



PRE-PREGNANCY BMI AND GESTATIONAL WEIGHT GAIN: NEW EVIDENCE,
EMERGING INNOVATIONS, AND POLICY IMPLICATIONS: A WORKSHOP

Epidemiology of Obesity and Pregnancy Weight Gain

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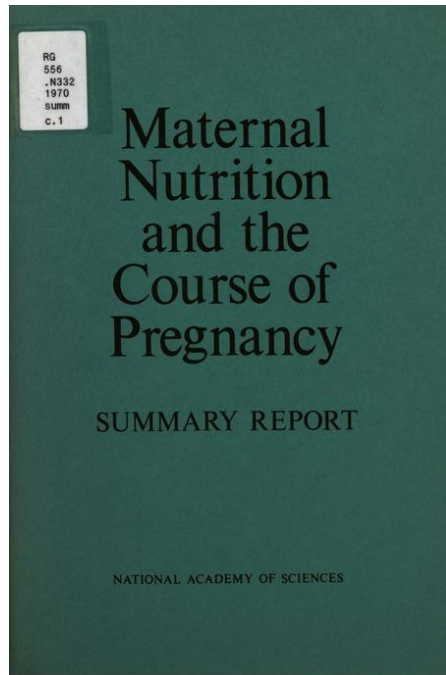
Division of Research
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September 4, 2025

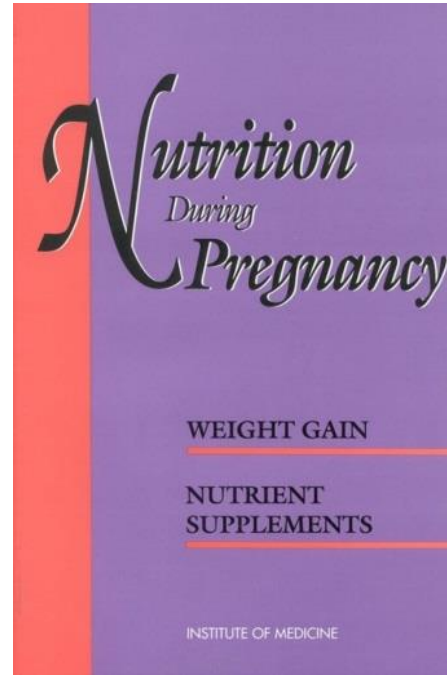
PRESENTER DISCLOSURE

No conflict of interest to disclose.

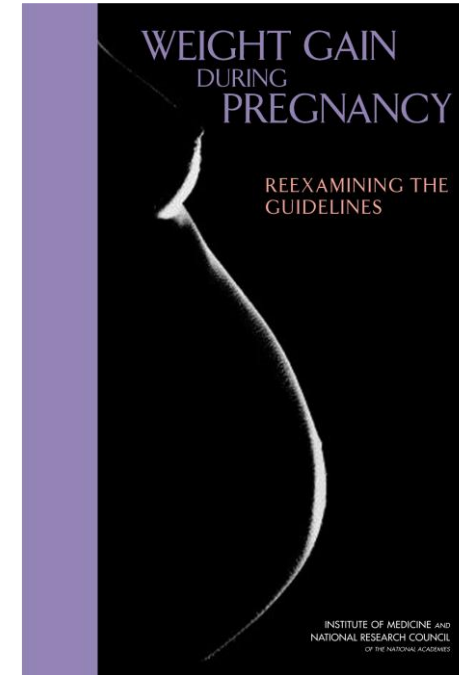
History of the US pregnancy weight gain guidelines: Over the years



