Cannabis and motor vehicle crashes

Every year in Canada, 125 000 car crashes result in over 12 000 serious injuries and 2400 fatalities. Drinking drivers are at increased risk of crashing. The crash risk doubles at blood alcohol levels (BALs) between 0.05% and 0.08% and increases over 150-fold at BALs above 0.24%. After alcohol, cannabis is the second most widely used impairing drug in the world, and many Canadians drive after using cannabis. The rate of cannabis use in BC drivers is particularly high. A 2008 BC survey in the Lower Mainland and on Vancouver Island found that 8.1% of drivers had been drinking and 10.4% tested positive for drugs, including 4.6% for cannabis.[1] The rate of cannabis use is even higher in other parts of BC. However, many cannabis users believe it does not impair their driving ability. The true contribution of cannabis to motor vehicle crashes (MVCs) is therefore of substantial interest.

There is clear evidence that cannabis, like alcohol, impairs the psychomotor skills required for safe driving.[2] Cannabis intoxication slows reaction time and impairs automated tasks such as tracking ability (staying within a lane) or monitoring the speedometer. In simulator studies, high doses of cannabis caused drivers to "crash" into a sudden obstacle more often. However, the impairment caused by so-called equivalent doses of cannabis and alcohol differ in important ways. Moderate doses of cannabis impair highly automated tasks but leave complex functions such as interpretation and anticipation of traffic patterns relatively intact whereas alcohol has the opposite effect. In experimental driving conditions, cannabis users tend to reduce their driving speed and are less likely to attempt to overtake and pass another vehicle, whereas drunk drivers tend to drive faster and more aggressively.[3] Furthermore, cannabis users tend to overestimate their impairment whereas people who used alcohol underestimate theirs.[2-4] Therefore, some researchers have suggested that cannabis users might be able to avoid crashes by compensating for their impairment. However, several lines of evidence suggest that this is not the case.

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Canadian surveys suggest that drivers who use cannabis are at increased risk of crashing. Asbridge and colleagues surveyed Canadian students and found that those who drove after using cannabis were almost twice as likely to have crashed their car.[5] Mann and colleagues analyzed surveys of Ontario adults and also found that cannabis-using drivers were more likely to crash.[6] The best evidence around cannabis and MVCs comes from modern "culpability studies" from Australia[7] and France,[8] which found that crashed drivers who used cannabis were more likely to have caused the crash than drug- and alcohol-free drivers. However, this risk was relatively small—comparable to that associated with alcohol levels between 0 and 0.05%. These studies had limitations: none accounted for North American driving conditions or drug use habits (which may limit their applicability to Canadian traffic policy), and there was a significant delay from crash until blood was obtained, so measured cannabis levels were much lower than actual levels at time of crash.

Many British Columbia drivers use cannabis. Cannabis impairs the psychomotor skills required for safe driving, and the available epidemiological evidence suggests that cannabis does increase the risk of crashing. However, this risk, and how it varies with cannabis dose, is not well quantified. This uncertainty hinders the development of effective road safety policy targeting cannabis-impaired driving. North American studies with large numbers of cannabis-using drivers are required to better understand the contribution of cannabis to car crashes. We have just launched a British Columbia study that will recruit 3000 crash-involved drivers from five BC emergency departments. This important study will provide insight into the contribution of cannabis to car crashes here in BC.

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New diagnostic protocol for intellectual disability

BC Children's Hospital is launching a new clinical research program that promises to change the medical paradigm for diagnosing and treating intellectual disability in children.

The program, called "Treatable Intellectual Disability Endeavour in BC (TIDE-BC)," features a diagnostic protocol of specific lab tests to identify all children in BC who have a treatable form of intellectual disability that's caused by a class of rare metabolic diseases.

Early diagnosis and therapy for children who have treatable intellectual disability can significantly improve their development and their future as adults.

The BCCH research team reviewed the medical literature and found 75 types of inborn errors of metabolism that feature treatable intellectual disability. Accompanying symptoms can include behavioral issues, seizures, and organ problems.

It is estimated that existing treatments could help up to 50 of the 1000 children with intellectual disability of all causes who are assessed each year at BCCH, significantly improving their outcomes.

The current standard for diagnosing children with intellectual disability is to analyze their chromosomes, but this reveals genetic disorders that are not treatable and misses children with treatable intellectual disability.

In the first year of implementing TIDE-BC, the new protocol will be piloted with 400 children. In the second and third years, all children who present with intellectual disability at BC Children's Hospital will be diagnosed using the new protocol.

Visit www.tidebc.org for more information.

Phosphodiesterase 4 inhibitors have only marginal benefits in COPD

Giving patients with chronic obstructive pulmonary disease newly available oral phosphodiesterase 4 (PDE4) inhibitors, roflumilast or cilomilast, improves lung function and reduces the likelihood of a flare-up, but does not increase general quality of life.

Roflumilast and cilomilast are members of a new class of medicines, and trials have now evaluated their safety and performance. A team of researchers looked at data from nine trials of roflumilast and 14 trials of cilomilast involving over 1000 patients.

Treatment with a PDE4 inhibitor was associated with a reduced likelihood of COPD exacerbation, but more participants in the treatment groups experienced non-serious adverse events compared with controls, particularly gastrointestinal symptoms and headache. Roflumilast was associated with weight loss during the trial period.

So far trials have run for only 1 year or less, indicating a need to look at longer-lasting effects.

For more information, go to www.thecochranelibrary.com.

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