



The Los Angeles Mommy and Baby Project

Healthy Mommies and Healthy Babies

Healthy Weight Gain During Pregnancy

Why Does Weight Gain Matter for Pregnant Women?

Staying healthy during pregnancy is crucial as it can affect the health of both the woman and her baby.

A particular concern for pregnant women is maintaining a healthy weight. Women who gain too little or too much weight may be at risk of a preterm birth, low birth weight, macrosomia or cesarean delivery.¹

The Institute of Medicine (IOM) recommends guidelines for how much weight a woman should gain during pregnancy. These guidelines include a range of weight gain based on a woman's pre-pregnancy Body Mass Index (BMI), (see Table 1).² As an indicator of body fat and shape, BMI is calculated from self-reported height and pre-pregnancy weight.

- In 2010, only one in three pregnant women in LA County who gave birth (to a singleton, full-term infant) gained the recommended amount of weight during their pregnancy.
- Adherence to IOM guidelines was lowest among women who:
 - were overweight or obese before their pregnancy
 - were African American
 - were not married
 - reported food insecurity at any point in their pregnancy
 - had lower educational attainment
- Women who enter prenatal care early on their pregnancy had a higher likelihood of meeting IOM pregnancy weight gain recommendations compared to women who entered prenatal care later in their pregnancies.

Institute of Medicine (IOM) Pregnancy Weight Gain Recommendations

These guidelines are specific to the Body Mass Index (BMI) of a woman just before she becomes pregnant. BMI is calculated from self-reported height and pre-pregnancy weight.

Pre-pregnancy BMI	Weight Gain Guidelines
Low (<18.5)	28-40 lbs.
Normal (18.5 - 25.0)	25-35 lbs.
High (25.0 - 30.0)	15-25 lbs.
Obese (>30.0)	11-20 lbs.

Table 1. Pregnancy Weight Gain Guidelines, 2009 IOM

Methods

This report utilizes data from the 2010 Los Angeles Mommy and Baby (LAMB) project. The LAMB project is a biennial population-based telephone and mail survey conducted by the Los Angeles County Department of Public Health, Maternal, Child, and Adolescent Health Programs. The survey asks mothers who recently delivered a live baby in Los Angeles (LA) County about events that happened before, during, and after their pregnancy. Questions on self-reported height, pre-pregnancy weight, and pre-delivery weight were used to determine weight status and weight gain during pregnancy. Data from the LAMB project is used for strategic planning and improving health programs for LA County mothers and infants. Of the mothers who gave birth to 133,160 infants in Los Angeles County in 2010, a total of 6,500 participated in the 2010 LAMB project*

*Adjusted response rate for LAMB 2010 was 57%.



Findings

Pre-pregnancy Weight Status of LA County Mothers

The 2010 LAMB survey found that 50.9% of LA County mothers were of normal weight, 25.8% were overweight, 18.6% were obese and 4.6% were underweight before their pregnancies.

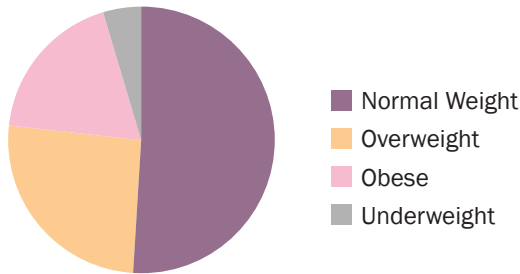


Figure 1. Pre-Pregnancy BMI Distribution of LA County Mothers, 2010 Los Angeles Mommy and Baby Survey

Black and Hispanic mothers (27.1% and 23.3%, respectively) had a higher prevalence of obesity compared to White or Asian/Pacific Islander (API) mothers (9.6% and 5.7%, respectively). API mothers were the most likely to be normal weight (72.1%).

