

# Medicinal Cannabis Vaporisers



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As the global medicinal cannabis industry continues to grow, dry herb (flower) and cartridge-based vaporisers are becoming more and more popular as a method of administering medication. A medicinal cannabis vaporiser is a medical grade device that is used to administer medicinal cannabis to a patient. The route of administration is via vapourisation and inhalation.

Here in New Zealand, the regulations set by the Ministry of Health state that so long as a dry-herb or cartridge vaporiser is approved by an overseas regulator as a medical device, it can be legally imported, sold, and owned here in New Zealand. More information on the current legislation in NZ can be found on the Ministry of Health website, following the link below:

- [Medicinal Cannabis Agency - Information for health professionals](#)

Medicinal cannabis flower is now available via prescription from your doctor. One of the only methods of administering the medication will be via inhalation, specifically excluding smoking. The inhalation method involves heating the medication using a dry-herb vaporiser, to a temperature that produces a vapor containing the desired cannabinoids. This vapor is then inhaled by the patient and onset of effects will soon follow. Vaporising cannabis using a dry-herb vaporiser is inherently safer, healthier, and more efficient than smoking. Evidence of this can be found in the studies below:

- [No smoke, no fire: What the initial literature suggests regarding vapourized cannabis and respiratory risk](#)
- [Vaping cannabis produces stronger effects than smoking cannabis for infrequent users](#)
- [A Qualitative Analysis of Cannabis Vaporization among Medical Users](#)

**So, what dry herb vaporisers can be purchased in New Zealand, and what are the difference between the dry herb vaporisers and cartridge vaporisers?**

A dry-herb vaporiser is designed to be used with ground, dried cannabis flower. While the heating

mechanisms used to vaporise the dry herb can vary across different devices and manufacturers, the basic concept remains the same. The dried herb is heated in a chamber to a temperature above 160 degrees Celsius at which point the cannabinoids can be inhaled in vapor form.

The dry herb vaporisers that are classed as medical devices in New Zealand are:

- [Storz & Bickel Mighty Medic](#)
- [Storz & Bickel Mighty+ Medic](#)
- [Storz & Bickel Volcano Medic 2](#)

A cartridge vaporiser utilises pods that come pre-filled with medication. Normally these cartridges are filled with a cannabis extract in liquid form and are not cross compatible with other devices. While some cartridge vaporisers can be imported and sold in New Zealand under the medical device regime, the pre-filled cartridges that are used with them do not yet meet the minimum quality standards set by the Medicinal Cannabis Agency and therefore cannot be prescribed or sold.

Some studies commissioned by third parties to explore the efficacy and safety of the Storz & Bickel Medical Device range can be found below:

- [Evaluation of a vaporizing device \(Volcano\) for the pulmonary administration of tetrahydrocannabinol](#)
- [Pharmacodynamic effects of vaporized and oral cannabidiol \(CBD\) and vaporized CBD-dominant cannabis in infrequent cannabis users](#)
- [Effect of Intrapulmonary THC Administration in Humans](#)

## Are They Legal?

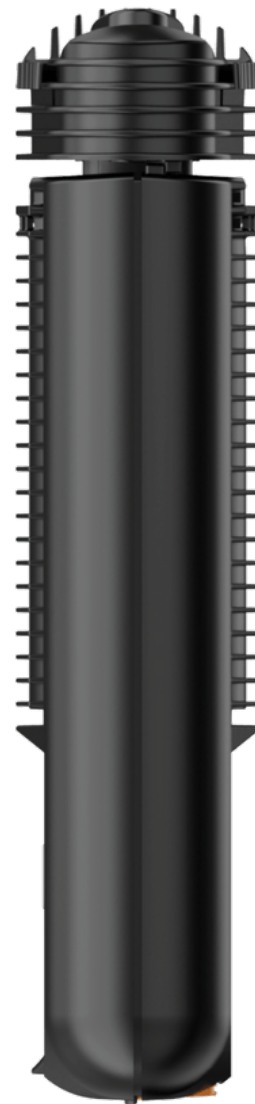
In New Zealand, only cannabis vaporisers that have been approved and certified as a medical device are permitted to be sold and possessed. The Storz & Bickel-manufactured vaporisers sold by MediVape are the only two medical grade vaporisers for dry herb medical cannabis approved for use in New Zealand.

## How Do They Work?

A medical grade cannabis vaporiser has an element inside which heats up to vaporise the milled medical cannabis flower in the chamber, sending it to the mouthpiece to be inhaled. It is used for administering medical cannabis via inhalation without producing harmful smoke.

## Are Vaporisers Safe?

To be sold legally in New Zealand, medicinal cannabis vaporisers must be registered medical devices. To meet this medical device standard, vaporisers must meet high manufacturing and design quality standards, and the manufacturing process is audited by health authorities. Buying an approved medical vaporiser will give you peace of mind that your device is safe.



## MIGHTY MEDIC Medivape

### What materials have been used in the Mighty Medic?

We have applied the maximum possible care and diligence in all materials. All materials are food-safe, heat-resistant, and according to FDA regulations.

