Neuroscience researchers believe in quitting smoking gradually

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Smoking is harmful in almost every respect. Cancer, stroke, and other cardiovascular diseases are just a small part of a well-documented portfolio of serious consequences of smoking. Nicotine is what makes smoking addictive, but new Danish research suggests that smoking initially increases brain activity. However, the brain tissue quickly adapts and the effect will disappear. On the other hand, according to brain scans, the brain's oxygen uptake and blood flow decreases by up to 17% immediately after people stop smoking:

Regular smokers experience an almost dementia-like condition in the early hours after quitting, as suggested by brain scans. This can be quite an unpleasant experience, and is probably one of the reasons why it can be very difficult to quit smoking once and for all. Smokers drift back into abuse, perhaps not to obtain a pleasant effect - that ship has sailed - but simply because the withdrawal symptoms are unbearable, says Professor Albert Gjedde, neuroscience researcher at the Department of Neuroscience and Pharmacology, University of Copenhagen.

Together with Associate Professor Manouchehr Seyedi Vafaee from the same department and other scientists, Albert Gjedde is behind the new findings published in the *Journal of Cerebral Blood Flow & Metabolism*.

The researchers compare the nicotine in tobacco smoke with other pharmacologically active substances:

After a period of time, many users of medicine will no longer experience

an effect from treatment - for example with antidepressants. However, the consequences of discontinuing treatment could still be overwhelming if the withdrawal symptoms are very unpleasant, says Albert Gjedde.

Habitual smokers seemingly need to continue smoking just to keep their brain functioning normally. With time, they may become less dependent on smoking, but the researchers still do not know how long it takes before the brain of a former smoker has regained its normal energy consumption and blood flow:

We assume that it takes weeks or months, but we do not know for sure. The new findings suggest that it may be a good idea to stop smoking gradually - simply to avoid the worst withdrawal symptoms that make it so difficult to stick to the otherwise very sensible decision to stop smoking, says Albert Gjedde. He emphasises that there are still many blind spots in relation to researching the brains of smokers.

Provided by University of Copenhagen

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