

# **Re-Thinking the Acceptable Macronutrient Distribution Range for the 21st Century: A Letter Report**

## **Committee**

### **John W. Erdman, Jr.**

#### **Chair**

John W. Erdman Jr. is Emeritus Professor of Food Science and Human Nutrition at the University of Illinois at Urbana Champaign. He continues to have an active research program with a particular interest in the impact of bioactive food components on health and disease. Currently, his lab is working on carotenoids and vitamin E in relation to risk of prostate cancer and brain development and function as well use of quantitate ultrasound to detect early stages of NAFLD. His lab has accepted fees for service for analysis of carotenoids and vitamin E from human blood samples. Previously, his laboratory has extensively evaluated how food processing and other factors alter the bioavailability of a number of minerals and carotenoids and have published human clinical trials on soy protein and cholesterol reduction. He has authored over 240 original research articles and over 400 total publications (h-index is 61). He is a Fellow of the American Society for Nutrition (ASN), the Institute of Food Technologists (IFT) and the American Heart Association (AHA). He is past President of the American Society for Nutritional Sciences (now ASN). He is an elected Member of the Institute of Medicine (now National Academy of Medicine). Dr. Erdman is a scientific advisor for the Soy Nutrition Institute Global and is a member of the board of trustees for the Institute for the Advancement of Food and Nutritional Sciences. He has received numerous honors for research, teaching and mentoring. His B.S., M.S., M.Phil. and Ph.D. are in Food Science from Rutgers University. He has served on over two dozen committees for the Institute of Medicine, National Academy of Sciences (NAS) and was Vice Chair of the Standing Committee on the Scientific Evaluation of Dietary Reference Intakes (DRIs) for the duration of the development of the initial DRIs.

# Stephanie A. Atkinson

## Member

Stephanie Atkinson is a tenured Professor and nutrition clinician-scientist in the Department of Pediatrics, Associate Member, Department of Biochemistry and Biomedical Sciences, Faculty of Health Sciences, McMaster University and Special Professional Staff in McMaster Children's Hospital. Her research has focused on optimizing health of infants and children including investigations of the factors influencing growth and skeletal development in premature infants and in children with bone disorders secondary to pediatric diseases or drug therapy such as acute lymphoblastic leukemia and cystic fibrosis. Currently, her research program encompasses randomized clinical trials and epidemiological investigations of the environmental (nutrition), genetic and biochemical factors during fetal, neonatal and early childhood life that play a role in defining the offspring phenotype and as risk determinants for non-communicable diseases including obesity, diabetes, cardiovascular disease, neurocognitive functioning and osteoporosis. Distinguished elected positions include a Governor-in-Council appointment to the inaugural Governing Council of The Canadian Institutes of Health Research (CIHR), President of the American Society for Nutrition and Chair of the Institute Advisory Board of the CIHR Institute of Nutrition, Metabolism and Diabetes. She has served as member or chair of expert advisory panels from Health Canada, World Health Organization/Food & Agricultural Organization. She previously served on the scientific advisory board of Jamieson Natural Resources. She has served on several National Academies' committees related to various aspects of setting the Dietary Reference Intakes and subsequent projects; the process for the DGAs; and feeding of infants and children from birth to 24 months. She is a co-author on the publication Options for Basing Dietary Reference Intakes (DRIs) on Chronic Disease Endpoints. Dr. Atkinson received her Ph.D. in nutritional biochemistry from the University of Toronto and completed post-doctoral training in endocrinology at Toronto's Hospital for Sick Children.

