

Protein Quality and Growth Monitoring Studies to Satisfy Quality Factor Requirements for Infant Formula

Committee

Stephanie A. Atkinson

Chair

Stephanie A. Atkinson, PhD, DSc, FCAHS, FASN, FCNS 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. 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. Her career long research has focused on optimizing health of infants and children including investigations of the factors influencing growth, body composition and skeletal development in premature and term infants and in children with growth and bone disorders secondary to pediatric diseases or drug therapy such as acute lymphoblastic leukemia, epilepsy 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 CIHR-appointed Chair of the Institute Advisory Board of the CIHR Institute of Nutrition, Metabolism and Diabetes (2009-2019), and elected Chair and Past-chair of the Board of Directors of the Maternal, Infant, Child and Youth Health Research Network (MICYRN) from 2014 – 2018. She has served as member or chair of expert advisory panels for Health Canada, the World Health Organization/Food & Agricultural Organization and grant review committees for CIHR, NIH and the EU Joint Program Initiative. Service to the National Academies since 1985 includes committees on various aspects of setting the Dietary Reference Intakes (DRI) including the original Standing Committee on the Scientific Evaluation of Dietary Reference Intakes (DRIs) and Chair of the first report of DRIs for Calcium, Phosphorus, Magnesium, Fluoride and Vitamin D. More recently she served as member of Evaluating the Process to Develop the Dietary Guidelines for Americans, 2020-2025; Feeding of Infants and Children from Birth to 24 months; and currently the Standing Committee for the Review of the DRI Framework. Dr. Atkinson's contributions to science and professional service have been recognized with many honors including election as a Fellow in the Canadian Academy of Health Sciences, the American Society for Nutrition and the Canadian Nutrition Society; a Governor General of Canada Queen Elizabeth II Diamond Jubilee Medal in recognition of dedicated service to her peers, community and to Canada; and a Doctorate of Science, honoris causa, from Western University and Brescia University College in 2016.

Steven A. Abrams

Member

Steven A. Abrams, MD is a practicing board-certified neonatologist and currently is Professor of Pediatrics at Dell Medical at the University of Texas at Austin. He served as an Associate Editor of the American Journal of Clinical Nutrition and is now Editor-in-Chief of Advances in Nutrition. He currently sits on the 2025 U.S. Dietary Guidelines Advisory Committee and was previously on the 2015 Committee. He has chaired the American Academy of Pediatrics' Committee on Nutrition and participated in multiple committees of the National Academies of Science, Engineering, and Medicine which established DRI values. His research focuses on infant nutrition and mineral metabolism in children. He is the author of articles related to infant feeding for the American Academy of Pediatrics. He is the recipient of career research awards in pediatric nutrition from the American Academy of Pediatrics and the American Society for Nutrition. Dr. Abrams has worked with infant formula companies in the past.

Teresa A. Davis

Member

Teresa A. Davis, PhD is a Professor of Pediatrics at the Children's Nutrition Research Center at Baylor College of Medicine in Houston, Texas. Dr. Davis is internationally recognized for her studies on the nutritional regulation of skeletal muscle growth. Her work has been supported by the National Institutes of Health (NIH, 1996-2027), the U.S. Department of Agriculture (USDA, 1989-2024), and Abbott Nutrition (2011-2016) and she has served on numerous NIH grant review panels. Dr. Davis was a member of the U.S. 2020 Dietary Guidelines Advisory Committee and served on both the USDA/U.S. Department of Health and Human Services Infancy Working Group of the B-24 Project and the Scientific Steering Committee of the Pre-B Project. Dr. Davis served as President of both the American Society for Nutrition (ASN) and the American Society of Animal Science (ASAS). Her professional honors include ASN Stockstad Award, the ASAS Animal Growth and Development Award, the ASAS Morrison Award, ASAS Fellow, and ASN Fellow. Dr. Davis has served as Editor-in-Chief of The Journal of Nutrition (2014- 2023) and Critical Reviews in Food Science and Nutrition (2024-2027). She received her doctorate from the University of Tennessee and her postdoctoral training from Washington University School of Medicine.

