

Dietary Reference Intakes for Vitamin D and Calcium

Committee

A. Catharine Ross

Chair

A. Catharine Ross, Ph.D. is Professor and occupant of the Dorothy Foehr Huck Chair of Nutrition, Department of Nutritional Sciences, The Pennsylvania State University. Prior to her appointment at The Pennsylvania State University, she was with the Medical College of Pennsylvania. As a nutritional biochemist, Dr. Ross has studied cellular factors involved in the biosynthesis and transport of vitamin A molecules. Her focus has been on the interaction of cellular retinoid-binding proteins and enzymes that esterify retinol for transport, storage, and oxidation with the intent to link biochemical findings with nutritional studies to better understand how vitamin A homeostasis is regulated by dietary status and metabolic conditions. She also investigates the role of retinoids in immune function, principally antibody production. She currently serves as Editor-in-Chief of the Journal of Nutrition. She is past Associate Editor for both the Journal of Lipid Research and the 9th and 10th editions of Modern Nutrition in Health and Disease and has served on several other editorial boards for various scientific publications. Dr. Ross has received numerous awards including the Mead-Johnson Award from the American Institute of Nutrition and the Osborne and Mendel Award from the American Society for Nutritional Sciences; Dr. Ross is a Fellow of the American Association for the Advancement of Science. She is active within a range of professional societies including the American Association of Immunologists, Sigma Xi, and the American Physiological Society, and has served on a number of committees for the American Society for Nutrition, and the Federation of the American Societies for Experimental Biology. She is also active on the NIH-NIDDK Board of Scientific Counselors and is chair of the NIH Integrated Nutrition and Metabolic Processes Study Section. Dr. Ross is a member of the National Academy of Sciences (2003) and has served on the IOM Food and Nutrition Board (1997-2003), as a member of the Panel on Micronutrients for the Dietary Reference Intakes (1999-2001), and as a member of the Committee on Opportunities in the Nutrition of Food Sciences (1991-1993). Dr. Ross received her Ph.D. from Cornell University in biochemistry, molecular and cell biology.

Steven A. Abrams

Member

Steven A. Abrams, M.D. is Professor of Pediatrics, Baylor College of Medicine, Houston. His research focus is mineral metabolism in infants as well as calcium intake and absorption in adolescents. His work includes the study of stable isotopes of iron and zinc and the overall relationship of mineral nutriture to health. His research is supported by the USDA and by the NIH. Dr. Abrams, a neonatologist, is a Diplomat of the Board of Medical Examiners, the American Board of Pediatrics, and the Sub-board of Neonatal-Perinatal Medicine. He has received a number of awards including the Centrum Center for Nutrition Science Award from the American Society for Nutrition Sciences and the Norman Kretchmer Memorial Award in Nutrition and Development from the American Society for Clinical Nutrition. He is a member of an advisory panel for The Milk Processor Education Program (MilkPEP). He is an associate editor of The American Journal of Clinical Nutrition. Dr. Abrams is also a member of the American Society for Nutrition, the American Academy of Pediatrics, and the American Society for Bone and Mineral Research. Dr. Abrams has served as an IOM committee member for the Committee on the Use of Dietary Reference Intakes in Nutrition Labeling (2002-2003), the Panel on Calcium and Related Nutrients for Dietary Reference Intakes (1996-1997), and the Subcommittee on Upper Safe Reference Levels of Nutrients (1996-1997). Dr. Abrams received his medical degree from Ohio State University College of Medicine.

