

Smoking and schizophrenia—understanding and breaking the cycle of addiction

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Smoking addiction in schizophrenia can be explained by significantly increased activation of the ventro-medial prefrontal cortex (vmPFC), a region involved in the brain reward system. These new data, the result of a study by researchers at the Institut universitaire en santé mentale de Montréal (CIUSSS EST, Montreal) and the University of Montreal confirms the tendency to smoke and low smoking cessation rates of people with schizophrenia.

"Smoking is a real problem for people with schizophrenia," said Stéphane Potvin, a researcher at the Institut universitaire en santé mentale de Montréal and lead author of the study. "Their health and [life expectancy](#) are often undermined by this addiction, whose brain mechanisms were until now largely unknown," said the associate professor at the University of Montreal's Faculty of Medicine.

Essentially, the research team observed greater neuronal activation of a specific region of the brain (vmPFC) in schizophrenia smokers compared with healthy subjects when presented with appetitive cigarette images. At the behavioural level, the researchers also found that schizophrenia smokers had more depressive symptoms than did participants in the control group.

"These observations suggest that smoking has a greater rewarding effect in schizophrenia smokers. This corroborates the hypothesis already formulated of their increased vulnerability to this addiction but also demonstrates the great difficulty for them when it comes to quitting smoking," said Potvin.

The prevalence of smoking in people with schizophrenia is high, and cessation rates are low. Schizophrenia smokers are twelve more times likely to die from heart disease related to smoking than are those who do not smoke. "It is necessary to explore avenues that will help people in their

efforts to free themselves from [smoking](#)," said Potvin. "That is why we want to continue our research into whether this activation of the ventro-medial prefrontal cortex (vmPFC) is caused by the disease itself or by the effects of antipsychotics," concluded the researcher.

More information: Stéphane Potvin et al. Increased ventro-medial prefrontal activations in schizophrenia smokers during cigarette cravings, *Schizophrenia Research* (2016). [DOI: 10.1016/j.schres.2016.03.011](#)

Provided by University of Montreal

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