

Smoking may thin the brain

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Many brain imaging studies have reported that tobacco smoking is associated with large-scale and wide-spread structural brain abnormalities.

The [cerebral cortex](#) is a specific area of the brain responsible for many important higher-order functions, including language, information processing, and memory. Reduced cortical thickness has been associated with normal aging, reduced intelligence, and impaired cognition.

However, prior research had not described the impact of smoking upon cortical thickness.

A new study, published in the current issue of [Biological Psychiatry](#), now reports concerning findings about the impact of smoking.

Researchers compared cortical thickness in volunteers, both smokers and never-smokers, who were without medical or psychiatric illnesses.

Smokers exhibited cortical thinning in the left medial orbitofrontal cortex. In addition, their cortical thickness measures negatively correlated with the amount of cigarettes smoked per day and the magnitude of lifetime exposure to [tobacco smoke](#). In other words, heavier smoking was associated with more pronounced thinning of cortical tissue.

The orbitofrontal cortex has frequently been implicated in [drug addiction](#). The current findings suggest that smoking-related cortical

thinning may increase the risk for addictions, including smoking.

"Since the brain region in which we found the smoking-associated thinning has been related to impulse control, reward processing and decision making, this might explain how [nicotine](#) addiction comes about," explained Dr. Simone Kühn. "In a follow-up study, we plan to explore the rehabilitative effects of quitting smoking on the brain."

"The current findings suggest that smoking may have a cumulative effect on the brain," noted John Krystal, M.D., Editor of *Biological Psychiatry* and Professor and Chair of Psychiatry at Yale University. "This concerning finding highlights the importance of targeting young smokers for antismoking interventions."

For now, this study adds to a long and ever-growing list of reasons that [smokers](#) should consider quitting.

More information: "Reduced Thickness of Medial Orbitofrontal Cortex in Smokers" by Simone Kühn et al., *Biological Psychiatry*, Volume 68, Number 11 (December 1, 2010)

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