer USDA Human Nutrition Research Center on Aging (HNRCA) at Tufts University - Boston Campus, 711 Washington Street, Boston, Massachusetts will be the site of this conference. The auditorium is located on the Mezzanine Level of the HNRCA Building, corner of Washington and Kneeland Streets. The HNRCA is located 3 miles from Logan International Airport, 1 mile from city center, and a 1/2 block from the Doubletree Hotel Boston Downtown.

Accommodations

Hotel accommodations have been arranged with the Doubletree Hotel Boston Downtown, 821 Washington Street, Boston, at a discounted room rate of \$184 single/double occupancy. Rates are subject to 12.45% tax. Hotel guests have complimentary access to the adjoining state-of-the-art fitness facility. If driving, onsite valet parking is available for \$28 per day. Check-in time: 3:00 PM; Check-out time: 12:00 Noon. When reserving, indicate that you are attending the "NYAS Meeting on Vitamin E" and *reserve with a major credit card*. **Reservation Deadline: April 19, 2004.** For reservations, contact the Doubletree Hotel Boston Downtown 1.617.956.7900 or toll free 1.800.222.TREE. To avoid a charge of one night's room and tax, cancellation requires 24 hours notice prior to arrival (by 3:00 PM).

Ground Transportation

For ground transportation and parking information, a campus map, and directions to Tufts-HNRCA go to: <http://hnrctwww.hnrc.tufts.edu/about/directions.shtml>. Taxi fare from Logan International Airport is approximately \$17.00. The MBTA Subway fare is \$1.00; take the Orange Line to the New England Medical Center stop. For subway and commuter bus/rail information, go to: <http://www.mbta.com/>.

Air Travel Discounts

Discounts for travel to this conference are available. For information, contact the Academy's travel company representative: **Roslyn R. Chelouche, MSW Travel Group**, 71 Fifth Avenue, 10th floor, NY, NY 10003. When corresponding, please include your e-mail address for a prompt quote providing the best fare. E: rchelouche@mswtravelny.com; F: 212.329.7299; T: 212.329.7333; 7275.

Call for Abstracts

We invite you to submit an abstract for participation in a Poster Session. Subject to editorial review, selected presenters (including fellowship recipients) will be requested to submit a short manuscript for publication in the conference proceedings. **Deadline for abstract submission: March 10, 2004.** To receive complete instructions for abstract submission, email to: VitaminE@nyas.org with the words **Abstract Instructions** in the subject line. (Text message not required.) Instructions will be forwarded automatically. Any questions, telephone 1.212.838.0230 x323.

Fellowships

A limited number of fellowships in the form of registration waivers may be available to qualified junior investigators. In addition, **The Oxygen Club of California*** will be providing a \$500 award to a qualified junior investigator. Individuals applying for a fellowship will be expected to author a poster presentation (sole or first authorship is not required). To apply for a fellowship, follow the "Call for Abstracts" instructions above. Be sure to submit your abstract to the address for "Fellowship Application". **Deadline for fellowship applications: March 10, 2004.** *The Oxygen Club of California will be subsidizing a portion of the dinner cruise cost for junior investigators giving a poster presentation. Be sure to check off # 6 on the registration form to receive the special reduced rate of \$20.

SPIRIT OF BOSTON HARBOR CRUISE & DINNER (by subscription)

An optional dinner cruise will take place Sunday evening, May 23, on historic Boston Harbor. For a virtual tour go to: <http://www.spiritcruises.com/> and click on Boston. The cost is \$100 per person. There is a special reduced rate of \$20 for junior investigator poster presenters (see fellowships for more information). Cost includes buffet dinner, wine/beer, entertainment, and round-trip ground transportation. If you wish to attend, please enclose payment with your conference registration. **Seating is limited; please reserve early.**

Registration Fees Include*

- Admission to all Sessions and Conference Materials
 - Daily Continental Breakfast and Coffee Breaks
 - Daily Conference Luncheons
 - Poster Session & Reception (Saturday Evening, May 22)
 - Published Proceedings (not included in the daily registration fee)
- * *Nonmember and Student Fees – Includes NYAS Membership for 1 Year*

Registration Fees	By April 19	After April 19
1. NYAS Member	\$365	\$415
2. Nonmember	\$440	\$490
3. Student/Resident/Fellow *	\$215	\$240
4. Daily Fee – Saturday, May 22	\$200	\$200
Daily Fee – Sunday, May 23	\$200	\$200
Daily Fee – Monday, May 24 (Indicate date on form)	\$100	\$100
5. Harbor Cruise & Dinner	\$100	\$100
6. Harbor Cruise & Dinner *	\$ 20	\$ 20

(rate applies only to qualified junior investigators; see fellowships for details)

* Department Chair/Supervisor must sign registration form for students.

You are not officially registered until fees are received. You will be sent written confirmation.

Refunds

Written requests for refunds received by **April 19, 2004** will be issued minus an administrative fee of \$50. *Absolutely no refunds will be honored after this date.*

Send all correspondence to:

Programs Department, **New York Academy of Sciences**

2 East 63rd Street, New York, NY 10021

T: 212.838.0230, ext. 324, **F:** 212.838.5640 **E:** conference@nyas.org

Visit the Academy at: <http://www.nyas.org>



Vitamin E and Health

May 22-24, 2004

REGISTRATION FORM

The closing date for advance registration is **Monday, April 19, 2004**. After this date, registrations will only be accepted on-site. Please type or print legibly - For multiple registrations, please photocopy this form

Name: _____
(Circle one) Dr. Mr. Ms. First Last Degree

Affiliation/Organization: _____

Address: _____

City: _____ State: _____ Country: _____ Zip: _____

Telephone: _____ Fax: _____

E-mail: _____

Registration Fees (Circle One):

1 = NYAS Member 2 = Nonmember 3 = Student/Resident/Fellow* 4 = Daily Rate: Date(s) _____

In addition, I wish to register for the Spirit of Boston Harbor Dinner Cruise taking place Sunday, May 23. I understand this is an additional charge (see above for details).

* If you are a student, resident or fellow (category 3)

Department Chair/Supervisor Signature: _____

Enclosed is my total payment for: Registration (plus the Dinner Cruise, if applicable) \$ _____

Payment Information (Check One)

U.S. Bank Check made payable to: **New York Academy of Sciences**
 Credit Card (check one) Visa MasterCard American Express

Card#: _____ Expiration Date: _____

Print Name of Cardholder: _____

Cardholder Signature: _____

Please send me information on membership in the Academy.
 I would like to propose a meeting for sponsorship by the Academy. *Please send me the guidelines for proposals.*

Include your payment when mailing. If paying by credit card, fax to: 1.212.838.5640

Please let us know if you will require any assistance during this meeting.



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