John F. Aloia

Member

John F. Aloia, M.D. is Chief Academic Officer, Department of Academic Affairs, Winthrop-University Hospital, Mineola, New York and is Professor of Medicine and Associate Dean at SUNY at Stony Brook. Dr. Aloia's recent publications address differences in skeletal and muscle mass with aging in black and white women; optimal vitamin D status and serum parathyroid hormone in African American women; and the reference range for serum parathyroid hormone. His other research interests center on bone metabolism and, in particular, issues related to pathogenic mechanisms responsible for the development of skeletal fragility and osteoporosis. The focus of this investigation is the influence of various regulatory factors on the skeleton. Dr. Aloia is the recipient of several awards and is first author on a range of peer-reviewed articles focusing on bone metabolism. He oversees an active research program designed to explore the use of drugs to treat of osteoporosis and reverse low bone mineral density. Dr. Aloia receives research funding through the Empire Clinical Research Investigator Program which awards competitive grants through the New York State Department of Health in support of physician training in the methodology, implementation, and evaluation of clinical research. The topics for these grants include vitamin D replacement in obesity and the effect of bariatric surgery on bone. In addition, he has a research award pending from the NIH targeted to the study of vitamin D and osteoporosis prevention in elderly African American women. Dr. Aloia is the recipient currently of a pharmaceutical research grant from Merck (interaction between calcium and vitamin D intake in postmenopausal women). Dr. Aloia is also Principal Investigator at Winthrop-University Hospital on the following Clinical Trials: Eli Lilly (teriparatide rDNA origin injection and direct assessment of nonvertebral fractures in community experience), and Takeda Global Research (a phase 4, randomized, double-blind, placebo-controlled study to evaluate the effect of pioglitazone compared to placebo on bone metabolism in impaired fasting glucose, postmenopausal women). Dr. Aloia is a Diplomate of the National Board of Medical Examiners and is Board Certified in Internal Medicine and Endocrinology. He is also a member of several professional societies including the American Association of Clinical Endocrinologists, the American Association of Diabetes Educators, the American College of Physicians, the American Diabetes Association, the American Medical Association, the American Society for Bone and Mineral Research, the Endocrine Society, the International Bone and Mineral Society, and the National Osteoporosis Foundation. He received his medical degree from Creighton Medical School, Omaha.

Patsy M. Brannon

Member

Patsy M. Brannon, Ph.D., R.D. is Professor, Division of Nutritional Sciences, Cornell University where she has also served as Dean of the College of Human Ecology. Prior to moving to Cornell University, Dr. Brannon was Chair, Department of Nutrition and Food Science, University of Maryland. She has also served as Visiting Professor, Office of Dietary Supplements, National Institutes of Health. Her research focus includes nutritional and metabolic regulation of gene expression, especially as relating to human development, the placenta, and exocrine pancreas. She chaired an NIH initiative to plan effective federal research related to the health effects of vitamin D; and has also co-chaired the NIH program "Vitamin D and Health in the 21st Century: Update Conference" as well as coordinated the vitamin D round table associated with the conference. Dr. Brannon is a member of a number of professional and scientific associations including the American Dietetics Association, the Institute of Food Technologists, and the American Association for the Advancement of Science. She has served on the Executive Board of the American Society for Nutrition and is a member of the technical expert panel on "The Relationships of Vitamin D and Calcium Intakes to Nutrient Status Indicators and Health Outcomes" for the Tufts Evidence Based Practice Center. Dr. Brannon has received numerous awards including the Pew Faculty Scholar in Nutrition award as well as the Centennial Laureate award from Florida State University. Dr. Brannon has published widely in the field and has over 50 peer-reviewed journal articles to her credit. She received her Ph.D. from Cornell University in nutritional biochemistry.

Steven K. Clinton

Member

Steven K. Clinton, M.D., Ph.D. is Professor in the Department of Internal Medicine, Division of Medical Oncology at The Ohio State University. He is the Program Leader for the Molecular Carcinogenesis and Chemoprevention Program of the Comprehensive Cancer Center and serves the James Cancer Hospital as Director of Prostate and Genitourinary Oncology. Dr. Clinton is a faculty member of the campus wide Ohio State University Nutrition Graduate Program (OSUN) and is co-director of the Center for Advanced Functional Foods Research and Entrepreneurship. Dr. Clinton's research examines fundamental mechanisms underlying the development of cancer and studies novel prevention and therapeutic strategies in human clinical trials. His cancer research interests within nutritional sciences include the roles energy intake, bioactive lipids, vitamin D, and carotenoids and other phytochemicals. Dr. Clinton earned a Ph.D. from The University of Illinois at Urbana-Champaign in Nutritional Sciences followed by his medical degree at the same institution. After completing his internship and residency in Internal Medicine at the University of Chicago, he pursued subspecialty training in Medical Oncology at the Dana-Farber Cancer Institute and Harvard Medical School where he remained on the faculty prior to joining The Ohio State University in 1998. Dr. Clinton has received a number of awards, including: The Emil Frei III Fellowship in Clinical Investigation, a Preventive Oncology Academic Award from the National Cancer Institute-National Institutes of Health, The Bertha Bouroncle Distinguished Faculty Teaching Award, and is a Fellow of the American Association for the Advancement of Science. He is a member of several professional organizations, including: Advancing Science Serving Society, American Association for Cancer Research, American Society of Clinical Oncology, and American Society of Nephrology. Over the past three decades, Dr. Clinton's research has been supported by many organizations including the National Institutes of Health/National Cancer Institute, the Department of Defense Congressionally Directed Medical Research Programs, The American Cancer Society, the American Institute for Cancer Research, the Lance Armstrong Foundation, and Development funds from the Arthur G. James Cancer Hospital.