1970

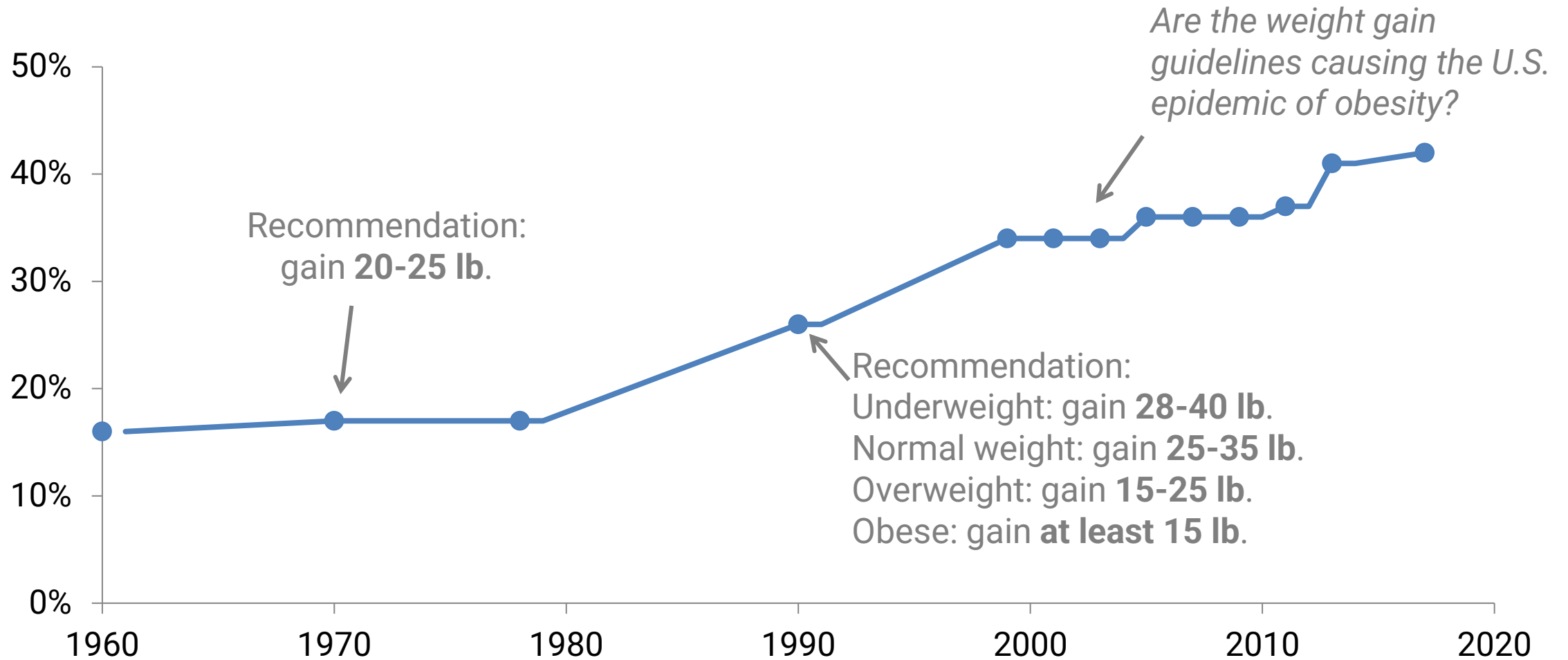


1990

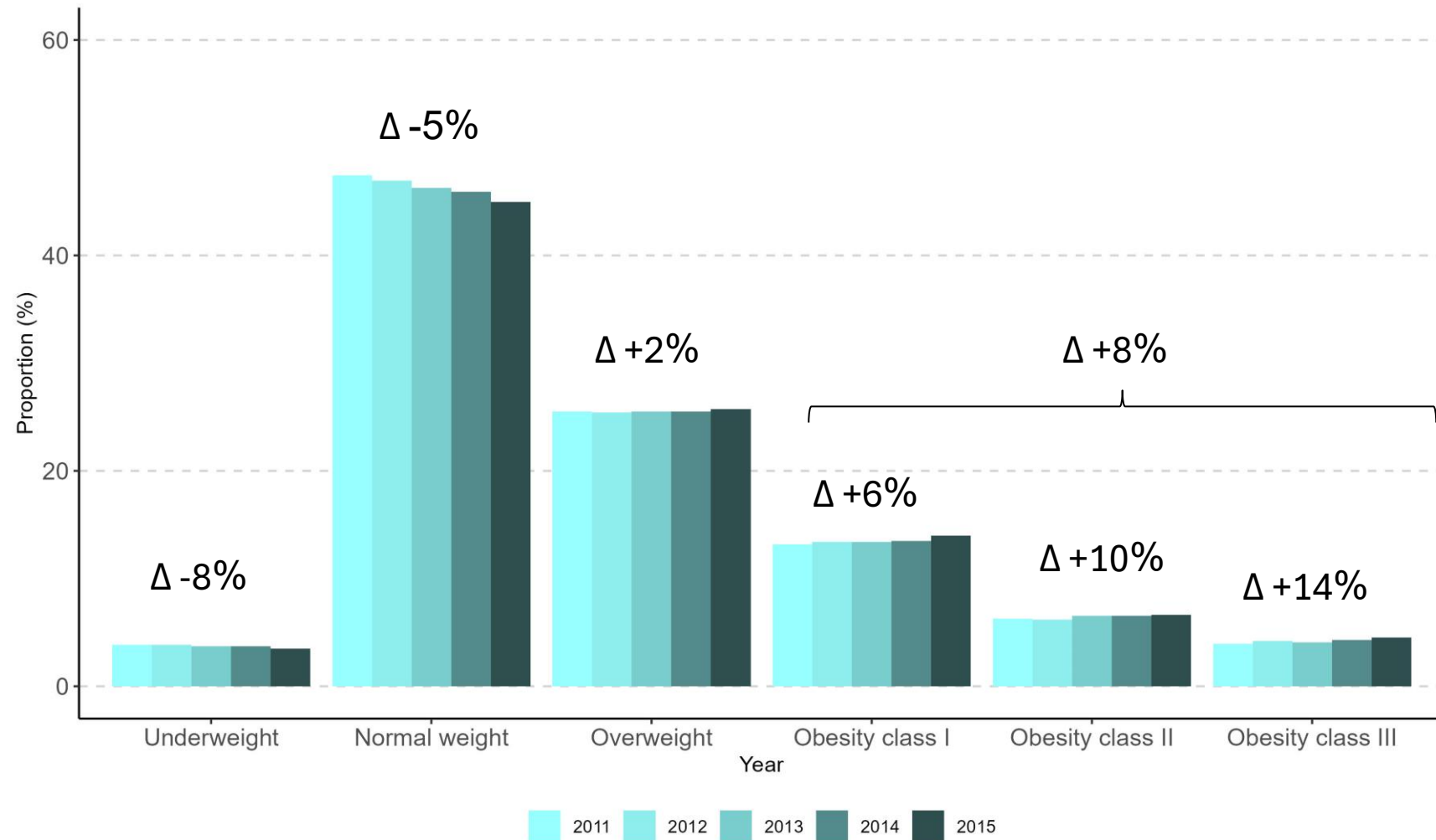


2009

Gestational weight gain guidelines relative to the prevalence of obesity in US adult women

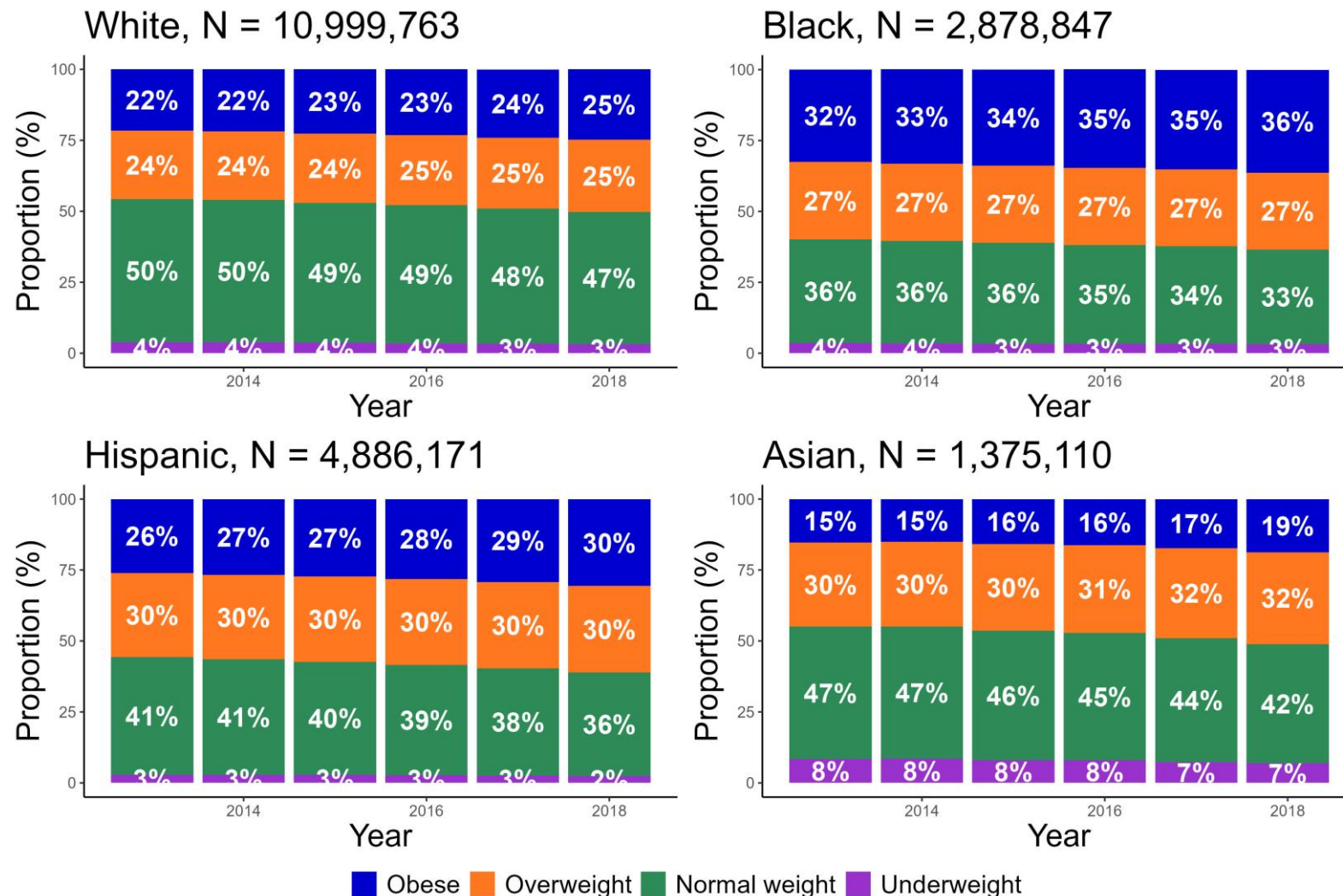


Trends in pre-pregnancy BMI, 2011 to 2015



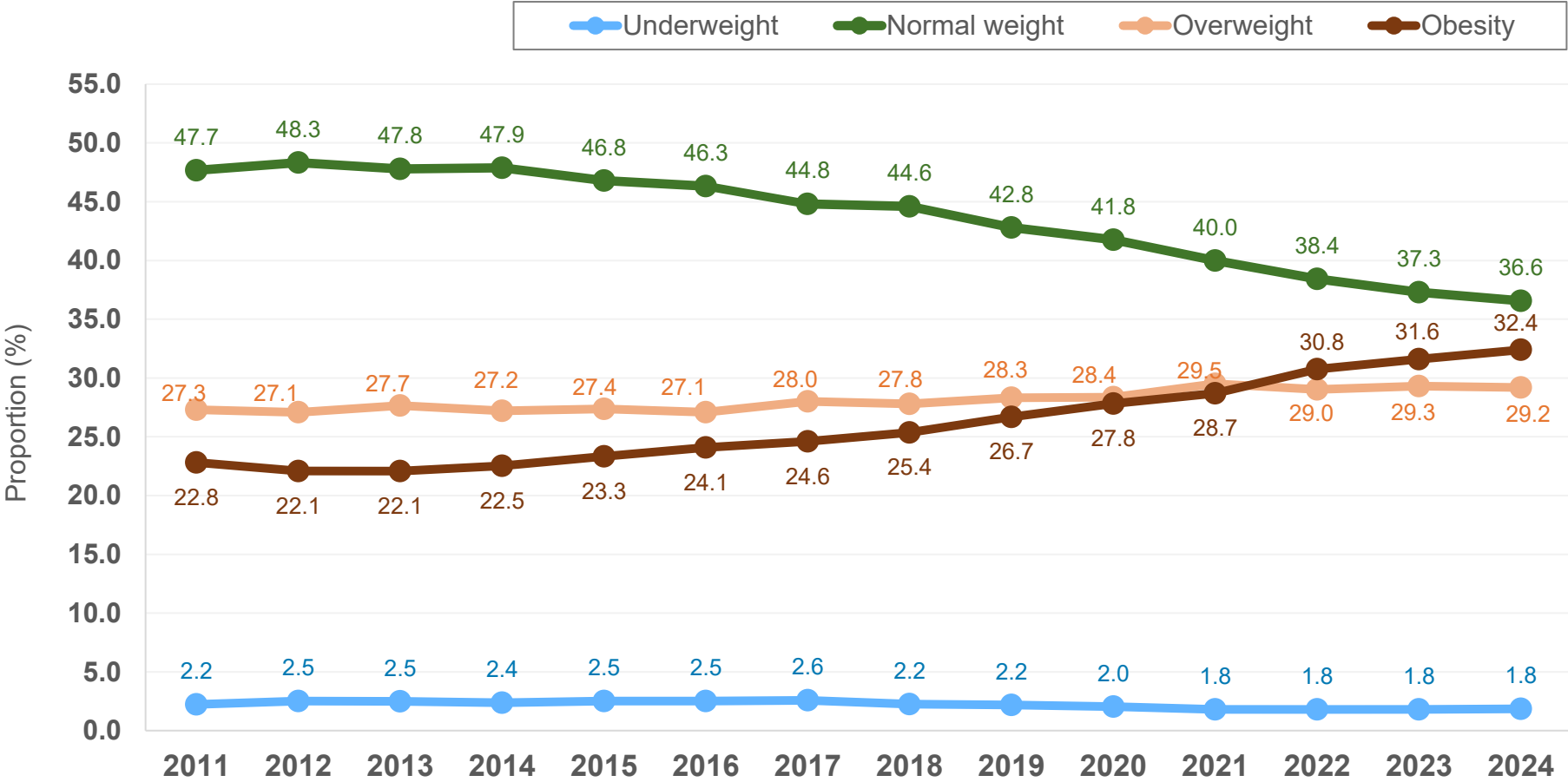
Deputy et al 2015. Data from 36 states, DC and NYC

