

Alcohol is more harmful than cannabis

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A non-binding referendum on the legalisation of cannabis will be held in conjunction with the general election on 19 September 2020. Although many New Zealanders have consumed cannabis there is a much greater familiarity with alcohol as a recreational drug to the extent that a lot of people don't even think of alcohol as a psychoactive drug. This paper seeks to provide comparative health information about two drugs: delta9-tetrahydrocannabinol (THC), the primary psychoactive drug in cannabis, and ethanol (ethyl alcohol) the psychoactive drug in alcoholic beverages.

We have been taught to consider cannabis a dangerous substance for 50 years through publicity aligned with the so-called "War on Drugs", a global movement initiated by

US President Nixon's declaration in 1971 that drug abuse was "public enemy number one". At the same time, alcohol has been promoted as relatively harmless and that it is not only entirely normal for people to consume alcohol most days of the year but that regular drinking is a sign of a successful and popular citizen. This marketing of alcohol by Big Business has been buttressed by backroom lobbying of successive governments to prevent stronger regulation of alcohol. The result of all of this propaganda and pressure is a strong tendency for us to think of alcohol as good and cannabis as bad.

Table 1 compares delta9-THC and ethanol according to 13 commonly discussed issues related to drugs and health. The descriptions of harm are in some cases based on

Table 1: A descriptive comparison of 13 harms to health related to two psychoactive drugs, delta9-THC and ethanol.

	Delta9-THC	Ethanol
1. Risk of death from overdose	virtually zero	relatively high**
2. Risk of aggressiveness during intoxication	low	moderate/high**
3. Risk of anxiety during intoxication	moderate	virtually zero
4. Risk of harm driving intoxicated	moderate/high	high*
5. Risk of irritability in withdrawal	moderate	moderate
6. Risk of death from severe withdrawal	virtually zero	relatively high**
7. Risk of brain damage from chronic heavy use	possible	definite**
8. Risk of fetal brain damage	probably low	definitely high**
9. Risk of liver and other organ damage	low	high**
10. Risk of addiction	moderate	moderate
11. Known to cause psychotic conditions	yes but fairly rare	yes but rare
12. Known to cause major depression	possibly	definitely*
13. Known to cause cancer	no evidence for THC possible for smoked cannabis	definite carcinogen**

*Evidence that ethanol is more harmful than delta9-THC.

**Good evidence ethanol is distinctly more harmful than delta9-THC.

very solid information, such as the overdose and cancer risks of alcohol, whereas other aspects such as whether cannabis causes brain damage and depression are not clearly established by existing research.

Ethanol is more harmful than delta9-THC on nine of the 13 aspects considered. For two of these, motor vehicle injury and causation of depression, the evidence is indicative that alcohol is more harmful; but for seven of these there is good evidence that ethanol is distinctly more harmful as follows:

1. The safety ratio of delta9-THC is >1,000¹ indicating it is almost impossible to die from a cannabis overdose, whereas ethanol, with a safety ratio of 10, close to heroin which is six, makes death from alcohol poisoning a not infrequent event in New Zealand life and tragically associated at times with coming of age challenges to drink a potentially lethal dose of alcohol.
2. Ethanol directly causes aggression through a number of interacting mechanisms, including misinterpretation of visual cues² and inducing sadism.³ The damage from drunken aggression can be observed every weekend and many weekdays in New Zealand's 'vibrant' social life, and seen in the appalling alcohol-fueled family violence statistics that continue year after year, a phenomenon not observed for cannabis. In head-to-head research cannabis was found to decrease aggressive feelings following aggression exposure compared with alcohol, which enhanced aggressive feelings.⁴
6. When severe, the withdrawal syndrome following neuroadaptation from ethanol is associated with complications that can pose a high potential for death in some patients. These complications include seizures and delirium as well as the risk of aspirating vomit. These complications are not a feature of delta9-THC withdrawal.
7. Chronic cognitive impairment is a well-known consequential risk for alcohol when consumed heavily for an extended period of time. The two main syndromes are alcoholic dementia (due to the direct toxic effect of alcohol on the brain and affecting frontal lobes in particular) and the Wernicke-Korsakoff syndrome (mediated by depletion of thiamine (Vitamin B1) in combination with the toxic effects of alcohol). The evidence for chronic cognitive impairment from heavy cannabis use is much less well established. Sensitive testing including electrophysiological measures have revealed long-term deficits in attention,⁵ although the clinical significance of this effect is considered subtle.⁶
8. Fetal alcohol spectrum disorder (FASD) is the result of brain damage to unborn children when alcohol is consumed by their mothers during pregnancy resulting in a range of cognitive-behavioural problems in affected children.⁷ It has been estimated there could be as many as 3,000 children born with FASD every year in New Zealand.⁸ The same cannot be said for cannabis use by pregnant mothers. It has been shown that cannabis using mothers are at increased risk of producing low birth weight infants even after controlling for cigarette, alcohol and other drug use,⁹ but the existence of a fetal cannabis syndrome causing behavioural problems in affected children requires further research.⁶ In the meantime the best advice for women who are planning pregnancy or who find themselves pregnant is to discontinue all recreational drug use including both alcohol and cannabis.
9. Ethanol consumption is implicated in the causation of over 200 different medical conditions,¹⁰ whereas delta9-THC appears relatively non-toxic to the human body and has no such medical linkages. On the contrary, delta9-THC and other cannabinoids are the focus of a growing anecdotal literature as treatment for a range of medical conditions including glaucoma, nausea, AIDS-associated anorexia, chronic pain, inflammation, multiple sclerosis and epilepsy.¹¹

