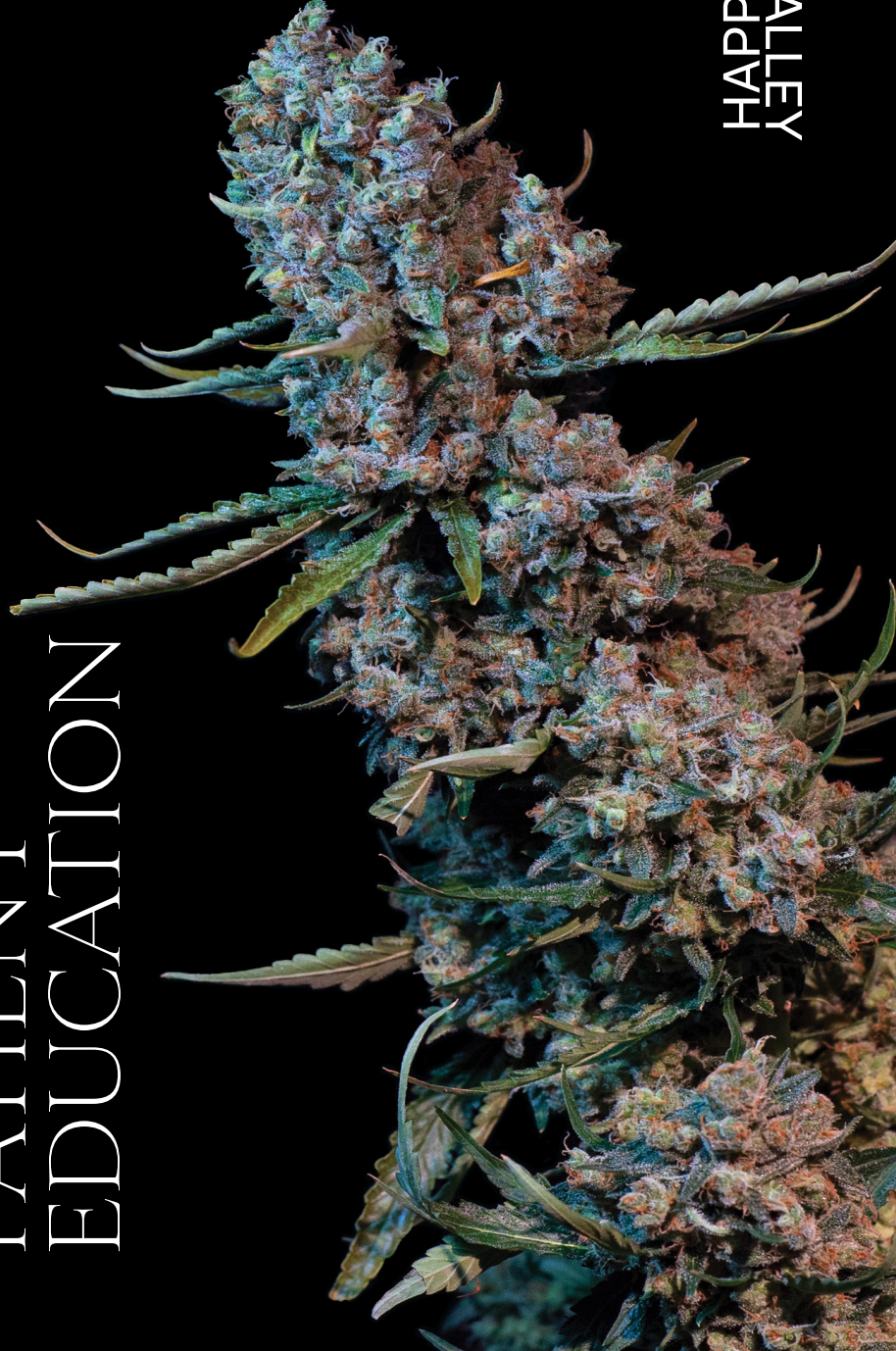


# PATIENT EDUCATION



# WELCOME TO HAPPY VALLEY

We are creating consistent, premium-quality cannabis experiences for you—while raising the bar to improve industry authenticity standards.



## DISPENSARY HIGHLIGHTS

### AMENITIES

- Express check out for medical patients
- Free, ample and brightly lit parking lots
- Welcoming, modern environment with easy check-in
- Interactive educational kiosks
- Fully-accessible ADA ramp, service counter & restroom facilities
- 24-hour facility surveillance, security personnel, and motion detectors
- Knowledgeable, trustworthy, compassionate, courteous staff

## ABOUT MEDICAL CANNABIS IN MA

In 2012, Massachusetts overwhelmingly passed the Massachusetts Medical Marijuana Initiative, allowing doctors to permit patients with debilitating medical conditions to purchase cannabis from state-sanctioned distribution centers.