Trends in pre-pregnancy BMI by race and ethnicity, 2013-2018



Wang et. al. 2021

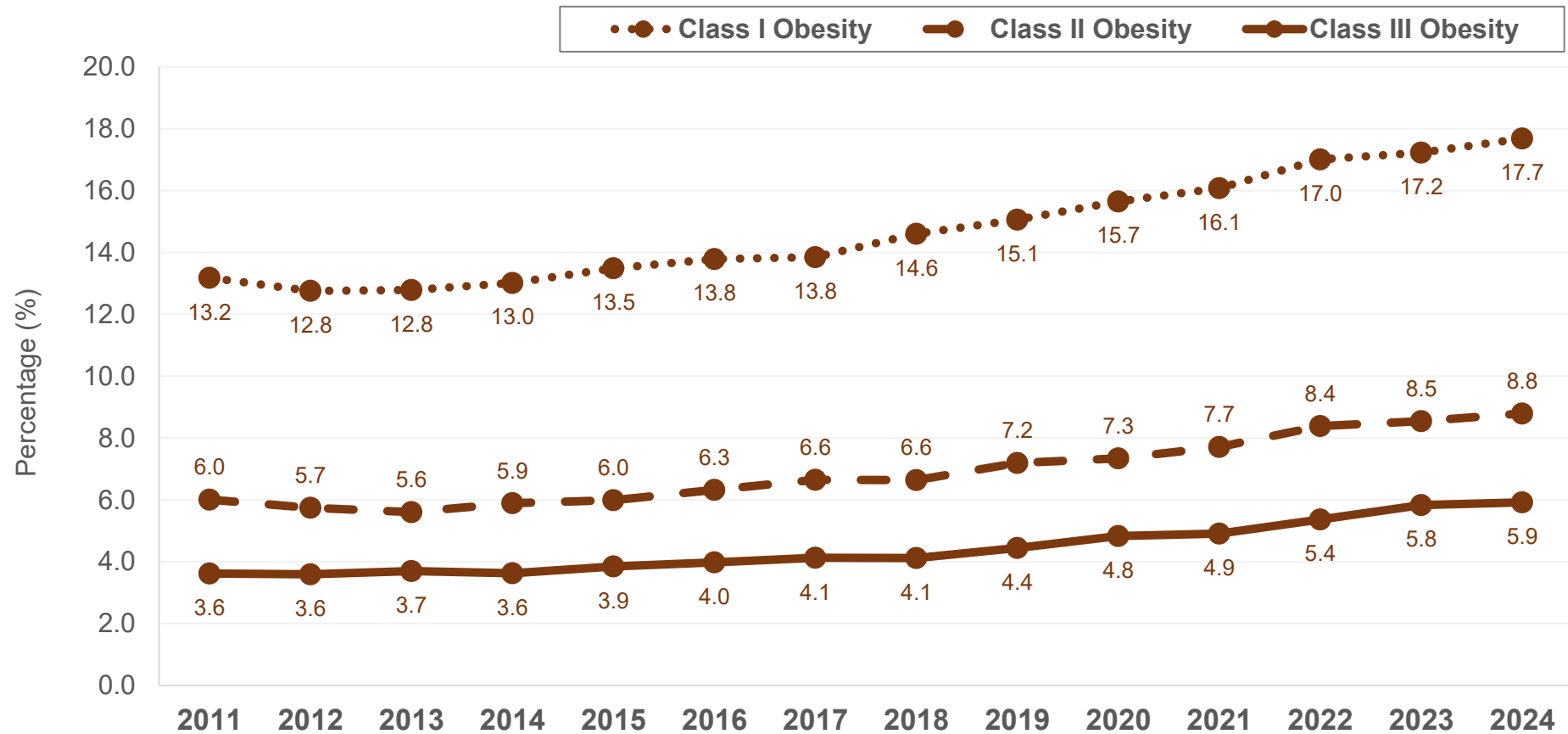
Trends in pre-pregnancy BMI categories, 2011-2024



Unpublished Data

Among of 537,686 pregnant individuals with singleton live births at Kaiser Permanente Northern California.

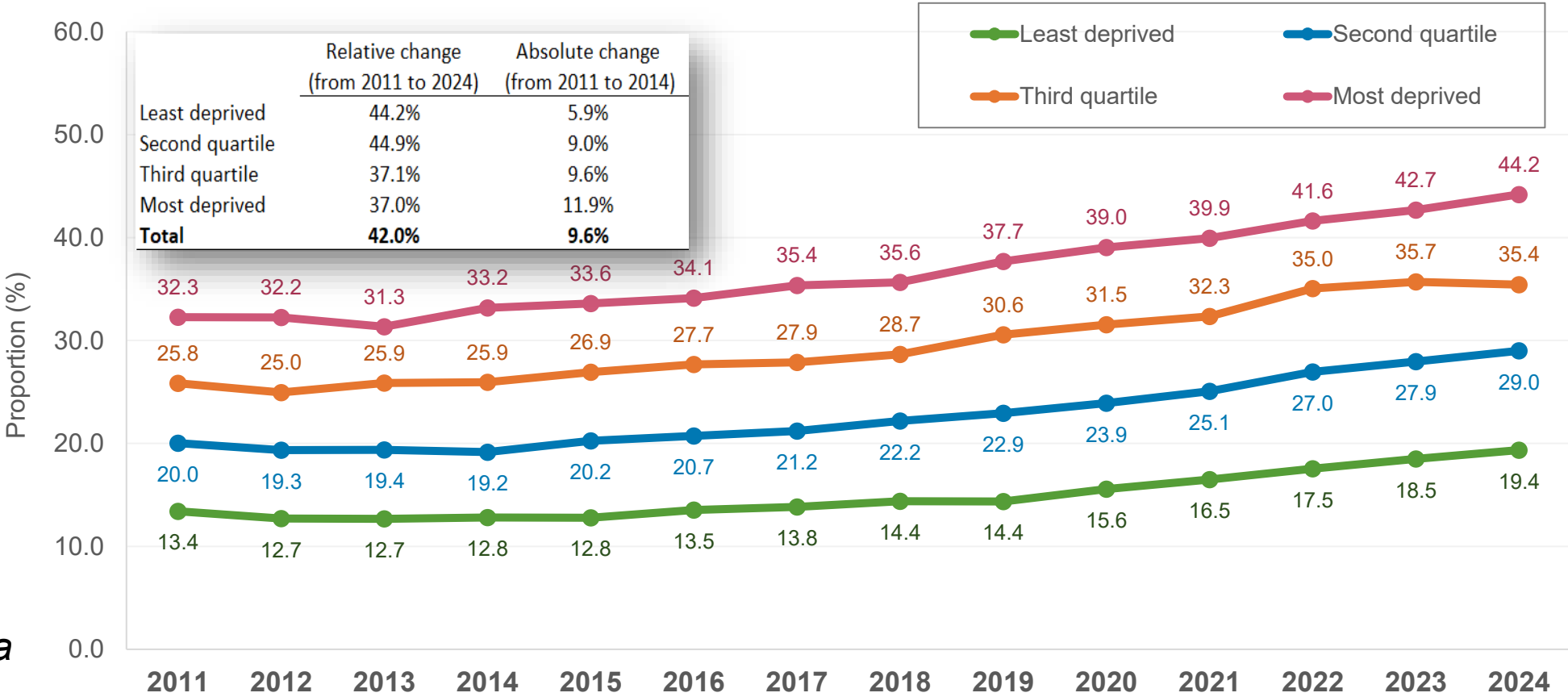
Trends in pre-pregnancy obesity classes, 2011-2024



