

Kimberly O'Brien

Web Bio

Information

Biography

Biographical Statement

Kimberly O'Brien received her B.S. in Biology from the University of New Hampshire and her PhD in Nutrition from the University of Connecticut, Storrs. Her professional training included fellowships with the National Institute of Child Health and Human Development, Laboratory of Theoretical and Physical Biology/Section for Metabolic Analysis and Mass Spectrometry and the Children's Nutrition Research Center, Department of Pediatrics, Baylor College of Medicine. Professor O'Brien joined the faculty in the Division of Nutritional Sciences after working for 10 years as a faculty member in the Center of Human Nutrition at Johns Hopkins Bloomberg School of Public Health.

Professor O'Brien's research has centered on studies designed to better understand mineral metabolism and bone health in infants, children, and pregnant and lactating women in both developed and developing countries. To address issues of calcium metabolism, she has undertaken metabolic studies in groups including children from osteoporotic families, pregnant and lactating adolescents, and children with chronic diseases such as cystic fibrosis and HIV infection. Her current research focuses on the impact of adolescent pregnancy, particularly among minority populations, on maternal and fetal bone health, risk of anemia, vitamin D insufficiency, birth outcomes and determinants of adolescent weight gain across pregnancy. Partitioning of nutrients between the mother and fetus is addressed at the cellular level by assessing placental mineral transporters in relation to maternal and neonatal status.

To allow for kinetic studies of human mineral metabolism, a mass spectrometry laboratory has been added to the existing resources in the Human Metabolic Research Unit. This laboratory includes instrumentation for high-sensitivity mineral stable isotope analysis including a quadrupole thermal ionization mass spectrometer and a Thermoquest Triton TI magnetic sector thermal ionization mass spectrometer. This laboratory also provides analytical services through collaboration with other academic institutions in the country.

Professional

Current Professional Activities

Adjunct Associate Professor, Johns Hopkins Bloomberg School of Public Health, Department of International Health, Baltimore, MD

Adjunct Associate Professor, University of Rochester School of Medicine and Dentistry, Department of Obstetrics and Gynecology, Rochester, NY

Adjunct Associate Professor, University of Rochester School of Medicine and Dentistry, Department of Community Medicine, Rochester, NY

Research

Current Research Activities

Calcium Metabolism and Bone Health; Maternal and Neonatal Anemia, Control of Maternal/Fetal Nutrient; Partitioning and Placental Mineral Transport; Micronutrient Status in; International Settings; Development of Mass Spectrometric Methodology; Pediatric Bone Health; Pregnancy and Mineral Metabolism in Adolescents

Extension

Education

Education

PhD - 1991 University of Connecticut, Nutrition
BS - 1985 University of New Hampshire, Biology

Courses

Courses Taught

NS3410 - Human Anatomy and Physiology

NS6310 - Micronutrients
Primary Instructor Charles McCormick

Websites

Related Websites

[PubMed](#)
[O'Brien Laboratory](#)

Administration

Publications

Selected Publications

Young MF, Griffin I, Pressman E, McIntyre A, Cooper E, McNanley T, Harris L, Westerman M, O'Brien KO. Maternal Hcpidin is Associated with Placental Transfer of Iron Derived from Dietary Heme and Non-heme Sources. J Nutr; 2012;

142:33-39.

Essley BV, McNanley T, Cooper EM, McIntyre AW, Witter F, Harris ZL, O'Brien KO. Osteoprotegerin differs by race and is related to infant birth weight z-score in pregnant adolescents. *J Developmental Origins of Health and Disease* 2011; 2(5):272-9.

Essley BV, McNanley T, Cooper B, McIntyre A, Witter F, Harris ZL, O'Brien KO. Vitamin D Insufficiency is Prevalent and Vitamin D is Inversely Associated with PTH and Calcitriol in Pregnant Adolescents. *J Bone Miner Res* 2011; Sep 28. Doi:10.1002/jbmr.526

Jaacks LM, Young MF, Essley BV, McNanley TJ, Cooper EM, Pressman EK, McIntyre AW, Orlando MS, Abkowitz JL, Guillet R, O'Brien KO. Expression of the Heme Transporter, Feline Leukemia Virus Subgroup C Receptor (FLVCR), is Related to Maternal Iron Status in Pregnant Adolescents. *J Nutr*; 2011 Jul 141(7):1267-72.