Ramon A. Durazo-Arvizu

Member

Ramon A. Durazo-Arvizu, Ph.D. is Associate Professor of Preventive Medicine and Epidemiology, Loyola University Chicago, Stritch School of Medicine. His focus is applied statistics including the analysis of time to an event data (survival analysis), and the analysis of longitudinal data. In addition, his expertise includes analysis of national data bases including National Health Interview Survey (NHIS) and the National Health and Nutrition Examination Survey (NHANES). He has developed models to explain the relationship between body mass index and mortality in blacks and whites. His more recent survival analysis relates to vitamin D and mortality rates and related relationships concerning vitamin D and parathyroid hormone levels. Dr. Durazo-Arvizu is the author of more than 20 articles in peer-reviewed journals, has received two emerging investigative professionals awards, and is a member of the Society for the Advancement of Chicanos and Native Americans in Science, The American Statistical Association, The Royal Statistical Society, and The International Biometry Society. He received his Ph.D. from the University of Arizona in applied mathematics.

J. C. Gallagher

Member

J. Christopher Gallagher, M.D. is the Professor of Medicine and Chief of the Bone Metabolism Section at Creighton University Medical Center in Omaha, Nebraska. Dr. Gallagher is an endocrinologist who specializes in osteoporosis, menopause, vitamin D metabolism and treatment. He is certified by the American Board of Internal Medicine and the English Board of Internal Medicine. He has participated in numerous clinical trials in osteoporosis and in menopausal women. His current research focus is dose ranging safety studies on vitamin D supplementation in older women and is funded by a grant from the National Institute on Aging and similar studies in younger women funded by the Department of Defense. In past research in the vitamin D area his group showed the impact of dietary factors such as calcium and caffeine on bone loss in elderly women and its interaction with the vitamin D receptor and studies showing that vitamin D metabolites can reduce falls in the elderly. Dr. Gallagher also receives clinical trial funding from Wyeth-Ayerst Laboratoris, AMGEN, and Unigene to test several prescription drugs and therapies under development. He has authored or co-authored more than 190 articles including 93 peer-reviewed journal articles, 10 book chapters, review articles and presentations at meetings. He is a Past President of the North American Menopause Society (NAMS). He is the recipient of several awards including the Vitamin D Research Career Award from the International Vitamin D Society and the Creighton University Distinguished Career Award. Dr. Gallagher received his medical degree from Manchester University Medical School in England and his training in bone and vitamin D research at the Medical Research Council (MRC) Mineral Metabolism Unit in Leeds, England and at the Endocrine Research Unit at the Mayo Clinic.

Richard L. Gallo

Member

Richard L. Gallo, M.D., Ph.D. is Professor of Medicine and Pediatrics, Chief Division of Dermatology, University of California, San Diego and Chief of the Dermatology Section of the VA San Diego.. Dr. Gallo's major research interests are innate immune defense systems in skin by host defense peptides and glycosaminoglycans as well as mechanistic, diagnostic and therapeutic implications of these molecules in human skin disease. He has written extensively on issues related to the physiology and pathology of skin immunology and is responsible for several landmark discoveries in the role of host defense peptides in human health including uncovering important functions for Vitamin D in the immune system. He has been elected to the board of directors of the Association of Professor of Dermatology and in 2006 received the Montagna Award from the Society of Investigative dermatology and in 2007 received the CE.R.I.E.S. Dermatology Research Award from the Centre de Recherches et d'Investigations Epidermiques et Sensorielles.. Dr. Gallo is a member of the American Dermatology Association and the American Society of Clinical Investigation. He has authored or co-authored more than 125 peer-reviewed articles and has received numerous NIH research grants and research support from the Veterans Administration. Dr. Gallo received his medical degree from the University of Rochester School of Medicine, and his Ph.D. from the University of Rochester in radiation biology and biophysics.

