MINUTES OF THE NUTRITION COORDINATING COMMITTEE (NCC) MEETING, NATIONAL INSTITUTES OF HEALTH (NIH)
Rockledge 2, Conference Room 9100-9104, Bethesda, MD
January 3, 2008 2:00- 4:00 PM

WELCOME

Dr. Van Hubbard, Director, NIH Division of Nutrition Research Coordination (DNRC), convened the meeting at 2:02 PM and welcomed participants. Participating via phone were Dr. Sharon Adamo, HRSA; Dr. Barbara Bowman, CDC NCCDPHP; Ms. Tammy Brown, IHS; Ms. Jean Charles-Azure, IHS; Dr. Paul Coates, NIH ODS; Dr. Becky Costello, NIH ODS; Captain Janice Huy, CDC NIOSH; Dr. David Klurfeld, USDA; Dr. Elizabeth Maull, NIH NIEHS; Dr. Margaret McDowell, CDC NCHS; Dr. Marshall Plaut, NIH NIAID; Dr. Daniel Raiten, NIH NICHD; and Dr. Elizabeth Yetley, NIH ODS. The agenda for the meeting is provided as Appendix A, and the list of attendees is provided as Appendix B.

APPROVAL OF MINUTES FROM THE OCTOBER 4, 2007 NCC MEETING

Minutes from the October 4, 2007 NCC meeting had previously been sent to NCC members via email. Dr. Hubbard asked if there were any other corrections to the minutes. There were none. Dr. Paul Coates, Office of Dietary Supplements (ODS), made a motion to approve the minutes, and Dr. John Milner, National Institute of Cancer (NCI), seconded the motion. The minutes were thus approved and will be posted on the DNRC website along with the minutes from previous NCC Meetings.

SEAFOOD DEFICIENT DIETS: NEURODEVELOPMENT AND PSYCHIATRIC RISK.

Dr. Joe Hibbeln, NIH NIAAA, one of the first investigators to draw attention to the importance of omega-3 fatty acids in psychiatric disorders, presented the NCC with a summary of his research relating to seafood deficient diets and neurodevelopment and psychiatric risks. Ecological associations, a plausible biological mechanism, and data from the Avon Longitudinal Study of Parents and Children (ALSPAC), in Bristol, UK, were presented. The ALSPAC was used to assess the possible benefits and hazards to a child's development with different levels of maternal seafood intake during pregnancy. Study results suggest beneficial effects on child development with maternal seafood intakes of more than 340 g per week. In addition, results indicate that maternal seafood consumption of less than 340 g per week in pregnancy does not protect offspring from adverse outcomes. For example, after adjusting for other factors, maternal seafood intake during pregnancy of less than 340 g per week was associated with increased risk of their children being in the lowest quartile for verbal intelligence quotient compared with mothers who consumed more than 340 g per week. Due to these findings, Dr. Hibbeln suggested that advice to limit seafood consumption during pregnancy could actually be detrimental.

In addition to the neurodevelopmental and psychiatric risks associated with seafood deficient diets, Dr. Hibbeln presented a new research hypothesis regarding diet deficiency and obesity. Over the past century, there have been dramatic changes in the nutritional environment, specifically a shift from an environment rich in seafood to one rich in seed oils. Dr. Hibbeln suggested that an excessive intake of omega-6 fatty acids or a deficient intake of omega-3 fatty acids appears to cause hyperactivation of the endocannabinoid pathways and may be a significant, reversible cause of obesity.

BEYOND SIZE: IMPLICATIONS FOR NANOTECHNOLOGY APPLICATIONS TO FOOD AND NUTRITION

Dr. Ann Yaktine, IOM, gave a brief overview of nanotechnology. Due to the highly unique characteristics of nanoscale structures, there are several potential applications for the use of nanotechnology in food and nutrition. Nanoemulsions that encapsulate vitamins or other nutrients, nanolaminates that protect foods from moisture and microbial contaminants, nanopowders that enhance nutrient absorption, and nanosprays that disperse active molecules and are rapidly absorbed are some of the potential applications. At the same time there are potential benefits to using nanotechnology, there exists the possibility of unintended adverse effects. As this technology advances, it is important to examine the balance between intended benefits and unintended health effects. The National Academies of Science offers a unique opportunity to conduct such research either by convening a workshop to further explore the topic and publish a summary or convening an ad hoc expert committee to address nanotechnology as it relates to food and nutrition and author a consensus report. More information about nanotechnology and the implications to food and nutrition can be found in the handout attached as Appendix C.

