

Office of Dietary Supplements Update

National Institutes of Health
U.S. Department of Health and Human Services

Conference Evaluates the Value of Multivitamin/Mineral Supplements in Chronic Disease Prevention

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On May 15-17, ODS and the Office of Medical Applications of Research sponsored an NIH State-of-the-Science Conference to assess the available evidence on the safety and efficacy of dietary supplements containing multiple vitamins and minerals (MVMs) to help prevent chronic diseases. More than one-third of adults in the United States are estimated to take MVMs, so it was appropriate to examine whether this regular use is safe and might provide health benefits—specifically, reducing the risks of heart disease, cancer, osteoporosis, vision loss, and other chronic conditions that afflict a majority of Americans as they age.

More than 500 people attended this 3-day conference in the Natcher Auditorium

on the NIH campus, which focused on six questions:

- What are the current patterns and prevalence of the public's use of MVM supplements?
- What is known about the dietary nutrient intake of MVM users versus non-users?
- What is the efficacy of single vitamin/mineral supplement use in chronic disease prevention?
- What is the efficacy of MVM in chronic disease prevention in the general population of adults?
- What is known about the safety of MVM for the generally healthy population?
- What are the major knowledge gaps and research opportunities regarding MVM use?

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NAPRALERT Database: 31 Years Old and Still Growing

Interested in review articles on *Aloe vera*? Want to learn about the historical use and biological-testing results of *Turnera diffusa* (better known as damiana, used as an aphrodisiac by the ancient Mayans)? For these and many other such queries, consider using NAPRALERT (NATURAL Products ALERT) the largest relational database of the world's literature on the traditional uses, chemistry, and pharmacology of natural products and

their ingredients, including secondary metabolites. It can be accessed directly at <http://napralert.org>.

Begun in 1975, NAPRALERT contains more than 200,000 scientific papers and reviews that represent animal, plant, and microbial organisms from all countries of the world. The database now provides an easier-to-use interface and format. The Web site

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WE'RE ON THE WEB!
[HTTP://ODS.OD.NIH.GOV](http://ods.od.nih.gov)

Multivitamin/Mineral Supplements (continued from page 1)

(The term MVM referred to any supplement containing three or more vitamins and minerals, without herbal ingredients, and with each nutrient at a dose less than the Tolerable Upper Intake Level [UL] determined by the Food and Nutrition Board.)

The conference was part of the NIH Consensus Development Program in which carefully selected panels review the science on important medical or health-related practices. The 13-member panel assembled for this event included experts in food science and human nutrition, biostatistics, biochemistry, toxicology, family and geriatric medicine, pediatrics, cancer prevention, disease prevention and health promotion, and consumer protection. The panel was chaired by J. Michael McGinnis, MD, Senior Scholar at the Institute of Medicine of the National Academies.

In developing its formal statement, the panel listened to the presentations by 19 invited speakers, heard the questions and comments of participants during the discussion sessions, and reviewed published research. They also studied the results of a systematic review of randomized controlled trials on the topic prepared by the Agency for Healthcare Research and Quality (AHRQ) Evidence-based Practice Center at Johns Hopkins University.

The panel concluded that there was insufficient scientific evidence to determine whether or not the regular use of MVMs help to prevent chronic disease. According to Dr. McGinnis, "More than half of American adults are taking dietary supplements, the majority of which are MVMs, and the bottom line is that we don't know for sure that they're benefiting

from them. In fact, we're concerned that some people may be getting too much of certain nutrients." The panel emphasized that its findings pertained only to generally healthy adults and did not include pregnant women, children, or those with disease.

The panel did recommend nutrient supplements in some cases. It urged that postmenopausal women take calcium and vitamin D supplements to protect bone health. And it advised non-smoking adults with early-stage, age-related macular degeneration to consider taking supplements of zinc and the antioxidants vitamins C, E, and beta carotene. The panel also endorsed previous recommendations that women of childbearing age consume enough folic acid to prevent neural tube defects in infants.



Media attention

Dozens of reporters from top news organizations attended the press briefing both in person and via the internet. As a result, articles appeared in major media publications such as *The Washington Post*, *Los Angeles Times*, and *USA Today*. CNN and NPR covered the story and included it on their Web sites. Coverage by Associated Press and Reuters new services ensured articles about the conference in many other newspapers, broadcasts, and Web

sites located throughout the United States and around the world—from as far away as Russia and Malaysia. ODS Director Paul Coates and Dr. McGinnis gave numerous radio interviews both together and individually to discuss the conference panel's findings.

Go to <http://www.consensus.nih.gov/> to access a full set of materials from the conference, including the program and abstracts book, the panel statement (which will also appear in the September 5 *Annals of Internal Medicine*), the Johns Hopkins evidence-based review, and an NIH press release. A webcast archive of the entire conference is also available there. In December, the *American Journal of Clinical Nutrition* will publish a supplement of the conference that includes the scientific papers prepared by the speakers based on their presentations.

