

National Institute of Diabetes and Digestive and Kidney Diseases (NIDDK) MMM Updates

Eleanor F. Hoff

301-496-6623

eleanorh@mail.nih.gov

Christine Maric-Bilkan

301-435-0486

christine.maric-bilkan@nih.gov

NIDDK MMM Program Updates

- **Gestational Diabetes Mellitus (GDM):**

Rationale: Affects ~ 7% percent of pregnancies in the United States and increases the risk for delivery, neonatal complications and long-term metabolic health issues in mother and offspring.

NIDDK contributions: NIDDK-supported research has found that dysglycemia during pregnancy, that doesn't meet current U.S. diagnostic criteria, also has long-term metabolic impacts on mothers and offspring, including increased type 2 diabetes risk in mothers (HAPO Follow-Up Study, co-sponsored by NICHD).

- **Obesity and Gestational Weight Gain (GWG):**

Rationale: Excess weight prior to or gained during pregnancy can lead to adverse maternal and neonatal outcomes and obesity in offspring.

NIDDK contributions:

Research supported includes studies examining onset, impact, and prevention, spanning basic research to clinical trials. For example, the **LIFE-Moms Consortium**

- The consortium tested diverse lifestyle intervention strategies in overweight and obese pregnant women that sought to control GWG and/or improve metabolic status with potential short-and long-term health benefits for mothers and offspring.
- The consortium consisted of seven clinical trials conducted in diverse populations, including minority and SES-disadvantaged groups.
- Results have been published for several of the trials, and a meta-analysis of all the trials shows that the interventions overall resulted in a significantly lower proportion of women with excess GWG.
- Follow-up continued through 1 year post-delivery for the women and 1 year of age for the offspring; a manuscript describing the outcomes is in preparation.
- Co-sponsors: NHLBI, NICHD, NCCIH, ORWH, ODP, and OBSSR

NIDDK MMM Future Research and Programs

- **Focusing on GDM:** Need a better understanding of natural history of glycemia during pregnancy.
- Currently seeking to establish a research consortium that can enroll women in first trimester and leverage technological advances (continuous glucose monitors) to characterize changes in glycemia across pregnancy. Goal is to help set the stage for future clinical trials of potential interventions/prevention.
- **Key question:** Will diagnosis and intervention earlier in pregnancy/at a lower level of dysglycemia actually result in benefit for women and offspring?
- **For both GDM and obesity/gestational weight gain with or without diabetes:** Continue research on the impact of the intrauterine environment on offspring (metabolic imprinting/epigenetic programming), including female offspring who may become pregnant themselves - impact on their innate health, their future pregnancies, and long-term health outcomes from the combination of these factors.