In order to determine how to best address the opportunities/challenges of nanotechnology as it relates to food and nutrition, Dr. Hubbard suggested convening a small group of interested individuals to discuss how to proceed.

Action Item: If you are interested in joining this group or have additional comments, please contact Dr. Hubbard (Van.Hubbard@nih.hhs.gov) by January 22, 2008.

REVISION OF THE NUTRITION/SUPPLMENTS FACTS LABEL

Dr. Paula Trumbo, FDA, provided an update on the Advance Notice of Proposed Rulemaking (ANPRM) for "Food Labeling: Revision of Reference and Mandatory Nutrients," which was released 2 months ago. The full ANPRM can be viewed in the Federal Register. The document requests comments on what new reference values FDA should use to calculate the percent daily value in the Nutrition Facts and Supplement Facts labels and what factors the agency should consider in establishing such new reference values. It also poses questions regarding whether FDA should require that certain nutrients be added or removed from the Nutrition Facts and Supplement Facts labels and what should be considered

nutrients of concern. Comments are currently being collected and tabulated. Due to several requests for more time, the deadline for comments may be extended past the original 90-day timeframe.

Once comments are reviewed, FDA plans to bring together an interagency group for discussion prior to releasing a notice of proposed rulemaking. Hopefully this dialogue will enable other agencies to offer feedback at a more timely stage of the rulemaking process.

REPORTS FROM NCC MEMBERS AND LIASONS

Dr. Pam Starke-Reed, DNRC, announced that the 2-day meeting, **"**Gastrointestinal Microbiota and Advances in Pre and Probiotic Research," was held on December 11-12, 2007 and was a huge success. She thanked Dr. Crystal McDade-Ngutter, DNRC, who did a wonderful job organizing the conference. In addition, Dr. Starke-Reed thanked the working group for their time and effort. An executive summary from the meeting will be available at a later date. In the meantime, extra conference materials are still available. Contact Dr. McDade-Ngutter if you are interested in obtaining a copy (mcdadengutterc@mail.nih.gov).

Dr. Dan Raiten, NICHD, announced the possibility of a new project in collaboration with the Gates Foundation addressing iron supplementation in International communities. Further details will be discussed at a meeting to be held on January 15, 2008. Contact Dr. Raiten if you are interested in more information (raitend@mail.nih.gov).

Dr. Raiten also announced a project led by the World Health Organization to address the global burden of foodborne disease. WHO is seeking technical support from interested parties and is not looking for funding at this time. Contact Dr. Raiten for more details.

Dr. Margaret McDowell, CDC NCHS, reminded NCC members about the upcoming "Stakeholder Update Meeting: What We Eat in America/NHANES" that will take place on Thursday, January 10, 2008 from 1:00-3:30 in the NCHS Auditorium.

UPDATE FROM THE DHHS OFFICE OF DISEASE PREVENTION AND HEALTH PROMOTION (ODPHP)

Dr. Rick Troiano provided an update on the Physical Activity Guidelines and Ms. Kathryn McMurry provided several additional updates from ODPHP.

Physical Activity Guidelines

The Physical Activity Guidelines Advisory Committee held the second of three meetings at the Cohen Building on December 6 and 7. Frozen roads and school closings reduced the public attendance, but the Committee had lively discussion and made good progress. A report was received from each of 10 subcommittees

as well as an additional presentation on special population issues. Nine participants provided public comments. The subcommittees are finalizing their evidence review chapters, and the Committee will then shift focus to other sections of the Committee Report. The final meeting, where the Committee will present the draft report, is scheduled for February 28 and 29, with the expected location being room 800 of the Hubert H. Humphrey Building. Official announcement of the meeting will be forthcoming later this month. Information, including a summary of the meeting and a link to the registration site for the next meeting (when available) will be found on the Physical Activity Guidelines website.

Dietary Guidelines for Americans 2010

The planning process for the Dietary Guidelines for Americans 2010 is underway. There should be a call for committee nominations in the spring of 2008, and the first meeting is expected to be held in Fall, 2008. USDA has the administrative lead for this edition and information about the process will be available USDA, Center for Nutrition Policy and Promotion website. A one-page handout outlining the process has been distributed.