Medical cannabis first became legal in California in 1996, and more than 30 states have since followed suit. Massachusetts opened its first medical dispensary in June 2015, and roughly 60,000 residents actively use medical cannabis today.

### MEDICAL USE 101

Medical Use is defined as doctor-recommended cannabis to treat specific medical conditions. With an active registration card, cannabis patients can access a 60-day supply (10 ounces) of medical cannabis from Medical Marijuana Treatment Centers (MMTCs), where they have the option of pharmacy-grade consultations.

### BENEFITS OF MEDICAL USE

Medical patients are granted priority over recreational buyers and can therefore expect shorter wait times, a separate check out line as well as exclusive products available only for medical patients.





# HOW TO GET APPROVED FOR MEDICAL USE

THERE ARE THREE BASIC STEPS IN THE APPROVAL PROCESS:

## 1. QUALIFY

To qualify for Massachusetts Medical Use, you must be:

- A Massachusetts resident
- At least 18 years old
- Living with one of the following qualifying conditions identified by Massachusetts:
  - ALS
  - Anxiety
  - AIDS/HIV
  - Cancer
  - Chronic pain
  - Crohn's disease
  - Depression
  - Glaucoma
  - Hepatitis C
  - Multiple Sclerosis
  - Parkinson's disease
  - PTSD
  - Seizures
  - Severe nausea
  - Other physician-determined debilitating or chronic medical conditions

## 2. GET CERTIFIED

Schedule an appointment with your qualified health care provider and obtain a Medical Use certification. Once certified, your physician will provide your PIN number, allowing you to access the Medical Use of Marijuana Program.

## 3. REGISTER

For Massachusetts' recommended online registration, be ready to supply your:

- Certification PIN number
- MA-issued photo ID (recommended, as you may be able to access your RMV photo) or Federal ID and recent photo

If unable to apply online, call (833) 869-6820 to begin a lengthier paper registration process.

You will receive email notification of the status of your application upon its review. Once approved for registration, you can print a temporary card online, and will receive a mailed permanent card within a week or two.

# KEY CANNABIS TERMS

## CANNABINOIDS

Active chemical compounds found in cannabis, similar to the human body's biological chemicals involved in pain, appetite, memory, mood, and more.

## TERPENES

A plant's scent, traits, and effects are determined by terpenes—fragrant oils found in cannabis and all living plants

## CANNABINOID RECEPTORS

Located throughout our bodies, cannabinoid receptors help regulate pain, appetite, memory, mood, and other functions associated with the endocannabinoid system.

## ENDOCANNABINOID SYSTEM (ECS)

The complex biological system within our bodies that plays a role in regulating pain, appetite, memory, mood, sleep, reproduction, motor control, and more.

## THC

The cannabinoid THC, or tetrahydrocannabinol, is the primary psychoactive compound found in cannabis.

## CBD

The cannabinoid CBD, or cannabidiol, is a non-psychoactive compound found in cannabis.





# HOW CANNABIS HELPS 10 MEDICAL CONDITIONS

## 1. CANCER

Ever-growing studies support endless anecdotal testimonials to cannabis' effective role in cancer treatment. In 2006, Spanish researchers determined that THC can inhibit cancer cell growth. A 2017 study found patients treated with cannabis experienced significantly increased life expectancy. Cannabis has also been shown to help with chemotherapy-induced nausea and associated treatment pain, and cannabinoid combinations (including both THC and CBD) have demonstrated greater effectiveness than THC alone.

## 2. GLAUCOMA

Cannabis treatment for glaucoma has been in use since the 1970s discovery that it can reduce and relieve intraocular pressure. Multiple studies have since replicated these results, heralding cannabis' anti-inflammatory and neuroprotective properties for glaucoma patients.

## 3. HIV AND AIDS

Cannabis can help alleviate pain and nausea associated with HIV and AIDS while simultaneously stimulating patients' appetites and hindering disease progression. In preclinical studies, treatments involving cannabis compounds were more likely to increase chances of survival and prevent the spread of HIV.

## 4. HEPATITIS

Studies suggest cannabinoids may inhibit inflammation and liver damage—symptoms associated with hepatitis C. Further, patients consuming cannabis while undergoing hepatitis treatment have demonstrated greater likelihood of completed treatment programs.

## 5. ALS

Amyotrophic Lateral Sclerosis, or ALS, degenerates motor neurons and causes continuous muscle atrophy. While a mere handful of treatments exist for ALS patients, early cannabinoid research provides hope, as a study found synthetic cannabinoids successfully extended the lives of rodents with ALS. Findings also suggest cannabinoids may play a therapeutic role in regulating an ALS patient's endocannabinoid system.

## 6. CROHN'S DISEASE

Cannabis has been considered a treatment option for Crohn's Disease since a 2013 clinical trial, when patients taking cannabis reported improved appetite and sleep, and nearly half experienced complete remission. Cannabis is thought to similarly improve other inflammatory bowel syndromes.