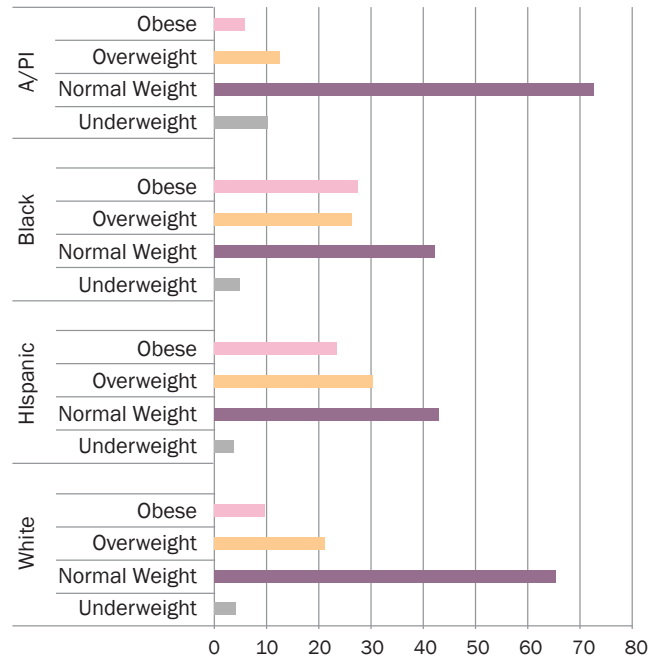


Figure 2. Pre-Pregnancy BMI Distribution of LA County Mothers by Race/Ethnicity, 2010 Los Angeles Mommy and Baby Survey

Pre-pregnancy BMI and Pregnancy Weight Gain

In 2010, 36% of LA County pregnant women gained weight within the recommended ranges according to their pre-pregnancy BMI. Twenty-three percent of women gained less and 41% gained more than the recommended weight.

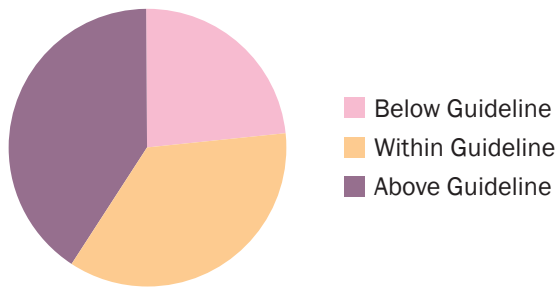


Figure 3. Pregnancy Weight Gain Distribution of LA County Mothers in Relation to IOM Guidelines, 2010 Los Angeles Mommy and Baby Survey

Fifty-seven percent of overweight women and fifty-one percent of obese women gained more weight than recommended. Forty-two percent of normal weight women gained weight within the recommended ranges. Underweight women were the most likely to gain less weight than recommended (34.5%).

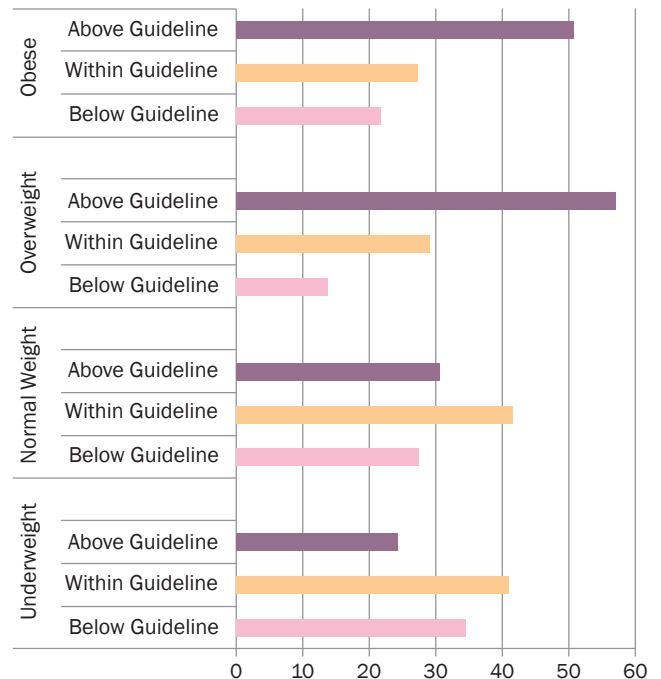


Figure 4. Pregnancy Weight Gain Distribution of LA County Mothers by Pre-Pregnancy BMI, 2010 Los Angeles Mommy and Baby Survey

