

# Structural racism: Communities with higher redlining scores had higher rates of stroke

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Discriminatory housing policies that restricted the sale or purchase of homes by race in certain neighborhoods across the U.S., called 'redlining,' which were established nearly a century ago and outlawed by

the Fair Housing Act of 1968, were associated with higher rates of stroke in the same neighborhoods in 2017, according to preliminary research to be presented at the American Stroke Association's International Stroke Conference 2021.

"Differences in stroke rates, whether we are studying ischemic or hemorrhagic stroke, are usually attributed to biological differences or differences in underlying conditions," said lead study author Jeffrey J. Wing, Ph.D., M.P.H., an assistant professor of epidemiology in the College of Public Health at The Ohio State University in Columbus, Ohio. "Yet, our findings suggest the difference we found in the Columbus area may actually be the result of structural racism."

Beginning in 1936, the Home Owners' Loan Corporation began restricting the sale of homes in certain [neighborhoods](#) across the country by redlining or marking neighborhoods by "risk for investment," which equated to race. As a result, residents who lived within these redlined areas were denied home loans, which lowered tax revenues in these communities, thereby reducing investment in schools and services, and creating numerous inequities for residents for multiple generations.

"Even though redlining was abolished in 1968, redlining is a form of structural racism that perpetuated segregation and racial inequities. Accumulating evidence shows this divisive and exclusionary housing practice continues to have long-term effects on the [health](#) of many people, even today—more than 80 years later," said study co-author Helen Meier, Ph.D., M.P.H., assistant research scientist at University of Michigan's Institute for Social Research. "Our study is one of the first to link historic redlining in a U.S. city to frequency of stroke."

Researchers examined the association between the discriminatory housing policies of redlining and stroke rates in Columbus, Ohio neighborhoods in 2017. They calculated historic redlining scores for

neighborhoods within the boundaries of Columbus based on the degree of redlining. Thus, the greater the redlining, the higher the redlining score.

Researchers then matched the redlining scores with stroke rates measured in the same neighborhoods from the 500 Cities Project. The 500 Cities Project is from the U.S. Centers for Disease Control and Prevention and reports on 27 chronic disease measures for the 500 largest American cities in all 50 states, quantified by city and census tract-level data. They assessed the association between historic redlining scores and stroke rates across neighborhoods in Columbus in 2017.

Researchers found:

- Higher historic redlining scores were associated with greater rates of stroke, when comparing the highest to the lowest quartile of historic redlining scores.
- Neighborhoods in the highest group of historic redlining scores had a 1.48% higher stroke rate, compared to those with the lowest redlining scores.

"As different cities across the country declare racism as a public health crisis, it's important to have more research that shows the link between racism and health disparities," Wing said. "Our research has the potential to help change how we treat and care for all individuals and promote equitable access to care that can lead to improved health outcomes."

"Health disparities in stroke are going to persist until we address the legacy of structural racism, of which historical redlining is one form," Meier said. "It's important to document the significant, negative impacts of structural racism on health."

Study limitations include people who had a history of stroke may not

have always resided in the same census tract, leading to unmeasured variability in redlining exposure. In addition, this is an ecologic-designed study, where redlining exposure was combined with stroke rate to a neighborhood level, which limits the assessment of individual associations, Wing added.

The American Heart Association recently published a presidential advisory that names structural racism as a cause of poor health and premature death from heart disease and [stroke](#). The advisory, titled "Call to Action: Structural Racism as a Fundamental Driver of Health Disparities," reviews the historical context, current state and potential solutions to address structural [racism](#) in the U.S. and outlines steps the Association is taking to address and mitigate the root causes of health care disparities.

Provided by American Heart Association

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