

# Medicinal Cannabis and Driving



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# Using Medical Cannabis and Driving In New Zealand

In 2017, the Government introduced legislation to develop a medicinal cannabis industry in New Zealand and make products more accessible. Regulations to support the Act came into force on 1 April 2020. Legal access to medical cannabis is increasingly common in New Zealand, with The Drug Foundation estimating around 17,000 people have accessed legal medicinal cannabis products in 2020 - around ten times as many as in 2018.

## Medical Cannabis

There are many different common medicines that come with warnings about driving.

But what about medicinal cannabis? You may want to maintain your freedom to drive to work, drop off and pick up the children, get away for the weekend; all may require the ability to drive.

Firstly, you should always talk to your doctor about how a medicinal cannabis product may affect your driving as it all depends on the type of medicinal cannabis you have been prescribed.

Each medicinal cannabis product contains different amounts of the plant's active compounds, which produce different effects on the mind and body. The most important, and best characterised of these compounds are cannabinoids. The two most important cannabinoids to consider are  $\Delta^9$ -tetrahydrocannabinol (THC) and cannabidiol (CBD). THC is responsible for the intoxicating effects of cannabis and in contrast, CBD is non-intoxicating. Both these compounds interact with our body's own Endocannabinoid System

## Is It Safe to Drive On CBD?

As mentioned, CBD is not intoxicating and does not produce the "high" that recreational cannabis is known for. A report by the World Health Organisation on CBD concluded that there are no public health issues, such as driving associated with the use of CBD. A 2020 Netherlands study, found that using CBD-dominant cannabis did not impair thinking or driving skills compared with placebo.

There are three types of CBD products available on prescription in New Zealand; Full Spectrum CBD, Broad Spectrum CBD and CBD Isolate.

Full-spectrum CBD is a product that contains all of the available compounds in the cannabis plant, including terpenes and fatty acids, but only tiny amounts of THC (usually less than 0.3%). It does not contain enough THC to impair your driving, but it may still show up in a roadside drug test.

The New Zealand government has indicated that the threshold for "impairment levels" in roadside drug tests will be aligned with alcohol levels. It's highly unlikely therefore that CBD-dominant products will meet that threshold. The government has also indicated that there will be a medical defence for anyone found driving with drugs in accordance with a prescription. It's a good therefore, to keep a copy of your prescription in your vehicle for the unlikely event that you'll need to explain why THC is present in your system.

Broad-spectrum CBD contains all of the available compounds in the cannabis plant but has no THC at all. CBD isolate is pure CBD, containing no other cannabinoids or compounds from the cannabis plant. Neither will not produce any intoxicating effects, impair your driving, or be detected in a roadside drug test.

Therefore, you should be safe to driving while using CBD-based products and drive.



## Is It Safe to Drive with THC?

THC is the main compound that produces the high feeling recreational cannabis is known for, but scientists have found it also has many therapeutic applications. Medicinal cannabis products containing THC can have side effects that include dizziness, disorientation, coordination problems and slower reaction times.