Adherence to IOM Pregnancy Weight Gain Guidelines by Race/Ethnicity

White, Hispanic, and Black women were more likely to gain more weight than recommended. More than 50% of Black women and 45% of white women gained more weight than what was recommended. Asian/Pacific Islander women were most likely to gain weight within the recommended ranges. (Figure 5)

Adherence to IOM Pregnancy Weight Gain Guidelines by Other Demographic Factors

Women were more likely to gain weight within the recommended ranges if they:

- Had a higher level of education
- Were married
- Were over age 30

Mothers who reported ever eating less than they should have in pregnancy due to financial difficulties were less likely to gain weight within the recommended ranges (23.0%) compared to their food secure counterparts (36.5%). Women who reported any smoking in pregnancy were also less likely to gain weight within the recommended ranges compared to women who did not smoke in pregnancy (25.8% v. 36.1%). There were also

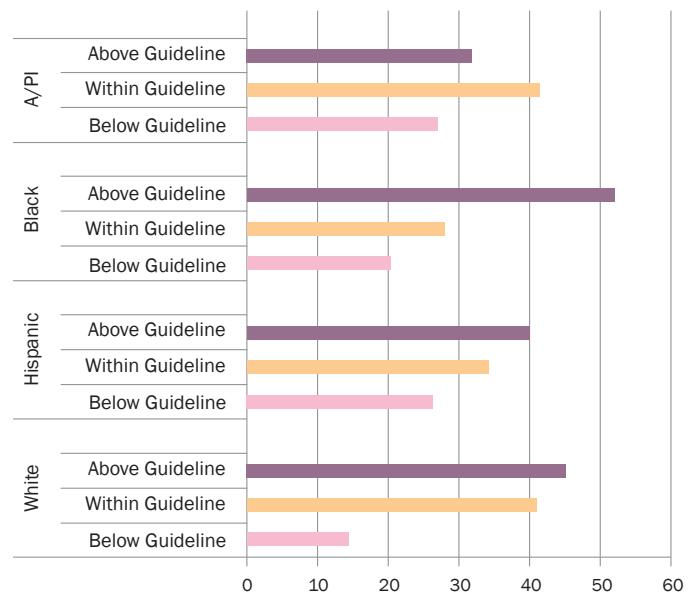


Figure 5. Pregnancy Weight Gain Distribution of LA County Mothers by Race/Ethnicity, 2010 Los Angeles Mommy and Baby Survey

differences across early versus late access to prenatal care (PNC). Thirty-seven percent of women who began PNC early gained weight within the recommended ranges compared to 27.3% of women who began PNC late.

Demographic Factor	Met IOM Guidelines	95% Confidence Interval	Population Estimate
Education Level			
Less than High School	30.5%	26.1-34.9	6,596
High School	31.6%	27.6-35.6	7,989
More than High School	39.7%	37.3-42.1	22,381
Marriage Status			
Married	40.4%	37.9-42.9	23,991
Not Married	29.9%	27.0-32.7	13,317
Age Group			
< 20 yrs. Old	34.2%	30.9-37.5	3,222
20-29 yrs. Old	33.4%	30.4-36.5	15,474
> 30 yrs. Old	38.2%	35.6-40.9	18,934
Reported Food Insecurity			
No	36.5%	34.6-38.5	36,271
Yes	23.0%	16.2-29.9	1,359
Smoking Status within Pregnancy			
No	36.1%	34.2-38.0	36,392
Yes	25.8%	17.3-34.3	695
Late vs. Early PNC Entry			
Early PNC (< 3 months)	37.1%	35.0-39.1	34,307
Late PNC (> 3 months)	27.3%	21.9-32.7	2,638

Table 2. Pregnancy Weight Gain Distribution of LA County Mothers by Selected Socio-demographic and Risk Factors, 2010 Los Angeles Mommy and Baby Survey