## 7. PARKINSON'S DISEASE

In 2004, an anonymous questionnaire circulated in Prague found one in four Parkinson's disease (PD) patients used cannabis, with nearly half reporting motor symptom improvements. Another study suggests stimulating the brain's cannabinoid receptors may reduce patient dyskinesia—the involuntary muscle movement associated with PD.

## 8. EPILEPSY

Though not listed among Massachusetts' qualifying conditions, cannabis treatments for epilepsy have garnered significant attention in recent years—in part because in 2018, epilepsy became treatable via the first FDA-approved drug derived from cannabis. CBD, the drug's active ingredient, does not cause the intoxication or euphoria associated with THC. Prescribed to patients age 2 and older, and intended to treat epilepsy's rare, severe Dravet and Lennox-Gastaut syndromes, the treatment reduces seizure frequency and intensity—which can be fatal to afflicted young children who regularly experience hundreds of seizures.

## 9. CHRONIC PAIN

Chronic pain—associated with one of the aforementioned conditions or not—is among the most frequently cited recommendations for medical cannabis use. Cannabinoids have a proven analgesic effect on the body—particularly useful for frequent, chronic pain. Surveys have also found patients prefer cannabis to other painkillers.

## 10. OTHER CONDITIONS

If you have a condition not mentioned above and believe cannabis could help, talk to your doctor—Massachusetts law places medicinal cannabis recommendation at the physician's discretion.

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## WE'RE HERE FOR YOU

Our expertly educated Hosts at Happy Valley are always ready to help you.

Contact us online by going to **HappyValley.org** or visit us at any of our Happy Valley locations and we'll help you find solutions to best suit your needs.



# CHOOSING YOUR IDEAL CANNABIS CULTIVARS

## CANNABIS CULTIVARS: SHIFTING TERMINOLOGY

### PAST CLASSIFICATION

For years, the terms Indica and Sativa broadly classified cannabis plants' effects based on their appearances and scientific species. Sativa cultivars were tall plants with skinny leaves and stimulating psychoactive effects. Indica cultivars were short, fat plants offering sedative effects. We now know this classification was inaccurate and incomplete.

### CURRENT CLASSIFICATION

Today, you're likely to instead hear cannabis cultivars referred to as Narrow Leaf (NL), Broad Leaf (BL), and Hybrid strains—based only on identifiable physical characteristics. NL plants are tall, lanky, and noted for narrow, thin leaves. BL plants are short, stocky plants with thick, wide leaves.

Hybrid plants, created by interbreeding NL and BL, are dramatically changing the cannabis landscape. However, with the virtually limitless combinations of newly bred Hybrid strains, it has become almost impossible to accurately judge the effects of a cannabis cultivar solely on its physical appearance.

"The classical characterization of Indica versus Sativa is not very helpful when you're trying to understand what the active agents in the product are going to be."

**Dr. Jason Busse**

Associate Director,  
Michael G. DeGroote Centre for Medicinal Cannabis Research

"You cannot tell the effects a plant will have based on its shape—the shape of its leaflets, its size, or how tall it is... What we really should be honing in on is the chemical composition of the plant."

**Dr. Ethan Russo,**

Director of Research and Development,  
International Cannabis and Cannabinoids Institute

### CLASSIFICATION OF THE FUTURE

Cannabis scientists are increasingly focused on formulated cannabis—selectively breeding Hybrid cultivars based on their specific, natural chemical ratios to create repeatable, effect-driven experiences. Because each of our endocannabinoid systems reacts differently to the unique cannabinoids, terpenes (see Terpenes below), and other compounds within various cannabis cultivars, this trending industry-wide classification approach will continue to offer your most customized experience possible.

### THE IDEAL CULTIVARS FOR YOU

With your unique situation in mind, our expertly educated Happy Valley Hosts are always ready to help you find the right cultivars for your specific needs. As you try different options, track each experience in the private Journal feature of our Happy Valley app. This way, you can zero in on chemical profiles and strains that work best for you, helping you better identify options to produce future desired effects—and slowly building your ideal, custom-tailored cannabis experience.





# TERPENES, THE ENTOURAGE EFFECT, & YOUR BODY

## TERPENES

A plant's scent, traits, and effects are determined by terpenes—fragrant oils found in all living plants. Terpenes play an essential role in aromatherapy, perfume, wine, and cannabis, because our bodies' responses change with varying terpene combinations which can stimulate, arouse, or sedate. Different cannabis strains produce a wide variety of powerful fragrances—not just the stereotypical skunk smell—and the terpenes responsible for those scents profoundly affect your personal experience.