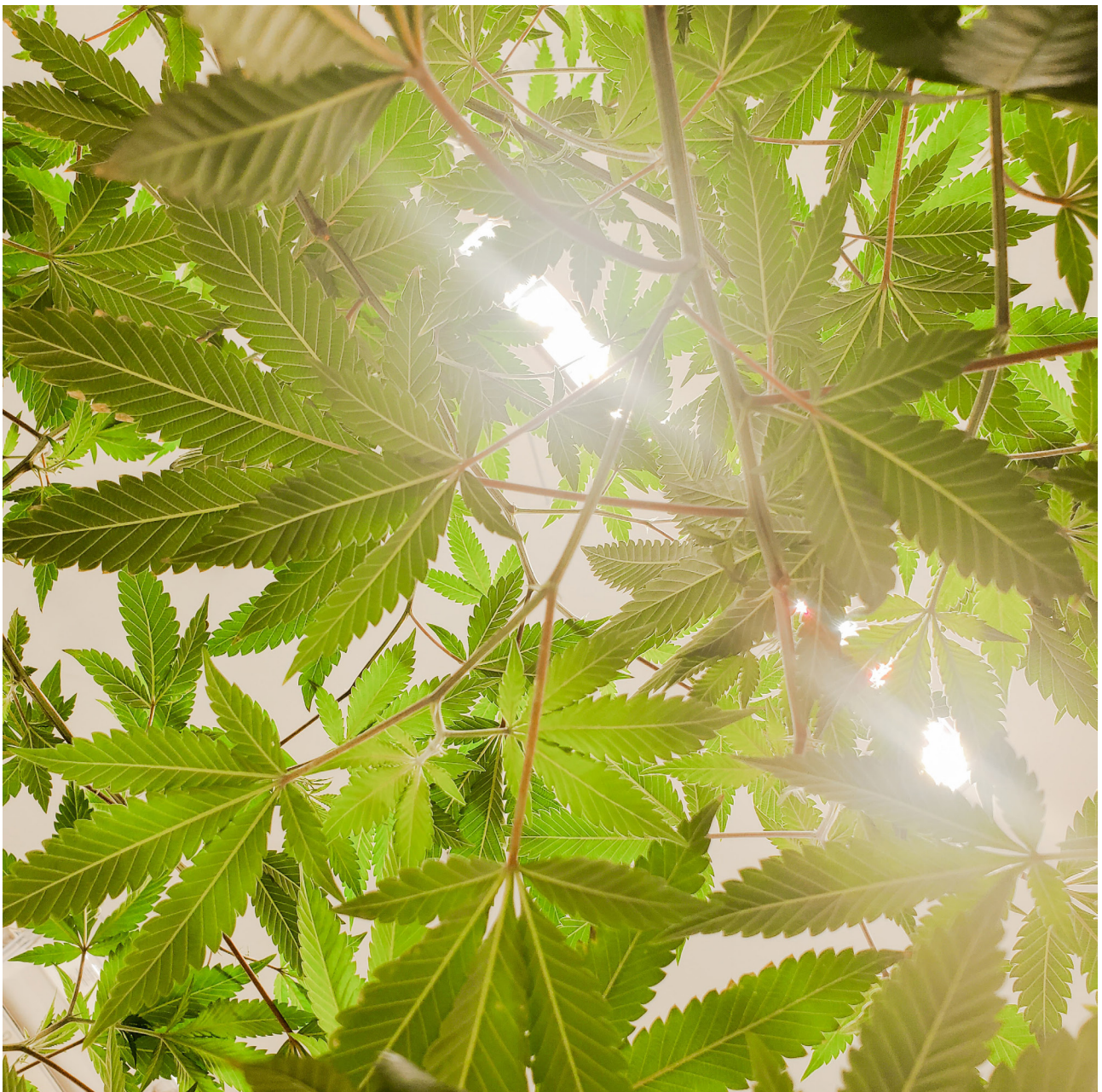
It will show up in a roadside drug test and may exceed the threshold of impairment, which can lead to infringement notices, fines, and even prison for reoffenders.

A 2019 Australian study found that both THC-dominant strains and strains containing equal amounts of CBD and THC impaired driving. It's impossible to say how much THC is required to

produce intoxicating effects. The effects of THC can last for hours.

Therefore it is important to ask your doctor about the specific cannabis-based medicine you are being prescribed. So if you were to take a THC-based medicine in the evening, it may be possible that you can drive unimpaired in the morning. However, if you have a health condition that requires you to use THC throughout the day, you shouldn't be driving. The aforementioned Netherlands study found drivers were impaired four hours after vapourising high-THC dried flower cannabis.

Therefore, you shouldn't drive after using medicinal cannabis that contains THC. The only time you should be safe to use THC and drive is when you're using a full-spectrum CBD product, which contains less than 0.3% THC.



**BEYOND THE BASICS: THC And Crash Risk:  
Evidence From Epidemiological Studies**

Epidemiological studies (studies that investigate how often diseases occur in different groups of people and why), with the aim to quantify the impact substances have on road safety can estimate the relative crash risk using an ‘odds ratio’. This ratio helps to describe the likelihood of a driver who tests positive for a drug or alcohol being involved in a crash relative or compared to a sober driver.

