

# Coffee, other stimulant drugs may cause high achievers to slack off: research

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(Medical Xpress) -- While stimulants may improve unengaged workers' performance, a new University of British Columbia study suggests that for others, caffeine and amphetamines can have the opposite effect, causing workers with higher motivation levels to slack off.

The study – published online today by Nature's [Neuropsychopharmacology](#) – explored the impacts of [stimulants](#) on “slacker” rats and “worker” rats, and sheds important light on why stimulants might affect people differently, a question that has long been unclear. It also suggests that patients being treated with stimulants for a range of illnesses may benefit from more personalized treatment programs.

“Every day, millions of people use stimulants to wake up, stay alert and increase their productivity – from truckers driving all night to students cramming for exams,” says Jay Hosking, a PhD candidate in UBC’s Dept. of Psychology, who led the study. “These findings suggest that some stimulants may actually have an opposite effect for people who naturally favour the difficult tasks of life that come with greater rewards.”

Hosking says some individuals are more willing to concentrate and exert effort to achieve their goals than others. However, little is known about the brain mechanisms determining how much cognitive effort one will expend in decision-making for accomplishing tasks.

Hosking and study co-author Catharine Winstanley, a professor in UBC’s Dept. of Psychology, found that rats – like humans – show varying levels of willingness to expend high or low degrees of mental effort to obtain food rewards. When presented with stimulants, the “slacker” rats that typically avoided challenges worked significantly harder when given amphetamines, while “worker” rats that typically embraced challenges were less motivated by caffeine or amphetamine.

While more research is needed to understand the brain mechanisms at work, the study suggests that the amount of mental attention people devote to achieving their goals may play a role in determining how stimulants drugs affect them, Hosking says.

Winstanley, a Michael Smith Foundation for Health Research scholar, says people with psychiatric illnesses, brain injuries and Attention Deficit Hyperactivity Disorder (ADHD) may benefit from treatment programs with greater personalization, noting that patients often use stimulants to counter drowsiness and fatigue from their conditions and treatments, with mixed results.

“This study suggests there may be important benefits to taking greater account of baseline cognitive differences among individuals when considering treatment programs,” says Winstanley, who is a member of the Brain Research Centre at UBC and Vancouver Coastal Health.

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