## TERPENES IN NATURE: FOLLOW YOUR NOSE

At least 20,000 terpenes exist naturally, hundreds of which can be found in the cannabis plant. When terpenes have been dried and cured, they are referred to as terpenoids.

In nature, to defend against herbivores, some terpenes release aromas suggesting a plant may be poisonous or inedible. Other terpenes' fragrances attract pollinators. Following your nose may similarly help you determine the needs of your unique chemical makeup—terpene scents you enjoy may indicate medicinal and therapeutic benefits to help your body, while off-putting odors likely offer you undesirable effects.

## THE ENTOURAGE EFFECT

Years ago, cannabis' effects were attributed solely to THC. Thanks to an ever-advancing understanding of cannabis plants, many researchers now believe each cultivar's specific effects result not from one lone element, but from its overall combination—or entourage effect—of terpenes, cannabinoids (including THC and CBD), and countless other compounds.

With so many elements working in conjunction, the entourage effect may allow cannabis to provide the same benefits (and therefore take the place) of multiple prescribed medications and treatments. Further, these elements can now be methodically combined to create one-of-a-kind cultivars and increasingly specific entourage effects.

As evolving science reveals more about terpenes and their psychoactive properties, scientists, doctors, and patients can better select cannabis products to align with your specific needs.

# TERPENES & THE ENDOCANNABINOID SYSTEM

Research shows terpenes interact with the cannabinoid receptors in your body to enhance or diminish the effects of cannabinoids like THC and CBD. Cannabinoid receptors are part of the endocannabinoid system (ECS)—the complex biological system that plays a role in regulating:

- Sleep
- Appetite
- Motor control
- Mood
- Immune function
- Reproduction
- Pain
- Pleasure
- Memory
- Temperature

## TWO TYPES OF CANNABINOID RECEPTORS

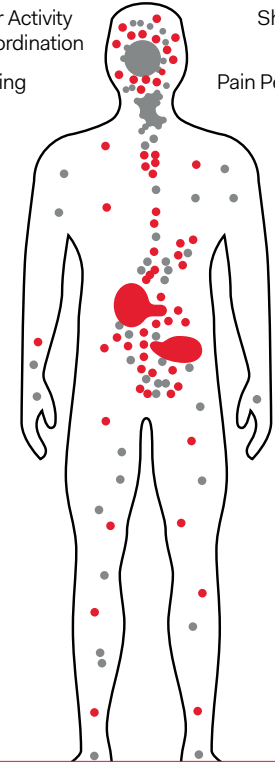
Scientists have identified two types of cannabinoid receptors within the ECS—both of which are able to receive and bind with cannabinoids like THC and CBD.

CB1 receptors are concentrated primarily in the brain, though they can also be found in reproductive organs.

CB2 receptors—found in the immune system with the highest concentration in the spleen—are believed to be more receptive to CBD.

### CB1 Receptor Targets:

Motor Activity & Coordination  
Thinking  
Short Term Memory  
Pain Perception  
Appetite



### CB2 Receptor Targets:

Gut  
Kidneys  
Pancreas  
Skeletal Muscle  
Colon  
Eyes  
Tumors  
Reproductive System  
Immune System  
Respiratory Tract



# BENEFITS OF COMMON TERPENES

Though hundreds of terpenes are found in cannabis, a handful are among the most prevalent. The overview below outlines some of the most common terpenes and their general benefits.

**Humulene** (*hyūm-yū-lēn*) or alpha-humulene, has an earthy, woody aroma and is commonly found in beers like IPAs, other hoppy ales, and household herbs including ginger, ginseng, and sage. Alpha-humulene possesses antibacterial, anti-inflammatory, and appetite-suppressing properties.

**Pinene** (*pīn-ēn*) or alpha-pinene, releases the piney scent found in pine, juniper, and eucalyptus trees as well as frankincense, rosemary, and sage. This anti-inflammatory terpene can serve as a bronchodilator or decongestant, and offers energizing, stimulating, and antiseptic benefits.

**Caryophyllene** (*ka-rē'ō-fī-lēn*) or beta-caryophyllene, emits a peppery, spicy scent, and is found in black pepper, cloves, hops, rosemary, and cotton. Caryophyllene can be used as a pain-relieving terpene and also possesses anti-inflammatory, anticancer, and antiseptic properties.

**Eucalyptol** (*yū-kə-'līp-təl*) emanates a minty, sweet, slightly spicy smell and is found in eucalyptus, cardamom, rosemary, sage, bay leaves, and tea trees. It is commonly used in cough suppressant, body powder, and mouthwash, and its anti-inflammatory, antioxidant, and decongestant properties can help provide relief for asthma, COPD, and muscle and joint pain.

**Geraniol** (*gə-'rā-nē-ōl*) radiates a rosy, flowery scent and is found in rose oil, fruit flavoring, perfumes, and other cosmetic and household products. Geraniol boasts antimicrobial, antibacterial, anti-inflammatory, antifungal, and even insect-repellent properties. It has further been cited as a potential chemopreventive agent—a compound able to block, reverse, or prevent invasive cancer.