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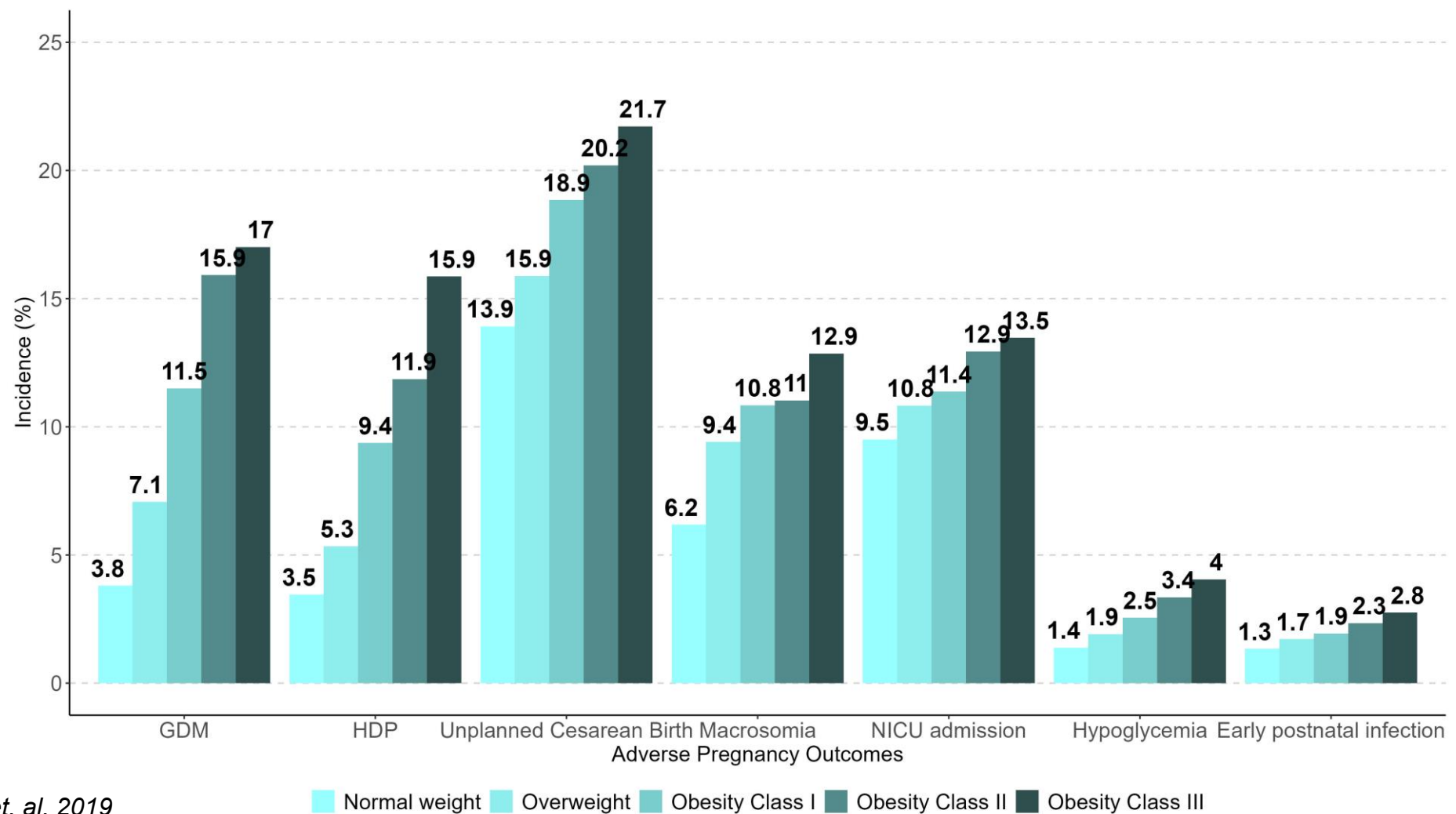
Trends in pre-pregnancy obesity by maternal neighborhood deprivation index (NDI), 2011-2024



Unpublished Data

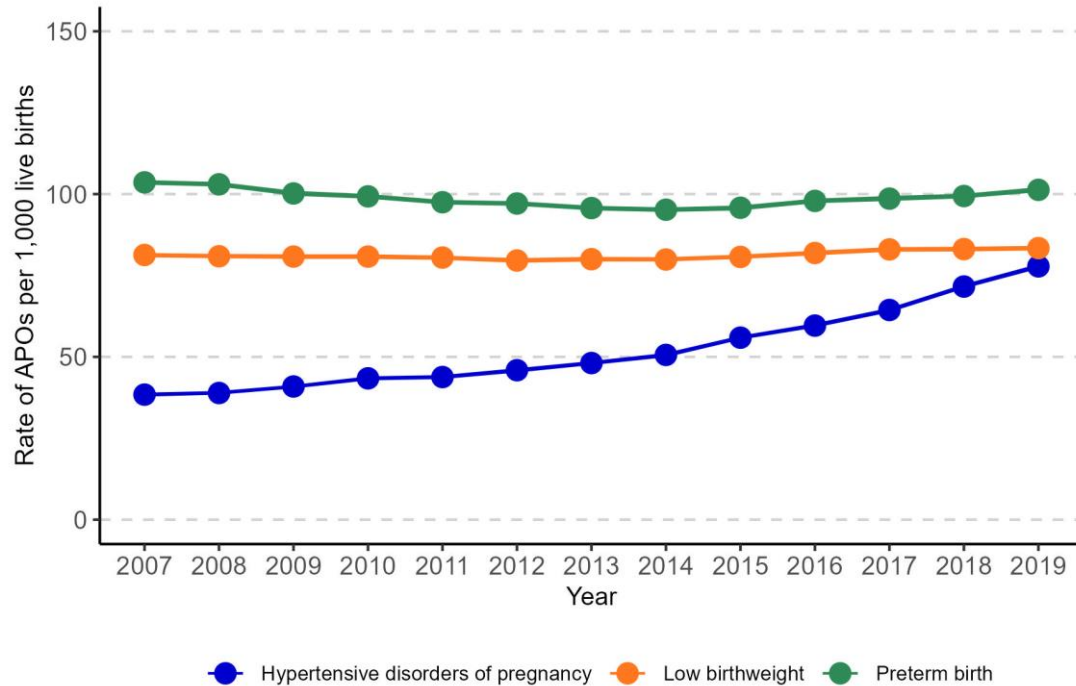
Among of 537,686 pregnant individuals with singleton live births at Kaiser Permanente Northern California.

