

# Review of *Cannabis Crashes: Myths & Truths*

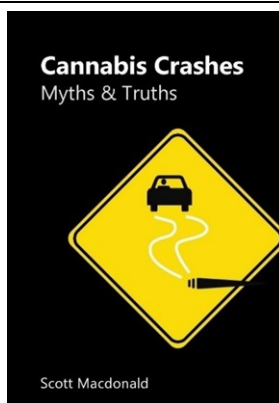
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Macdonald, Scott. *Cannabis Crashes: Myths & Truths*. Publisher: Author, 2018. 164p. \$39.50 US. Available from [www.lulu.com/shop](http://www.lulu.com/shop). ISBN 9780-359-02413-1.

The possibility of death or injury is ever-present when it comes to the everyday act of driving a motor vehicle<sup>1</sup>. Unsurprisingly, the level of risk involved is greatly magnified when a driver is severely under the influence of alcohol or psychoactive substances. Governments around the world have attempted to reduce traffic crashes by introducing preventative measures. Common example of measures used to detect performance deficits from alcohol have included the *Breathalyzer* and field sobriety tests. Such measures are typically introduced based upon scientific research investigations that provide rigorous scientific evidence about levels of alcohol impairment<sup>2</sup>, how to accurately test for it, and how it affects driving performance.

With the recent introduction of legalized cannabis in North American jurisdictions (including Canada in 2018 as well as U.S. states including Colorado, California and Washington), governments have hurriedly introduced measures designed to minimize cannabis-related traffic crashes. Some such measures are seemingly borrowed from the alcohol-impaired evidence-base despite concerns about their direct applicability. Questions also linger about the quality of the available peer-reviewed scientific literature on cannabis performance deficits and the appropriateness of such findings for use in the development of traffic legislation. In his book *Cannabis Crashes: Myths & Truths*, Dr. Scott Macdonald seeks to provide answers to the aforementioned questions by systematically analyzing the objective scientific literature on cannabis performance deficits, assessing the validity of biological tests for cannabis impairment and determining the effectiveness of existing laws for improving traffic safety.

One of the first things readers will notice about *Cannabis Crashes: Myths & Truths* is that it was self-published and for this reason some may be skeptical about its content. Any concerns I had were immediately put to rest after reviewing the qualifications of Dr. Macdonald and the impressive list of scholars who contributed “content advice.” The author’s background in epidemiology and biostatistics makes him eminently qualified to provide assessments of research studies that examine performance deficits resulting from substance use. He is scientist at the Canadian Institute for Substance Use Research (CISUR) at the University of Victoria and has spent his 40-year research career investigating the relationships between substance use (primarily alcohol, cannabis and cocaine) and injuries. These investigations have resulted in 100+ peer-reviewed publications and more than 20 appearances as an expert witness in court hearings involving drug testing in the workplace.



Throughout the book, Macdonald brings to bear his epidemiological training and extensive research experience in the field of substance abuse. The book’s eight chapters follow a logical progression which begins with an orientation to the existing legislation surrounding alcohol and cannabis impairment and how they are assessed (Ch. 2). Next, detection approaches for both substances are reviewed (Ch. 3.) and in this chapter Macdonald also includes useful guidance about how to interpret summary statistics and correlations presented in research studies (pp. 32-34). The pharmacokinetics of alcohol and cannabis (Ch. 4) and their long-term effects (Ch. 6) receive brief but useful overviews.

The book’s two most substantial chapters examine laboratory studies of substance use and performance (Ch. 5) and observational studies of alcohol and cannabis risk in crashes (Ch. 7). In both, Macdonald reviews methodological issues and statistical flaws from noteworthy and influential research studies. He then evaluates these limitations against five key epidemiological criteria (pp. 79-84) useful for interpreting the meaning of findings from these studies. Criteria included are: bias; control for confounding; measurement error; strength of association, and; difference between causation and correlation. These two chapters are a particular strength of the book as Macdonald delivers clear and reasoned explanations about why study findings can all too often be considered problematic from an epidemiological perspective.

In the concluding chapter (Ch. 8), Macdonald sums up the misconceptions about cannabis use and impairment and includes a handy table (pp. 105-107) that highlights these myths and truths. He also speculates on the possible origins of influential myths and how myths can be inadvertently introduced into research findings. This final section circles back to laws for impaired driving with specific attention given to the implications of Canada’s cannabis-impaired laws. An extensive bibliography and a surprisingly useful glossary of terms which I found myself referring to frequently round out the book. The omission of an index is a minor detriment.

In summary, *Cannabis Crashes: Myths & Truths* will be highly relevant to those policy-makers and lawyers seeking to heighten their understanding of the scientific evidence base used to detect alcohol and cannabis performance deficits and to assess cannabis-impaired driving. It will also be of interest to students and academics as it provides guidance for understanding limitations of study findings in substance use research and points out critical directions for future cannabis research. Overall, Macdonald has achieved what he set out to accomplish in this book which was “...to better understand what different laws aimed at minimizing cannabis-impaired driving are likely to achieve” (p. 6). □

1 The World Health Organization estimates in its [Global status report on road safety 2018](#) that 1.35-million people die annually as a result of road traffic crashes and between 20 and 50 million more suffer non-fatal injuries. 2 In Canada and the U.S., impairment from alcohol has a legal definition, typically defined as a Blood Alcohol Content (BAC) cut-off level of .05% or .08% alcohol with legislation that prohibits driving at these levels (p. 7).

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