**Limonene** (*li-mə-.nēn*) produces a zesty, citrusy aroma, naturally occurs in citrus fruit rinds and juniper, and is used endlessly in cosmetic and household items from aftershaves and perfumes to bath and cleaning products. Possessing energizing, uplifting, anti-inflammatory, antiseptic, and possibly anticancer properties, limonene may help elevate mood, relieve stress, limit pain, and treat anxiety and depression.

**Myrcene** (*mər.sēn*) releases an earthy, herbal smell, and is found in mangoes, bay leaves, wild thyme, parsley, and cardamom. Primarily known for its sedative effects, myrcene also boasts antioxidant, anti-inflammatory, pain-relieving, and anti-carcinogenic properties and is commonly used in a variety of foods and drinks. High concentrations of myrcene may synergistically interact with THC, allowing cannabinoids to more easily cross the blood-brain barrier—which may explain why increased THC effects have been noted with myrcene present.

**Ocimene** (*āsə.mēn*) emits a sweet, herbal scent with citrusy, woody undertones and naturally occurs in lavender, orchids, hops, mangoes, kumquats, and other tropical fruits. Commonly used in perfumes and believed to help plants defend against pests and predators, ocimene exhibits anti-inflammatory, antiviral, and antifungal properties.

**Terpinolene** (*tər'pin-ēl.ēn*) emanates a piney aroma with floral qualities and is found in nutmeg, tea trees, conifers, apples, cumin, and lilacs. Believed to possess antioxidant, antibacterial, and sedative properties, terpinolene naturally occurs in many cannabis cultivars and is commonly used in perfumes, flavorings, and turpentine.



# MY CANNABIS JOURNAL

Use this Journal to document your experience and outcomes when trying different products.

## EXAMPLE

1

DATE	PRODUCT	CULTIVAR	ONSET / DURATION
Mar 14, 2020	Flower	Stardawg	Instant / 5hr
DOSAGE	EFFECTS	CONSUMPTION METHOD	
3 puffs	Eased pain	<input type="checkbox"/> Vape <input type="checkbox"/> Edible <input type="checkbox"/> Smoke <input type="checkbox"/> Tincture <input type="checkbox"/> Dab <input checked="" type="checkbox"/> Topical	
NOTES			
Really liked this cultivar. Helped w/ pain but also created feeling of general happiness. Effects lasted about 2.5 hours.			

2

DATE	PRODUCT	CULTIVAR	ONSET / DURATION
DOSAGE	EFFECTS	CONSUMPTION METHOD	
		<input type="checkbox"/> Vape <input type="checkbox"/> Edible <input type="checkbox"/> Smoke <input type="checkbox"/> Tincture <input type="checkbox"/> Dab <input type="checkbox"/> Topical	
NOTES			

3

DATE	PRODUCT	CULTIVAR	ONSET / DURATION
DOSAGE	EFFECTS	CONSUMPTION METHOD	
		<input type="checkbox"/> Vape <input type="checkbox"/> Edible <input type="checkbox"/> Smoke <input type="checkbox"/> Tincture <input type="checkbox"/> Dab <input type="checkbox"/> Topical	
NOTES			

4

DATE	PRODUCT	CULTIVAR	ONSET / DURATION
DOSAGE	EFFECTS	CONSUMPTION METHOD	
		<input type="checkbox"/> Vape <input type="checkbox"/> Edible <input type="checkbox"/> Smoke <input type="checkbox"/> Tincture <input type="checkbox"/> Dab <input type="checkbox"/> Topical	
NOTES			

5

DATE	PRODUCT	CULTIVAR	ONSET / DURATION
DOSAGE	EFFECTS	CONSUMPTION METHOD	
		<input type="checkbox"/> Vape <input type="checkbox"/> Edible <input type="checkbox"/> Smoke <input type="checkbox"/> Tincture <input type="checkbox"/> Dab <input type="checkbox"/> Topical	
NOTES			



# CANNABIS PRODUCTS



Among the ever-growing list of cannabis products, the most common forms you'll find at Happy Valley are:

**CANNABIS FLOWER** is the portion of the plant harvested, trimmed, cured, and packaged for sale—typically, with no further processing. It can be inhaled by vaporization or smoking.

**CANNABIS EXTRACTS** are components derived from the cannabis plant, including cannabinoids—cannabis' active chemical compounds. The most widely known cannabinoids are THC and CBD. A variety of methods exist to extract cannabinoids from flower, using everything from hydrocarbons to ice water (see Extraction Methods below).

