

MOMS & BABIES SERIES

POOR-QUALITY BUILT ENVIRONMENTS HURT MOMS AND BABIES

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THE PROBLEM: DEFICIENCIES IN NEIGHBORHOODS' PHYSICAL CONDITIONS IMPAIR THE HEALTH OF PREGNANT PEOPLE AND THEIR INFANTS

Built environments are the physical spaces in which we live, work, and play. They are the human-made aspects of a community, such as the layouts of neighborhoods, the water and air quality in our homes and workspaces, the availability of public transportation, and the accessibility of green parks and walking paths.¹ Built environments affect people's health – and poor-quality built environments harm the health of pregnant people[†] and babies. Despite that, improvements to the built environment are an overlooked way to address the maternal health crisis, and more must be done.

Research demonstrates that well-resourced and -maintained environments positively affect the health of individuals. Conversely, poor-quality built environments – those with vacant lots, deteriorating neighborhoods, proximity to highways or power plants, and high traffic and noise pollution – have been found to exacerbate harmful health conditions, including respiratory diseases such as asthma and bronchitis, learning and behavioral issues, stress, anxiety, and depression.² People who are disadvantaged by structural racism and other forms of discrimination and bias are disproportionately exposed to poor-quality built environments, which results in the concentration of health risks.

POOR-QUALITY BUILT ENVIRONMENTS ARE ASSOCIATED WITH NEGATIVE BIRTH OUTCOMES, SUCH AS LOW BIRTH WEIGHT, PARTICULARLY FOR BLACK WOMEN.¹

[†] We recognize and respect that pregnant, birthing, postpartum, and parenting people have a range of gender identities, and do not always identify as "women" or "mothers." In recognition of the diversity of identities, this series prioritizes the use of non-gendered language where possible.

ABOUT THE SERIES:

Our maternity care system often fails to provide equitable, respectful, culturally centered, safe, effective, and affordable care. It spectacularly fails communities struggling with the burden of structural racism and other forms of inequity, including: Black, Indigenous, and other People of Color (BIPOC); rural communities; and people with low incomes. The multiple crises of the COVID pandemic, economic downturn, and national reckoning on racism have underscored the need to address the social influencers of health. This series identifies ways to improve maternal and infant health by tackling some of these factors. Topics were chosen based on importance and urgency, and availability of systematic reviews and complementary research.



POOR-QUALITY BUILT ENVIRONMENTS NEGATIVELY IMPACT MATERNAL AND INFANT HEALTH

Systematic reviews (rigorous appraisals that collect, assess, and synthesize the best available evidence from existing studies) examining the relationship between the built environment and maternal and infant health outcomes found that:

- Poor-quality built environments increase psychological stress and depressive symptoms in pregnant women, thereby heightening the risk of preterm birth and low birth weight.³
- Prenatal exposure to air pollutants is linked to adverse birth outcomes such as low birth weight, preterm birth, small size for gestational age, stillbirth, and congenital anomalies.⁴
- Exposure to green spaces results in reduced stress and increased physical activity and social participation for the pregnant person.⁵ Greenness positively affects pregnancy outcomes, and is associated with increased birth weight, decreased small size for gestational age, and a lower likelihood of preterm birth.⁶
- Deteriorating built environments contribute to the creation of food deserts (areas without access to a grocery store or healthy, affordable food retail outlets). Lack of access to healthy food causes undernutrition among pregnant people, and is also linked to childhood obesity.⁷

Other individual studies have found:

- Residential exposure to air pollution during pregnancy is associated with higher blood pressure. This can lead to high blood pressure disorders later in pregnancy that pose risks to both the pregnant person and fetus (gestational hypertension, pre-eclampsia, and eclampsia).⁸
- Violent crime is associated with increased stress in pregnant people, and with increased risk of preterm birth, small size for gestational age, and low birth weight.⁹