## **Sai K. Das**

### **Member**

Sai Krupa Das is a Senior Scientist on the Energy Metabolism Team at the Jean Mayer USDA Human Nutrition Research Center on Aging and Professor at the Friedman School of Nutrition Science and Policy, both at Tufts University. She has over 20 years of experience in human nutrition research and in the field of energy metabolism. She has examined energy expenditure in adults with varying weight status and is an expert on doubly labeled water and other methodologies for measuring energy intake and expenditure and body composition. During her career, Dr. Das has conducted several clinical trials involving lifestyle interventions for attenuating age-related changes and targeting the obesity epidemic. These studies have included employees at worksites, hard-to-reach segments of the general population, military families, and people from around the world who face weight-related health challenges. She is widely published for her ongoing work on the landmark CALERIE (Comprehensive Assessment of Long-term Effects of Reducing Intake of Energy) trial, the first largest randomized controlled trial of calorie restriction in humans. Her publications include A Standard Calculation Methodology for Human Doubly Labeled Water Studies; Evaluation of PIQNIQ, a Novel Mobile Application for Capturing Dietary Intake; and Opportunities and Challenges of Technology Tools in Dietary and Activity Assessment: Bridging Stakeholder Viewpoints. Dr. Das has previously received honoraria from the Council for Responsible Nutrition and the Gerontological Society of America. Dr. Das is currently Executive Director of the International Weight Control Registry and a member of the Energy and Macronutrient Metabolism Research Interest Group of the American Society of Nutrition. She is also a member of the Obesity Society and the Gerontological Society of America. Dr. Das holds a Ph.D. in Human Nutrition from the Friedman School of Nutrition Science and Policy.

## Amy H. Herring

### Member

Amy H. Herring is Sara & Charles Ayres Distinguished Professor at Duke University. Prior to coming to Duke, she was the Carol Remmer Angle Distinguished Professor of Children's Environmental Health at the University of North Carolina at Chapel Hill. Her research interests include development of statistical methodology for longitudinal and clustered data, Bayesian inference, and development of methods for inference in the presence of missing data or measurement area. She is interested in research questions arising in maternal and child health, nutrition, and environmental epidemiology. She has won numerous awards for her work, including the Mortimer Spiegelman Award from the American Public Health Association as the best applied public health statistician under age 40, the Janet L. Norwood Award for outstanding achievement by a woman in the statistical sciences, Harvard's Lagakos Distinguished Alumni (Biostatistics) Award, and the "Best Paper in Biometrics" award (twice). Dr. Herring is an elected member of the Board of Directors of the International Biometric Society and will serve as Chair of the American Statistical Association's Section on Bayesian Statistical Science in 2022 and as President of the International Society for Bayesian Analysis in 2023. She was previously President of the International Biometric Society's Eastern North American Region and served as Chair of the American Statistical Association's Biometrics Section. She is an elected fellow of the American Statistical Association and International Statistical Institute. She is also a paid member of the Health Effects Institute research committee. Dr. Herring received her Sc.D. in Biostatistics from Harvard University.

## Nancy F. Krebs

### Member

Nancy Krebs is a Professor of Pediatrics, Head of the Section of Nutrition in the Department of Pediatrics at the University of Colorado School of Medicine. Dr. Krebs' research has focused on determining dietary nutrient requirements and characterizing homeostasis, including metabolic regulation and adaptation to different physiologic states, including in normal infants (especially breastfed), pregnant & lactating women. She also has substantial clinical experience and research related to obesity in childhood and adolescence, and effects of maternal obesity risk factors for excessive infant weight gain. She has received honors from the American Academy of Pediatrics and the American Society for Nutrition for her research, including the Pediatric Nutrition Lifetime Achievement Award from ASN, and selection as a Fellow of the ASN. Dr. Krebs has served on multiple special panels and working groups for the National Institutes of Health, including the Dietary Guidelines B-24 Federal Steering Committee, and the Thematic Working Group (6-12 months). She is also a member of the FAO/WHO Expert Group on Nutrient Requirements for Children Aged 0-36 months. Dr. Krebs served on the Danone Happy Family Maternal Infant Advisory Board, 2017-2022. Compensation for this service goes to the University of Colorado. She is a co-investigator with in-kind support on research grants from the National Pork Board, the U.S. Highbush Blueberry Council, the Gerber Foundation, Mead Johnson, and the National Cattlemen's Beef Association. She obtained an M.S. in Nutrition Science at the University of Maryland and an M.D. from the University of Colorado. She completed a Pediatric Residency and Fellowships in Pediatric Nutrition and in Gastroenterology. From 2003-2007, she was a member of the National Academies' Food and Nutrition Board.

