

Your neighborhood may affect your survival from stroke, other neurologic conditions

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People living in disadvantaged neighborhoods—areas with higher poverty levels and fewer educational and employment opportunities—had an increased risk of dying within a month of being

hospitalized for stroke, epilepsy and other neurologic diseases compared to people living in neighborhoods with fewer disadvantages, according to new research published in the February 15, 2023, online issue of *Neurology*.

"A person's individual socioeconomic status, which includes their education, occupation and income, has been linked in previous studies to [health outcomes](#) for a number of neurologic conditions including stroke and dementia," said study author Bradley G. Hammill, DrPH, of Duke University in Durham, North Carolina.

"Our study looked more broadly at a person's neighborhood and found that people living in disadvantaged [neighborhoods](#), regardless of their individual socioeconomic status, had an increased risk of death one month after hospitalization for stroke and other neurologic conditions. These results suggest that the environment in which a person lives can greatly impact their health."

For the study, researchers reviewed three years of Medicare claims and identified 905,784 people age 65 and older who had been hospitalized for neurologic conditions such as stroke, Alzheimer's disease, Parkinson's disease, epilepsy, coma and multiple sclerosis.

Researchers used the residential address of each participant and a measure called the Area Deprivation Index to determine if each participant lived in an advantaged or disadvantaged neighborhood. The index incorporates information on the socioeconomic conditions of each neighborhood and its residents, ranking neighborhoods based on 17 indicators including income, employment, education and housing quality. Neighborhoods in the index are determined by census areas of about 1,500 residents.

Higher scores on this index indicate more neighborhood disadvantage.

Researchers divided participants into three groups: people who lived in neighborhoods with the most advantage with an index score of one to 15; people who lived in neighborhoods with a score of 16 to 85; and people who lived in the most disadvantaged neighborhoods with a score of 86 to 100.

They looked at Medicare records to determine which participants died within a month after being hospitalized for stroke, epilepsy and more. They then compared people living in neighborhoods with the most advantage to those living in the most disadvantaged neighborhoods.

For stroke, of 87,511 people living in the most advantaged neighborhoods, 14.1% died within the first month. Of the 73,312 people living in disadvantaged neighborhoods, 14.6% died.

For [degenerative diseases](#), such as Alzheimer's disease and Parkinson's, 8.7% of the 14,247 people in the most advantaged neighborhoods died within a month, compared to 9.7% of the 8,064 people living in disadvantaged neighborhoods.

For epilepsy, 6.8% of those in the most advantaged neighborhoods died within a month, compared to 7.7% of those in the disadvantaged neighborhoods.

After adjusting for factors that could affect risk of death such as age, sex, individual socioeconomic status and other [health conditions](#) such as diabetes and [high blood pressure](#), researchers found people living in disadvantaged neighborhoods who were hospitalized for stroke had a 23% higher risk of dying within a month than those in the most advantaged neighborhoods.

In addition, when compared to people living in the most advantaged neighborhoods, people living in disadvantaged neighborhoods had a 38%

higher risk of dying one month after hospitalization for degenerative nervous system disorders such as Alzheimer's disease and Parkinson's disease, a 34% higher risk for epilepsy, 44% higher risk for trauma-related coma and 146% higher risk of dying after a non-trauma-related coma. Researchers did not find differences in risk for people hospitalized for multiple sclerosis.

Researchers found no relationship between neighborhood socioeconomic status and how often people were readmitted to the hospital.

"Decreased access to [health care](#) and healthy living resources available in more advantaged neighborhoods, as well as increased exposure to unfavorable neighborhood conditions such as [heavy metals](#), pesticides and [noise pollution](#) could decrease overall health for people living in disadvantaged neighborhoods and contribute to this increased risk of death," said Hammill.

"Strategies to improve health equity should explicitly consider the effect of neighborhood environments on a person's health. Health systems could use the results of our study to implement interventions to improve outcomes and health equity for people living in disadvantaged neighborhoods."

A limitation of the study was that it did not include people who were transferred to other hospitals. This means some of the sickest people were excluded from the study due to needing a higher level of care.

More information: Jay B. Lusk et al, Association Between Neighborhood Socioeconomic Status and 30-Day Mortality and Readmission for Patients With Common Neurologic Conditions, *Neurology* (2023). [DOI: 10.1212/WNL.0000000000207094](https://doi.org/10.1212/WNL.0000000000207094). [n.neurology.org/content/early/ ... WNL.0000000000207094](https://www.neurology.org/content/early/.../WNL.0000000000207094)

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