Pre-pregnancy BMI and adverse pregnancy outcomes



Data from DSouza et. al. 2019

Trends in adverse pregnancy outcomes over time

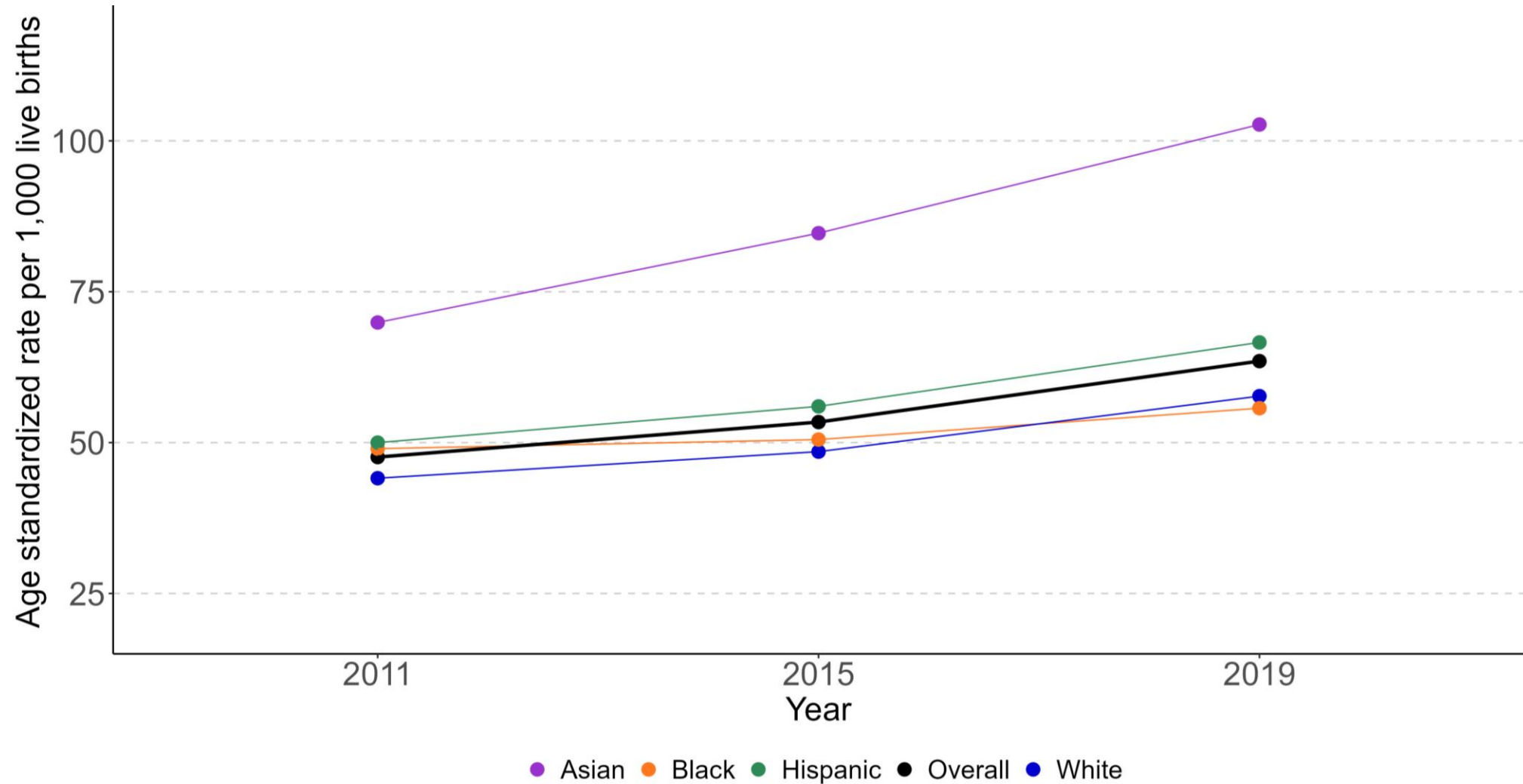


Trends in the Rate of SMM per 10,000 discharges



Freaney et. al. 2022; Fink et. al. 2023

Trends in gestational diabetes 2011-2019

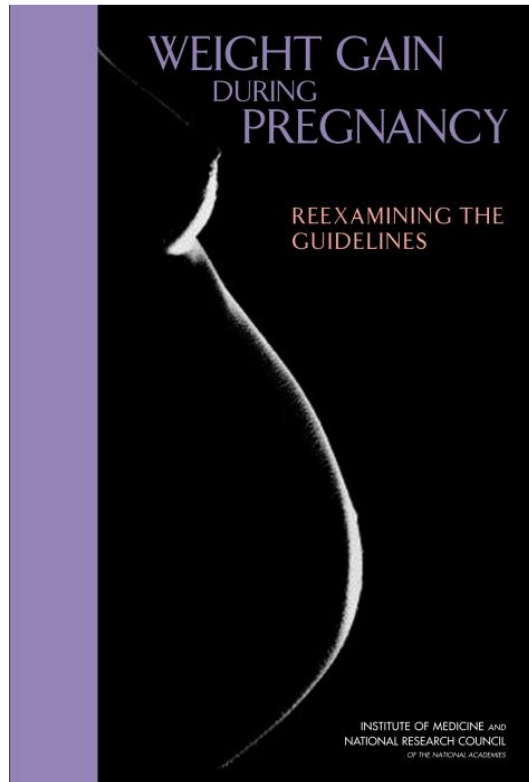


Shah NS et al 2021



Epidemiology and Trends in Pregnancy Weight Gain

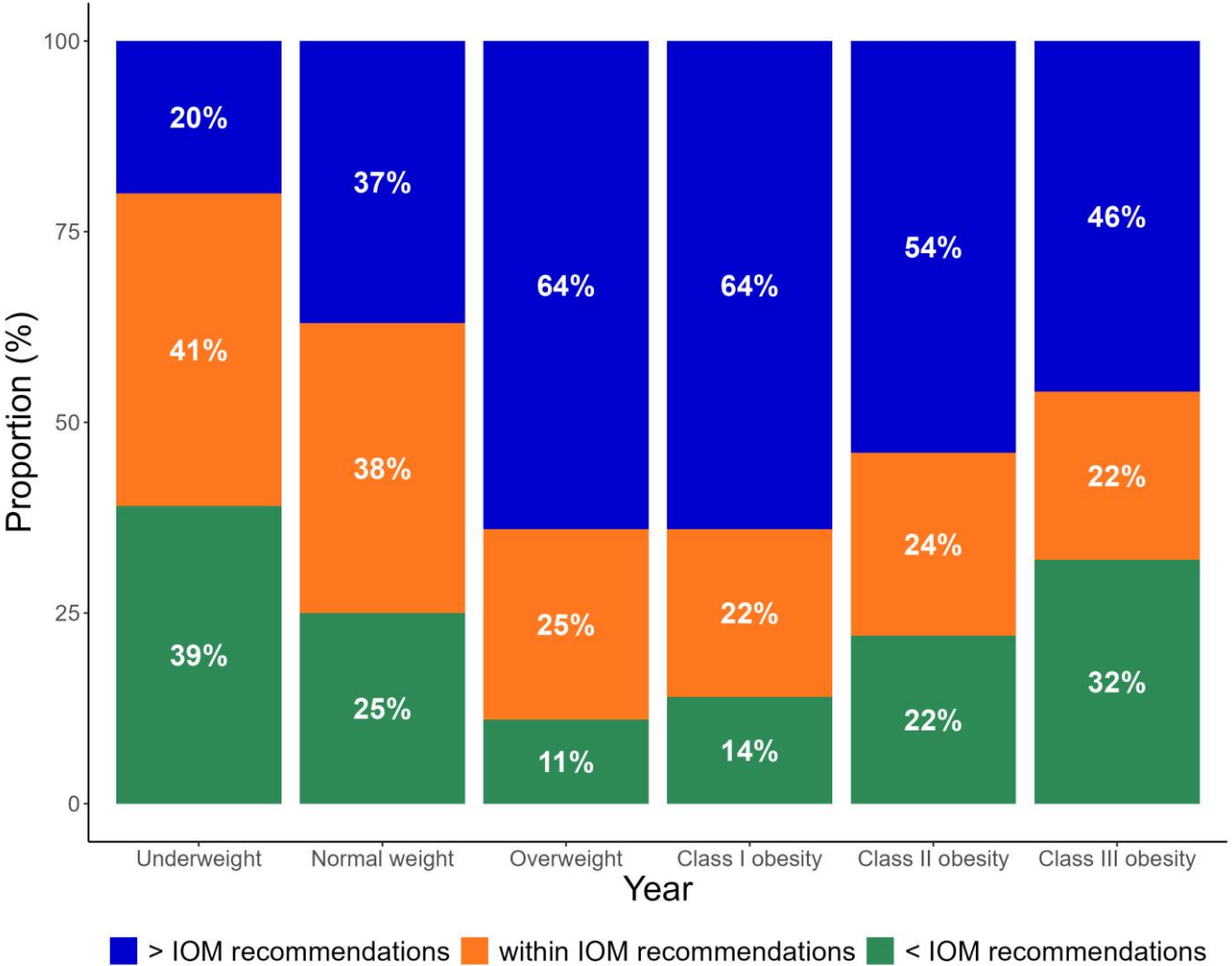
2009 Institute of Medicine pregnancy weight gain guidelines



Pre-pregnancy BMI (kg/m ²)	Total weight gain (lbs)	Mean rate of GWG lbs/week*
Underweight (< 18.5)	28 – 40	1 (1 - 1.3)
Normal weight (18.5 – 24.9)	25 – 35	1 (0.8 - 1.0)
Overweight (25.0 – 29.9)	15 – 25	0.6 (0.5 - 0.7)
Obese (≥ 30.0)	11 – 20	0.5 (0.4 - 0.6)

