

# The Health Benefits of Terpenes and How They Compare to CBD

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## What are terpenes?

Terpenes are essential oils of a plant. They are responsible for the way a plant smells and tastes. Lemons smell and taste like lemons because of terpenes. Rosemary smells and tastes like rosemary because of terpenes. Cannabis smells and tastes like cannabis because of terpenes. Plants make terpenes for practical reasons: to attract pollinators or ward off predators. Aside from the fact that terpenes give plants their smell and taste, cannabis terpenes may have health benefits that rival those of CBD and THC. Aromatherapy research has already aimed to explore this role of terpenes from plants at large. More studies are needed to confirm the potential benefits of terpenes (including from cannabis), but the information currently out there has been enough to influence how cannabis is grown.

Naturally, the terpene profile of each strain of cannabis is different. Cannabis manufacturers try to imitate and enhance the terpene profiles of naturally occurring strains in order to make new strains that have particular desired effects. Now, there are hundreds of cannabis strains, thanks to the growth in the industry and the cannabis growers and manufacturers, and they all have different names. Take, for instance, Lemon Kush. Lemon Kush has a lot of the terpene limonene, which is also found in citrus peels. However, not all

Lemon Kushes are necessarily the same, even though they come from the same seed strain. Terpene profiles differ based on whether a plant is grown indoors or outdoors because of things like sunlight, temperature, and nutrients that enter into the equation.

Even further, terpenes have now been isolated from plants, including cannabis, and sold on their own, touting a variety of health benefits. Whether or not terpenes actually have health benefits on their own or in conjunction with cannabis remains to be seen. Keep in mind that terpenes are non-intoxicating, which means they do not get you high by themselves. This simple fact makes them, like CBD, much easier to sell in the mass market.

### **How do terpenes affect human physiology?**

Terpenes bind to the brain's receptors, just as cannabinoids (THC, CBD) do. When chemicals interact with those receptors, the body typically has a physiological response. Terpenes also can influence the body's production of our neurotransmitters, such as serotonin and dopamine, which play a huge role in our physiology.

The potential health benefits of terpenes are numerous and depend on each individual one. Some of the posited benefits include relief from anxiety, pain, and depression, anti-inflammation, anti-bacterial, anti-cancer, energizing, sedating, and mood-enhancing in general, to name a few.

There is also heavy speculation and some research into terpenes' ability to enhance the intoxicating effects of marijuana as well as the therapeutic effects of both THC and CBD. This has been coined the "Entourage Effect," which claims that the benefits of the cannabis plant come together synergistically to enhance its benefits. In other words, terpenes would help to enhance the therapeutic effects of CBD and THC, making them significantly more effective than they would be on their own. Therefore, if CBD relieves anxiety, CBD with terpenes would be more effective at anxiety-relief, for example.

Certain terpenes may also either enhance or lessen the intoxicating effects of THC. The terpene myrcene, for example, is commonly found in marijuana. This terpene causes our cell membranes to be extra permeable. The translation is that when there is a lot of myrcene in a particular strain of marijuana, the THC is more quickly and easily absorbed, causing a more intense, and longer lasting high. On the flip side, a different terpene, pinene, has been shown as inhibiting the intoxicating effects of marijuana. While the validity of these claims is still up in the air based on the lack of clinical, conclusive studies, what has been found appears promising.

### **What are the differences between CBD and terpenes?**

Cannabinoids are naturally occurring chemical compounds produced by the cannabis flower. CBD and THC are examples of cannabinoids found in cannabis plants, though there are many more. Different cannabinoids elicit different bodily effects. The human body has

an endocannabinoid system seems to play an important role in brain, endocrine, and immune function, as well as the secretion of hormones and stress responses. CBD binds to the body's cannabinoid receptors CB1 and CB2 as well as stimulating the endocannabinoid system's production of its own cannabinoids. It also interacts with several neurotransmitters in the brain and many of the body's molecular pathways to allegedly deliver an array of health benefits.

The cannabis glands that contain cannabinoids are the same ones that secreted its terpenes, which are oils. Like CBD and other cannabinoids, terpenes also bind to cannabinoid receptors and can influence neurotransmitters in the brain, sometimes even affecting their production rate. It is thought, as mentioned, that terpenes have a synergistic effect on cannabinoids like CBD, so consuming the two together seems to be ideal in terms of health benefits.

### **The most important terpenes in cannabis**

Without terpenes, it is possible that the therapeutic benefits of cannabis could largely be lost. So far, more than 100 cannabis terpenes have been found, though most of them do not occur in heavy concentrations. Here are some of the most concentrated and common terpenes found in cannabis plants (both marijuana and hemp) and how they interact with the body and influence the function of cannabinoids. Keep in mind that none of these potential effects, both beneficial and otherwise, have been proven through elaborate clinical studies. Research is ongoing to fully understand and verify the effects of terpenes on the human body.

**Myrcene** is the most abundant terpene found in cannabis. This terpene makes it easier for chemicals to cross the blood-brain barrier, allowing for a faster and sometimes stronger impact of cannabinoids like THC and CBD. THC's psychoactive effects may be enhanced by myrcene as well, meaning the combination of THC and myrcene could increase "high" feelings. Some studies indicate that myrcene may be helpful for pain relief and treating insomnia. You can also find myrcene in thyme and lemongrass. Its flavor and scent is citrusy and earthy.