13. Alcohol is classified as a Group 1 carcinogen (definite carcinogen to humans) according to the World Health Organization's International Agency for Research on Cancer (IARC),¹² which the alcohol industry goes out of its way to not warn its customers about.¹³ On the other hand, delta9-THC has not been classified by the IARC despite considerable research. While there remains doubt about whether smoking cannabis causes lung cancer, there is nevertheless good evidence of chronic obstructive pulmonary disease in heavy cannabis smokers,¹⁴ but this is likely the consequence of smoking dried plant matter in similar fashion to smoking tobacco rather than consuming the drug delta9-THC.

There is only one of the 13 health aspects, 3. Risk of anxiety during intoxication, where cannabis is distinctly more harmful than alcohol. Alcohol dissolves anxiety in most people, whereas cannabis can heighten feelings, including anxiety in some people. There will be a presentation to emergency departments most months of an inexperienced user of cannabis with a panic attack.

The one harm often pointed to as evidence of the danger of cannabis compared with alcohol is 11. known to cause psychotic conditions. In fact both cannabis and alcohol can cause psychotic conditions although these are rare events. They generally occur following chronic heavy use of potent forms of either drug, especially when there is a family history of psychosis. The main conditions are alcoholic hallucinosis and psychosis as part of delirium tremens in relation to alcohol, and cannabis-induced psychosis and schizophrenia where cannabis is considered an initiating factor. In terms of the latter, taking the extremes of people on a continuum of cannabis use

there is a doubling of the risk of developing schizophrenia in people who are daily users of cannabis compared with people who have never used cannabis.¹⁵ Cannabis has been singled out as a psychotogen partly because it is known to change people's perceptions. Some researchers have labelled these perceptual changes "psychotic" when in fact the vast majority are "psychotic-like". In addition to seeking a change in mood, users of cannabis generally enjoy changes in their perceptions as well as their accompanying thoughts; such as experiencing time going slower, having surprising new ideas or a deeper sense of meaning about normal routines or ordinary objects, or having a greater appreciation of music. A small minority of users view cannabis as a spiritual aid.

The differential harm profile described above demonstrates how irrational our drug laws are. A highly toxic, aggressogenic, carcinogen is sold by teenagers to the public through every supermarket in New Zealand, as well as via thousands of liquor stores, bars and restaurants, while the sale of a more benign substance is prohibited.

A rational 'No' vote in the upcoming referendum would not be based primarily on the potential health harm from cannabis, unless one is also advocating for the sale of alcohol to be made illegal.

On the other hand, to vote 'Yes' requires trust the door isn't being opened to Big Business to ultimately control and exploit cannabis. The "unbridled commercialisation"¹⁶ that exists with Big Business' involvement with alcohol, resulting in enormous harm and cost to the New Zealand public, would likely be similar if cannabis became a new product available for Big Business activity. However, societal harm can be predicted to be less overall if this occurred because cannabis is inherently safer than alcohol.

Competing interests:

Nil.

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