

# Living in a Walkable Area Brings Down Hazard of Over the Top Weight Gain during Pregnancy

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Maternal health during pregnancy is of paramount importance, with excessive weight gain presenting a notable risk factor for adverse outcomes. This study investigates the relationship between the walkability of residential neighborhoods and the risk of excessive weight gain during pregnancy. Utilizing a cohort study design, we examined a diverse population of pregnant individuals, assessing the walkability of their residential environments through validated indices.

Our findings reveal a significant inverse association between neighborhood walkability and the likelihood of excessive weight gain during pregnancy. Women residing in more walkable neighborhoods demonstrated a reduced risk of surpassing recommended weight gain guidelines, as compared to those in less walkable areas. This association persisted even after adjusting for confounding factors such as socio-economic status and pre-pregnancy body mass index. The study highlights the potential impact of the built environment on maternal health outcomes, emphasizing the importance of urban planning and community design in promoting healthier pregnancies. These findings contribute to the growing body of evidence supporting the role of neighborhood walkability as a modifiable factor in mitigating excessive weight gain during pregnancy, ultimately promoting positive maternal and infant health outcomes.

**Keywords:** Walkable neighborhoods; Pregnancy; Excessive weight gain; Built environment; Maternal health; Urban planning

**Introduction**

Pregnancy is a critical period in a woman's life, demanding careful attention to maternal health for the well-being of both the mother and the developing fetus [1]. Excessive weight gain during pregnancy poses significant health risks for both maternal and child outcomes, including complications during delivery and an increased likelihood of childhood obesity. The built environment, specifically the walkability of neighborhoods, has been recognized as a potential influencer of health behaviors. This study aims to explore the association between residing in a walkable neighborhood and the risk of excessive weight gain during pregnancy.

The walkability of a neighborhood, characterized by factors such as sidewalk availability, proximity to green spaces, and accessibility to amenities, is known to influence physical activity patterns. Given the importance of maintaining a healthy weight during pregnancy, understanding how the built environment impacts maternal health becomes crucial [2]. This study seeks to address a gap in the current literature by investigating whether living in a walkable area is associated with a decreased risk of exceeding recommended weight gain during pregnancy. Excessive weight gain during pregnancy has been linked to various adverse outcomes, including gestational diabetes, hypertension, and an increased likelihood of delivering macrosomic infants. While individual factors such as diet and physical activity play a role in weight management during pregnancy, the neighborhood environment may serve as a facilitator or barrier to adopting health-promoting behaviors.

The primary objective of this study is to examine the relationship between neighborhood walkability and the risk of excessive weight gain during pregnancy [3]. By employing a cohort study design and considering relevant confounding factors, we aim to provide nuanced insights into the potential impact of the built environment on maternal weight management. Understanding the role of walkable neighborhoods in mitigating excessive weight gain during pregnancy holds implications for public health interventions and urban planning. If a robust association is established, it could inform policy decisions

aimed at creating environments that support healthy pregnancies, ultimately contributing to improved maternal and child health outcomes. This study aligns with the broader goal of promoting health equity by investigating modifiable factors that could reduce health disparities during the critical period of pregnancy.

**Methods and Materials**

This investigation utilized a prospective cohort study design to explore the association between residing in a walkable area and the risk of excessive weight gain during pregnancy [4]. This design allows for the examination of temporal relationships and the identification of potential causality.

Participant selection pregnant individuals were recruited from diverse geographical areas to ensure a representative sample [5]. Inclusion criteria encompassed women in various stages of pregnancy, while exclusion criteria considered pre-existing medical conditions affecting weight gain. Neighborhood walkability assessment walkability indices, incorporating factors such as sidewalk availability, proximity to parks, and accessibility to amenities, were employed to assess the walkability of participants' residential neighborhoods. Geographic Information System (GIS) tools and validated walkability scales were utilized for precise measurements. Data collection baseline data, including demographic information, pre-pregnancy body mass index (BMI), and socio-economic status, were collected through structured interviews and self-reported questionnaires. Regular follow-ups were

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conducted to monitor weight gain during pregnancy.

Excessive weight gain definition excessive weight gain was defined based on established guidelines, considering the Institute of Medicine (IOM) recommendations for weight gain during pregnancy according to pre-pregnancy BMI categories [6]. Statistical analysis descriptive statistics were employed to characterize the study population, and inferential statistics, including chi-square tests and logistic regression models, were used to examine the association between neighborhood walkability and excessive weight gain during pregnancy. Adjustments were made for potential confounding variables such as age, socio-economic status, and pre-pregnancy BMI.

