

Structural racism in neighborhoods linked to risk of cancer from traffic-related air pollution

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High levels of traffic-related air pollutants have been linked with elevated risks of developing cancer and other diseases. New research

indicates that multiple aspects of structural racism—the ways in which societal laws, policies, and practices systematically disadvantage certain racial or ethnic groups—may contribute to increased exposure to carcinogenic traffic-related air pollution. The findings are published in the journal *Cancer*.

Most studies suggesting that structural racism, which encompasses factors such as [residential segregation](#) and differences in [economic status](#) and homeownership, may influence neighborhood exposures to air pollutants have focused on residential racial segregation, which is only one indicator of structural racism. Emily B. White, MPH, CHES, and Christine C. Ekenga, Ph.D., MPH, of Emory University, developed a more comprehensive measure of structural racism to examine its relationship with [cancer risk](#) from air pollutants in 134 counties in Georgia.

The researchers obtained carcinogenic air toxin data from the US Environmental Protection Agency and sociodemographic data from the American Community Survey. Next, they used county-level data on residential segregation, education, employment, incarceration, economic status, political participation, and [home ownership](#) to create a multidimensional county-level structural racism index.

These multiple domains of racial inequalities may have different influences on exposure to traffic-related air pollutants. For example, limited educational resources and job opportunities can restrict individuals' ability to relocate to less polluted areas.

Regarding [political participation](#), poor political representation may result in insufficient policy measures to mitigate traffic-related pollution, as well as inadequate investments in public transportation, which can lead to higher community dependence on private vehicles.

The investigators' analyses revealed a significant association between multidimensional structural racism and exposure to carcinogenic traffic-related air pollutants. People living in neighborhoods in the highest quartile of structural racism had a 7.8-times higher estimated risk of developing cancer from traffic-related air pollutants compared with those living in neighborhoods with low structural racism.

The results suggest that neighborhood racial disparities in exposure to traffic-related air pollution in Georgia may be explained, in part, by variations in county-level structural racism.

"By highlighting the link between structural inequalities and environmental health risks, our study underscores the importance of addressing social and systemic issues to improve public health outcomes," said Dr. Ekenga. "This study can inform policymakers about the need for targeted interventions to reduce exposure to traffic-related air pollutants."

More information: Multidimensional Structural Racism and Estimated Cancer Risk from Traffic-Related Air Pollution, *Cancer* (2024). [DOI: 10.1002/cncr.35467](https://doi.org/10.1002/cncr.35467)

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