

# More years of childhood education may reduce adult heart disease risk

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State policies requiring children to attend additional years of school may result in a reduced risk for heart disease and improvements in several cardiovascular risk factors in adulthood, according to a study by

researchers at UC San Francisco and Stanford University.

In the study, the researchers conducted a natural experiment by evaluating state compulsory schooling laws, which legislate the number of years children must attend school. From two large, national surveys conducted from 1971 to 2012, they identified more than 75,000 people born from 1900 to 1950, when states required children to attend school between 0 and 12 years. They then used U.S. Census data on a group of similar individuals to predict the number of years of required schooling for each individual, based on their year and state of birth.

Overall, about a third of the study participants did not graduate from high school. While 34.5 percent reported heart disease, the researchers found that each year of additional compulsory schooling through [high school](#) was associated with a 2.5 percent reduction in occurrence. They also noted improvements in several [cardiovascular risk factors](#) with each additional year, including reductions of more than 3 percent in smoking and nearly 5 percent in depression.

"For clinicians and [health systems](#) struggling to address disparities in heart disease between the rich and the poor, our findings suggest that cross-sectoral interventions to address social factors like education are important," said lead author Rita Hamad, MD, Ph.D., assistant professor of family and community medicine in the Philip R. Lee Institute for Health Policy Studies. "As a society, we should be thinking about investing in social policies to improve overall health and reduce [health care costs](#)."

The study, published online June 25, 2019, in *PLOS Medicine*, provides some of the first evidence of the effects of education policies on heart disease in the United States.

The 2019 guidelines from the American College of Cardiology and the

American Heart Association have suggested using patients' [social factors](#) in clinical prediction tools for heart disease, since education is often a stronger predictor than traditional biomedical risk factors like cholesterol and diabetes. The U.S. Department of Health and Human Services also has proposed that patients' [educational attainment](#) be used as an input in determining physician payments for performance, to encourage physicians to care for more disadvantaged patients. Hamad said this type of data could inform those efforts.

While more education also was associated with improved high-density lipoprotein (HDL), or "good" cholesterol, the researchers found that more education also was associated with higher body-mass index (BMI) and total cholesterol. A [possible explanation](#) is that high-income people born between 1900-1950 tended to eat richer diets, they said. By contrast, higher BMI today tends to be associated more with low income, due to the inability to afford healthy food.

"Overall, people with more education may have reduced heart disease because they have higher incomes, allowing them to afford better food and health care," Hamad said. "Or, it may be that they have more resources and therefore less stress, which has been previously linked with heart disease."

The researchers are examining how these same policies affect health care costs and whether the policies reduce racial disparities in [heart disease](#).

**More information:** Hamad R, Nguyen TT, Bhattacharjya J, Glymour MM, Rehkopf DH (2019) Educational attainment and cardiovascular disease in the United States: A quasi-experimental instrumental variables analysis. *PLOS Medicine* (2019). [DOI: 10.1371/journal.pmed.1002834](https://doi.org/10.1371/journal.pmed.1002834)

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