

Rowan University

## Rowan Digital Works

---

Stratford Campus Research Day

27th Annual Research Day

---

May 4th, 12:00 AM

# The Possible Relationship of Adiponectin and Gestational Weight Gain during Different Stages of Pregnancy Amongst Different Ethnic Groups

Jayshree Chauhan  
*Rowan University*

Xinhua Chen  
*Rowan University*

Follow this and additional works at: [https://rdw.rowan.edu/stratford\\_research\\_day](https://rdw.rowan.edu/stratford_research_day)



Part of the [Endocrinology, Diabetes, and Metabolism Commons](#), [Female Urogenital Diseases and Pregnancy Complications Commons](#), [Maternal and Child Health Commons](#), [Obstetrics and Gynecology Commons](#), [Pathological Conditions, Signs and Symptoms Commons](#), and the [Women's Health Commons](#)  
Let us know how access to this document benefits you - share your thoughts on our [feedback form](#).

---

Chauhan, Jayshree and Chen, Xinhua, "The Possible Relationship of Adiponectin and Gestational Weight Gain during Different Stages of Pregnancy Amongst Different Ethnic Groups" (2023). *Stratford Campus Research Day*. 1.

[https://rdw.rowan.edu/stratford\\_research\\_day/2023/may4/1](https://rdw.rowan.edu/stratford_research_day/2023/may4/1)

This Poster is brought to you for free and open access by the Conferences, Events, and Symposia at Rowan Digital Works. It has been accepted for inclusion in Stratford Campus Research Day by an authorized administrator of Rowan Digital Works.

# The Relationship of Adiponectin and Gestational Weight Gain during Different Stages of Pregnancy among Different Ethnic Groups

Jayshree Chauhan, MS-III & Xinhua Chen, M.D. MSCE

Department of Obstetrics & Gynecology, Rowan-Virtua School of Osteopathic Medicine



## Introduction

- Gestational weight gain (GWG) can be defined as the amount of weight gain between conception and birth.
- GWG has been found to have an association with gestational diabetes mellitus (GDM), preeclampsia, and postpartum retention of weight gain.
- Adiponectin is a fat derived hormone that plays a role with weight gain.
- We conducted this study because Black and Hispanic women are more likely to inadequately gain weight when compared to white women and inadequate weight gain can increase the risk of illness, preterm delivery, and developmental delay.

## Objectives

- To investigate the ethnic differences between adiponectin and GWG in different stages of pregnancy.

## Methods

- Pregnant women (n = 1634) were from a large prospective cohort study in Camden, NJ (Hispanic = 47%, African American = 37%, Caucasian = 16%).
- Serum analysis of Adiponectin was measured at entry (week 16 of pregnancy) and at trimester 3 (week 28 of pregnancy) using Luminex xMap Technology.
- Gestational weight change was measured at week 24, 28, 32, and delivery.
- Each week weight gain was divided into inadequate, adequate, and excessive gestational weight gain.
- Potential confounding variables such as BMI, age, parity, and smoking were accounted for.

## Results

Table 1: Characteristics of the study participants

Variable	All participants	Hispanic	African American	Caucasian
n	1634	777 (47%)	602 (37%)	255 (16%)
Age (yr.)	22.03±5.29	22.19±5.27	21.38±5.02	23.11±5.75
Pre-pregnancy BMI (kg/m <sup>2</sup> )	25.73 ± 6.30	25.74±5.88	26.15±7.01	24.72 ± 5.65
Smoking	310 (18.97)	95 (12.23)	117 (19.44)	98 (38.43)
Multiple parity	994 (60.83)	466 (59.97)	377 (62.63)	151 (59.22)

Figure 1: Adiponectin levels (ug/ml) in different ethnicities

\* = p<0.05 and p<0.01 compared to Caucasians

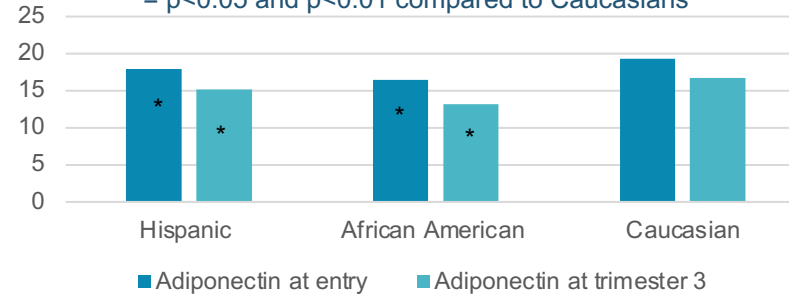


Figure 2: Total weight gain (kg) amongst different ethnicities at different stages of pregnancy

\* = p<0.05 compared to Caucasians

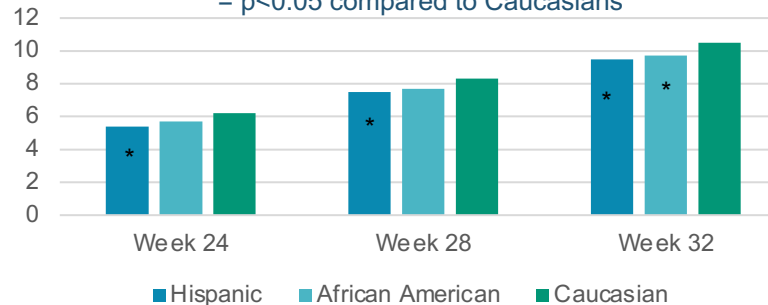
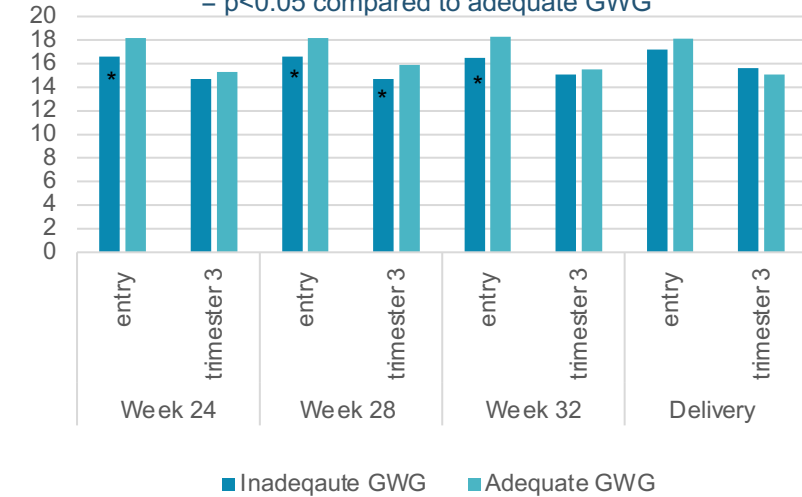


Figure 3: Adiponectin levels (ug/ml) at entry and trimester 3 in women with inadequate GWG vs adequate GWG

\* = p<0.05 compared to adequate GWG



## Conclusions and Implications

- Adiponectin levels at entry and trimester 3 are significantly decreased in Hispanic and African American women compared to Caucasian women.
- Total weight at weeks 24, 28, 32 were significantly less in Hispanic and African American women compared to Caucasian women.
- In all women, inadequate GWG had significantly lower adiponectin levels compared to adequate GWG at weeks 24, 28 and 32 but not at delivery.
- Excessive GWG had lower adiponectin levels than adequate GWG but significance was not found.
- Maternal adiponectin concentration may play an important role in the regulation of GWG.
- This study calls for early intervention in pregnant racial minorities to make sure mothers are gaining weight appropriately for best health outcomes.