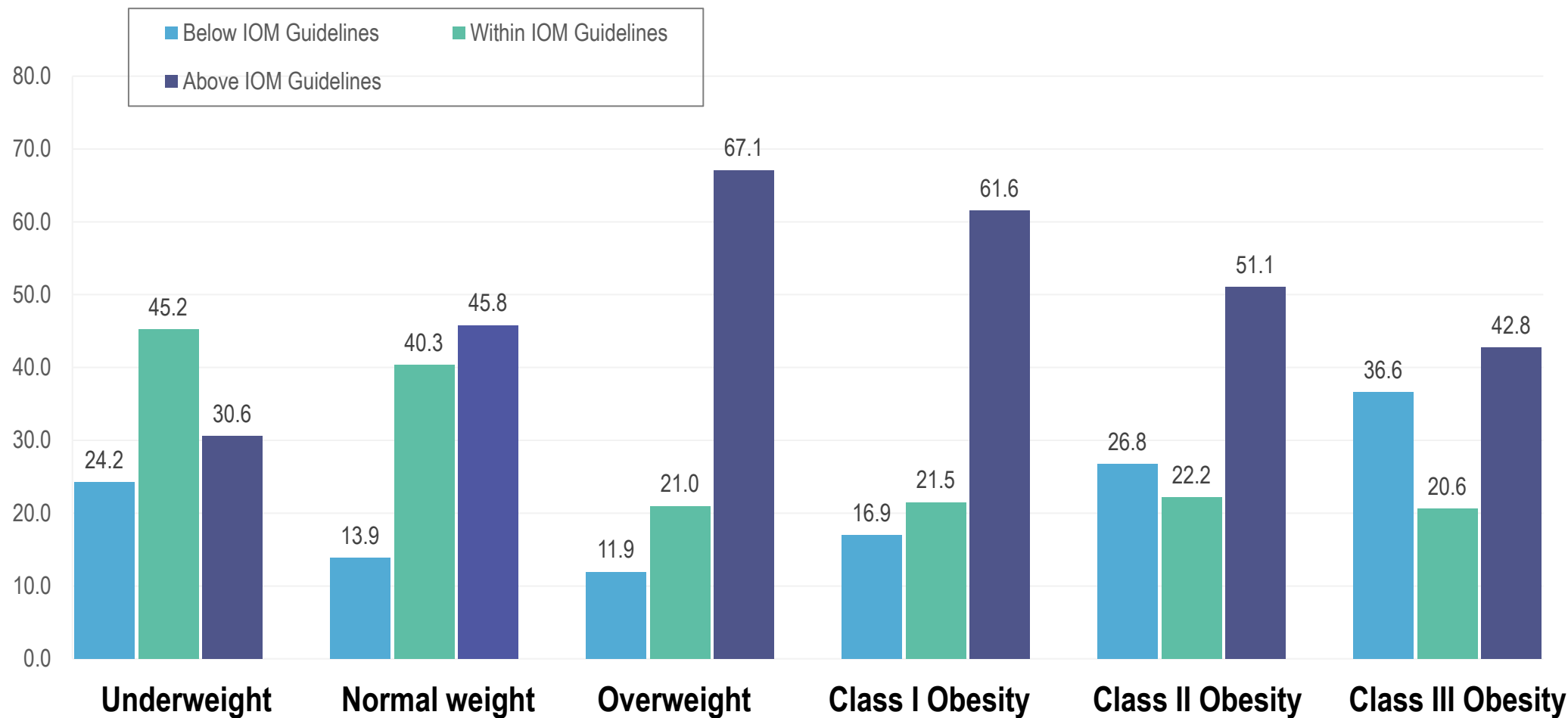
* 2nd/3rd trimester rate and 1st trimester recommendation 1.1 - 4.4 lbs for all BMI groups

Gestational weight gain adequacy, 2012-2013



Deputy et al. 2015

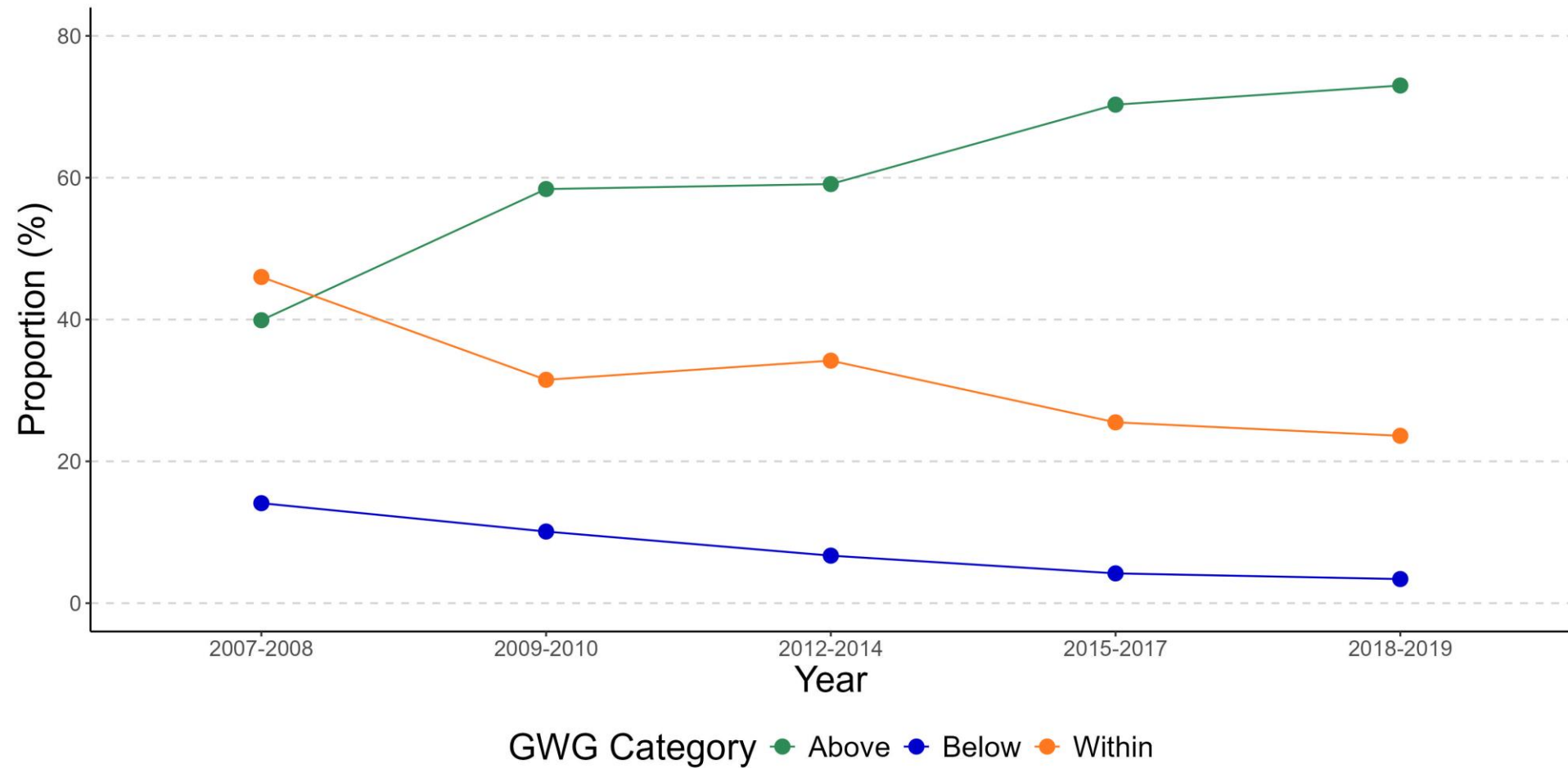
Gestational Weight Gain Relative to IOM Guidelines by Pre-Pregnancy BMI, 2011-2024



*Among 537,686 pregnant individuals with singleton live births at Kaiser Permanente Northern California.