Nutrition Evidence Library

An interagency working group with representation from AHRQ, CDC, FDA, NIH, USDA/ARS, USDA/CSREES, and USDA/CNPP is working to develop a process for utilizing an evidence-based review tool to support the 2010 Dietary Guidelines Advisory Committee. A preliminary set of research questions will be developed, literature searches conducted, and research articles will be abstracted for the Advisory Committee's review and conclusions. Training sessions will be set up in the spring for evidence abstractors, and agency staff are encouraged to participate. Because the Dietary Guidelines encompass several areas of chronic disease prevention and health promotion, the work should be complementary to agency and institute missions.

Dietary Reference Intakes (DRIs)

Review of Dietary Reference Intakes Workshop

The prepublication summary of the joint US/ Canadian workshop that was held in Washington, DC on September 18-20, 2007 will be available by the end of January on the Institute of Medicine's website. A follow-on project is in the works to further distill the learning from the workshop to lay out an interim DRI framework that can be used to guide future updates as well as further refinements to the process.

Future DRI Reviews

The US and Canadian governments, in collaboration with IOM's' Food and Nutrition Board, are developing generic criteria for selecting nutrients for DRI updates. It is not expected that the entire collection of over 45 nutrients will be updated on a scheduled basis. Generally, the reviews will be triggered by significant advances in the science and public health importance. One strong

candidate is vitamin D, which would be reviewed along with calcium. If this goes forward in FY 2008, funding assistance from all sources will be welcome.

Healthy People 2010:

- The Progress Review for Nutrition and Overweight will be rescheduled in Spring, 2008.
- In its place, the Food Safety Focus Area held its Progress Review on December 20, 2007.
- The Progress Review for Physical Activity and Fitness will be held on March 20, 2008.

Summaries of Progress Reviews can be viewed on the Healthy People website.

Healthy People 2020

- The membership of the federal advisory committee is expected to be announced shortly. The first meeting is tentatively planned for early February.
- All 10 regions will be holding Healthy People 2020 Regional Meetings in 2008.

New Assistant Secretary for Health

A new Acting Assistant Secretary for Health was appointed. Donald Wright, M.D., M.P.H. began work on December 10, 2007 in the HHS Office of Public Health and Science as the Principal Deputy Assistant Secretary for Health (PDASH). He serves also as Acting Assistant Secretary for Health (ASH). Dr. Wright joined HHS after serving the past four years as the Director of the Office of Occupational Medicine for the Occupational Safety and Health Administration (OSHA) within the Department of Labor. Prior to joining the Department of Labor, Dr. Wright had an extensive occupational medicine clinical and consulting practice in Central Texas. He received his undergraduate degree from Texas Tech University, his medical degree from the University of Texas Medical Branch, and masters in public health from the Medical College of Wisconsin. He is board certified in both Family Medicine and Occupational Medicine and is a member of the American College of Occupational and Environmental Medicine and the American Academy of Family Physicians.

New Acting Surgeon General

Since October 2007, Rear Admiral Steven K. Galson, M.D., M.P.H., has served as the Acting Surgeon General of the United States. Prior to his appointment as Acting Surgeon General, he served as the Director of the Center for Drug Evaluation and Research (CDER) at the Food and Drug Administration (FDA). RADM Galson began his Public Health Service (PHS) career as an epidemiological investigator at the Centers for Disease Control. He has held senior-level positions at the Environmental Protection Agency, the Department of Energy where he was the Chief Medical Officer, and the Department of Health and Human Services. Prior to his arrival at the Food and Drug Administration

(FDA), RADM Galson was the Director of the Office of Science Coordination and Policy, Office of Prevention, Pesticides and Toxic Substances, at the EPA. RADM Galson received his Baccalaureate Degree from Stony Brook University in 1978, an M.D. from the Mt. Sinai School of Medicine in 1983, and a M.P.H. from the Harvard School of Public Health in 1990. He is Board Certified in General Preventive Medicine and Public Health as well as in Occupational Medicine.

ODS UPDATE
Dr. Paul Coates provided an update of ODS activities.

