

Neighborhood walkability linked to risk of gestational diabetes

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A new study by scientists in the Columbia University Mailman School of Public Health's Built Environment and Health Research Group finds that higher neighborhood walkability is associated with lower risk of

gestational diabetes (GD). The results of the study are published in the peer-reviewed journal [Paediatric and Perinatal Epidemiology](#).

GD increases infants' risk of being large for gestational age, may increase the risk of unhealthy weight gain during childhood, and increases the pregnant individual's risk for future type 2 diabetes.

The researchers, working in partnership with the New York City Department of Health and Mental Hygiene, analyzed the relationships between neighborhood walkability for pregnant New Yorkers. The Neighborhood Walkability Index they used to measure walkability includes data on residential density, land use mix, street connectivity, and access to public transit. They analyzed city data from more than 109,000 births in 2015.

They found that the risk of GD decreased with increases in Neighborhood Walkability Index score by as much as 20 percent between areas in the highest and lowest quartiles of walkability. Similarly when the researchers assessed the density of walkable destinations, another measure of neighborhood walkability, pregnant individuals in the highest quartile of walkable destinations had a 23 percent lower risk of GD compared to those living in the lowest quartile. The analyses adjusted for the pregnant individual's age, race and ethnicity, parity, education, place of birth, and [marital status](#), along with the poverty rate of the neighborhood.

An earlier study by research team found that [neighborhood walkability is associated](#) with a lower risk of excess weight gain during pregnancy; almost 50 percent of pregnant individuals gain more weight than is recommended for healthy pregnancies. The researchers theorize that neighborhood walkability is associated with higher levels of walking and physical activity in pregnant individuals, which in turn reduces the risk of GD and excess weight gain during pregnancy. Pregnant individuals

are known to favor lower intensity forms of exercise such as walking during pregnancy, and in New York City neighborhood walkability is positively associated more walking and total physical activity.

"The study highlights the importance of urban planning, particularly neighborhood [walkability](#), in promoting health," says study co-first author Andrew Rundle, DrPH, an epidemiology professor at Columbia Mailman. "Creating opportunities for pregnant individuals to meet recommendations for healthy [physical activity](#) during pregnancy is expected to have long-lasting positive benefits for both parent and child."

Going forward, Rundle says "We plan to continue our research on how [urban design](#) can support health during pregnancy so that these benefits are included in cost-benefit analyses and decision making for how we design new neighborhoods and re-design existing neighborhoods."

Co-authors include James Quinn from the Columbia Mailman School and Kathryn Neckerman at Columbia University's Columbia Population Research Center; Eliza Kinsey, University of Pennsylvania; Elizabeth Widen, University of Texas, Austin; Mary Huynh, Lehman College; Gina Lovasi, Drexel University; Gretchen Van Wye, New York City Department of Health and Mental Hygiene.

More information: Andrew G. Rundle et al, Neighbourhood walkability is associated with risk of gestational diabetes: A cross-sectional study in New York City, *Paediatric and Perinatal Epidemiology* (2023). [DOI: 10.1111/ppe.12952](https://doi.org/10.1111/ppe.12952)

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