Zip Codes Are More Predictive than Diagnosis Codes

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It’s not supposed to happen here. We think we live in a meritocracy in which our fate depends on hard work, determination, and grit. Our circumstances of birth should not matter. Where we live should not matter. How much money our parents have should not matter. Our socioeconomic status should not matter, especially when it comes to health. And yet it does. We can predict your health and life expectancy from your zip code.1 The social determinants of health are profound.

We know that poverty is bad for your health, but beyond the potential obvious mechanisms (poor access to good nutrition, poor insurance coverage, poor access to care, poor access to exercise) we need to better understand how the social determinants of health get transduced into biology and how that biology erodes health. Perhaps by better understanding these links, we could help persuade policy makers and thoughtful local, state, and federal government officials to pursue policies to improve education and increase jobs where needed, as well as make sure that those who are less fortunate retain their dignity.

In a seminal study of British civil servants, those who were in higher status jobs had better health and lived longer,2,3 highlighting the importance of social status and self-worth. Sapolsky4,5 found that lower status apes had endocrine differences and when they rose in status, their endocrine status changed. Pierce6 postulated that discrimination and racism causes microaggressions with cumulative, small, but all too pervasive indignities—contributing to chronic stress. McEwen7 has done elegant work on the effect of stress on not only neurobiology, but also inflammation and cardiac disease. And to make the zip code-stress-biology relationship even more complex, stress could be passed down through the generations in an almost Lamarkian process of intrauterine epigenetic methylation.8

One might be justified in feeling hopeless that zip codes determine health. Hope, nevertheless, exists. Hudziak and Archangeli9 found that if bad things were bad for your brain, perhaps good things were good for your brain. He led an important project that introduced all Vermont school-aged children to sports and music (regardless of talent or ability) coupled with mindfulness training. Positive outcomes, especially for children at risk, were stunningly positive with improved well-being, decreased substance use disorders, and decreased incarceration. Zip code fate may not be an unalterable fate after all.

REFERENCES