An odds ratio of 1.0 is a crash risk estimate of a sober driver. As an example an odd ratio of 3.0, an individual would be 3 times more likely to be involved in a crash compared to a sober driver. An odds ratio can also be used to estimate the chance that the individual under the influence of a substance would be responsible for the crash as a ‘crash culpability estimate’

The most recent and authoritative meta-analyses (a statistical analysis that combines the results of multiple scientific studies), a 2019 Norwegian study review, suggested that cannabis-positive drivers are approximately 1.1–1.4 times more likely to be involved in a crash than sober drivers.

This can be placed in perspective with alcohol and the various blood alcohol concentration (BAC), medicinal and recreational cannabis, as well as other prescription medications.

In the table below is a list of drug classes and their corresponding crash risk estimate and crash culpability estimate. Alcohol has three corresponding blood alcohol concentrations (BAC). Currently in New Zealand the BAC for any driver, 20 years of age and over, is 0.05. Any river under 20 years of age the BAC is zero.

CRASH RISK AND CRASH CULPABILITY ESTIMATES FOR DIFFERENT DRUG CLASSES		
Drug Class	Crash Risk Estimate	Crash Culpability Estimate
Alcohol (BAC = 0.02)	1.03 - 1.19	1.36
Alcohol (BAC = 0.05)	1.38 - 1.75	2.19
Alcohol (BAC = 0.08)	2.69 - 2.92	3.63
THC-dominant Cannabis	1.11 - 1.42	1.20 - 1.42
Antidepressants	1.35 - 1.40	N/A
Antihistamines	1.12	N/A
Benzodiazepines & Z-hypnotics	1.17 - 2.30	1.41
Opiates	1.68 - 2.29	1.47
BAC, blood alcohol concentration; N/A, not available		

Table taken from Thomas R Arkell et al. Medical cannabis and driving. AJGP Vol. 50, No. 6, June 2021

Overall, the increase in crash risk associated with THC is similar to that associated with a low-range blood alcohol concentration, (BAC 0.01- 0.05), although

some analyses suggest that crash risk and culpability with cannabis may be greater with higher blood THC concentrations.

## Vaporised Vs Oral Thc-Dominant Cannabis

Vaporising dried flower medicinal cannabis, produces a rapid and transient peak in blood and oral fluid THC concentrations. When taken orally, cannabis is absorbed more slowly through the gastrointestinal tract, producing far lower blood THC concentrations.

THC is readily absorbed into fatty tissue, from where it can slowly re-enter the bloodstream days or even weeks following cannabis consumption. Blood THC concentrations are therefore not necessarily indicative of recent cannabis consumption or the amount of cannabis consumed. The mere presence of THC in blood or oral fluid does not reliably predict impairment, although current mobile drug testing methods and associated laws rely entirely on this.

On-road driving studies results confirm modest but clinically relevant driving impairment at 40–100 minutes but not 240–300 minutes post-treatment. As a general rule it would be recommended that no driving be conducted for 6 hours after vaporising dried flower and at least 8 hours if you feel impaired at any stage post-vaporisation of medicinal cannabis.

When using oral THC balanced or dominant medication, due to the slow onset and offset of action, the advice would be to not drive for 10 hours after taking oral medication and at least 12 hours if you feel impaired.

As medical cannabis patients typically use cannabis products daily and over prolonged intervals, they will likely develop tolerance to THC psychoactive effects that may mitigate driving impairment.

One key 2012 study from the Netherlands, implied that driving impairment is likely to be greatest in the early stages of THC treatment. This is why medicinal cannabis dosing of THC is titrated slowly upwards in patients during the first few weeks of initiation of treatment, and why you are always advised to exercise extreme caution around driving until your treatment regimen is stable.

## Conclusion: The Highway To Health

The general rule is that CBD-dominant medicines are safe and THC-dominant medicines are not. However, CBD won't always be the most appropriate medicine for your specific health condition or symptoms. Patients who are prescribed THC-dominant medicinal cannabis may find restrictions around driving and other everyday tasks.

As with other medications that make you feel drowsy or affect concentration, your doctor will be able to provide you with personalised advice. But make sure to do your own research, read the label of any medicinal cannabis products you are using, and err on the side of caution when it comes to driving.

It should be noted that a prescription for THC containing medication does not negate the offence of driving while substance-impaired or intoxicated, and you have a responsibility, as a safe road user, to abide by the Land transport rules (Waka Kotahi NZ Transport Agency).