



## Mid Atlantic Regional Chapter of the American College of Sports Medicine

Annual Scientific Meeting, November 1<sup>st</sup> – 2<sup>nd</sup>, 2019  
Conference Proceedings

International Journal of Exercise Science, Volume 9, Issue 8



### **Influence of Physical Activity and Sedentary Behavior During Pregnancy on Labor and Delivery Type**

Melissa A. Jones<sup>1</sup>, Janet Catov<sup>1</sup>, Kara Whitaker<sup>2</sup>, Bethany Barone Gibbs<sup>1,1</sup> University of Pittsburgh, Pittsburgh, PA, <sup>2</sup> University of Iowa, Iowa City, IA

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 activPAL micro3) and physical activity (waist-worn ActiGraph GT3X-BT) were assessed in women for  $\geq 4$  days with  $\geq 10$  hours in each trimester of pregnancy. This secondary analysis includes women with available labor and delivery records, and PA and SED measures in  $\geq 1$  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, 13% 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.

Supported by American Heart Association (17GRNT33400168)