

Cannabis and Cancer: A Cancer Society Fact Sheet



Key points:

- Any link between smoking cannabis and cancer risk is still unclear from a scientific perspective.
- There are still reasonable grounds for concern about a possible increased cancer risk for cannabis users and also for their children.
- There is good scientific evidence that cannabis use carries significant risks for the individual user and for the health care system (e.g. from injury from vehicle crashes, harm to respiratory health, and harm to mental health).

Background

Cannabis is a fairly commonly used drug in New Zealand¹ though it is an illegal one. Cannabis (also known as marijuana), is a greenish-gray mixture of the dried, shredded leaves, stems, seeds, and flowers of the hemp plant (*Cannabis sativa*). It is grown throughout New Zealand and is usually smoked in hand-rolled cigarettes (joints). The active ingredient in cannabis is delta-9-tetrahydrocannabinol (THC), which is what affects the brain.

The social and health context around cannabis

The debates about the illegal status of cannabis in New Zealand and other developed countries are very complex. Some people argue that this status of cannabis is a large part of the problem with this drug. This may be because its illegality might provide economic support for criminal gang activity and generates disrespect for the law

by cannabis users. In contrast, others argue that the illegal status of cannabis is justified, given that users can be harmed (with the costs borne to the publicly-funded health system), and also others can be potentially harmed (e.g. when cannabis contributes to road crashes or with use in pregnancy). A further complex issue is the medicinal use of cannabis and cannabinoids. A recent review² reported that THC and other chemicals in cannabis “may treat the symptoms and side-effects of cancer”. Also, there is evidence for other medicinal uses (i.e. improving appetite, reducing nausea and vomiting, and reducing moderate nerve pain in patients with cancer). This suggests a challenge for researchers is to develop safe and effective medicines from cannabis but to avoid these having the “adverse psychoactive effects” of cannabis.² It has also been reported that vapourisers can be used to deliver cannabis vapours (that are free of cancer-causing chemicals) for medicinal purposes.³

Cannabis and cancer

The effects of cannabis on health have not been studied anywhere near as much as for tobacco smoking. However, a review has concluded that the airways of cannabis smokers have changes that indicate cancer risk (i.e. “chronic inflammatory” and “precancerous changes”).⁴ This review also found one well-designed study⁵ that suggested that cannabis smoking caused cancer in the upper airways of young adults and that the risk was highest in the most frequent users.

The most detailed recent review reported that cannabis smoke contains several of the same cancer-causing chemicals as the tar from tobacco, and that this raised concerns that cannabis smoking may be a risk factor for

tobacco-related cancers.⁶ In one of the studies in this review⁷, there was reported to be no increased risks of lung or bowel cancer. However, there were links to prostate and cervical cancers. In another one of the reviewed studies, there was a link to a type of brain cancer among both tobacco and non-tobacco smokers.⁸

From a review of 14 studies⁶, the reviewers found that one of these⁵ found a link between cannabis and head and neck cancers. They also reported that another study⁹ found no link between oral cancer and cannabis. An eight-fold increase in risk among cannabis users was found in a lung cancer study in Tunisia.¹⁰ However, there were limitations with the design of this study (i.e. no assessment of the dose-response, and the cannabis may have been mixed with tobacco). Use of cannabis during pregnancy was associated with increased risks of various cancers in childhood (including the blood cancer – leukaemia) in four studies, but these studies also had limitations with their scientific quality.

In summary, these reviewers found that there were not enough studies to properly decide on any link between cannabis and cancer. They highlighted the limitations of previous studies (e.g. possible under-reporting where cannabis use is illegal, small sample sizes, and too few heavy users in the study sample). Another review was published in 2005² also noted the inconsistent evidence from different studies. It also reported that there is mixed evidence on the effects of THC and other chemicals in cannabis on cancers. That is, in some studies these have had anti-cancer effects, but in other studies THC seems to impair how the immune system responds to cancer. Another review examined the differences in the pharmacological properties of cannabis and tobacco smoke and it suggested reasons why tobacco smoke, but not cannabis smoke, may result in lung cancer.³

When considering the above evidence, it seems that any link between smoking cannabis and cancer is still unclear from a scientific perspective. Nevertheless, there are some reasonable grounds for concern about a possible

increased risk for cannabis users and also for the children of users. In the New Zealand context there would appear to be a particular need for more research, given the facts that Māori have high rates of lung cancer and relatively high rates of cannabis use¹ (compared to non-Māori New Zealanders).

The evidence for other harm to health from cannabis

A review of cannabis and respiratory health has reported that cannabis smokers have higher rates of acute and chronic respiratory symptoms – such as chronic cough, chronic sputum production, wheeze and acute bronchitis.¹¹ Another review has reported that acute cannabis intoxication is a cause of motor vehicle crashes and other injuries.⁴ In terms of mental health, this review⁴ found that cannabis use may trigger the onset or relapse of schizophrenia in some cases. This review also found that there was now a lot of evidence for “cannabis dependence” (i.e. addiction), which occurs in about 7–10% of regular users. This dependence seems more likely if cannabis use starts early in life and with frequent use (i.e. weekly or daily use). While the review reported that acute cannabis intoxication can impair brain function, there was no suitable evidence to determine whether or not there were long-term effects on brain functioning. But it did find that there was a small body of evidence showing harm to the brains of the offspring of women who used cannabis during pregnancy. A conclusion of this review⁴ was that the evidence shows that regular heavy use of cannabis carries risks for the individual user and for the health care system. Some of the evidence covered in this review came from research studies done in New Zealand.¹²⁻²¹ A feature of some of the research on the health impacts of cannabis is that the more frequent its use, the more likely the user was to experience adverse effects.²²

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