Recent Additions to the ODS Web Site

- Carnitine Fact Sheet
(<http://dietary-supplements.info.nih.gov/factsheets/carnitine.asp>)

Several fact sheets now highlight words and phrases whose meaning may not be familiar to all readers. Clicking on them brings up a pop-up box with a definition or explanation. Glossary terms will be added to more fact sheets in the future.

News for Researchers

ODS coordinates and collaborates on funding initiatives across NIH and with other agencies through mechanisms such as Requests for Applications (RFAs) and Program Announcements (PAs). Some of these initiatives are highlighted below. For further information about them and other ODS-funded opportunities, visit http://dietary-supplements.info.nih.gov/Funding/PAs_and_RFAs.aspx.

Collaborative Research on Tinnitus (RFA-DC-07-004)

Tinnitus affects more than 50 million Americans to some degree. Two million are so seriously debilitated by the condition that they cannot function normally, finding it difficult to hear, work, or sleep. At present, there is no real understanding of the biological bases of tinnitus. Progress in understanding the neural correlates of tinnitus and designing effective treatments and ways to prevent it requires the development of interdisciplinary approaches. Therefore, applications must demonstrate a collaborative approach across two, or preferably more, disciplines. Appropriate research topics would include clinical studies to evaluate the potential benefits of dietary supplements and complementary and alternative methods for treating tinnitus as well as chemoprotective agents (such as antioxidants) to prevent the disorder.

Diet, Epigenetic Events, and Cancer Prevention (PA-06-412)

This PA is intended to promote clinical and preclinical research to determine how diet and dietary factors, including dietary supplements, impact DNA methylation, histone posttranslational modification, and other epigenetic processes involved in cancer prevention and development. Another aim is to encourage collaborations between nutrition and epigenetic experts to study bioactive food components with cancer-preventative properties and to examine key epigenetic events in cancer processes (e.g., carcinogen metabolism, cell division, differentiation, and apoptosis) to establish linkages between epigenetics, methylation patterns, and tumor incidences and behaviors. The information gained should provide guidance for the development of dietary intervention strategies for cancer prevention.

Ruth L. Kirschstein National Research Service Awards for Individual Predoctoral Fellowships (F31) to Promote Diversity in Health-Related Research (PA-06-481)

This initiative seeks to improve the diversity of the health-related research workforce by supporting the training of predoctoral students from underrepresented groups. Such candidates include individuals from underrepresented racial and ethnic groups, disadvantaged backgrounds, and those with disabilities.

NAPRALERT Database (continued from page 1)

includes the results of several sample searches so a potential user may learn whether the information desired can be found in the database. The cost to receive a list of citations and a summary is based on the number of citations a search reveals (50¢ each for 100 or fewer; 25¢ each for 101 or more).

NAPRALERT is maintained by the Program for Collaborative Research in the Pharmaceutical Sciences at the College of Pharmacy, University of Illinois at Chicago, under the direction of Norman R. Farnsworth, PhD. ODS has provided some financial support to maintain NAPRALERT. Dr. Farnsworth also directs an ODS co-funded Botanical Research Center focused on women's health issues.

CARDS Database Expanded

The Computer Access to Research on Dietary Supplements (CARDS) database provides information on dietary supplement related projects funded by the federal government since fiscal year (FY) 1999. CARDS currently contains projects funded through FY2004 for the National Institutes of Health (NIH) and the Department of Defense, and through FY2002 for the U.S. Department of Agriculture (USDA). Project information received from NIH for FY2005 and USDA for FY2003 are currently being coded by ODS staff and will be available in the fall. Access the CARDS database at http://dietary-supplements.info.nih.gov/research/cards_database.aspx.

Upcoming Events

August 5-9

The 47th Annual Meeting of the American Society of Pharmacognosy*

Arlington, VA

<http://www.phcog.org/AnnualMtg/Washington.html>

Dr. Joseph Betz will chair a workshop titled *Bucking the System: Non-Academic Careers for Natural Products Scientists* and a symposium titled *Clinical Evaluation of Herbs and Supplements: Trials, Toxicology, and Drug Interactions*. ODS has provided financial support for the meeting and travel awards to two postdocs.

August 21

Standardization of the Terminology for Expression of Analytical Results for Isoflavones

University, MS (The University of Mississippi)

<http://www.outreach.olemiss.edu/depts/pharmacy/botanical/symposium.html>

ODS is sponsoring this 1-day symposium.

September 1-29

NIH Visitors Center, Building 45*

Bethesda, MD

September 10-13

Heart Failure Society of America: 10th Annual Scientific Meeting

Seattle, WA

http://www.hfsa.org/annual_meeting.asp

Dr. Rebecca Costello will co-moderate a session titled *Nutritional Aspects of Heart Failure*.