**VAPORIZERS** heat oil or flower to a point of atomization for smoke-free vapor inhalation. Vape pens are easy to use and employ the same atomization technology as electronic cigarettes. All Happy Valley vape products have been tested for contaminants, including vitamin E acetate, with no adverse findings. Please note that vaporizer products may contain ingredients harmful to health when inhaled.

**EDIBLES** As the name implies, edible cannabis products are made to be eaten. Edibles are usually produced as candies, chocolates, cookies, brownies, or drinks featuring cannabis extracts and can be discreetly enjoyed in many settings. Always take care to patiently follow dosage instructions as edible consumption has a much longer onset than vaping or smoking.

**TINCTURES** are extracts designed to be applied under the tongue or by mouth—a method that results in greater cannabinoid absorption rates.

**TOPICALS** Lotions and other topically applied products allow you to experience therapeutic benefits of cannabis without psychotropic effects. Your skin and CB2 receptors absorb cannabinoids for a variety of benefits, including pain reduction—which can work synergistically when simultaneously ingesting cannabis.



# CANNABIS GENETICS

Due to the diversity among cannabis plants, efforts are underway to map the cannabis genome. Cannabis genome researchers aim to identify the sources behind cannabis' effects, and distinguish among various cultivars. This will make it easier for scientists to study how specific cannabinoids relate to health applications and overall effects on the body. A genome map will also reveal information to refine cannabis crops and select specific cultivars based on known growth, yield, and effects. Genome maps, unlike genome sequences, allow researchers to trace the genetic lineage of plant species through several generations, looking for identifying marks tied to specific characteristics like abnormalities and diseases. These genetic advances will help ensure consistency and reliability of cultivars to fit your specific needs.

## TRICHOMES

Trichomes are resinous glands on the cannabis plant responsible for producing cannabinoids, terpenes, and other cannabis compounds. They also protect against ultraviolet rays, fungus, and pests that would otherwise destroy crops.

# EXTRACTION METHODS

Three primary processes remove cannabinoids and terpenes from the cannabis plant.

**Note:** All Happy Valley extracts are solvent-free.

1. **Hydrocarbon:** Hydrocarbon extraction pulls cannabinoids and terpenes from the cannabis plant using petroleum-based solvents like butane, propane, and hexane. The most common extracts—THC and CBD—are referred to as shatter, live resin, or budder.
2. **CO2:** Often used to create oils and edibles, and considered a more natural method, CO2 extraction uses carbon dioxide to remove cannabinoids and terpenes from the cannabis plant.
3. **Solventless:** Solventless extraction employs water, ice, heat, and intense pressure to mechanically separate cannabinoids and terpenes from the plant. These extracts are often referred to as dry sift, ice oil, water hash, rosin, and full melt.







# CONSUMPTION METHODS

Cannabis can be consumed through various methods. Each method, in turn, features varied effects, time before effect onset, and length of effect onset. Always take care to follow dosage instructions. Though you cannot overdose on cannabis, side effects can be intense and overwhelming. When in doubt, start with a small amount at a low strength, and slowly work up to your ideal dosage. Patience is key. Store all cannabis products out of reach of children.

## SMOKING

Cannabis can be smoked via pipe, water bong, or rolled in paper like a cigarette. Smoking produces the most immediate effect (within minutes) and permits the most refined dosage control. Though smoking is not good for the lungs, the amount of cannabis needed to smoke is so small, you should not be overly concerned. Filtration methods like water pipes (also known as a “bong”) reduce the amount of inhaled plant matter. Smoking flowers rather than leaves also reduces the amount needed to smoke. When possible, use other consumption methods to avoid a negative impact on pulmonary health.

## VAPORIZING

Vaporizing, or vaping, allows patients to inhale active cannabinoids while avoiding smoke. Vaporizers heat the cannabis to a temperature just below the point of combustion (when smoke is produced). When properly heated, THC and other cannabinoids are emitted in vapor form. Highly efficient, vaporizers require minimal amounts of cannabis and are therefore cost-effective.

Because vapor isn't as thick as smoke, it's normal not to see or feel much when inhaling or exhaling. Always wait a few minutes to experience the full effects before trying more. Patience is key. All Happy Valley vape products have been tested for contaminants, including vitamin E acetate, with no adverse findings. Please note that vaporizer products may contain ingredients harmful to health when inhaled.

## TOPICAL APPLICATION

Ideal for localized pain relief, cannabis-infused lotions, ointments, salves, creams, oils, and compresses allow you to experience therapeutic benefits of cannabis without psychotropic effects. Many topical applications include herbs and other ingredients to aid absorption and enhance healing properties. Take care not to apply to open wounds, and apply only as directed.

## ORAL CONSUMPTION

Because orally consumed cannabis is most efficiently absorbed when combined with butter or other lipids, edibles are usually created as chocolates, cookies, brownies, drinks, candies, oil-containing capsules, or tinctures.

