Genes or environment? Twins study offers ‘unsatisfying answer’ when it comes to disease

It’s the next chapter in the nature-nurture debate: To keep people healthy, is it better to focus on people’s Zip codes or their genetic codes?

A new study in Nature Genetics examined 56,000 pairs of twins from a database of 45 million people insured through Aetna to try to answer the question and found — as might be expected — a mixed picture. Of 560 diseases and conditions studied, 40 percent had some genetic contribution, while a quarter were influenced by shared environment. Cognitive conditions such as attention-deficit/hyperactivity disorder had the strongest genetic influence, while eye disorders and respiratory diseases such as sinusitis or hyperventilation were more influenced by the environment.

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[T]he new study found the diseases were a little less influenced by genes and a little more influenced by environment, on average. The unsatisfying answer to the debate over whether genes or environment are more important may simply be that both matter, and the contributions of each will vary depending on the disease.
…

On average, across the conditions the researchers examined, diseases were 31 percent heritable and 9 percent determined by the twins’ shared environment. That leaves the majority of the difference unexplained, which could be attributable to individual contrasts between twins’ experiences, randomness or data that is erroneous or incomplete.

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