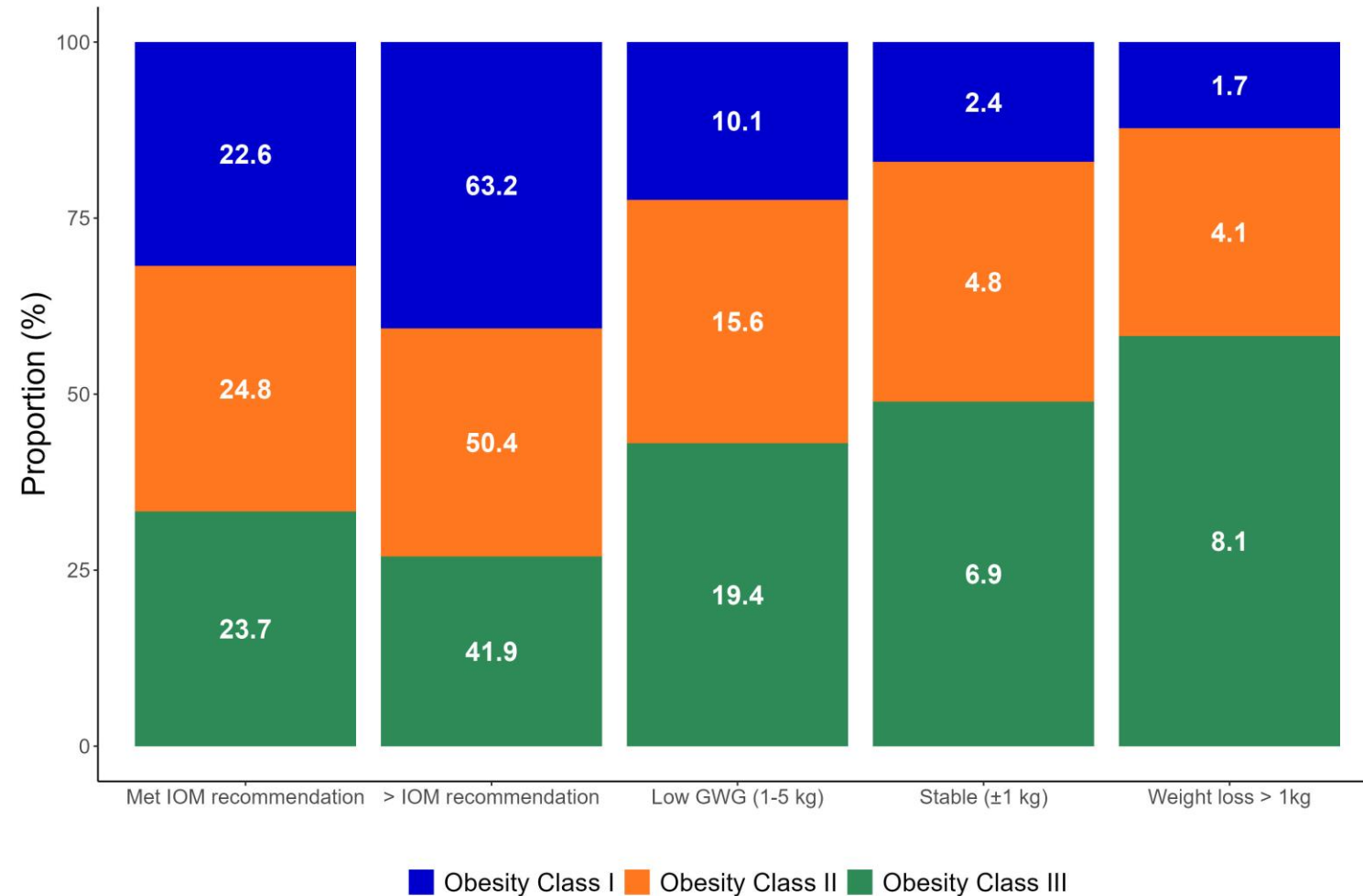
Unpublished Data

Trends in gestational weight gain relative to IOM guidelines, 2007-2019



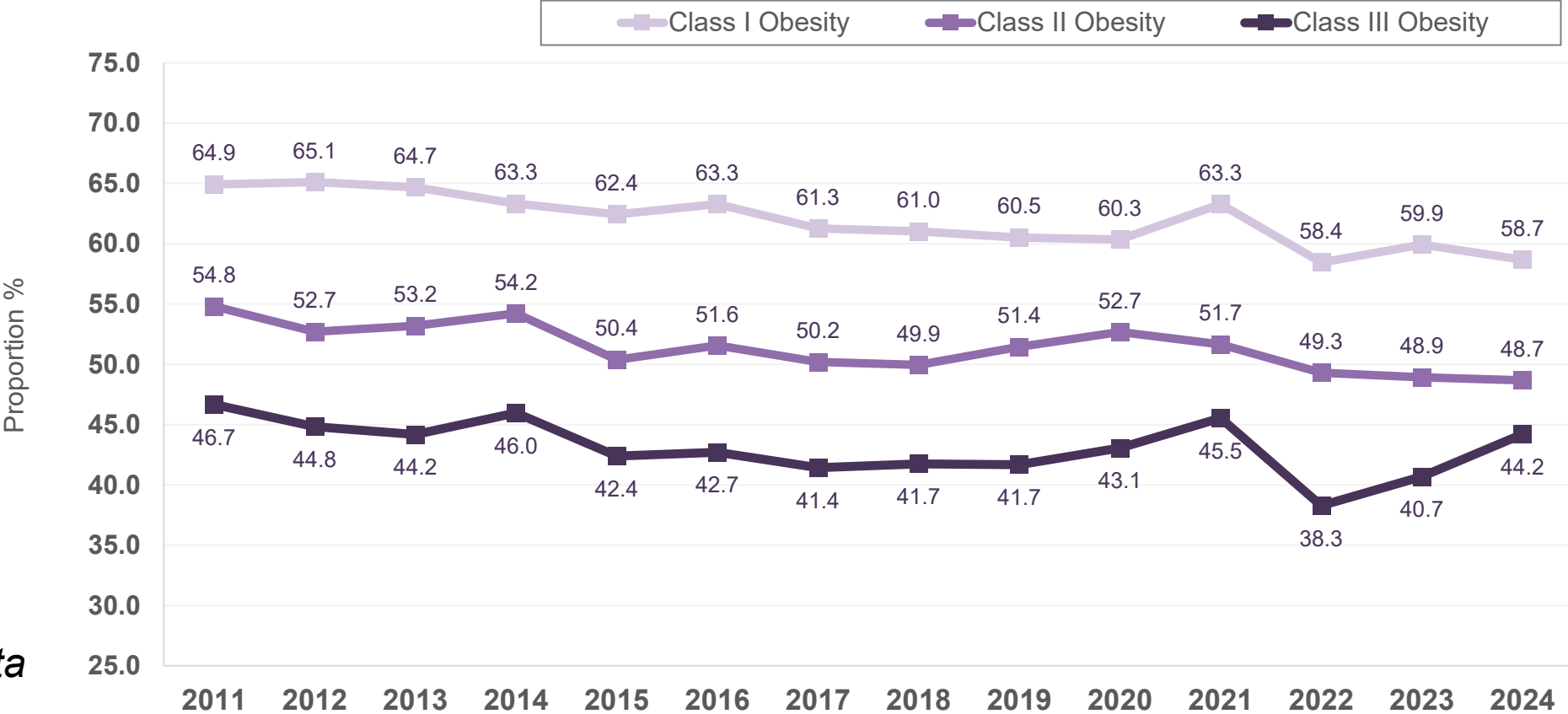
Martin et. al. 2025

Gestational weight change categories by pre-pregnancy obesity class in KPNC (N=29,408)



Widen et. al. 2024.

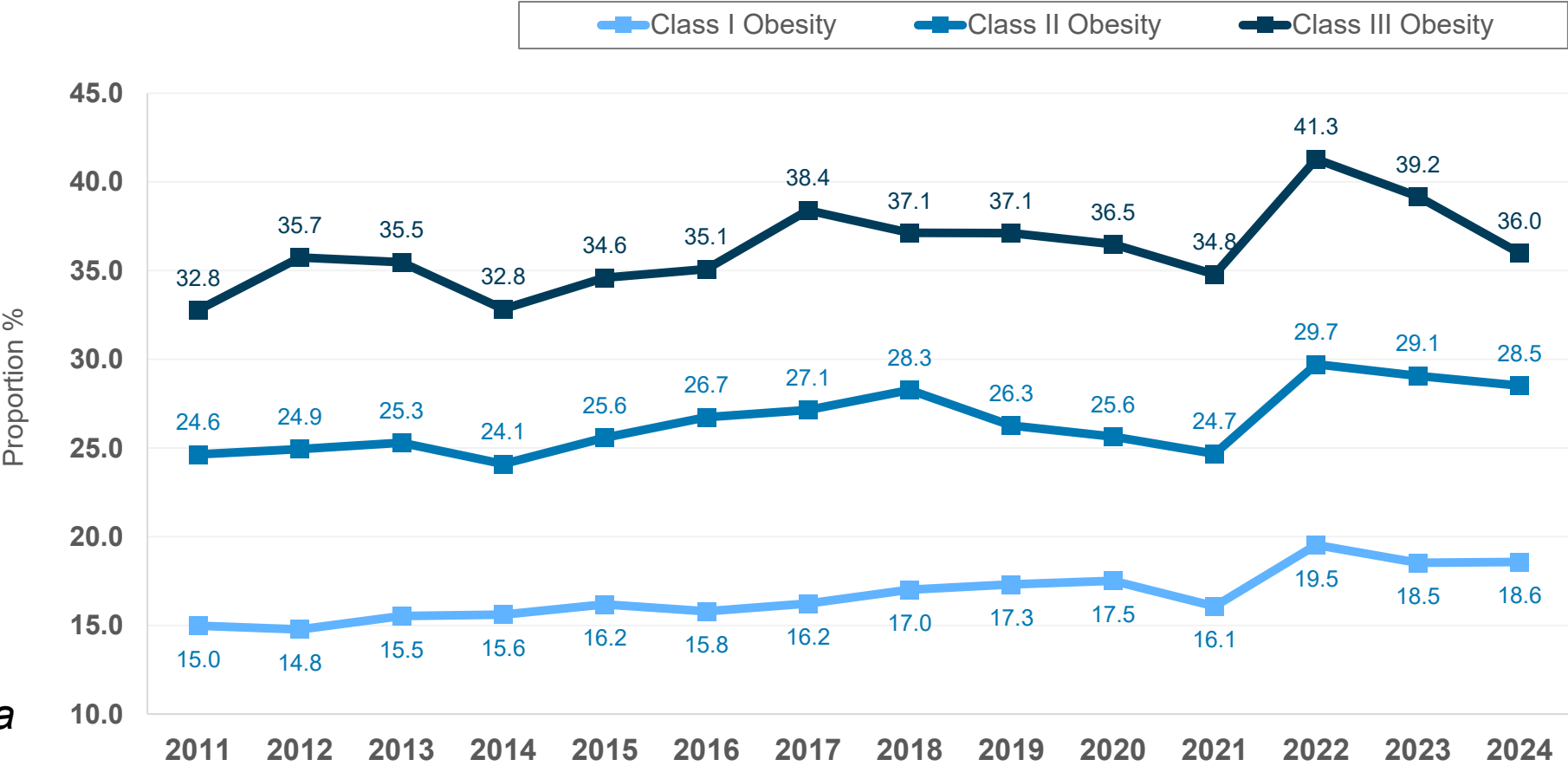
Gestational Weight Gain Above IOM Guidelines by Pre-Pregnancy BMI Obesity Classes, 2011-2024



Unpublished Data

Among 141,663 women with singleton live births at Kaiser Permanente Northern California.