Summary

According to the LAMB project, the majority of LA County mothers (almost two-thirds) did not meet gestational weight gain guidelines during their pregnancies. This mirrors national IOM adherence trends (estimated to range between 60 to 67%).³ Furthermore, excessive gestational weight gain is more prevalent than inadequate gain in both LA County and on a national level.³ The findings that LA County women who were overweight or obese, or who smoked, before pregnancy were less likely to meet IOM guidelines emphasizes the importance of healthy weight and smoking cessation in the preconception period. Higher levels of adherence among mothers who began prenatal care early on underlines a valuable opportunity for health care providers to encourage healthy weight gain and positive lifestyle changes. In the transitional stage between preconception and early pregnancy, women may be especially motivated to ensure healthy outcomes for themselves and their baby.⁴ Also, the findings bring attention to the complex role of food

insecurity in excessive or inadequate weight gain. This emphasizes the need for health care providers to assess this factor as part of their counseling on pregnancy weight gain.⁵

Studies have suggested that healthy pregnancy weight gain is achievable through monitoring weight gain, and providing education and counseling on weight, nutrition, and physical activity during prenatal care visits.⁶ Collaborative efforts between the Los Angeles County Department of Public Health and key community stakeholders are warranted to address these concerns and educate providers on health education messages, assessment tools, and counseling strategies available to help reinforce and standardize gestational weight gain counseling. Differences in adherence to weight gain recommendations across race/ethnicity characteristics also call for the inclusion of culturally competent approaches to reduce disparities.

Data Analyses and Limitations

Data analyses were conducted using Statistical Analysis Software (SAS) version 9.3 and weighted to represent the experiences of all women who delivered a live birth in 2010. The LAMB project data is based on self-reported participant responses about three to seven months after delivery. This may affect recall of pre-delivery weight. There may also be underreporting of heavier pre-pregnancy and pre-

delivery weights. Among mothers who had prenatal care discussions with their providers on pregnancy weight gain, it is difficult to determine content of the counseling and whether it explicitly referred to IOM guidelines. Finally, the current report includes only mothers with full-term, singleton births on whom pre-pregnancy BMI could be determined.

Recommendations

Mothers and Mothers-to-be

- Women of reproductive age can better prepare themselves for pregnancy (and general good health) by striving for a healthy weight and a normal BMI before becoming pregnant.
- Pregnant women should follow a healthy balanced diet. If needed, mothers should seek nutrition counseling and supplementation from WIC.
- Women who plan to become pregnant or are pregnant should quit smoking.
- Pregnant women should begin prenatal care before three months gestation (preferably as early as possible).

Prenatal Care Providers and Health Care Community

- Improve and increase training opportunities for prenatal care providers, including topics such as:
 - Clarity/emphasis on weight gain recommendations in pregnancy.
 - How to better counsel pregnant women on how much weight to gain, including sensitive approaches to discuss patient weight gain goals and charting their progress.
- Develop and implement less personnel-intensive tools, such as:
 - Self-help materials encouraging goal setting and self-monitoring.
 - Informational mailings.
- Increase patient knowledge of pregnancy-related risk factors and healthy behaviors in the pre- and inter-conception periods.
- Enlist the assistance of allied health professionals, such as dietitians or other qualified individuals, to better support a woman's nutrition and exercise goals to achieve a healthy weight.

Additional Resources

- Los Angeles Mommy and Baby (LAMB) Project: www.publichealth.lacounty.gov/mch/lamb/LAMB.html
- Pregnancy Risk Assessment Monitoring System (PRAMS): www.cdc.gov/prams/
- WIC Program: <http://www.wicprograms.org>
- WIC Program in Los Angeles County: <http://www.phfewic.org/>
- Institute of Medicine (IOM), Gestational Weight Gain Recommendations: <http://www.iom.edu/Reports/2009/Weight-Gain-During-Pregnancy-Reexamining-the-Guidelines.aspx>
- Institute of Medicine, Gestational Weight Gain Discussion for Patients: <http://www.iom.edu/About-IOM/Making-a-Difference/Kellogg/HealthyPregnancy.aspx>
- Institute of Medicine, Implementation Guide on Nutrition During Pregnancy: <http://www.iom.edu/Reports/1992/Nutrition-During-Pregnancy-and-Lactation-An-Implementation-Guide.aspx>
- Centers for Disease Control and Prevention, Pediatric and Pregnancy Nutrition Surveillance System: http://www.cdc.gov/pednss/what_is/pnss_health_indicators.htm

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