

James & Esther King Biomedical Research Program

Salihu, Hamisu

*Public Health
University of South Florida*

*2010 Program
Research Project Grant
(5-year project)*

Project Title: Preventing Fetal Body and Brain Size Reduction in Low-income Smoking Mothers: A Randomized Clinical Trial

Project Summary: Since smoking cessation programs during pregnancy have been only partially successful, especially in low-income subpopulations, it is important to develop interventions that include a strategy to reduce the undesirable impact of smoking during pregnancy. Current low-strength folic acid prescribed to pregnant women is insufficient to compensate for depleted blood folate levels among smokers. This project seeks to assess the value of higher-strength folic acid (in comparison to standard of care) combined with a smoking cessation program in reducing the negative effects of tobacco smoke on the fetal body and brain. In three follow-up visits, participating pregnant women will be administered questionnaires and will undergo ultrasound examinations. Maternal blood will also be collected for the testing of folic acid levels and other related substances. All participants will be followed until delivery when umbilical cord blood will be collected for assessment of brain growth and development. At birth, the infant's body and brain growth limits will also be measured. The two groups will then be compared to determine the effectiveness of higher-strength folic acid supplementation in improving fetal body and brain growth among smokers. This study will provide important information for subsequent follow-up of these infants to determine whether the intervention improves future intellectual, behavioral, and physical development.