# Alice H. Lichtenstein

## Member

Alice Lichtenstein is the Stanley N. Gershoff Professor of Nutrition Science and Policy in the Friedman School, and Senior Scientist and Director of the Cardiovascular Nutrition Laboratory at the Jean Mayer USDA Human Nutrition Research Center on Aging (HNRCA), both at Tufts University. She holds secondary appointments as an Associated Faculty member in the Institute for Clinical Research and Health Policy Studies at Tufts Medical Center and Professor of Medicine at Tufts University School of Medicine and an honorary doctoral degree from the medical faculty of the University of Eastern Finland (formally University of Kuopio). At the HNRCA Dr. Lichtenstein's research group focuses on assessing the interplay between diet and cardiovascular disease risk factors. Past and current work includes addressing issues related to trans fatty acids, soy protein and isoflavones, sterol/stanol esters, novel vegetable oils differing in fatty acid profile and glycemic index, in postmenopausal females and older males. Additional work is focused on population basis studies to address the relationship between cholesterol homeostasis biomarkers and nutrient intake biomarkers, and cardiovascular disease risk; and on the application of systematic review methods to the field of nutrition. She is a co-Investigator for the AHRQ/Brown Carbohydrate and Laxation systematic review study. Dr. Lichtenstein previously received funding from the Avocado Nutrition Center to be part of a multi-center study. Dr. Lichtenstein served on the 2000 and 2015 (vice-chair) Dietary Guidelines Advisory Committees. She is a member and past-chair of the AHA Nutrition Committee, and in 2021 was chair of the writing group that updated the AHA diet guidance for cardiovascular disease prevention. She was elected a Fellow of the American Society for Nutrition and American Heart Association, received the Honorary Lifetime Membership Award in Recognition of Extraordinary Expertise and Contributions to Clinical Lipidology from the National Lipid Association and in 2019 she received the Alumni Award of Merit from the Harvard T.H. Chan School of Public Health. Dr. Lichtenstein completed her undergraduate work at Cornell University, holds a master degree from the Pennsylvania State University, and master and doctoral degrees from Harvard University School of Public Health. Dr. Lichtenstein served as a member of the Committee to Review the Dietary Reference Intakes for Macronutrients and a member of the Committee to Review the Dietary Reference Intakes for Sodium and Potassium of the National Academies.

## **Nadine R. Sahyoun**

### **Member**

Nadine Sahyoun is Professor of Nutritional Epidemiology at the Department of Nutrition and Food Science, University of Maryland, College Park and served as the departmental Graduate Program Director. Her area of work focuses on the relationship between diet, lifestyle factors, nutritional status and health outcomes, especially in vulnerable populations. Her recent work examines determinants and impact of food and nutrition security on populations in the US, Middle East and Sub-Saharan Africa. She spent a sabbatical year as a Fulbright Scholar at the American University of Beirut in 2009-2010. She received the Excellence in Research Award from the University of Maryland Alumni Association and was an ADVANCE professor from 2019-2021. Dr. Sahyoun serves as a panel member for the GRAS determination of food products for the consulting firm, Exponent. She was previously active in the Department of Health and Human Services advisory workgroup for the COVID-19 module of the Administration for Community Living/Administration on Aging National Survey of Older Americans Act Participants. Dr. Sahyoun received her Ph.D. in Nutrition from the Friedman School of Nutrition Science and Policy, at Tufts University and was a postdoctoral research fellow with the Association for Teachers in Preventive Medicine, National Center for Health Statistics in Hyattsville, Maryland.