Rajavel Elango

Member

Rajavel Elango, PhD is an Associate Professor in the Department of Pediatrics, and School of Population and Public Health, at the University of British Columbia, Vancouver, Canada. He is also an Investigator at the Research Institute, BC Children's Hospital, Vancouver, Canada. Dr. Elango's research program focuses on identification of dietary requirements for protein and amino acids, and protein quality of foods during key stages of growth and development, such as pregnancy, lactation, childhood malnutrition and in in-born errors of metabolism using state-of-the-art stable isotope techniques. Dr. Elango is a Deputy Editor for the British Journal of Nutrition, and a Section Editor for the Current Opinion in Clinical Nutrition and Metabolic Care. He is a member of the American Society for Nutrition and Vice-President (Research) for the Canadian Nutrition Society. Dr. Elango was part of the 2020 National Academy of Sciences, Engineering and Medicine (NAEM) Expert Workshop on Nutrition During Pregnancy and Lactation: Exploring New Evidence. Dr. Elango has been part of the United Nations - Food and Agriculture Organization (FAO) 2014 and 2017 Expert Working Group on protein quality of foods, and a recent 2022 International Atomic Energy Agency (IAEA) Expert Meeting on "Assessment of Protein Requirements and Protein Quality and for the Development of a Protein Digestibility and Quality Database". He is a scientific advisor to the International Council on Amino Acid Science. He previously received research support from Vitaflo, USA and was previously a consultant to Arla Food Ingredients.

Shibani Ghosh

Member

Shibani Ghosh, PhD, MS is a Research Associate Professor at the Friedman School of Nutrition Science and Policy and the Associate Director of the USAID Feed the Future Food Systems for Nutrition Innovation Lab. She is the Principal Investigator of the Jordan Nutrition Innovation Lab and the One Nutrition in Complex Environments study in Uganda with over 20 years of research experience in the Middle East, South Asia, and Sub-Saharan Africa. Her research focuses on formulating and implementing community based randomized interventions targeting women, infants, and young children with a focus on integrated maternal infant health programs, fortification, supplementation, complementary food supplements, protein quality and amino acids. She has published extensively on the role of protein and amino acids as well as non-dietary factors such as environmental enteric dysfunction, water, hygiene and sanitation, aflatoxins, and mycotoxins in supporting or impeding optimal growth of infants and young children. She has also designed and implemented several longitudinal birth cohort studies examining the maternal- infant life cycle and identifying intervention actions for program and policy recommendation. Dr. Ghosh is the interim co-chair of the Global Nutrition Report, Chair of the Council of USAID Feed the Future Innovation Labs and an expert on the United Nations Food and Agriculture Organization's (FAO) Scientific Advisory Committee the contribution of livestock to food security nutrition and healthy diets, the Agricultural Model Intercomparison and Improvement Project (AgMIP) and a technical advisory board member of the Food Safety Innovation Lab at Purdue University. She has served as an expert on UN FAO's expert working group on protein quality assessment in follow up formula for young children and ready to use therapeutic foods.

James D. House

Member

James D. House, PhD is Full Professor and the Manitoba Strategic Research Chair in Sustainable Protein in the Department of Food and Human Nutritional Sciences, University of Manitoba, Winnipeg, MB, Canada. He completed his Ph.D. in amino acid nutrition and metabolism from the University of Guelph, Ontario, Canada in 1996. His research program has advanced our understanding of factors affecting the utilization of plant- and animal-based protein sources in the human diet, including the use of in vivo and in vitro digestibility protocols for protein and amino acids. His research program has trained over 40 graduate students and 16 post-doctoral fellows and research associates, as well as over 40 undergraduate research assistants. Dr. House is a fellow of the Canadian Nutrition Society (CNS) and has received awards from the Canadian Society of Animal Science, the Canadian Nutrition Society, as well as awards for merit and administrative service from the University of Manitoba. Dr. House has served as President for the Canadian Nutrition Society (2018) and currently serves as a member of the Board of Trustees for the Institute for the Advancement of Food and Nutrition Sciences (IAFNS). His research program is funded via NSERC Discovery Grants, as well as numerous tripartite funding programs involving industry and government partners. His research includes topics on the protein efficiency ratio. Dr. House is serving as a member of Protein Industry Canada's Centre for Regulatory Research and Innovation's Advisory Committee.