Gestational Weight Gain Below IOM Guidelines by Pre-Pregnancy BMI Obesity Classes, 2011-2024



Unpublished Data

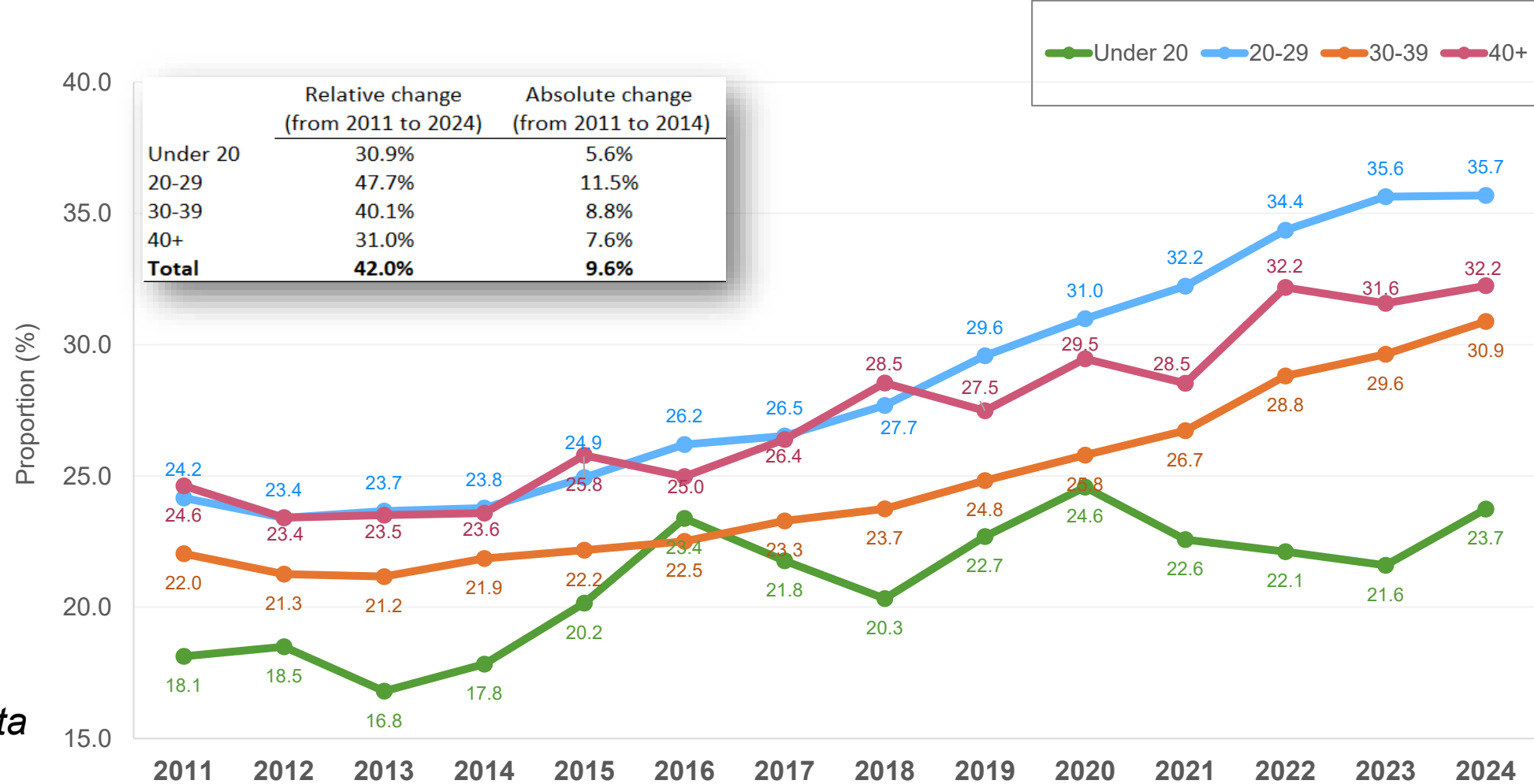
Among 141,663 women with singleton live births at Kaiser Permanente Northern California.

Summary

- Increasing proportions of individuals are entering pregnancy with overweight and obesity, with especially steep increases in severe obesity.
- These trends are patterned by race-ethnicity and socioeconomic disadvantage reflecting persistent disparities.
- Most pregnant individuals exceed gestational weight gain guidelines, particularly those entering pregnancy with overweight or obesity.
- Patients with severe obesity tend to gain less weight during pregnancy, but a high proportion still exceed the current guidelines.
 - Do they need lower GWG guidelines and how can we best counsel them?

Backup slides

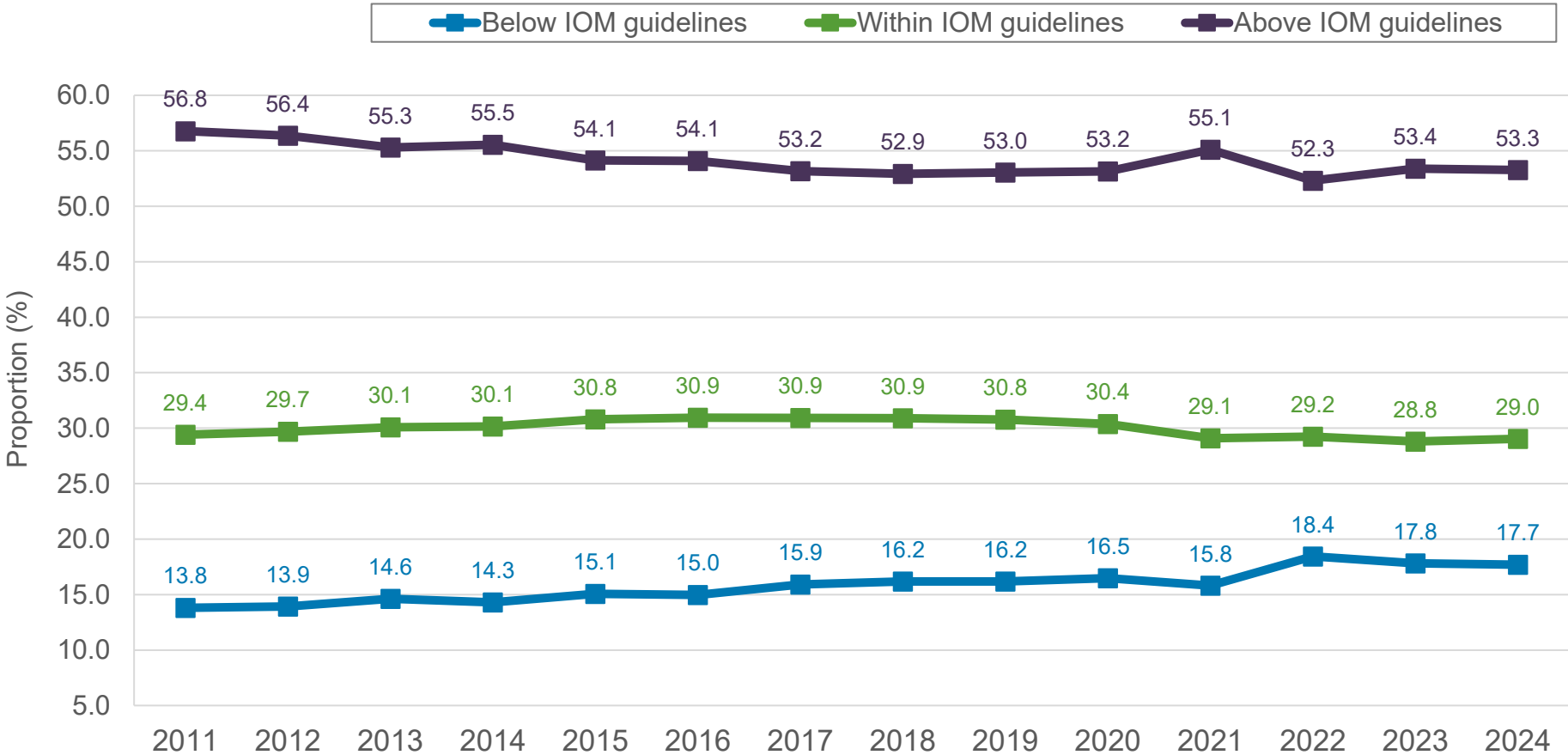
Pre-pregnancy obesity by maternal age, 2011-2024



Unpublished Data

Among of 537,686 pregnant individuals with singleton live births at Kaiser Permanente Northern California.

Trends in the proportions of gestational weight gain relative to IOM guidelines, 2011-2024



Unpublished Data

*Among 537,686 pregnant individuals with singleton live births at Kaiser Permanente Northern California.