CONCLUSIONS: Decreasing sedentary time and adding any intensity PA may positively impact metabolic health during pregnancy by reducing fasting and postprandial insulin resistance, as well as reducing fasting and postprandial triglycerides. This is important as, during pregnancy, insulin resistance is associated with poor pregnancy and neonatal outcomes and increased triglycerides are associated with increased risk of preeclampsia, pre-term birth, and increased maternal cardiovascular risk later in life.

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825 May 27 4:00 PM - 4:15 PM
Influence Of Physical Activity And Sedentary Behavior During Pregnancy On Labor And Delivery Type
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(No relationships reported)

Physical activity (PA) during pregnancy is known to be safe and does not increase risk of medical intervention during labor and delivery. While it is known that sedentary behavior (SED) and PA have independent health effects, whether higher SED during pregnancy increases risk for medical intervention in labor and delivery is unknown.

PURPOSE: To examine the relationship of SED and PA patterns across pregnancy with labor and delivery outcomes.

METHODS: In this prospective cohort study, objective SED (thigh-worn ActiGraph GT3X-BT) and physical activity (waist-worn ActiGraph GT3X-BT) were assessed in women for ≥4 days with ≥10 hours in each trimester of pregnancy. This secondary analysis includes women with available labor and delivery records, and PA and SED measures in ≥1 trimester (n=99). Trajectory analysis was used to identify patterns of PA and SED across pregnancy and assign women to the groups most closely related to their dominant activity patterns. Labor and delivery information was abstracted from participant medical records. Labor types were categorized as: spontaneous, induced-elective, or induced-medical. Delivery types were categorized as: vaginal, c-section-elective, c-section-medical. Differences in labor and delivery type by SED and PA trajectories were analyzed using Fisher’s exact tests due to small cell sizes.

RESULTS: Trajectory analysis resulted in and assigned women to high, medium, and low groups for PA and SED across trimesters of pregnancy. Approximately 60% of labor was spontaneous, followed by 27% medical induction, and 13% elective induction. Deliveries were 79% vaginal, 11% medically indicated c-section, and 8% elective c-section. Type of labor (L) or delivery (D) did not significantly differ by SED (L: p=0.185, D: p=0.134) or PA (L: p=0.756, D: p=0.120) trajectories. When elective induction and c-sections were removed to only consider risk for medical intervention, differences remained insignificant by SED (L: p=0.136, D: p=0.088) or PA (L: p=0.527, D: p=0.128) trajectories.

CONCLUSION: Objectively-measured patterns of SED or PA across pregnancy were not related to type of labor or delivery, including risk of medical intervention. Future research with larger samples could expand to the entire birth experience including duration of labor, medication use, or fetal complications.

826 May 27 4:15 PM - 4:30 PM
Effect Of Exercise During Pregnancy And Lactation In Obese Wistar Rats On Offspring Glycemic Control
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(No relationships reported)

PURPOSE: To determine the effect of maternal exercise in pregnant and lactating obese Wistar rats on the glycemic control of their offspring at time of weaning.

METHODS: Two days following impregnation, 24 obese Wistar rats were separated into 2 groups. One group received 30 minutes of treadmill exercise (E) at 15-20 m/min each day while the other group received no exercise (NE). The groups were maintained after the birth of the offspring (21 days) through lactation (21 days) for a total of 6 weeks. At weaning an oral glucose tolerance test (OGTT) was performed on 12 randomly selected pups from each group. A t-test was utilized to determine differences in total glucose area under the curve (t-AUC) (mean and standard error) between groups (p<0.05).

RESULTS: There was an effect of maternal exercise on the glycemic control of the offspring. The ability to dispose of glucose following a glycemic load was significantly greater in the offspring of E dams (513.1±11.7 mmol/L) compared to the offspring of NE dams (542.7±7.1 mmol/L) (p<0.05).

CONCLUSIONS: Initiating moderate exercise early during the pregnancy of obese rats and maintaining exercise through lactation can positively impact glycemic control in offspring.

827 May 27 4:30 PM - 4:45 PM
The Effects Of An Antenatal Lifestyle Intervention On Pregnancy Outcomes In Overweight And Obese Pregnant Women
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(No relationships reported)

Three reviews of antenatal behavioral lifestyle interventions did not find significant intervention effects on maternal complications and adverse neonatal outcomes, perhaps due to the inclusion of low to medium quality studies.

PURPOSE: To evaluate the effect of a lifestyle intervention program on pregnancy outcomes in overweight and obese pregnant women.

METHODS: This study was a randomized controlled trial. Overweight and obese pregnant women were recruited from Columbia, South Carolina and were randomized to a behavioral intervention group (n=110) or to a standard care group (n=104). The antenatal intervention was designed to target weight self-monitoring, increasing physical activity, and increasing healthy dietary behavioral practices. Intervention contents were delivered through one in-depth counseling session, followed by phone counseling, behavioral podcasts, and social media support. Standard care women received monthly mailings and a match number of podcasts on non-dietary behavioral practices. Intervention contents were delivered through one depth counseling session, followed by phone counseling, behavioral podcasts, and social media support.

RESULTS: Our study population was racially diverse (56% white, 44% African American) with a mean prepregnancy BMI of 32.2±5.9 and was 12.7±2.4 wks gestation at baseline. Compared to standard care women, women in intervention group had lower percentages of gestational hypertension (9.1 vs. 21.2%, p<0.01) and delivering a low birth weight baby (<2500g) (1.9 vs. 10.6%, p<0.009). These women also had lower percentages of gestational diabetes (7.3 vs. 12.5%) and delivering a preterm baby (<37 wks of gestation) (2.8 vs. 7.7%), although these differences were not significant at the 0.05 level. No group differences were found in other outcomes (i.e., cesarean deliveries, macrosomia births (birthweight ≥4000g), and Appgar scores).

CONCLUSIONS: An antenatal behavioral lifestyle intervention designed to reduce gestational weight gain was beneficial in improving pregnancy outcomes in overweight and obese pregnant women. Future analyses will examine mechanisms for this effect.

828 May 27 4:45 PM - 5:00 PM
Change In Physical Activity In The Health In Pregnancy And Postpartum (HIPP) Randomized Controlled Trial (RCT)
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(No relationships reported)

Despite the known benefits of physical activity (PA) in pregnancy, PA is consistently shown to decrease from early to late pregnancy. Very few antenatal interventions have targeted PA and included sensor-measured outcomes in overweight and obese pregnant women.

PURPOSE: To examine whether a lifestyle intervention increased moderate- to vigorous-intensity PA (MVPA), light PA, and steps or reduced their decline from early to late pregnancy compared to a standard care condition.

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