

## Neighborhood-Level Racial Residential Segregation and the Impact on Cardiovascular Disease Risk

The following is a synopsis of “**Neighborhood-Level Racial or Ethnic Residential Segregation and Incident Cardiovascular Disease: The Multi-Ethnic Study of Atherosclerosis,**” and “**Comments - Assessing Neighborhood-Level Effects on Disparities in Cardiovascular Diseases**” published in the January 13, 2015 issue of *Circulation*.



### What is already known on this topic?

Social, cultural, and economic factors influence where and how many resources and opportunities are available in a metropolitan area. One of the factors most prominent in U.S. metropolitan areas is racial/ethnic residential segregation. Research has found it not only linked to health, but to the differences in resource and opportunity availability where people live. For example, the more segregated a metropolitan area is, the poorer the health outcomes are among blacks. While many studies of metropolitan area segregation and health have focused on blacks, a particular focus on the impact of neighborhood-level residential segregation on blacks, as well as other growing minority groups, is also needed.

### What is added by this article?

Researchers analyzed data from the Multi-Ethnic Study of Atherosclerosis (MESA), an observational prospective cohort (2000–2012; median follow-up 10.2 years), to examine the connection between neighborhood-level racial/ethnic residential segregation and cardiovascular disease (CVD) among 5,227 non-Hispanic black, non-Hispanic white, and Hispanic adults aged 45 to 84 years. Racial/ethnic

residential segregation was defined as “the degree to which two or more racial/ethnic groups live separately from one another” and was measured separately for blacks, whites, and Hispanics, randomly recruited from six sites (New York, NY; Baltimore City and County, MD; Forsyth County, NC; St. Paul, MN; Chicago, IL; and Los Angeles County, CA). Neighborhood (census tract) characteristics were adjusted to account for the following social, cultural, and economic factors: neighborhood poverty, the neighborhood social environment, and the neighborhood physical environment. Overall, those who developed CVD in all racial/ethnic groups were older, more likely to be male, hypertensive, and diabetic and had low education and income levels.

### Blacks

- Blacks who developed CVD were more likely to live in poor physical environments rather than poor social environments.
- Blacks had a 12% higher risk of developing cardiovascular disease, independent of sociodemographic characteristics, neighborhood characteristics, and traditional CVD risk factors.

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## Hispanics

- Among Hispanics, there was no evidence linking segregation to CVD occurrence among Hispanics.
- When looking closely at country of origin, the association between segregation and occurrence of CVD did not vary significantly.

## Whites

- CVD occurrence rates were lower for whites living in predominantly white neighborhoods compared to whites living in predominately minority neighborhoods.
- Higher white segregation was generally associated with higher individual and neighborhood socioeconomic position, better neighborhood environments (social and physical), and lower current smoking, physical activity and body mass index.

## What are the implications for public health practice?

Neighborhood-level (physical, social, and/or environmental) factors may be the potential drivers of CVD related health disparities particularly in blacks. Associations of segregation with CVD risk vary by race/ethnic group and may be a fundamental cause of the differences in health outcomes between blacks and whites. This is reflected by racial/ethnic group differences in experiences that lead to segregation, as well as different consequences of segregation experienced, such as CVD-relevant exposures.

Conventional measures of socio-economic status, such as education, income, employment, health insurance may not necessarily be enough to inform an understanding of reduction in health disparities. Public health interventions designed to prevent CVD and to reduce racial/ethnic differences in cardiovascular health at the population level, should consider the consequences that result from residing in racially segregated neighborhoods. Further research is needed to better understand the individual and neighborhood level experiences that link segregation to cardiovascular disease. Understanding these root causes may inform evidence-based practices and policies.

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## Resources

Centers for Disease Control and Prevention, MMWR, Strategies for Eliminating Health Disparities  
<http://www.cdc.gov/mmwr/pdf/other/su6301.pdf>

Centers for Disease Control and Prevention, Science in Brief, Understanding Health Disparities in Cardiovascular Disease  
[http://www.cdc.gov/dhdsp/pubs/docs/sib\\_feature\\_nov2014.pdf](http://www.cdc.gov/dhdsp/pubs/docs/sib_feature_nov2014.pdf)

Centers for Disease Control and Prevention, Minority Health Resources  
<http://www.cdc.gov/minorityhealth/resources.html>

## Citations

Kershaw, KN, Osypuk, TL, Do, DP, De Chavez, PJ, Diez Roux, AV. Neighborhood-Level Racial/Ethnic Residential Segregation and Incident Cardiovascular Disease: The Multi-Ethnic Study of Atherosclerosis. *Circulation*. 2015;131:141-148. DOI: 10.1161/CIRCULATIONAHA.114.011345.

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*The findings and conclusions in this report are those of the authors and do not necessarily represent the official position of the Centers for Disease Control and Prevention.*