

Persistent smokers may have higher risk to become depressed than never smokers

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Based on a Finnish study, persistent smokers may have higher risk to become depressed in comparison to never smokers. Also those smokers who quit have an elevated risk of depressive symptoms in short run. However, in long run this risk declines to the level of never smokers. In other words, both completely smoke-free life style and successful smoking cessation in long run seem to protect from depressive symptoms.

It is known that depression is associated with cigarette smoking, but the nature of this association is discussed under various hypotheses. First, according to the so called self-medication hypothesis, those who suffer from depressive symptoms smoke cigarettes in order to alleviate their symptoms. According to the second assumption, chronic persistent smoking may have a role in the etiology of depression. The third hypothesis suggests that there is a reciprocal mechanism between smoking and depression. The fourth hypothesis says that there are shared underlying genetic factors explaining this co-morbidity.

This study conducted in the Department of Public Health at the University of Helsinki explored, which of those assumptions would be supported by the data, when smoking behavior and changes in it is considered as a predictor of depressive symptoms. The researchers had access to the data collected within the Finnish Adult Twin Cohort Project. There were about four thousand male and five thousand female twins, whose health and health behavior were followed-up through 15 years.

Data on smoking behavior and changes in it between 1975 and 1981 were analyzed as a predictor of depressive symptoms measured in 1990. The analyses were adjusted for other factors known to predict depression. Because the data consisted of twins it was possible to test the causality between smoking and depression by using twin pairs discordant for depression, where the twin without depression served as a matched control for his/her co-twin with depression. Additionally, it was possible to explore potential shared genetic influences underlying the association.

The results suggest that first, persistent chronic cigarette smoking predicts depressive symptoms. However, when adjusted for other factors associated with depression, the elevated risk of persistent smoking remained significant among men only. "The result that chronic smoking may actually have a role in the etiology of depression, may be surprising, as nicotine as such – in short term – is assumed to have some positive effects on mood", says Dr. Tellervo Korhonen from the Department of Public Health at the University of Helsinki, and continues: "We should look for explanation to our result from long term effects of cigarette smoking, from addiction mechanisms and from other substances than nicotine within tobacco smoke."

Secondly, there was evidence suggesting that those smokers who had quit had elevated depression risk in relatively short term. The association of quitting smoking and depressive symptoms gives us indirect evidence on the self-medication hypothesis. Dr. Korhonen emphasizes, however, the further evidence within the same study showing that those smokers who had quit successfully and remained abstinent through the follow-up did not have elevated depression risk compared to the never smokers. "This may reflect a relatively long recovery process from the adverse effects of cigarette smoking" Dr. Korhonen continues.

"The mechanisms underlying the association between smoking and depression are very complicated. Although nicotine as such may have

short term positive effects on concentration and possibly on mood, long term exposure to tobacco smoke may be one risk factor in development of depression. However, this mechanism is still relatively unknown. Thus, there is need for further research and evidence in order to make an unambiguous statement that 'smoking cigarettes cause depression'. Examination of potential shared genetic vulnerability for both tobacco dependence and depression is among the further challenges", Dr. Korhonen is discussing the evidence so far. According to Korhonen, one can already say that – as in prevention of many other diseases – also in prevention of depression - smoke-free life and successful smoking cessation seem to have a positive impact.

Source: University of Helsinki

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