Always take care to patiently follow dosage instructions as effect onset is usually an hour or two after oral or edible consumption, can vary greatly based on your stomach content and personal tolerance, and effects may last hours. Though you cannot overdose on cannabis, side effects can be intense and overwhelming—and are often felt much more with edibles versus smoking or vaping due to digestive processes. When in doubt—and especially if you're new to edibles or cannabis—start with a small amount at a low strength, track your effects, and slowly work up to your ideal dosage. Patience is key.

## Special Massachusetts Guidelines for Edibles

Massachusetts' Cannabis Control Commission limits cannabis edibles to 5- or 10-milligram servings of THC. While edible packages can contain up to 100 milligrams total, the product must be separated into servings of no more than 10 milligrams.

The Commission further prohibits making or selling edibles in the shape or likeness of a human, animal, fruit, or cartoon character. The packaging must have two symbols indicating the product contains cannabis and is unsafe for children.

**NOTE:** The impairment effects of edible products may be delayed by two hours or more.

All Happy Valley edibles comply with these regulations.

# HOW EDIBLES ARE MADE

The complex process of making cannabis-infused food begins with isolating THC. Decarboxylation occurs when converting tetrahydrocannabinolic acid (THCA)—a non-psychoactive cannabinoid most prevalent in raw cannabis flowers—into THC using heat and time. Drying and curing cannabis over time will cause partial decarboxylation. Smoking and vaping cannabis create instant decarboxylation. Once THC has been infused into oil or butter, it can be used for cooking.



# A GREAT EXPERIENCE BEGINS WITH GREAT CANNABIS

When looking for high-quality cannabis, it's important to work with trusted producers. At Happy Valley, we are leading the charge to create a consistent, accurately dosed, premium-quality cannabis experience for you—with a guarantee that what we say is what you get.

We sequence the DNA of every plant we grow with Medicinal Genomics—a leading third-party expert in cannabis genetics. To verify your product's origin, simply scan your package's QR code using our mobile app. Think of it as your certificate of authenticity.

Each of our products is grown and produced in our state-of-the-art manufacturing facility using cutting-edge production equipment to ensure your products are packaged at the peak of quality and freshness.

We guarantee consistent, authentic cannabis products. Every time.

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## WE'RE HERE FOR YOU

Our expertly educated Hosts at Happy Valley are always ready to help you.

Contact us online by going to **HappyValley.org** or visit us at any of our Happy Valley locations and we'll help you find solutions to best suit your needs.



# CBD VS. THC: UNDERSTANDING THE DIFFERENCE



## TETRAHYDROCANNABINOL (THC)

THC, cannabis' primary psychoactive cannabinoid, interacts with the CB1 and CB2 receptors in the ECS to provide a variety of positive effects throughout the body. It functions as a muscle relaxant and anticonvulsant. THC and its synthetic counterpart Marinol have been shown to relieve nausea that often accompanies cancer treatments. It has shown efficacy as a neuroprotectant, sleep aid, antibacterial agent, and appetite stimulant. THC cannot cause an overdose. Even products containing less than 2% THC have been found to relieve pain by blocking pain receptors.

A 1975 study published in the Journal of the National Cancer Institute revealed a promising relationship between THC and tumor reduction. Recent studies have shown THC kills brain cancer cells and elicits an anti-tumor effect in mice. Though THC is not a cure for cancer, it has unlocked treatment innovations, and will likely continue to inform future cancer research.

## CANNABIDIOL (CBD)

CBD is a cannabinoid found in cannabis. As it is non-psychoactive and therefore does not cause the euphoria or intoxication associated with THC, CBD-containing products are legal in almost every state. While the 2018 Farm Bill legalized hemp products at the federal level (including cannabinoids like CBD that can be derived from hemp), some states have their own laws regarding CBD.

CBD has been shown to alleviate anxiety with a relative lack of adverse side effects and is an excellent option for patients with social anxiety disorders such as PTSD. Studies suggest CBD may help prevent the spread of cancer and provide medicinal benefits in the treatment of inflammation, diabetes, cancer, and neurodegenerative diseases. Research further indicates CBD may treat the causes of acne, as well as opioid, tobacco, and other substance addictions.

In 2018, the FDA approved Epidiolex—an oral CBD solution to treat two severe forms of epilepsy, Dravet and Lennox-Gastaut syndromes. It is the first FDA-approved cannabis-derived drug.

## THE UNIQUE ENTOURAGE EFFECT OF THC + CBD

CBD has been found to increase the clinical efficacy of THC while reducing negative side effects, suggesting that blended ratios of both THC and CBD would likely prove more effective than either cannabinoid alone.

To determine which cannabinoid combinations work best for you, first familiarize yourself with consumption methods, effects and suggested dosages.

