

A Longitudinal Investigation of Variability of Environmental Saliva Markers in Pregnant and Post-Partum African-American Women (Moms' LIVES Study)

P. Barry Ryan¹, Dana Boyd Barr¹, Bradley Skarpness², Douglas Granger³, Katrina Dipple⁴, and Carol Hogue¹

1. Emory, Battelle, Morehouse, Chattanooga (EMBC) Study Center
2. Battelle Memorial Institute
3. Johns Hopkins University Study Center
4. UCLA Study Center

Introduction

We propose recruitment of 100 pregnant, African-American women to evaluate the efficacy of using saliva biomarkers in place of other, more standard markers of exposure and to evaluate the short-term and long-term variability in saliva biomarkers.

Methods:

Biological samples will be taken from our study participants over four Cycles. On the first day of the Cycle 1 (Figures 1 and 2) visit, we will take urine, blood, hair, and nail samples in addition to saliva sample to evaluate the correlation and equivalence of markers determined by the more invasive measures, e.g., blood draw, and the salivary markers. Samples will be analyzed for hormones, stress biomarkers, and markers of exposure to environmental contaminants. Short-term variability in saliva biomarkers will be assessed by sampling the same individual on, for example, Monday, Wednesday, and Friday of the same week, resulting in three sets of saliva samples. To address longer-term variability, this process will be repeated twice with an additional three samples taken one month later, and one month after that. Finally, an additional set of samples will be taken six months after that (post-partum) for a total of twelve samples for each individual. The rationale for the initial 3-month study period is that this represents a single trimester of pregnancy and is the time required for spermatogenesis. The six-month follow-up will afford assessment of late pregnancy or early post-partum effects. The saliva samples will be analyzed for the same suite of biological markers of stress and environmental exposure, and hormone levels.

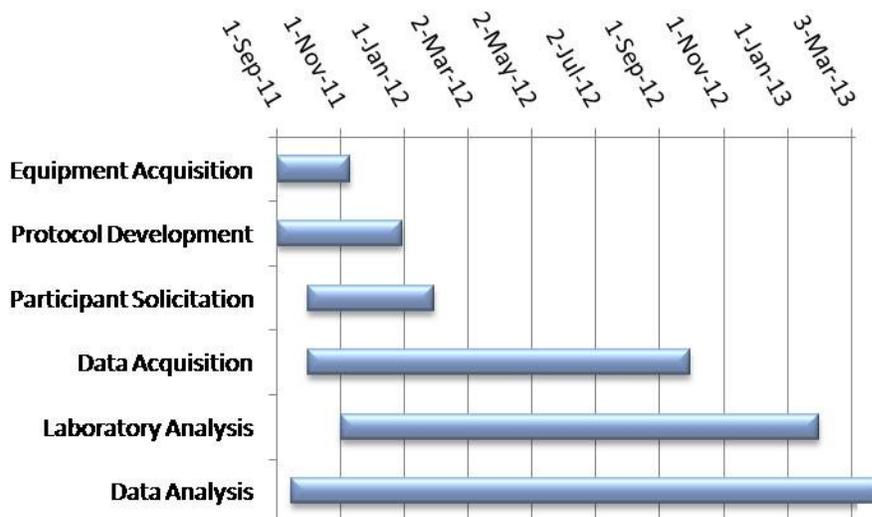


Figure 1. Timeline for Moms' LIVES Study

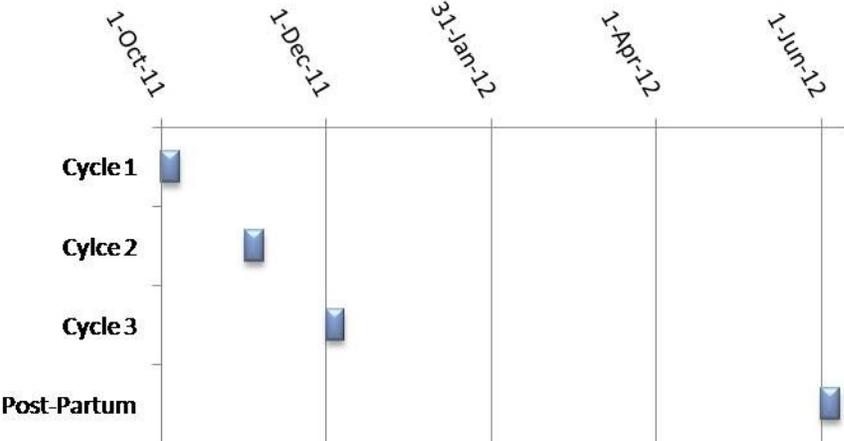


Figure 2. Sample timeline for monitoring of a single individual