## **Valerie Tarasuk**

### **Member**

Valerie Tarasuk is a Professor in the Department of Nutritional Sciences at the University of Toronto, cross-appointed to the Dalla Lana School of Public Health. While her major scholarly contributions have been in the area of household food insecurity in Canada, her research extends to Canadian food policy and population-level dietary assessment. She has participated in numerous advisory processes and reviews related to the design and interpretation of population dietary intake surveys and the development of food and nutrition policy in Canada. In recognition of her contributions, Dr. Tarasuk has been awarded the Earle Willard McHenry Award for Distinguished Service in Nutrition (2017), an honorary Doctor of Science degree from Queen's University (2018), and the CNS-SCN Fellow Distinction from the Canadian Nutrition Society (2021). She completed her Ph.D. in Nutritional Sciences at the University of Toronto under the supervision of Prof. George Beaton. Dr. Tarasuk served on the National Academies' Committee on Use of Dietary Reference Intakes in Nutrition Labeling and the Standing Subcommittee on the Interpretation and Uses of Dietary Reference Intakes.

## **Linda V. Van Horn**

### **Member**

Linda Van Horn is Professor and Chief, Nutrition Division, Department of Preventive Medicine, Feinberg School of Medicine, Northwestern University in Chicago. She is a clinical nutrition epidemiologist focusing on primary prevention of cardiometabolic and other chronic diseases beginning in utero and throughout the life course. Multi-center collaborative trials include the Diet Intervention Study in Children (DISC), the Women's Health Initiative (WHI) and the International Study of Macro/Micronutrient Intake and Blood Pressure (INTERMAP). Ongoing work involves DASH diet intervention in children born among mothers with overweight/obesity (MOMFIT) designed to prevent excessive gestational weight gain (KIDFIT). Current work involves the Nutrition for Precision Health (NPH) as one of the 6 clinical centers involved in this major NIH initiated research. Dr. Van Horn was editor of the Journal of the Academy of Nutrition and Dietetics from 2003-2013. She chaired the 2010 US Dietary Guidelines Advisory Committee (DGAC) and served on the 2020 US DGAC. She chaired several NIH Task Forces and Workshops including the National Heart, Lung and Blood Institute Workshop on Medical Nutrition Education. She is an active member of the American Heart Association Nutrition Committee. She is a member of the NASEM Standing Committee on Evidence Synthesis and Communication in Diet and Chronic Disease Relationships. Her undergraduate training was in Nutrition and Dietetics at Purdue, her master's degree is in exercise physiology from the University of Pittsburgh and her doctoral work at the University of Illinois, Chicago.

## **Elizabeth A. Yetley**

### **Member**

Elizabeth A. Yetley retired from the Office of Dietary Supplements (ODS) at the National Institutes of Health (NIH) in 2008 having served as Senior Nutrition Research Scientist for four years. Subsequently, she was contracted by ODS for the next nine years to work on specific projects that were of interest to the organization. From 1980 to 2004, she worked as a nutrition scientist at the U.S. Food and Drug Administration (FDA), eventually attaining the rank of Lead Nutrition Scientist. Dr. Yetley provided leadership for several projects at both NIH and FDA that included health claims for nutrition labels, folic acid fortification, methodological challenges for assessing folate and vitamin D biomarkers of status, and systematic reviews for Dietary Reference Intakes, and other nutrition topics such as vitamin D and omega-3 fatty acids. She also provided regulatory leadership for infant formulas, medical foods, and dietary supplements. She received numerous awards from organizations including FDA, NIH, the Health and Human Services' Secretary, the American Society for Nutrition, the University of Massachusetts, and Iowa State University. She received her B.S., M.S., and Ph.D. in nutrition from Iowa State University. Dr. Yetley was a member of the 2017-2019 National Academies' Committee to Review the Dietary Reference Intakes for Sodium and Potassium and is currently a member of the Committee to Review the Dietary Reference Intakes for Energy.