

## GETTING OUR BRAIN AROUND ADDICTION: THE EXAMPLE OF NICOTINE AND CANNABIS

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There appears to be an enormous impact of drug addiction on humanity. Addiction is a compulsive interplay between drugs, cues and habits; distinct behavioural traits, such as impulsivity, and psychological processes seem to influence the pathway to addiction in different ways through the corticostriatal circuitry including the brain reward system. Two drugs of abuse have received a lot of attention over the past few years, nicotine, the main psychoactive ingredient of tobacco, with the use of the electronic cigarettes, and cannabis with its medicinal properties and its psychoactive ingredients, including delta-9-tetrahydrocannabinol and cannabidiol. Tobacco smoking, mainly attributed to the addictive properties of nicotine, constitutes a worldwide drug abuse problem with devastating health consequences. On the other hand, the endocannabinoid system is thought to modulate the motivational processes and reward-seeking behaviours associated with the (ab)use of cannabis.

This plenary talk will largely focus on nicotine dependence and present a summary of findings from studies on nicotine, many of which using behavioural paradigms/animal models of drug addiction (i.e., the intracranial self-stimulation (ICSS), the conditioned place preference (CPP), the intravenous self-administration (IVSA) and the reinstatement of drug seeking procedures), and coming from early work by Vlachou and colleagues. Current progress, challenges and future directions on nicotine and cannabinoid research will also be discussed.

**Keywords:** Behaviour, Addiction, Reward, Cannabis, Nicotine

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