

Regular cocaine and cannabis use may trigger addictive behaviours

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New cocaine and cannabis research reveals that regular cannabis users have increased levels of impulsive behaviour. It had previously been argued that this increased impulsivity after cannabis administration was only experienced by occasional users, but that regular users were no longer affected in this way. Published in the *British Journal of Pharmacology*, the results provide evidence for how drug use may trigger addictive behaviours.

In a study conducted in the Netherlands, 61 healthy regular cannabis and cocaine [users](#) took both drugs and a placebo in controlled conditions. They then took part in tests that challenged them to reflect before making an action. "If a person's tendency to be impulsive increases, they tend to make snap decisions and the error rate increases," says lead researcher Janelle van Wel from Maastricht University. The participants were also studied in situations where they were asked to perform an action, but then told to stop. In this set of tests, people with higher levels of impulsivity make more mistakes and have delayed stopping times. Tests also assessed critical thinking skills, divided attention challenges and aspects of executive function and planning.

Both cannabis and cocaine increased impulsive responding, but in opposite ways. Under the influence of cannabis, subjects were slower, but made more errors. Cocaine administration caused the participants to react more quickly, but if participants had to control their impulses they made more errors. "This increased [impulsivity](#) after drug use could increase the likelihood of developing addiction," says Ms. van Wel.

Taken together, the results indicate that long-term users of cocaine and cannabis were more impulsive under the influence of the drugs than when they were given placebos. "These findings contrast with previous reports that had claimed that these effects after cannabis administration only occurred in occasional users and not in heavy users," says Ms. van Wel. Regular cannabis users experienced impairments, but had about a 2-3 times reduction in the magnitude of the impairments in two of the tests compared with occasional cannabis users.

One hallmark of drug addiction is a disturbed relationship between the frontal cortex where decisions are made and the limbic system that organises emotional responses and memory. These results indicate that [cannabis](#) could decrease the amount of control the [frontal cortex](#) exerts over behaviour, while [cocaine](#) could increase impulsive responding from the limbic system. "Both of these options would cause the decrease in impulse control we see in our study," says Ms. van Wel, who believes that future studies using imaging techniques could clarify this hypothesis.

More information: van Wel et al. Single Doses of THC and cocaine decrease proficiency of impulse control in heavy cannabis users, *British Journal of Pharmacology* 2013. [DOI: 10.1111/bph.12425](https://doi.org/10.1111/bph.12425)

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