POOR-QUALITY BUILT ENVIRONMENTS DISPROPORTIONATELY IMPACT COMMUNITIES OF COLOR AND WORSENS THEIR MATERNAL AND INFANT HEALTH

Mothers and infants of color are made especially vulnerable because of continued racial segregation, fueled by practices such as redlining and realtor steering. Overlaying structural racism, the affordable housing shortage,¹⁰ and skyrocketing income inequality on these segregated neighborhoods¹¹ produces the systematic under-resourcing of their built environments. Evidence shows that:

- Due to systemic inequity and segregation, Black women are more likely to live in dilapidated neighborhoods and housing with structural deterioration than non-Hispanic white women.¹²
- Poor-quality built environments are associated with negative birth outcomes, such as low birth weight, particularly for Black women.¹³
- Long-term exposure to air pollutants disproportionately impacts Black women, increasing their risk of adverse birth outcomes such as preterm birth, low birth weight, and small gestational age.¹⁴
- Black and Hispanic^{††} women living in hyper-segregated neighborhoods are at an increased risk of birth complications due to the lack of access to economic resources and social supports.¹⁵

^{††} To be more inclusive of diverse gender identities this bulletin uses “Latinx” to describe people who trace their roots to Latin America, except where the research uses “Latino/a” or “Hispanic,” to ensure fidelity to the data.



POOR QUALITY ENVIRONMENTS HURT MOMS AND BABIES

RECOMMENDATIONS

1. Federal, state, and local decisionmakers must enact and implement policies and programs that invest in infrastructure that ensures that all communities have safe drinking water.
2. Federal and state decisionmakers must enact and implement policies and programs to protect air quality.
3. Federal, state, and local decisionmakers must enact and implement policies and programs that promote equitable housing practices and provide strong protections against housing discrimination.
4. Congress must pass President Biden's American Jobs Act and American Families Act, which rebuilds and redefines our infrastructure in a way that dismantles and aims to alleviate structural racism and create a gender-equitable economy.
5. Federal, state, and local policymakers must conduct comprehensive health impact assessments using a health and racial equity lens to ensure resources are used to mitigate, not intensify, the adverse impacts of the built environment and to understand the built environment's overall impact on health.
6. Decisionmakers should prioritize community partnerships in planning and land-use decisions to improve the built environment, tailoring policies and programs to reflect their community's priorities, assets, and needs. This could include co-creating solutions to improve the built environment, such as addressing allergens in the air supply, promoting programs like WIC and SNAP, and conducting lead and mold remediation projects.



“ I HAD NO IDEA THAT I COULD BE POISONING MY NEWBORN... I ENJOYED EVERY MINUTE OF THAT [BREASTFEEDING] BOND. UNFORTUNATELY, THOSE MEMORIES ARE TAINTED BY THE POSSIBILITY THAT I COULD HAVE AFFECTED HER DEVELOPMENT OR GROWTH GIVING HER LEAD [BY EXPOSING HER TO LEAD I ABSORBED FROM FLINT'S CONTAMINATED WATER.] ”