Daniel Roth

Member

Daniel Roth, MD, PhD is a Clinician-Scientist and Associate Professor in the Division of Pediatric Medicine, Department of Pediatrics at The Hospital for Sick Children (SickKids) and University of Toronto (Toronto, Canada). Dr. Roth is a practicing physician in Pediatric Medicine at SickKids and a Senior Scientist at the SickKids Research Institute and the Centre for Global Child Health and holds appointments in the Department of Nutritional Sciences and the Dalla School of Public Health at the University of Toronto. Dr. Roth received his MD in 2002 from the University of British Columbia (Vancouver, British Columbia), completed a pediatric residency (2006) and MSc (2006) at the University of Alberta (Edmonton, Alberta), and has a PhD (2011) in international health and human nutrition from The Johns Hopkins Bloomberg School of Public Health (Baltimore, Maryland). Dr. Roth's research focuses on maternal and child nutrition including micronutrients and early-childhood linear growth faltering and infectious diseases in lower-income settings. He previously conducted studies of the effect of vitamin D in pregnancy and lactation on maternal and child health outcomes and is currently leading an international collaborative study of the early neonatal microbiome and infant sepsis in Dhaka, Bangladesh. Dr. Roth is also engaged in ongoing research aimed at developing new epidemiological approaches for assessing population-level childhood linear growth patterns in low- and middle-income countries and is currently investigating probiotic and synbiotic regimens in newborns.

John C. Wallingford

Member

John C. Wallingford is an independent consultant, operating since 2011 as Nutrispectives, LLC. His area of expertise includes the regulatory and nutrition science aspects of foods for special dietary uses such as infant formula and ingredients used therein, including GRAS notifications for novel ingredients. Previously Dr. Wallingford was Vice President of Scientific Affairs at Pfizer Nutrition, and Vice President of Regulatory, Government and Scientific Affairs at Wyeth Nutrition, where he led product registrations and approvals, ingredient approvals, and comments to regulatory rulemaking, as well as leading clinical and nutritional research. Earlier, Dr. Wallingford was Acting-Director of the Division of Technical Evaluation, Office of Food Labeling at US FDA Center for Food Safety and Applied Nutrition (CFSAN). He also served in the Office of Special Nutritionals at FDA CFSAN, where he was a senior scientific reviewer for foods for special dietary purposes and author of health claims rules. As an independent contributor he has commented on FDA proposed regulations related to nutrition labeling and infant formula quality factors; Good Manufacturing Practices and Guidance on Medical Foods and Investigational New Drug Applications for Nutrition Research; and Substantiation of Structure Function Claims on Infant Formulas. He authored the chapter "Federal regulations of foods and infant formulas, including new ingredients: Food additives and substances generally recognized as safe (GRAS) in Pediatric Nutrition Handbook, 9th ed. American Association of Pediatrics.

Xiaobin Wang

Member

Xiaobin Wang, DSc, MPH, MD is the Zanvyl Krieger Professor and Founding Director of the Center on the Early Life Origins of Disease, Department of Population, Family and Reproductive Health, Johns Hopkins Bloomberg School of Public Health, and Professor of Pediatrics at the Johns Hopkins School of Medicine. Dr. Wang's research bridges molecular biomarkers, clinical medicine, epidemiology and public health using a life course approach. She initiated and served as the PI of Boston Birth Cohort (BBC) since 1998. BBC, funded continuously by the NIH for over two decades, consists of ~8,700 mother-child dyads from urban low-income minority population in the US, aiming to investigate a broad array of psychosocial, environmental, nutritional and genetic factors and their interactions to advance our understanding of child growth and development and the root causes of pediatric and adult diseases and health disparities. Dr. Wang is an elected member of the National Academy of Medicine. She received MD from Beijing Medical University and ScD from Johns Hopkins University. She completed a postdoctoral fellowship at Harvard and pediatric residency at Boston Medical Center.

Ann L. Yaktine

Staff Officer