The Office of Dietary Supplements (ODS) sponsors a monthly seminar series. The January 16th seminar will be given by Emily Chew from the National Eye Institute on "Nutritional Therapies for Age-related Eye Diseases". The full schedule of seminars can be found as Appendix D. All are invited to attend. Please contact Dr. Mary Frances Picciano for further information (Mary.Picciano@nih.hhs.gov).

ODS co-funds more than 100 grants per year with NIH Institutes and Centers. The Office accepts applications forwarded by the ICs throughout the year and conducts an internal review primarily to determine relevance to the mission and goals of the Office. Meetings are held 4 times per year. Applications received from the ICs by January 14 will be reviewed soon thereafter and a funding decision will be made by February 6. Please contact Dr. Becky Costello for further information (Becky.Costello@nih.hhs.gov).

UPDATE OF DNRC ACTIVITIES:
Nutrition Education Subcommittee (NES). Dr. Jean Pennington, DNRC, provided an update of the activities of the NIH NCC NES. For the calendar year 2007, the NES reviewed 40 documents, which included 15 from NIH (one each from NCI, NICHD, WIN, DNRC, and NIA; three from ORS; and seven from NHLBI), 15 from other DHHS agencies (CDC, IHS, HRSA, and OWH), and ten from USDA (FNS, FNCS, and CNPP). Materials reviewed since the last NCC meeting were:

- *Nutrition Chapter in The Official Guide to Women's Health : A Resource for Healthy Living* (OWH, DHHS)
- *Fitness Chapter in The Official Guide to Women's Health: A Resource for Healthy Living* (OWH, DHHS)
- *Calcium and Cancer Prevention* (NCI, NIH)
- *Two Bite Club* (FNS, USDA)
- *DHHS Prevention Toolkit on Healthfinder.gov* (DHHS)
- *Know What You Eat, NIH National Nutrition Month Flyer* (DNRC, NIH)
- *Age Page on Dietary Supplements* (NIA, NIH)
- *UR What U Eat* (NHLBI, NIH)
- *One Woman's Story* (OWH, DHHS)

The DNRC maintains a listing of NIH nutrition education materials on its website; NCC members are requested to check the information on the website and provide any needed changes or new materials to Karen Regan, DNRC.

HNRIM: Mr. Jim Krebs-Smith provided an update regarding RCDC and the process of validating the nutrition fingerprint. Though initially scheduled for December, the validation is expected to be completed during January. More details will be available at the next NCC meeting.

In addition, Mr. Krebs-Smith reminded NCC members that the request for 2007 HNRIM data is expected to go out in late January. IC's were invited to submit their nutrition data earlier if desired. Data submissions should be based on the same definition of nutrition research used last year. RCDC definitions will not be implemented until FY 2008 data collection.

HHS Obesity Related Activities: Dr. Van Hubbard described the establishment of a Childhood Overweight and Obesity Prevention Initiative to be coordinated by the Surgeon General that was announced at the National Prevention and Health Promotion Summit on November 28, 2007. As part of this initiative a Childhood Overweight and Obesity Prevention Council has been formed, and their first meeting will take place on January 10th and will be chaired by the Acting Surgeon General, RADM Galson. More information will be available after this meeting.

NEXT NCC MEETING

The next meeting will be Thursday, February 7, 2008

ADJOURNMENT

The meeting was adjourned at 4:00 PM

LIST OF APPENDICES

Appendix A: NIH NCC Meeting Agenda for January 3, 2008
Appendix B: NIH NCC Meeting Attendees for January 3, 2008
Appendix C: Implications for nanotechnology applications to food and nutrition
Appendix D: ODS Spring Seminar Schedule

APPENDIX A: NIH NUTRITION COORDINATING COMMITTEE MEETING AGENDA

1. **Welcome**…… Van Hubbard

2. **Approval of Minutes of the October 6, 2007 meeting**……..... Van Hubbard

3. **"Seafood Deficient Diets: Neurodevelopmental and Psychiatric Risk"**

   Joe Hibbeln, MD
   Laboratory of Membrane Biochemistry & Biophysics
   NIAAA, NIH

4. **Beyond Size: Implications for Nanotechnology Applications to Food and Nutrition** ……..……...Ann Yaktine, FNB IOM, NAS