Young MF, Griffin I, Pressman E, McIntyre A, Cooper E, McNanley T, Harris L, Westerman M, O'Brien KO. Utilization of iron from an animal-based iron source is greater than that of ferrous sulfate in pregnant and non-pregnant women. *J Nutr*; 2010; 140:2162-6.

Young MF, Pressman E, Foehr M, McNanley T, Cooper E, Guillet R, Orlando M, McIntyre A, Lafond J, O'Brien KO. Impact of Maternal Iron Status on Placental Transferrin Receptor Expression. *Placenta* 2010; Nov;31(11):1010-4.

McGuire-Davis L, Chang S-C, Mancini J, Schulman-Nathanson M, Witter FR, O'Brien KO. Vitamin D insufficiency is prevalent among pregnant African American Adolescents. *Journal of Pediatric and Adolescent Gynecology* 2010; Feb 23(1):45-52.

Thacher TD, Obadofin MO, O'Brien KO, Abrams SA. The effect of vitamin D2 and vitamin D3 on intestinal calcium absorption in Nigerian Children with rickets. *J Clin Endo Metab* 2009; 94(9):3314-21.

Young MF, Glahn RP, Inglis J, Olbina G, Westerman M, O'Brien KO. Serum Hepcidin is Associated with Iron Absorption in Healthy Young Women. *Am J Clin Nutr*; 2009; 89(2): 533-8.

Rovner AJ, O'Brien KO. Hypovitaminosis D in Healthy Children in the United States: A Systematic Review of the Current Evidence. *Arch Pediatr Adolesc Med*. 2008 Jun;162(6):513-9.

Atkinson SA, McCabe GP, Weaver CM, Abrams SA, O'Brien KO. Are current calcium recommendations higher than needed to achieve optimal peak bone mass? The controversy. *J Nutr* 2008; 138:1182-6.

O'Brien KO, Donangelo CM, Zapata CL, Abrams SA, Spencer EM, King JC. Bone calcium turnover during pregnancy and lactation in women with low calcium diets is associated with calcium intake and circulating insulin-like growth factor 1 concentrations. *Am J Clin Nutr* 2006;83(2):317-323.

O'Brien KO. Maternal and Fetal Partitioning During Pregnancy: Whose Needs Predominate? *Nutrition Today*; 2005; 40(3):130-137.

Aris R, Bachrach L, Borowitz D, Elkin S, Guise T, Hardin D, Haworth C, Holick M, Joseph P, Merkel P, O'Brien K, Tullis E, Watts N, White T. Invited Review of a Consensus Conference Report: Guide to Bone Health and Disease in Cystic Fibrosis. *J Clin Endo Metab* 2005;90(3):1888-1896.

Smith SM, Wastney ME, O'Brien KO, Morukov VB, Larina IM, Abrams SA, Davis-Street JE, Oganov V, Shackelford LC. Bone markers, calcium metabolism, and calcium kinetics during extended-duration space flight on the Mir Space Station. *J Bone Miner Res* 2005;20(2):208-218.

O'Brien KO, Schulman Nathanson M, Mancini J, Witter FR. Enhanced calcium absorption does not prevent bone loss during pregnancy in adolescents. *Am J Clin Nutr* 2003;78(6):1188-1193.

Schulze KJ, O'Brien KO, Germain-Lee EL, Baer D, Leonard A, Rosenstein BJ. Endogenous Fecal Losses of Calcium Compromise Calcium Balance in Pancreatic Insufficient Girls with Cystic Fibrosis. *J Pediatrics* 2003;143:765-771.

O'Brien KO, Zavaleta, N, Abrams SA, Caulfield LE. Maternal Iron Status Influences Iron Transfer to the Fetus During the Third Trimester of Pregnancy. *Am J Clin Nutr*; 2003; 77:924-30.