Titration—the gradual adjustment of a medication to find your best dose with the least side effects—is your next best tool, especially as you experiment with different cannabinoid ratios (20:1 CBD:THC, 1:1 CBD:THC, and so on). Track each experience in the private Journal feature of our Happy Valley app to gradually pinpoint your ideal cannabis options.





# POTENTIAL EFFECTS & WARNINGS

Cannabis is one of the safest available medical treatments—it is impossible to consume enough to produce a toxic effect in the body. However, due to the complex nature of the cannabis plant, there are a wide variety of potential effects. If you encounter undesirable side effects, start your next experience with a small amount at a low strength, track your effects, and slowly work up to your ideal dosage. Patience is key.

## SIDE EFFECTS

The information below is according to Americans for Safe Access (ASA).

**Uneasiness** Cannabis usually soothes and comforts your mind. Sometimes, however, it can bring about anxiety. If this happens to you, sit or lie down in a comfortable environment, breathe deeply, and try to relax. Hold your loved ones or pets for a while. Eating can quickly reduce the feeling of anxiety.

**Hunger & Thirst** Cannabis is often used to stimulate appetite. Your cannabis experience may find you more hungry or thirsty than usual. While this lasts, drink water and eat healthy, nourishing food.

**Eye Redness** If you experience eye redness along with your cannabis experience, it will not hurt you, and will pass. Wear sunglasses or apply eye drops if you're concerned about drawing attention in public.

**Drowsiness** Cannabis can make some people drowsy. If you are prone to this effect, plan to take it when you are able to sleep. Don't drive or operate heavy machinery during your cannabis experience.

**Sleeplessness** If you discover cannabis keeps you awake, it will eventually pass. For your next experience, take it more than two hours before you want to sleep.

**Short-Term Memory Loss** Sometimes people experiencing cannabis find it difficult to engage in complicated conversation, keep track of details, or perform complex tasks. If this happens to you, plan your next experience around these types of activities.

**Giddiness** A cannabis experience can cause people to find great humor in mundane things. Most people enjoy this effect. However, if humor is inappropriate in your situation, plan your next experience accordingly.

## WARNINGS

Cannabis has not been analyzed or approved by the FDA. Cannabis can form habits and impair concentration, coordination, and judgment. Do not operate vehicles or machinery while under the influence of cannabis. Health risks may be associated with consuming cannabis. Cannabis is for use only by adults age 21 and older. Keep out of reach of children.

As a registered patient with the Commonwealth of Massachusetts, you may NOT distribute your cannabis to any other individual. If your purchase is unused, results in excess product, or is contaminated, return it immediately to where you purchased for immediate disposal.

## CONTRAINDICATIONS & DRUG INTERACTIONS

Cannabis may interact with other medications, supplements, and recreational drugs like alcohol. For your own safety, educate yourself about how medications, supplements, and recreational drugs interact to preserve their effectiveness and avoid over-intoxication. Likewise, always inform those prescribing your medications or supplements if you are taking medical cannabis. Be careful when taking cannabis along with other substances until you know how cannabis will affect you.

## SIGNS & SYMPTOMS OF SUBSTANCE ABUSE

Developed by and used with permission of Amanda Reiman, MSW PhD

Currently, standard measures of marijuana consumption do not exist; this is complicated by the variation of THC (the psychoactive chemical in marijuana) among different strains of marijuana, and the disagreement in the field concerning the differences between experimentation, regular, and heavy use of marijuana (Alexander, 2003). Research in this area has suggested the existence of "diagnostic orphans" among regular marijuana users. That is, users who meet only one or two of the current DMS-IV criteria for marijuana dependence, which is not enough to be labeled as marijuana abusers or dependent. It is proposed that there is a population of regular marijuana users who are experiencing similar patterns of use to those with an abuse or dependence diagnosis, but are lacking the elevated rates of other drug use, mental health symptoms and social and behavioral consequences to qualify them for an abuse or dependence diagnosis. Furthermore, research suggests that even daily marijuana use might not be indicative of abuse or dependence, varying by the user's individual circumstance and their use of other drugs (Degenhardt et al., 2002; Looby and Earleywine, 2007; Alexander, 2003).

Marijuana Abuse is now re-classified as Marijuana Use Disorder. Marijuana Withdrawal includes the following symptoms:

- Irritability, anger/aggression, anxiety, sleep difficulty, decreased appetite, restlessness
- Less common: depressed mood, physical discomfort

Concerning the prevalence of withdrawal symptoms, Agrawal et al. (2008) reported that 29% of those who used marijuana during the past year reported experiencing at least two marijuana withdrawal symptoms. Hasin et al. (2008) reported that among those who had ever used marijuana greater than 3 times per week, 44% reported experiencing at least two marijuana withdrawal symptoms and 34% reported experiencing at least three.

MASSACHUSETTS SUBSTANCE ABUSE HELPLINE:  
800.327.5050



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