5. **Revision of the Nutrition/Supplements Facts Label**……...Paula Trumbo, FDA

6. **Reports from NCC Members and Liaisons**…..……..…..NCC Members

7. **ODPHP Activities Update**……...……...Kathryn McMurry, ODPHP/OS

8. **ODS Activities Update** ……..…Paul Coates, ODS

9. **Current DNRC Update of Activities**…..……..……..…..DNRC Staff
   - Nutrition Education Subcommittee Update……..……..Jean Pennington*
   - International Committee Information……...Pam Starke-Reed/Dan Raiten*
   - HNRIM Update……...…….Jim Krebs-Smith/Karen Regan
   - HHS Obesity Related Activities……..…Van Hubbard

*** Updates will be included in the minutes of the meeting only**

APPENDIX B: NCC MEETING ATTENDEES FOR JANUARY 3, 2008

	Members Present	Members Absent	Alternates Present
Chairperson:	V Hubbard		P Starke-Reed
NIH Members:			
NCI	J Milner		S Ross
NHLBI		D Danford	
NIDCR		R Nowjack-Rayner	
NIDDK	C Miles		S Yanovski
NINDS		M Mitler	
NIAID	M Plaut		
NIGMS		S Somers	
NICHD		G Grave	D Raiten
NEI		N Kurinij	
NIEHS	E Maull		
NIA		J Hannah	
NIAMS		J McGowan	
NIDCD		B Wong	
NIMH		P Muehrer	
NIDA		G Lin	
NIAAA	R Breslow		
NINR		P Cotton	
NCCAM		M Klein	
NCRR		L Yager	
FIC		M Levintova	
NHGRI		M.K. Holohan	
NIH Liaison Members:			
CC	N Sebring		
CIT		J Mahaffey	
CSR		S Kim	
NLM		S Phillips	
OBSSR	D Olster		
OC		M Stern	
ODS	P Coates		B Costello
OD/ODP	B Portnoy		
OLPA			
ORWH			
PRCC		M Vogel-Taylor	
Agency Liaison Representatives:			
CDC/NCCDPHP		D Galuska	
CDC/NCHS		V Burt	
FDA	K Ellwood		S Blakely
HRSA		M Lawler	S Adamo
IHS	T Brown		J Charles-Azure
ODPHP	K McMurry		
USDA		M Kretsch	D Klurfeld
DOD		K Friedl	
OPHS			

DNRC: R Fisher, S Frazier, D Johson-James, W Johnson-Taylor, J Krebs-Smith, C McDade-Ngutter, J Pennington

Guests: R Ballard-Barbash (NCI), B Bowman (CDC/NCCDPHP), C Davis (NCI), P Emmett (University of Bristol), M Evans (NIDDK), J Flood (CC), J Hibbeln (NIAAA), J Huy (CDC/NIOSH), N Kasaoka (NCI), S Kasaoka (NHLBI), Y Kim (NCI), M Kozlosky (CC), S Krebs-Smith (NCI), M McDowell (CDC/NCHS), T Smith

(NIAMS), K Strong (CC), R Troiano (OS/ODPHP), E Trujillo (NCI), P Trumbo (FDA), A Yaktine (IOM), E Yetley (ODS), and K Zambell (CC)

APPENDIX C: IMPLICATIONS FOR NANOTECHNOLOGY APPLICATIONS TO FOOD AND NUTRITION

THE NATIONAL ACADEMIES
INSTITUTE OF MEDICINE

Food and Nutrition Board

Beyond Size: Implications for Nanotechnology Applications to Food and Nutrition

Statement of the Issues

Nanotechnology enables researchers to manipulate matter at the atomic level, producing structures with unique properties and wide-ranging uses, from molecular biology to physical science. Nanomaterials are appearing in consumer products and industry is actively exploring their use in creating, processing, and storing food, and in delivering bioactive food components and nutrients directly into targeted tissues.

Examples of food technology applications include nanoemulsions—composed of droplets of 500 nanometers or less—that encapsulate vitamins or other nutrients, prevent them from degrading, and allow them to penetrate targeted sites. Nanolaminates, another application, provide a unique way to protect foods from moisture while serving as carriers for flavors, nutrients, and antimicrobials. Another potentially important application is the use of nanocomposites to enhance mechanical, thermal, and barrier properties of food packaging materials.

