Study: Nicotine May Help Pioneer New Treatments for Schizophrenia

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People living with schizophrenia are often heavy smokers—and new findings about nicotine's effects on the brain may help explain why. According to a recent study published in Nature Medicine, the addictive chemical found in cigarettes may boost activity in a specific area of the brain and could help treat this mental illness, as well as some others, Medical Daily reports.

Schizophrenia is a disorder of the brain that leads to periodic episodes of psychosis, hallucinations and, often, other cognitive issues, such as troubles with memory and decision-making. Past research showed that the mental illness may be caused by a genetic mutation carried, and several recent studies focused on one known as CHRNA5 in particular.

For this latest study, neuroscientists from the Institut Pasteur in Paris and the University of Colorado studied mice to discover how exactly CHRNA5 affected the brain. Researchers discovered that the mutation increased the animals' risk for hypofrontality, a condition that causes decreased activity in the brain's prefrontal cortex and is linked with a decline in cognitive function.

When the scientists gave mice with schizophrenic characteristics nicotine each day, researchers found that brain activity in the prefrontal cortex increased within two days. Within one week, the rodents' sluggish brain function had normalized. That's when study authors suggested that the chemical could help temporarily act on receptors in that specific area of the brain, restoring mental function.

"Basically, the nicotine is compensating for a genetically determined impairment," said Jerry Stitzel, PhD, a researcher for the Institute for Behavioral Genetics at the University of Colorado. According to study authors, new treatments could help harness the power of nicotine without its addictive properties or causing damage to the lungs.

In addition to being a potential avenue for future schizophrenia treatment, researchers noted that the findings could help explain why so many people with this illness tend to smoke heavily. What's more, the findings might also apply to addiction and bipolar disorder, other mental health illnesses that are linked to hypofrontality.

Click here to learn more about schizophrenia and its genetic links.

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