Can Smoking Cause Depression?

By JANE COLLINGWOOD

Researchers have made bold claims about cigarette smoking leading to depression. It has long been known that smokers have higher rates of depression than nonsmokers, but researchers from the University of Otago in New Zealand investigated the link further, and say they have found a causal relationship.

The team took figures from over 1,000 men and women aged 18, 21 and 25 years. Smokers had more than twice the rate of depression. Using a computer modeling approach, their analysis supported a pathway in which nicotine addiction leads to increased risk of depression.

In the British Journal of Psychiatry, the researchers wrote, “The best-fitting causal model was one in which nicotine dependence led to increased risk of depression.” They suggest two possible routes, one involving common risk factors, and the second a direct causal link.

According to the researchers, “this evidence is consistent with the conclusion that there is a cause and effect relationship between smoking and depression in which cigarette smoking increases the risk of symptoms of depression.”

Professor David Fergusson, the study’s lead researcher, said, “The reasons for this relationship are not clear. However, it’s possible that nicotine causes changes to neurotransmitter activity in the brain, leading to an increased risk of depression.” But he adds that the study “should be viewed as suggestive rather than definitive.”

Writing in the same journal, Marcus Munafo, PhD of Bristol University, UK, reports that cigarette smokers often talk about the antidepressant benefits of smoking. “But evidence suggests that cigarette smoking may itself increase negative affect [emotion], so the causal direction of this association remains unclear,” he writes.

As Munafo points out, the role of nicotine in depression is complex, because smokers often feel emotionally uplifted following a cigarette. Bonnie Spring, PhD, at Hines Hospital, VA Medical Center, Illinois, looked at the link. Spring explains that depression-prone smokers
are thought to self-administer nicotine to improve mood. But little evidence supports this view, so she examined nicotine’s effect on depression.

Her team recruited 63 regular smokers with no history of diagnosed depression, 61 with past but not current depression, and 41 with both current and past depression. All were given either a “nicotinized” or a “denicotinized” cigarette following a positive mood trigger.

Those who had experienced depression showed an enhanced response to the positive mood trigger when smoking a nicotinized cigarette. The researchers wrote, “Self-administering nicotine appears to improve depression-prone smokers’ emotional response to a pleasant stimulus.” The reason for this effect is not clear.

This study was followed up in 2010 by scientists at the University of Pittsburgh. Kenneth A. Perkins, PhD and colleagues looked at whether smoking can improve a negative mood.

Again using nicotinized and denicotinized cigarettes, they found that smokers do feel better after a cigarette, but only when they haven’t smoked since the previous day. The improved mood after abstinence from smoking was a “robust” finding. However, cigarettes “only modestly” improved negative mood due to other sources of stress — in this case, a challenging computer task, preparing for a public speech, and watching negative mood slides.

The researchers say that relief from negative mood due to smoking depends on the situation rather than nicotine intake: “These results challenge the common assumption that smoking, and nicotine in particular, broadly alleviates negative effect.”

One major factor must be the smoker’s expectations. These were investigated by a team at the University of Montana. They write, “Expectancies about nicotine’s ability to alleviate negative mood states may play a role in the relationship between smoking and depression.”

They asked 315 undergraduate smokers to complete a survey, which supported the theory. Smokers believed that “higher levels of tobacco smoking will reduce negative emotions.” This expectation “fully explained the link relationship between depressive symptoms and smoking,” the researchers said.

Could the link between tobacco smoking and depression actually be due to other substance dependencies? A team from Switzerland thinks not. After surveying 1,849 men and women they found that alcohol and cocaine dependence were also significantly linked to depression. But when taking this into account, “the association between smoking and depression still remained statistically significant. This study adds support to the evidence that smoking is linked to depression,” they concluded.

So it seems that the evidence is stacked against nicotine as a mood lifter, despite widely-held beliefs to the contrary.

References