Nanotechnology also holds the potential to contribute to interventional health strategies through engineered nutrient delivery systems. Examples include nanoscale powders that increase the absorption of nutrients; nanoencapsulation of neutraceuticals to increase absorption and stability and allow for targeted delivery; and sprays that disperse active molecules such as vitamins into nanodroplets that are rapidly absorbed.

Along with both intended and ancillary benefits, unintended and unpredicted adverse effects are inherent risks that accompany any new technology. Because the field of nanotechnology assigns particles to the discipline based on size as well as chemical composition, attributing such health effects will be more challenging than with more conventional technologies. However, size alone cannot define the parameters needed to assess biological interactions with engineered nanoparticles. Nutrients that are present in a complex food matrix must be broken down into products that are themselves in the range of nanoscale materials before they can be taken up and utilized. Thus engineered nanoparticles that have applications to food science and technology or nutrient delivery must be examined at the level of their interface with biological systems.

Developing nanotechnology into a safe and effective tool for use in food science and technology and nutrient delivery applications is an important component of improving the nutritional health of Americans. Assuring consumer confidence in the technology is

also important. To achieve these goals will require such actions as examining the balance between both intended and ancillary benefits and the potential for unintended adverse health effects that may come from the application of nanotechnology to food science and nutrient delivery systems, and comparing the likelihood between nanotechnology and conventional approaches to have both positive and unintended adverse influence on health outcomes.

Questions that are relevant to the application of nanotechnology to food science and technology and nutrient delivery applications are:

- How might nanomaterials change in a complex system such as a food matrix?
- What is the evidence that the physical or chemical properties of nanoscale materials may be altered by interaction with a unique biological system like the human gut?
- What indicators are needed to know when nanomaterials matter in a food and nutrition context; and what is needed to evaluate applications for usage and identify the potential for a safety concern?

Possible Roles for the National Academies

- Convene a workshop to further explore a topic and as a source of information and publish a summary of what transpired, or
- Convene an ad hoc expert committee to address a statement of task and author a consensus report.

APPENDIX D

National Institutes of Health
Office of Dietary Supplements
2008 Spring Seminar Schedule

Wednesday, January 16, 2008

Emily Y. Chew, MD
Deputy Director
Division of Epidemiology and Clinical Research
National Eye Institutes, National Institutes of Health
Bethesda, MD

Topic: Nutritional Therapies for Age-related Eye Diseases
Location: Executive Plaza North (EPN) 6130 Executive Blvd, Room H
Time: 11:00 a.m. - 12:00 p.m.

Wednesday, February 6, 2008

Jacob Selhub, PhD
Professor, Friedman School of Nutrition Science and Policy
Chief of the Vitamin Metabolism Laboratory and Senior Scientist, Jean Mayer USDA Human Nutrition Research Center on Aging, USDA Human Nutrition Research Center on Aging at Tufts University,
Boston, MA

Topic: Folic acid intake and exacerbation of vitamin B12 deficiency
Location: Executive Plaza North (EPN) 6130 Executive Blvd, Room J
Time: 11:00 a.m. – 12:00 p.m.

Wednesday, March 12, 2008

Kenneth Setchell, PhD
Professor of Pediatrics
Director, Clinical Mass Spectrometry Facility
University of Cincinnati College of Medicine
Cincinnati, OH

Topic: Fate and possible function of enantiomeric soy isoflavone metabolites
Location: Executive Plaza North (EPN) 6130 Executive Blvd, Room H
Time: 11:00 a.m. – 12:00 p.m.

Wednesday, April 16, 2008

Helene McNulty, PhD
Professor of Human Nutrition & Dietetics

Northern Ireland Centre for Food and Health (NICHE)
School of Biomedical Sciences University of Ulster
Coleraine, Northern Ireland

Topic: Folic acid supplementation and optimal health: getting the balance right
Location: Executive Plaza North (EPN) 6130 Executive Blvd, Room J
Time: 11:00 a.m. – 12:00 p.m.

Wednesday, May 7, 2008

Susan Mayne, PhD
Professor of Epidemiology and Public Health
Yale University School of Medicine
New Haven, CT

Topic: Controversies and Solutions in Epidemiologic Studies of Diet and Cancer: What is Diet and how do we Measure It?
Location: Executive Plaza North (EPN) 6130 Executive Blvd, Room J
Time: 11:00 a.m. - 12:00 p.m.