

*Extended Abstract*

## **Evaluating the association of physical activity and weight gain in pregnancy**

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### **Objective**

Previous research has shown that physical activity in pregnancy decreases the risk of poor pregnancy outcomes including development of gestational hypertension, pre-eclampsia, gestational diabetes, and the need for unplanned cesarean section. Research has also shown that excessive weight gain in pregnancy increases the risk of poor pregnancy outcomes. Tracking accurate physical activity in pregnancy is difficult using patient-reported data, however with commercially available and accurate physical activity monitors, objective data is more readily available.

Our study is a feasibility study using objective data to track physical activity and weight gain in pregnancy.

### **Methods**

We identified women enrolled in the University of Iowa Maternal Fetal Tissue Bank at their initial obstetrics appointment. Participants were given a FitBit activity monitor to record their daily step counts as a measure of physical activity. Weight measurements at each obstetrics appointment were extracted from the patients' electronic medical record. Development of pregnancy outcomes and unplanned

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cesarean section were documented. Pearson correlations were performed on variables of interest. Chi square or Fisher exact test were utilized for categorical variables. For continuous variables, the Student's t-test or ANOVA was performed. All variables were tested at a significance level of 0.05.

## **Results**

Of the 108 women enrolled, 24 participants were excluded as part of the final data analysis due to inadequate obstetric care, incomplete data collection, multiple gestation pregnancy, and pregnancy loss. Among the 84 participants remaining, the average steps per trimester were 4934 steps/day. The average Body Mass Index (BMI) at the initial obstetrics appointment was 28.4. The average gestational weight gain was 27.3 lbs. There was no association between average steps throughout gestation and weight gain. BMI was negatively correlated with average steps throughout gestation. There was also no correlation between average steps throughout gestation and poor pregnancy outcome as defined by development of gestational hypertension, pre-eclampsia, gestational diabetes, or need for unplanned cesarean section.

## **Conclusion**

There was no statistically significant association between physical activity, as measured by daily steps, and weight gain or poor pregnancy outcomes. Although no correlation was found, this study confirmed that gathering objective data as a measure of physical activity in

pregnancy is feasible. Given the increased availability of commercial-grade accelerometers and their accuracy, the use of objective data will likely become the standardized method of data collection in physical activity studies.

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