

Roll-your-own tobacco could be more addictive

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Research carried out at Victoria University suggests smokers of roll-your-own tobacco may be more intensely addicted to the habit than those who puff on manufactured cigarettes.

PhD graduate Dr. Amy Lewis investigated how tobacco smoke influences the proteins involved in biological [addiction](#) to [cigarettes](#). These include monoamine oxidase enzymes or MAOs which break down brain neurotransmitters such as serotonin, [dopamine](#) and adrenalin which impact on people's mood.

Much of the smoking-related research carried out to date has focused on nicotine, but Dr. Lewis studied the effect that other, non-nicotine components of tobacco smoke have on enzymes such as MAOs. She found that cigarettes contain a number of addictive elements within tar.

"This is concerning for roll-your-own [smokers](#) as New Zealand loose leaf tobacco has a significantly higher ratio of tar to nicotine than manufactured cigarettes."

Dr. Lewis says in addition to being exposed to higher levels of tar, the habits of roll-your-own smokers may increase their level of addiction. This includes the size of the cigarette rolled, not using filters and drawing more intensively because the cigarette doesn't burn as steadily as manufactured brands.

A range of brands and tobacco types were used in the research with

samples sent to an overseas laboratory where a smoking machine isolated and extracted the tar. The tar was then used to treat human cells to measure its impact on MAOs.

Dr. Lewis also looked at the effect tobacco has on another [protein](#), the Mu opioid receptor (MOR), which helps to mediate the effects of drugs of abuse. Her studies show [tobacco smoke](#) increases the abundance of MOR in cells, indicating that this protein is also likely to be a factor in tobacco addiction.

Dr. Lewis' work has highlighted a whole new area of research into tobacco addiction.

"The vast majority of work done to date focuses only on nicotine and how it impacts on addictive pathways in the brain but my work shows that other components in tobacco also play a big part.

"It's a bit like watching an orchestra at work—there are so many different brain pathways all working together to establish and fortify tobacco addiction."

Dr. Lewis, who is a non-smoker from a smoking family, hopes her work will help in the development of new strategies to help people quit smoking.

"Even though most smokers say they want to quit, few are successful and [nicotine](#) replacement therapies have proven to be remarkably ineffective at helping them break the habit.

"More in-depth understanding of what it is about smoking that gets people hooked could help us come up with a new generation of smoking cessation therapies."

Provided by Victoria University

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