September 16-19

Food & Nutrition Conference & Expo (American Dietetic Association)*

Honolulu, HI

http://www.eatright.org/cps/rde/xchg/ada/hs.xsl/7539_ENU_HTML.htm

At a session titled *What You Need to Know About Multivitamin and Mineral Supplements*, Dr. Leila Saldanha will preside. Dr. Johanna Dwyer will present "State of the science: multivitamin-mineral supplements and chronic disease risk." Dr. Mary Frances Picciano will present "What are intakes of key nutrients among American children, and what supplements are they taking?"

September 18-20

30th National Nutrient Databank Conference: The Role of Food Composition in Improving Dietetic Practice

Honolulu, HI

<http://www.nal.usda.gov/fnic/foodcomp/conf/>

Dr. Johanna Dwyer will deliver a presentation titled "Progress in developing dietary supplement databases at NIH's Office of Dietary Supplements." Dr. Mary Frances Picciano's presentation is titled "Development of NOADS: The NHANES (National Health and Nutrition Examination Survey) Online Analyst for Dietary Supplements: a web-based tool for analysis of total nutrient intakes and their relation to biomarkers of nutritional status."

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New ODS Staff

ODS welcomes four new members to our team:

Jody Engel, MA, RD

As a Program Analyst, Jody will work with Dr. Joseph Betz on the Analytical Methods and Reference Materials program and Dr. Christine Swanson on the Botanical Research Centers program. Jody has a master's degree from Tulane University in applied social research and a recent BS degree from the University of Maryland in dietetics. Prior to completing her dietetic internship at the NIH Clinical Research Center, Jody worked part-time at ODS as Scientific Events Coordinator.

Régine Z. Laroche, BA

Régine is a full-time contractor working with Dr. Mary Frances Picciano on various projects, including a seminar series and development of a professional education program on dietary supplements. Her bachelor's degree from the University of Maryland is in government and politics.

Claudia D. Faigen, MA

Claudia is a part-time contractor who works with Dr. Anne Thurn on ODS communications issues and outreach efforts. She received her master's degree from the University of Maryland College of Jour-

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Recent Publications by ODS Staff

- *Johanna Dwyer*, Louise A. Berner, and Ian C. Munro (editors). Understanding Tolerable Upper Intake Levels. *Journal of Nutrition* 136(2S-1):485S-521S, February 2006.
- Abby G. Ershow and *Rebecca B. Costello*. Dietary guidance in heart failure: a perspective on needs for prevention and management. *Heart Failure Reviews* 11(1):7-12, March 2006.
- Alessandra Tavani, Luana Spertini, Cristina Bosetti, Maria Parpinel, Patrizia Gnagnarella, Francesca Bravi, Julie Peterson, *Johanna Dwyer*, Pagona Lagiou, Eva Negri, and Carlo La Vecchia. Intake of specific flavonoids and risk of acute myocardial infarction in Italy. *Public Health Nutrition* 9(3):369-374, May 2006.
- Tsunenobu Tamura and *Mary Frances Picciano*. Folate and human reproduction. *American Journal of Clinical Nutrition* 83(5):993-1016, May 2006.

Chenchen Wang, William S. Harris, Mei Chung, Alice H. Lichtenstein, Ethan M. Balk, Bruce Kupelnick, Harmon S. Jordan, and Joseph Lau. n-3 fatty acids from fish or fish-oil supplements, but not α -linolenic acid, benefit cardiovascular disease outcomes in primary- and secondary-prevention studies: a systematic review. *American Journal of Clinical Nutrition* 84(1):5-17, July 2006.

This paper is based on three reports for the Agency for Healthcare Research and Quality that were commissioned and funded by ODS.

Upcoming Events (continued from page 4)

October 5-8

American College of Nutrition, 47th Annual Meeting/Symposium*

Reno, NV

<http://www.amcollnutr.org/AnnualMeeting.html>

Dr. Rebecca Costello will moderate a session titled *Nutrition in Preventive Medicine and Chronic Disease Management* at which Dr. Sushil K. Jain, an NIH and ODS grantee, will present.

October 18-20

SupplySide West International Trade Show and Conference*

Las Vegas, NV

<http://www.supplysideshow.com/west>

Dr. Elizabeth Yetley will chair and speak at a session titled *Understanding the Systematic Review Process in Evidence-Based Decisions*. Dr. Joseph Betz will chair and speak at a session titled *Defining and Demonstrating Quality*.

October 26-28

AARP National Event & Expo: Life@50+*

Anaheim, CA

http://www.aarp.org/aarp_benefits/natl_events/anaheim

*** ODS will be exhibiting at these venues through October. Stop by to learn more about us, meet several of our staff, and pick up some of our materials.**

New ODS Staff (continued from page 4)

nalism and a BA in communications from Rutgers University.

Elizabeth A. Connors

A summer volunteer, Liz assists Dr. Elizabeth Yetley in a project to evaluate the nature and extent of NIH support for research on soy products. She returns to Emory University in the fall as a junior majoring in neuroscience and behavioral biology.