Glenville Jones

Member

Glenville Jones, B.Sc., Ph.D. is Craine Professor and Head, Department of Biochemistry, Queen's University, Ontario, Canada. His research focus is vitamin D metabolism and mechanism of action. He has published more than 175 peer-reviewed journal articles related to vitamin D metabolism, vitamin D-related cytochrome P450s, and the analysis of vitamin D metabolites. He employs unique transfected cell models and knockout mouse models to study the activation or breakdown of calcitriol or retinoic acid with the long-term goal of establishing the structure and function of the cytochrome P-450 enzymes involved in the complex metabolic pathways of calcitriol or retinoic acid. His laboratory has been supported by grants from the Canadian Institute of Health Research for over 30 years. Dr. Jones serves on the Scientific Advisory Board of the not-for-profit Vitamin D External Quality Assessment Scheme and on the Scientific Advisory Board of Cytochroma Inc, an applied genomics and drug discovery company focused on cytochrome P450 genes and the function of the proteins encoded by those genes in order to address unmet medical needs. He holds one non-competitive grant from Cytochroma Inc to study calcitriol analogs and cytochrome P450 inhibitors used for the treatment of renal disease. Dr. Jones is a member of several societies including the American Society for Bone and Mineral Research, the Canadian Society for Clinical Investigation, the Canadian Society for Nutritional Sciences, and the Canadian Society for Endocrinology and Metabolism. He is the recipient of a Vitamin Career Achievement Award from the international Vitamin D community. He also sits on the Scientific Program Organizing Committee of the 14th Workshop on Vitamin D, is a member of the expert panel on "The Relationships of Vitamin D and Calcium Intakes to Nutrient Status Indicators and Health Outcomes" for the Tufts Evidence Based Practice Center, and is a member of the Genzyme Speaker's Bureau. Dr. Jones received his Ph.D. from Liverpool University, England.

Christopher S. Kovacs

Member

Christopher S. Kovacs, M.D., FRCPC, FACP is Professor of Medicine and Endocrinology, Health Sciences Centre, Memorial University of Newfoundland, St. John's, Newfoundland, Canada. Dr. Kovacs' main research focus is calcium and bone metabolism during pregnancy, fetal development, and lactation. His laboratory is exploring the hormonal regulation of mineral transfer across the placenta, and maternal skeletal mineral loss during lactation and recovery post-weaning. In 2003 he received the Young Investigator Award from the Canadian Society of Endocrinology and Metabolism and the Gold Medal in Medicine from the Royal College of Physicians and Surgeons of Canada. In 2002 he was awarded the Antoni Nalecz Award from the Canadian Society for Endocrinology and Metabolism. Dr. Kovacs is on the editorial boards of Journal of Bone and Mineral Research and Endocrinology and peer reviewer for a wide range of professional publications including Endocrinology, Journal of Bone and Mineral Research, Pediatrics, and Journal of Women's Health. He has twice served as Chair for NIH Special Emphasis Panels, is a charter member of the NIH Skeletal Biology Development and Disease Study Section, and is on the Board of Directors of the Society for Advances in Mineral Metabolism. Dr. Kovacs received his medical degree from Queen's University at Kingston, Ontario, Canada.

JoAnn E. Manson

Member

JoAnn E. Manson, M.D., Dr.P.H. is Professor of Medicine and the Elizabeth Fay Brigham Professor of Women's Health at Harvard Medical School, Chief of Preventive Medicine at Brigham and Women's Hospital (BWH), and Co-Director of the Connors Center for Women's Health and Gender Biology at BWH. An endocrinologist and epidemiologist, Dr. Manson is actively involved in women's health research including several large-scale clinical trials and observational studies of cardiovascular disease, diabetes, and cancer. Her research has focused on the role of reproductive and hormonal factors, lifestyle variables such as diet (including vitamin D, calcium, omega-3s, and folic acid) and physical activity, and novel plasma and genetic markers as predictors of CVD, diabetes, and cancer. Dr. Manson is Principal Investigator of the Boston Center for the Women's Health Initiative (WHI), the CVD component of the Harvard Nurses' Health Study, the Women's Antioxidant and Folic Acid Cardiovascular Trial, the proposed Vitamin D and Omega-3 Trial, and other studies. She has published more than 600 articles in medical/scientific journals. Dr. Manson is the recipient of numerous awards, including the "Woman In Science Award" from the American Medical Women's Association, the Postmenopausal Cardiovascular Health Research Award from the North American Menopause Society, the International Menopause Society's Henry Burger Prize, and others. She is a member of the Association of American Physicians, the American Medical Association, the Endocrine Society, the North American Menopause Society, the American College of Physicians, the American Diabetes Association, American College of Endocrinology, the American Heart Association, and other professional societies. She also serves on a number of editorial and advisory boards, including the Board of the North American Menopause Society and is on the Scientific Advisory Board of Nutrition Action HealthLetter, and Harvard Health Letter. Dr. Manson received her A.B. from Harvard University, her M.D. from Case Western Reserve University School of Medicine and her Dr.P.H. from Harvard School of Public Health.