### Can I use the Mighty Medic while charging?

Yes. If the Mighty Medic is operated while plugged in, the batteries will be bypassed. Therefore, the Mighty Medic can be used even with completely drained batteries if it is plugged in and switched on.

### How do I take proper care of the batteries?

You should store the Mighty Medic at standard ambient temperature approx. 20°C, no frost, no direct sunlight, and keep it dry. If the device is not used for a longer time, you should store it at a battery capacity of between 20% and 80%. When using the Mighty Medic it is best to drain the batteries until about 20% capacity, which is one battery bar and then recharge them fully. From time to time, it makes sense to drain them all the way and then recharge them fully; this will adjust the battery capacity and keep the battery gauge correct. If the Mighty Medic is operated while plugged in, the batteries will be bypassed. Therefore, the Mighty Medic can be used even with completely drained batteries if it is plugged in and switched on.

### How is the vapour created?

The Mighty Medic functions with a patented combination of full hot air convection heating and additional conduction so that the air is already heated when it flows into the heated-up Filling Chamber and ensures an immediate and continuous vaporisation. The additional benefit of the heated Filling Chamber is that the material to be vaporised is already heated up and vaporisation takes place on the first draw.

### What is the difference between the Mighty Medic, Mighty+ Medic, and the Volcano Medic 2?

The Mighty Medic and Mighty+ Medic are battery-operated, portable devices which can also be used outside of a clinical environment or the patients' home. The Volcano Medic 2, on the other hand, is a desktop vaporiser that needs to be plugged into a power supply. In addition, the Volcano Medic 2 is much bigger and works with a built-in pump that draws the aerosol into a Valve Balloon.

The balloon is removable, so the application can be done independently of the hot air generator (e.g. in bed). The inhalation takes place directly out of the Valve Balloon, with resistance free inhalation. Instead of the Valve Balloon, the Volcano Medic 2 can be used with the Tube Kit.

With this inhalation method it is not necessary to switch on the pump. Dried, milled cannabis flowers are suitable formulations for both Mighty Medic and Volcano Medic 2. Additionally, Volcano Medic 2 allows for vaporisation of liquid cannabinoids dissolved in alcohol.

### How do I clean the devices?

We recommend using isopropyl alcohol (70%) or warm rinsing water as solvents for cleaning your device's Filling Chamber (Volcano Medic 2) or Cooling Unit (Mighty Medic/Mighty+ Medic).

Please do not immerse any plastic components in alcohol for longer than half an hour. Prolonged contact with isopropyl alcohol can lead to colour changes or embrittlement of the plastic parts. The Herb Mill and Magazine must not be placed in isopropyl alcohol. Clean these parts with warm rinsing water. In addition, using Dosing Capsules can avoid the build-up of coarse dirt, and these can be prepared and stored in their Magazine.

Video to demonstrate how to use the MEDIVAPE

- [MediVape Mighty Medic - How to use](#)



## What is Bioavailability?

Bioavailability is a term used to describe the proportion of a substance that gets absorbed into your bloodstream and is made available for your body to use.

It is measured by the percentage that's absorbed in the body compared to the product dose. For example, if 100 mg of a drug is taken orally and 40 mg of this drug is absorbed unchanged, the bioavailability is 0.4 or 40 percent.

In the case of cannabis, the active compounds are cannabinoids like CBD and THC. Depending on how you choose to consume cannabis, you could be absorbing less than 10% of the total cannabinoids that are present in a given dose.

Many things can affect how well your body absorbs cannabis, including your age, general health, certain gastrointestinal disorders, and whether or not the product is taken with food. However the most important factor in determining the bioavailability is the way cannabinoids are delivered into the body. (ie. whether you swallow or inhale it).

Studies have shown the bioavailability of THC through the oral route (ie an oil or edible) is approximately 10-20%, which means that 10-20% of the medicinal cannabis' active ingredient eventually reaches the bloodstream.

In the case of the Storz & Bickel range of approved medical device vaporisers, studies have been conducted to establish the bioavailability of cannabinoids when consumed through them. These studies showed that the bioavailability of cannabinoids when consumed through the Volcano Medic 2 valve balloon is almost 50%. When consumed via the Volcano Medic 2 Tube Kit, bioavailability is approximately 43%. And the Mighty Medic bioavailability is approximately 32%.

To give you an idea of what these numbers mean in real terms, the table below shows how much of a 100mg dose of a 19% THC strain of dried cannabis flower is consumed into the bloodstream.

And importantly, the higher the bioavailability, the lower quantity you need to dose to experience the effects. And with the relatively high price of medicinal cannabis products in New Zealand, bioavailability efficiency is key to getting the most out of your medicines.

VAPORISER	CANNABINOID CONTENT OF DRUG	CANNABINOID CONTENT IN BALLOON / TUBE / AEROSOL	CANNABINOID CONTENT IN BLOODSTREAM AFTER INHALATION
Volcano Medic 2 - Valve Balloon	THC: approx 19mg	approx 15mg	approx 10mg
Volcano Medic 2 - Tube Kit	THC: approx 19mg	approx 12mg	approx 8.25mg
Mighty Medic	THC: approx 19mg	approx 9.5mg	approx 6mg