REFERENCES

- 1 James F. Sallis, Brian E. Saelens, Lawrence D. Frank, Terry L. Conway, Donald J. Slymen, et al. "Neighborhood Built Environment and Income: Examining Multiple Health Outcomes," *Social Science & Medicine*, April 2009, DOI: [10.1016/j.socscimed.2009.01.017](https://doi.org/10.1016/j.socscimed.2009.01.017)
 - 2 National Center for Healthy Housing and National Housing Conference. A Systematic Review of Health Impact Assessments on Housing Decisions and Guidance for Future Practice, March 2016, https://nchh.org/resource-library/report_a-systematic-review-of-health-impact-assessments-on-housing-decisions-and-guidance-for-future-practice.pdf; Lauren Taylor. "Housing and Health: An Overview of the Literature," *Health Affairs*, June 7, 2018, <https://www.healthaffairs.org/doi/10.1377/hpb20180313.396577/full/>
 - 3 Alexandra L. Nowak and Carmen Giurgescu. "The Built Environment and Birth Outcomes: A Systematic Review," *The American Journal of Maternal/Child Nursing*, January/February 2017, DOI: [10.1097/NMC.0000000000000299](https://doi.org/10.1097/NMC.0000000000000299)
 - 4 Neil Thayamballi, Sara Habiba, Ouahiba Laribi, and Keita Ebisu. "Impact of Maternal Demographic and Socioeconomic Factors on the Association Between Particulate Matter and Adverse Birth Outcomes: A Systematic Review and Meta-Analysis," *Journal of Racial and Ethnic Health Disparities*, September 2020, DOI: [10.1007/s40615-020-00835-2](https://doi.org/10.1007/s40615-020-00835-2)
 - 5 Kyung Ju Lee, Hyemi Moon, Hyo Ri Yun, Eun Lyeong Park, Ae Ran Park, et al. "Greenness, Civil Environment, and Pregnancy Outcomes: Perspectives with a Systematic Review and Meta-Analysis," *Environmental Health*, August 27, 2020, DOI: [10.1186/s12940-020-00649-z](https://doi.org/10.1186/s12940-020-00649-z)
 - 6 *Ibid.*
 - 7 Sam Wilding, Nida Ziauddeen, Dianna Smith, Paul Roderick, and Nisreen A. Alwan. "Maternal and Early-Life Area-Level Characteristics and Childhood Adiposity: A Systematic Review," *Obesity Reviews*, April 29, 2019, DOI: [10.1111/obr.12861](https://doi.org/10.1111/obr.12861)
 - 8 Clara G. Sears, Joseph M. Braun, Patrick H. Ryan, Yingying Xu, Erika F. Werner, et al. "The Association of Traffic-Related Air and Noise Pollution with Maternal Blood Pressure and Hypertensive Disorders of Pregnancy in the HOME Study Cohort," *Environment International*, December 2018, DOI: [10.1016/j.envint.2018.09.049](https://doi.org/10.1016/j.envint.2018.09.049)
 - 9 Megan M. Shannon, Jane E. Clougherty, Clare McCarthy, Michael A. Elovitz, Max Jordan Nguemeni Tiako, et al. "Neighborhood Violent Crime and Perceived Stress in Pregnancy," *International Journal of Environmental Research and Public Health*, August 17, 2020, DOI: [10.3390/ijerph17155585](https://doi.org/10.3390/ijerph17155585)
 - 10 National Low Income Housing Coalition. *The Gap: A Shortage of Affordable Homes*, March 2020, https://reports.nlihc.org/sites/default/files/qap/Gap-Report_2020.pdf
 - 11 Bruce Mitchell and Juan Franco. *HOLC "Redlining" Maps: The Persistent Structure of Segregation and Income Inequality*, NCRC, accessed May 3, 2021, https://ncrc.org/wp-content/uploads/dlm_uploads/2018/02/NCRC-Research-HOLC-10.pdf
 - 12 See note 3.
 - 13 See note 3.
 - 14 See note 4.
 - 15 Renee Mehra, Danya E. Keene, Trace S. Kershaw, Jeannette R. Ickovics, and Joshua L. Warren. "Racial and Ethnic Disparities in Adverse Birth Outcomes: Differences by Racial Residential Segregation," *SSM Population Health*, August 2019, DOI: [10.1016/j.ssmph.2019.100417](https://doi.org/10.1016/j.ssmph.2019.100417)
- i See note 13.
- ii Darcel Phinisee-Clack. "Parenting in Flint," Black Mothers' Breastfeeding Association, accessed May 3, 2021, <http://blackmothersbreastfeeding.org/2016/03/parenting-in-flint-darcels-story/>

ACKNOWLEDGMENTS

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Support for this series was provided by the Robert Wood Johnson Foundation. The views expressed here do not necessarily reflect the views of the Foundation.

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