Abstract (extended)

Cannabis is the psychoactive substance most commonly detected in drivers involved in motor vehicle accidents, especially among young adults. While acute intoxication has been shown to produce some impairments in driving-related skills, these effects may not be limited to the time period immediately after use, yet little evidence is available on how long these impairments last. This current study examines the residual effects of cannabis on driving-related skills in young drivers using a high-fidelity driving simulator. The study is a randomized, double-blind, placebo-controlled mixed design trial. Eligible participants are regular cannabis-using drivers between the ages of 19 and 25 who smoke cannabis 1-4 days per week. Measures of simulated driving performance, cognitive and psychomotor functions, and subjective drug effects are collected concurrently with levels of cannabinoids in biological fluids before and after a one-time cannabis administration of active (12.5% THC) or placebo (<0.01% THC) cannabis. Comparisons of baseline to 24 and 48 hours post-drug are conducted. Preliminary findings of the interim analysis showed limited residual effects of cannabis on driving performance 24 and 48 hours after smoking a single dose. Although cannabis significantly increased braking distance behind a risk-taking hazard 48 hours post-drug, caution should be applied when interpreting this result. Future analyses with the full sample size will provide a more clear understanding of the residual effects of cannabis on driving behaviour and implications on traffic safety.