Susan T. Mayne

Member

Susan T. Mayne, Ph.D. is Professor in the Division of Chronic Disease Epidemiology at the Yale School of Public Health, and Associate Director of the Yale Comprehensive Cancer Center. Her primary research interests are in the area of nutritional epidemiology of chronic diseases, and especially nutrition and cancer prevention. She is trained in nutritional biochemistry, epidemiology, and clinical trials, and has a strong research interest in biomarkers of nutritional status for epidemiologic research. Dr. Mayne's program of research emphasizes the role of dietary factors in the etiology of several major cancers. Her work involves both observational studies and intervention trials, with a particular emphasis on carotenoids. Dr. Mayne has received a number of research awards and grants. She is currently a member of the IOM Food and Nutrition Board (2007-2010) and has served as a member of the following IOM committees: Panel on Antioxidants and Related Nutrients for Dietary Reference Intakes (1997-2000), Committee on Examination of the Evolving Science for Dietary Supplements (2001-2002), and Planning Committee For Dietary Reference Intakes Review Workshop (2007-2008). She is also a member of the Board of Scientific Counselors for the U.S. National Cancer Institute, and a recent member of the External Review Committee for the Breast Cancer Alliance, and a member of several professional societies including the American Society of Preventive Oncology and the American Society for Nutrition. Dr. Mayne received her Ph.D. in nutritional biochemistry from Cornell University followed by post-doctoral training in chronic disease epidemiology at Yale University.

Clifford J. Rosen

Member

Clifford J. Rosen, M.D. is Senior Scientist at Maine Medical Center's Research Institute. He is the Former Director of the Maine Center for Osteoporosis Research and Education an affiliate of St. Joseph Hospital, a Center which he started more than 15 years ago. He previously conducted more than 15 NIH and pharmaceutical sponsored clinical research trials, as well as currently overseeing three investigator initiated NIH funded translational projects. He is Past President of the American Society of Bone and Mineral Research (ASBMR) 2002 - 2003, and served 5 years as the first editor in Chief of the Journal of Clinical Densitometry as well as Associate Editor of the Journal of Bone and Mineral Research. Dr. Rosen is currently the editor in chief of The Primer on the Metabolic Bone Diseases and Disorders of Mineral Metabolism, and is now serving a 4 year term on The Advisory Council for the National Institutes of Arthritis Musculoskeletal and Skin Diseases and the FDA Endocrinologic and Metabolic Advisory Committee. He is also a member of several professional societies including the Endocrine Society, the American Society of Bone and Mineral Research, and the American Federation of Clinical Research. He is a Professor of Nutrition at the University of Maine and works as a Senior Staff Scientist at the Jackson Laboratory in Bar Harbor Maine studying insulin like growth factors and skeletal remodeling in mice. His work includes more than 305 manuscripts in a variety of journals including Nature Medicine, New England Journal of Medicine, and Proceedings of the National Academy of Sciences. Dr. Rosen received his medical degree from the State University of New York, Syracuse.

Sue A. Shapses

Member

Sue A. Shapses, Ph.D. is Professor, Department of Nutritional Sciences at Rutgers University. Prior to this she was a Postdoctoral Research Fellow with the Department of Orthopedic Surgery/Division of Biochemistry at Columbia University. Her research focuses on nutritional aspects of calcium metabolism critical to normal growth and maintenance of skeletal tissue, with a focus on both the mineralized and extracellular matrix of bone in conditions of aging and disease states. An important aspect of her work addresses bone turnover and bone mass relative to how nutritional intake influences the development of osteoporosis. Calcium absorption (using stable isotopes) and bone-regulating hormones and cytokines are examined in her work so as to explore mechanisms of regulation. Dr. Shapses currently receives research support from the NIH in the area of the nutritional regulation of bone turnover, and also from Johnson and Johnson in the area of obesity prevention and treatment. She is a registered dietitian and board certified with the American Dietetic Association. Dr. Shapses received her Ph.D. from Columbia University.