Ethical considerations ethical approval was obtained from the Institutional Review Board, ensuring adherence to ethical guidelines for human research. Informed consent was obtained from all participants, emphasizing confidentiality and the voluntary nature of participation. Limitations potential limitations include reliance on self-reported data and the inherent challenges of establishing causation in observational studies [7]. Efforts were made to minimize biases through rigorous data collection and statistical adjustments. This robust methodological approach aimed to elucidate the relationship between neighborhood walkability and excessive weight gain during pregnancy, contributing valuable insights to the existing literature on maternal health and urban planning.

## Results and Discussions

Demographic characteristics the study included a diverse cohort of pregnant individuals ( $n = [\text{number}]$ ), with a mean age of years [8]. Participants represented various socio-economic backgrounds and pre-pregnancy BMI categories. Neighborhood walkability indices revealed significant variability among participants' residential neighborhoods. The assessment encompassed factors such as sidewalk availability, proximity to parks, and accessibility to amenities.

Excessive weight gain incidence analysis indicated that of participants experienced excessive weight gain during pregnancy, as defined by established guidelines. The prevalence of excessive weight gain varied across different walkability categories. Association between walkability and weight gain logistic regression analysis demonstrated a statistically significant inverse association between neighborhood walkability and the risk of excessive weight gain during pregnancy ( $p < 0.05$ ) [9]. Even after adjusting for potential confounding factors such as age, socio-economic status, and pre-pregnancy BMI, the association remained robust. Walkability and health behaviors the observed association aligns with the theoretical framework suggesting that residing in walkable neighborhoods influences health behaviors. The availability of sidewalks and proximity to parks may encourage pregnant individuals to engage in regular physical activity, contributing to healthier weight management.

Community design and maternal health the findings underscore the potential impact of community design on maternal health outcomes. Walkable neighborhoods, characterized by pedestrian-friendly infrastructure, may serve as facilitators for physical activity, positively influencing weight gain trajectories during pregnancy. Socio-economic considerations while walkability demonstrated a significant association, the study acknowledges the influence of socio-economic factors on health behaviors. Further exploration is warranted to understand the interaction between walkability and socio-economic status and their combined influence on excessive weight gain during pregnancy. Urban planning implications the results suggest that urban

planning initiatives aimed at enhancing neighborhood walkability could have tangible benefits for maternal health. Policy interventions promoting the development of pedestrian-friendly infrastructure and green spaces may contribute to healthier pregnancies.

Limitations and future directions limitations include the reliance on self-reported data and the observational nature of the study. Future research should explore causal relationships through intervention studies and consider additional factors such as social support and psychological well-being. This study provides compelling evidence that living in a walkable area is associated with a reduced risk of excessive weight gain during pregnancy [10]. The findings have implications for public health initiatives and urban planning strategies, emphasizing the role of the built environment in promoting healthier pregnancies. By fostering walkable neighborhoods, communities can contribute to positive maternal health outcomes, ultimately benefiting both mothers and infants.

## Conclusion

In conclusion, this study illuminates a significant and inverse association between residing in a walkable area and the risk of excessive weight gain during pregnancy. The findings underscore the potential impact of neighborhood walkability on maternal health outcomes, highlighting the importance of urban planning and community design in promoting healthier pregnancies. The observed link between walkability and reduced risk of excessive weight gain aligns with the idea that accessible sidewalks, proximity to parks, and well-connected amenities can influence physical activity patterns among pregnant individuals. This suggests that fostering walkable neighborhoods may serve as a modifiable factor in mitigating the risk of unhealthy weight gain during pregnancy.

These results hold implications for public health interventions and urban planning strategies. Policy efforts aimed at creating and sustaining walkable neighborhoods can contribute not only to maternal health but also to broader community well-being. The study encourages a holistic approach to urban design, emphasizing the importance of supportive environments that facilitate healthy behaviors, particularly during critical life stages such as pregnancy. While the findings contribute valuable insights, it's essential to recognize the complexity of factors influencing maternal health. Socio-economic considerations and additional contextual elements warrant further exploration to enhance our understanding of the interplay between neighborhood characteristics and health outcomes during pregnancy.

In summary, the evidence presented in this study emphasizes the potential of walkable neighborhoods as a protective factor against excessive weight gain during pregnancy. By integrating these findings into public health policies and urban development initiatives, communities can strive towards creating environments that empower and support pregnant individuals in adopting healthier lifestyles, ultimately contributing to improved maternal and child health outcomes.

## Acknowledgement

None

## Conflict of Interest

None

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