



## Does City Life Pose a Risk to Mental Health?

Exploring the link between urban living and psychosis

Life in the city can be taxing. For years studies have consistently linked urban living to a higher risk of schizophrenia—but researchers are only beginning to understand why this association exists. A number of factors, including elements of the social environment (such as inequality and isolation) and physical stressors (such as pollution and noise) could explain how the city erodes well-being. Conversely, people predisposed to mental illness may simply be more likely to move into urban locales. Two papers published

in May suggest both scenarios could be involved.

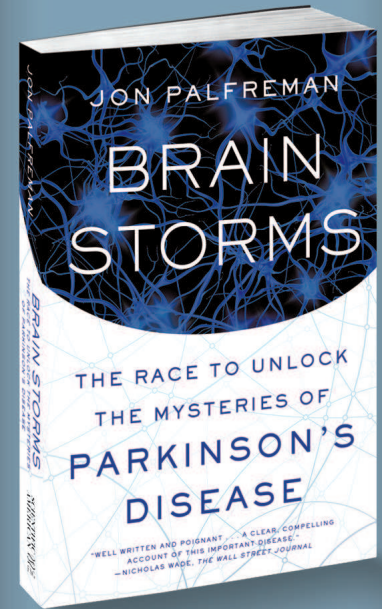
Although most investigations have focused on adults, new evidence indicates that exposure to urban environments early in life—being born or growing up in a city—matters most. To look more closely at this critical stage of life, a group led by Helen Fisher, a psychiatrist at King's College London, and Candice Odgers, a psychologist at Duke University, conducted a longitudinal study involving 2,232 twin children in the U.K. when they were ages five and 12. Half the kids at each age lived in cities. The investigators measured psychotic symptoms by conducting in-depth interviews with the children at age 12 to determine whether they had experienced hallucinations or delusions.

Their analysis revealed that growing up in the city nearly doubled the likelihood of psychotic symptoms at age 12 and that exposure to crime, along with low social cohesion (that is, a lack of closeness and supportiveness among neighbors), were the biggest risk factors. Although most kids who have psychotic symptoms will not develop schizophrenia as adults, psychotic incidents can predict a wide range of mental health problems, including depression, post-traumatic stress disorder and substance abuse.

Complicating the matter, schizophrenia is a highly heritable disorder, meaning genetic factors may also contribute. One process that might be occurring is social drift, whereby people with mental illness tend to move into poor city neighborhoods with substandard health care. In a recent study, published in May in *Translational Psychiatry*, a team led by researchers at the University of Oxford assessed genetic and environmental influences in three different cohorts of Swedish individuals: more than two million siblings, 1,355 twin pairs, and molecular genetic data collected from blood samples in another group of twins. They found that the risk of living in a deprived neighborhood in adulthood was heritable and associated with an increased genetic risk for schizophrenia. The authors believe previous studies failed to account enough for this familial confounding—although other experts disagree. One point of contention is that the new study looked at adults, whereas much existing work has shown that the city's influence in early life makes the biggest impact.

Scientists will likely need to combine the hereditary and environmental factors to understand how city life truly affects mental health. "Emphasizing the role of genes over the environment—or vice versa—is an overly reductionist approach to the science and ignores the fact that both sets of factors are relevant to psychosis onset," says James Kirkbride, a psychiatric epidemiologist at University College London who was not involved in the new studies. "No one is denying genetic factors, overall, contribute a greater extent to risk, but of the two, only environmental influences can be ameliorated currently." According to Kirkbride, the science confirms that efforts to reduce the negative impact of urban living should focus on disadvantaged neighborhoods, where the cycle of poor mental health may persist across generations. —Diana Kwon

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