

Delta Obesity Prevention Vitamin Study



The **Delta OPRU** conducted the Delta Obesity Prevention Vitamin Study in cooperation with the DHHS, FDA, National Center for Toxicological Research (Jefferson, AR) at the summer day camp site of the Boys, Girls, and Adults Community Development Center (Marvell, AR) with the goal of improved food intake and physical activity, and nutrition education. The research was a continuation of studies initiated in 2009. The communities of Marvell and Elaine, AR, were involved and although the yearly sample size is relatively small in these rural communities--55 children and 21 adult data points in 2009 and 114 children and 40 adult data points in 2010--the continuation each summer increases the numbers and allow for longitudinal observations in some children and adults. Food intake was measured using 24-hour dietary recalls and weighed food records. Physical activity is measured by accelerometers and physical fitness tests. Data is being analyzed for nutrient intakes (and Healthy Eating Index Scores), physical activity and fitness, serum vitamin and metabolite levels (nine vitamins including thiamine, niacin, folate, pyridoxal, pyridoxine, riboflavin, vitamins A, E, and D3 and two metabolites, S-adenosylmethionine and S-adenosylhomocysteine) and genomics. Comparisons will be made from year to year, within age groups, and individual food intake compared to physical activity measures (in small subsample) and individual genomics.

Delta Obesity Prevention Research Unit Current Federal Personnel

Mike Grusak
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Earl Fox, Jr.
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**The Delta OPRU is represented by a
cooperative endeavor with the following entities:**

**Arkansas Children's Hospital Research Institute
University of Arkansas at Pine Bluff
University of Southern Mississippi
Alcorn State University
Pennington Biomedical Research Center
Southern University and A&M College**

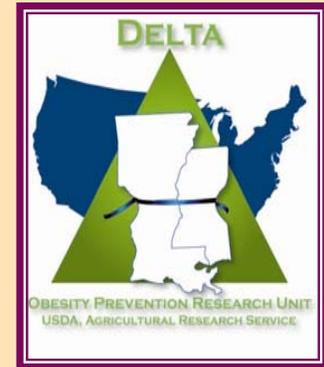
Including:

DHHS, FDA, National Center for Toxicological Research

USDA, ARS, Delta OPRU
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USDA, ARS, Delta Obesity Prevention Research Unit

Mission Statement

The Delta Obesity Prevention Research Unit is coordinating a major research program that brings together the expertise of seven institutions in the three state region. These institutions and their research scientists provide unique skills and resources to the Delta. Their research will result in Lower Mississippi Delta specific recommendations for input into the 2015 Dietary Guidelines that will enable rural Lower Mississippi Delta individuals and families to adopt food and physical activity guidelines for sustaining healthy weights, preventing obesity, and reducing the risk factors for obesity related chronic diseases.

Foods of Our Delta Study (FOODS) 2000



The Foods of Our Delta Study 2000 revealed that Lower Mississippi Delta (LMD) residents had higher rates of obesity and lower quality diets than the rest of the nation. Such findings are indicative of not adhering to recommendations of the Dietary Guidelines for Americans (DG). Researchers at the Delta OPRU will examine previously collected LMD data to develop a priority list of tools, techniques, and technology. Findings will be compiled into a Delta DG Tool Kit that will consist of healthy Delta menus, shopping lists, food selection tips, and food preparation methods. The Delta DG Tool Kit will be tested for feasibility with families and will be used in a larger study to determine the effectiveness in promoting DG adherence and obesity prevention over time.

Delta OPRU Significant Publications

- Connell, C.L., Zoellner, J.M., Yadrick, M., Chekuri, S.C., Crook, L.B., **Bogle, M.L.**, 2012. Energy density, nutrient adequacy, and cost per serving can provide insight into food choices in the lower Mississippi Delta. *Journal of Nutrition Education and Behavior*. 44(2):148-153.
- Kennedy, B.M., Prewitt, T.E., Strickland, E., Yadrick, K., Threadgill, P., Champagne, C., McGee, B.B., **McCabe Sellers, B.J., Bogle, M.L.**, 2011. Academic partnerships and key leaders emerging from communities in the lower Mississippi Delta (LMD): a Community-based participatory research model. *Journal of Cultural Diversity*. 18(3):9-94.
- Thomson, J.L., Tussing Humphreys, L.M., Onufrak, S., Connell, C., Zoellner, J., **Bogle, M.L.**, Yadrick, K. 2011. A simulation study of the potential effects of healthy food and beverage substitutions on diet quality and total energy intake in lower Mississippi Delta adults. *Journal of Nutrition*. 141:2191-2197.
- Thomson, J.L., Tussing Humphreys, L.M., Onufrak, S.J., Connell, C.L., Zoellner, J.M., **Bogle, M.L.**, Yadrick, K. 2011. Simulated reductions in consumption of sugar-sweetened beverages improves diet quality in Lower Mississippi Delta adults. *Food and Nutrition Research*. 55(7304):7.
- Thomson, J.L., **McCabe-Sellers, B.J.**, Strickland, E., **Lovera, D., Nuss, H.J.**, Yadrick, K., **Duke, S., Bogle, M.L.**, 2010. Development and Evaluation of WillTry: An Instrument for Measuring Children's Willingness to Try Fruits and Vegetables. *Appetite*. 54: 465-472.
- Ndirangu, M., Yadrick, K., Graham-Kresge, S., Hales, B., Avis, A., **Bogle, M.L.**, 2010. Community and Academia Partnerships: A Description of the Lower Mississippi Delta Nutrition Intervention Research Initiative Project. *International Public Health Journal*. 2 (2): 231-242.
- Zoellner, J., Powers, A., Williams, A., Ndirangu, M., Strickland, E., Rowser, M., Lucas, G., Connell, C., Yadrick, K., **Bogle, M.L.**, 2010. Does a 6-month pedometer intervention improve physical activity and health among vulnerable African Americans, a feasibility study. *Journal of Physical Activity and Health*. 7: 224-231.

Healthy Eating and Lifestyle for Total Health (HEALTH) Study



The *Dietary Guidelines for Americans* provide recommendations for making better food and physical activity choices that promote health and help prevent disease. The Healthy Eating and Lifestyle for Total Health (HEALTH) Study is a multi-site study aimed to identify reasons why adults and children from major U.S. racial/ethnic groups may or may not follow the *Dietary Guidelines for Americans* and to examine these influences and other factors as they relate to dietary behavior and body mass index (BMI) by administering surveys across the U.S. population. Eligible participants include 5th grade students or their adult caregiver who attend public school districts in the Lower Mississippi Delta of Arkansas, Louisiana and Mississippi. The Delta OPRU is responsible for the collection of information on African-American eligible participants. Cognitive interviews will be conducted to develop/refine questions to be used in Nominal Group Technique sessions. The Nominal Group Technique involves informal group discussions pertaining to diet, exercise and general health in order to identify barriers and facilitators to *Dietary Guideline* adherence. The Delta OPRU will be expanding the data collection to African Americans and Caucasian Americans throughout the LMD of Arkansas, Louisiana and Mississippi.