Medical Xpress

Living in a walkable neighborhood lowers risk of excessive weight gain during pregnancy

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In one of the first studies to examine the link between neighborhood characteristics and weight gain during pregnancy, Columbia University Mailman School of Public Health researchers find that pregnant people who live in walkable neighborhoods in New York City have lower odds

of excessive gestational weight gain (GWG) than those who live elsewhere in the city. They also found that living in a neighborhood with high rates of poverty increased the odds of excessive GWG. The findings are published in the journal *Obesity*.

Excessive or inadequate weight gain during pregnancy poses numerous health risks for both pregnant individuals and children. Excessive GWG is associated with a higher risk of pregnancy complications, including pregnancy-related hypertension and greater long-term postpartum weight retention. Excessive GWG is also associated with the risk for childhood asthma and obesity. Earlier research by Columbia Mailman researchers found that GWG was linked with a three-fold increased risk of childhood obesity at age 7 and excessive maternal weight gain.

Neighborhood walkability refers to urban form characteristics that support and favor walking and is defined by criteria including population density, land-use mix, density of public transit infrastructure, and street connectivity. Residents of walkable neighborhoods have been shown to engage in more walking, greater overall physical activity, and to have lower body mass index (BMI). Walkable neighborhoods are associated with better control of blood sugar among people with Type II diabetes. The most walkable areas of New York City include Battery Park City, Greenwich Village, NoHo, SoHo, Little Italy, and the West Village (Manhattan CBs 1 and 2). The least walkable areas include neighborhoods in eastern Queens and parts of Staten Island (Queens CB13 and Staten Island CB2).

"Given the long-lasting benefits of healthy pregnancies for parental and child health, this research provides further impetus for the use of urban design and poverty reduction to support healthy weight and reduce the risk of excessive gestational weight gain and related health risks," says the study's first author, Eliza Kinsey, Ph.D., formerly a postdoctoral research scientist in the Department of Epidemiology, now an assistant

professor at the University of Pennsylvania Perelman School of Medicine.

The current study was conducted in partnership with researchers at the New York City Department of Health and Mental Hygiene (DOHMH) Bureau of Vital Statistics and used de-identified birth record data for the year 2015 to examine neighborhood-level influences on GWG. Using medical record data, the DOHMH compiles data on all live births in the city, including basic health and demographic information for the pregnant individual and birth outcome statistics (e.g., birth weight, gestational age).

Among the sample of 106,285 births, 42 percent of the pregnant individuals experienced excessive GWG, and 26 percent had inadequate GWG. Pregnant people living in neighborhoods ranking among the poorest quarter of the city had an additional 17 percent greater odds of excessive GWG. Pregnant people living in the top quarter of neighborhoods ranked for walkability had 13 percent lower odds of excessive GWG. These findings align with prior studies in New York City that have found that both neighborhood poverty and walkability predict BMI in the general population.

Adjustment for pre-pregnancy BMI attenuated the association between neighborhood poverty and excessive GWG but had little impact on the association between neighborhood walkability and excessive GWG.

Senior author Andrew Rundle, DrPH, professor of epidemiology, noted, "Neighborhood walkability is likely associated with GWG due to differences in behavior during pregnancy, presumably walking for exercise and daily activities—not solely by influences on pre-pregnancy BMI. A significant amount of the exercise pregnant people get comes from low-impact activities like walking. Making neighborhoods more walkable has a host of health benefits, both for those currently living

there and future generations."

Co-authors of the current study include Elizabeth Widen, University of Texas at Austin; James Quinn, Columbia Mailman; Mary Huynh and Gretchen Van Wye, New York City Department of Health and Mental Hygiene; Gina Lovasi, Drexel University, Philadelphia; and Kathryn Neckerman, Columbia University Population Research Center.

More information: Eliza W. Kinsey et al, Neighborhood walkability and poverty predict excessive gestational weight gain: A cross-sectional study in New York City, *Obesity* (2022). DOI: 10.1002/oby.23339

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