People use **Limonene** for heartburn, acid reflux, and as an anti-inflammatory, antifungal, and antimicrobial. Some studies show it may also work for enhancing the mood and decreasing stress. Limonene comes second to only myrcene in terms of its quantity found in cannabis plants. Many citrus fruits, such as lemons and limes, also naturally contain limonene. Unsurprisingly, it has a strong citrus scent.

**Linalool** was originally used for depression, anxiety, and sleep disorders in Ayurvedic medicine, one of the oldest known medical systems, originating in India thousands of years ago. Now, speculation is prevalent about linalool's role in reducing some of the anxiety that

THC can cause. It is also used for pain relief and as an insecticide. Other plants containing linalool include lavender, birch, coriander, and cinnamon. This terpene smells and tastes floral, similar to lavender, with subtle hints of citrus.

**Pinene** is known for its anti-inflammatory effects as well as its antibiotic, gastroprotective, and anti-cancer effects. It can also act as a bronchodilator to help breathing conditions like asthma, promote alertness, and help retain memory. With other terpenes and cannabinoids, it can create an effect of sedation (myrcene) rather than alertness. Some studies have shown it reduces the effects of THC. Pinene is also found in pine needles, basil, sage, rosemary, and dill. It smells and tastes like pine.

In ancient Chinese medicine, the terpene **Humulene** was used as an appetite suppressant. Some studies have found it to be an effective anti-inflammatory. It is also commonly used as an antibacterial and anti-tumor agent. Humulene is most commonly found in hops, though it can also be found in basil, ginseng, sage, and clove. Its aroma is earthy and its taste manifests as slightly spicy.

Studies on **Ocimene** show it to have strong anti-inflammatory effects. It is also commonly associated with the Sativa strain of cannabis, as it may produce energetic effects as well as a decongestant effect, the latter causing coughing fits. Ocimene may work as an effective insect repellent and can be found in basil, bergamot, hops, mangoes, and pepper. Expect a sweeter and herbaceous flavor and scent.

**Caryophyllene** is a terpene that directly interacts with CB2 cannabinoid receptors. No other terpene is known to do this. It may act as an antioxidant and antibacterial, protecting both the brain and the body from disease. In addition, studies have found that it may also help with managing pain. Caryophyllene occurs naturally in rosemary, oregano, cloves, and black pepper. It is spicy and woody in both aroma and taste.

**Terpinolene** is usually found in low concentrations in cannabis, though many strains have this terpene. While cannabis does not generally contain much terpinolene, its effects may still be powerful. It seems to act as an antioxidant and a sedative, the latter contributing to its potential for relaxing, anti-anxiety effects as well. Nutmeg, apples, and the tree all contain terpinolene. It smells and tastes of wood and pine.

The terpenes in cannabis seem to be a strong determining factor in the widely variant effects of different cannabis strains. As more information about terpenes is verified, the therapeutic effects of cannabis produced for specific results will become easier to control.

### **Other notable non-cannabis terpenes**

**Menthol** is probably the most well known terpene out there. It is not usually found in cannabis, though sometimes. Menthol is found naturally in mint plants and creates a cooling sensation. It is often used to treat sore throats as a result, though it has other uses

too. Look for menthol in creams, as it is used as a topical analgesic. You can also find it synthetically added to cigarettes to provide a refreshing sensation and flavor while smoking.

Most notably, the terpene **Cymene** is found in thyme, cumin, and coriander and is famous for having analgesic and anti-inflammatory properties. It can be found in cannabis plants but is not one of its more common or plentiful terpenes.

**Camphor** is not found in cannabis, though is associated with many health benefits. It has been used since ancient times as medicine to treat respiratory issues, improve circulation, prevent infection, and repel insects. It may also relieve anxiety and stress and act as an anti-inflammatory. Camphor occurs naturally in camphor laurel trees, but today it is often synthesized.

### **The best ways to consume terpenes**

Because of the Entourage Effect, the best way to consume terpenes to make the most of their potential health benefits is presumably as part of cannabis products. They occur naturally in both hemp and marijuana, so you can easily consume terpenes in cannabis products where the CBD or THC has not been isolated. Marijuana products in plant form and manufactured into edibles, capsules, vape oil, etc. should provide the optimal synergistic effect of cannabinoids and terpenes. Different strains contain different terpenes as well as different quantities of terpenes. This accounts for the numerous and widely divergent effects of varying strains.

CBD products derived from either hemp or marijuana and labeled “full-spectrum” or “broad-spectrum” contain terpenes. CBD products are also available in more isolated forms. CBD isolate is pure CBD and does not contain terpenes. CBD distillate is about 80 percent CBD and contains fewer terpenes than occur naturally.

You can also find terpenes isolated into vape liquids. The effects of terpenes in general, are still anecdotal at this point, and most scientists and researchers seem to agree that they are less beneficial when isolated. That being said, if you want to try vaping strictly terpenes, they are available.

### **The bottom line: are terpenes better than cannabinoids?**

Terpenes and cannabinoids are separate parts of the cannabis plant, which act in different ways on the body, though they seem to have similar effects. Because of the lack of clinical studies, it is hard to say whether one is better than the other. The consensus at this point seems to be that using terpenes and cannabinoids together create a synergy that provides the most therapeutic benefits.

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