A PATIENT'S GUIDE TO

2016

MEDICAL CANNABIS

ASA CCC TheAnswerPage

CANNABIS CARE CERTIFICATION
- a project of Americans for Safe Access Foundation and TheAnswerPage

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Introduction

A LETTER FROM ASA'S FOUNDER and EXECUTIVE DIRECTOR

Steph Sherer

Dear patient,

In 2000, I sustained a severe injury that left me with lack of mobility in my neck, neurological spasms, and severe chronic pain. I had to take painkillers, muscle relaxants, and high doses of ibuprofen to relieve the pain and calm the spasms. After about a year, I started having problems with my stomach and kidneys as a result of the medications. Six months later, my doctor put me on diuretics and warned me that I might have to start dialysis. I was 23 years old and terrified.

Then one day, my doctor shut the exam-room door behind him and asked me in a whisper, "Do you smoke marijuana?" When I said no, he asked, "Do you know anyone who does?" I thought he was trying to buy marijuana from me! My doctor quickly reassured me. He explained that he did not know very much about medical cannabis, but he had seen a few patients with similar intolerance to pain medications who had cut their medication intake by at least half by using cannabis. He said he did not want to put me on dialysis. If I could find some marijuana, we should try it.

It was the first time that I had ever really thought about marijuana as medicine. I probably had the same amount of information on the subject that most Americans had at the time. I was in favor of it in principle, but I did not know anything about the law. Of course, I did not want sick people to go to jail for following their doctors' advice, but I had never heard about the emerging scientific research or considered the needs of patients. I thought medical cannabis was only for dying people with AIDS or cancer. Now I was facing my own medical crisis, and the choice between dialysis and cannabis seemed an easy one to make, regardless of the law.

But information about cannabis as medicine was extremely hard to find. I started calling friends, and friends of friends, trying to find access to the plant, but none of these individuals could really explain how to use cannabis as a medicine, what delivery systems were available to me, or how cannabis worked. I felt alone as I started experimenting with the medicine. Sometimes it worked, sometimes it didn't.

After months of going at this alone, a friend told me about a few medical cannabis centers in California's San Francisco Bay Area. The successful use of cannabis therapeutics in my life is a direct result of the guidance I received from the staff of one of these facilities.

Access Means Action

So much has changed over the past 14 years. New resources, such as this book, make learning about cannabis therapeutics and the laws easier for patients. But the battle for safe and legal access to this medication rages on.

Medical cannabis patients and their providers remain vulnerable to federal and state raids, arrest, prosecution, and incarceration. As a result, these individuals may suffer pervasive discrimination in employment, child custody, housing, public

accommodation, education, and medical care. Laws protecting patients and their providers vary from state to state and, in some cases, may even vary from county to county or city to city. Many sick or injured Americans choose to break outdated state laws that do not account for medical use or access to the medicine their doctor recommends. And no matter what state you are living in, medical cannabis patients and their providers are always violating federal law.

Advocates rallying in support of legislation.

The history of medical cannabis in the US is filled with stories of heroic patients who laid the foundation of safe access and built a movement. At the heart of this movement are the people who are willing to commit daily acts of civil disobedience to provide safe access for patients like me—people willing to stand up against injustice, to fight in the courtroom, to spend their last days concerned about the welfare of others.

My experience convinced me to work with other medical cannabis stakeholders to create an organization that would stand up for the rights of all Americans like me who are seeking safe access, as well as the rights of those willing to provide our medicine. As a cannabis patient, it was my turn, my responsibility, and my honor.

I have had the privilege of working with dedicated activists across the country and now internationally, as well as an extremely talented staff. From my many teachers along the way and the challenges we have overcome, I've learned that a thorough understanding of the complex realities "on the ground" is the key to catalyzing collective action.

Until ASA members stood up for access, the national debate around medical cannabis was focused solely on the legality and ethics of arresting and prosecuting patients for cannabis usage. That injustice is real but reflected only a fraction of the challenges this community confronted on a daily basis. We cannot create good policy without including the voices and experiences of patients and those who provide them with access. That is what ASA members have brought to this movement; that is what WE can bring to every state and the country as a whole.

By participating in this movement, you are helping create the future of medical cannabis in your city, state, and nation. My hope is that, as you discover the utility of cannabis as a therapeutic agent in your life, you will also join this powerful movement to create safe and legal access for everyone who needs it.

Sincerely,

Steph Sherer
Founder and Executive Director, Americans for Safe Access

Chapter 1
TALKING TO YOUR DOCTOR ABOUT CANNABIS THERAPEUTICS

The first step of integrating medical cannabis into your life is talking to your doctor. There is nothing wrong or illegal about discussing medical cannabis with your doctor. Doctors are accustomed to patients bringing ideas to them about treatment options and preferences, and cannabis therapeutics should be no different.

While there are now options available for physicians to receive Continuing Medical Education (CME) about medical cannabis such as the Cannabis Care Certification (CCC), most physicians have not received formal education on cannabis and the endocannabinoid system. Keep this in mind, as you may find that you are the first patient speaking with your doctor about medical cannabis for your condition.

The first important aspect is to be forthright. Be direct and ask your doctor if medical cannabis may be right for you. Make sure that you bring information about how medical cannabis may help treat your condition. Don't assume that your doctor already has this information. Americans for Safe Access (ASA) has an entire suite of publications and guidelines for doctors and conditions you can access online at **www.safeaccessnow.org/asa_condition_based_booklets**. There you can download this and other brochures to show your doctor. You may also want to share information about CCC's AMA-accredited cannabis education: **www.CannabisCareCertification.org.**

Bring as much material as you can to help guide this conversation.

Some primary care physicians may say they are not the right person to talk to you about this. They may refer you to a neurologist, internal medicine specialist, or to a specialist who can best treat your medical condition. ASA recommends that you be just as prepared for those appointments. Bring information, as much information as you can, about cannabis as a treatment for your condition, as well as information about the laws for the physician. Patients in the US can find the regulations for their doctors at **www.CannabisCareCertification.org.**

Be a patient patient. It may take a few conversations with your physician until he or she feels comfortable recommending medical cannabis. Sometimes medical practices create a policy that doctors in the practice cannot recommend medical cannabis. Veterans Health Administration physicians operate under such a policy. If your doctor will not recommend medical cannabis, then you may want to look for a cannabis specialist.

There are many websites that provide information about doctors who do recommend medical cannabis, but it's important to ensure that the doctor is licensed and has the legal standing to write a legitimate medical cannabis recommendation. Exercise due diligence to assure that the cannabis specialist is

following the law, and your medical cannabis recommendation won't be in legal jeopardy. Most states require that the recommending doctor take a complete history and conduct a full physical examination. Some of these physicians don't usually take insurance, so there will be an upfront cost for the examination. Paying the required fee for the examination does not mean that you will receive a medical cannabis recommendation.

Once you are using medical cannabis, make sure you're talking to your doctor about symptom relief you experience. As you are using cannabis, you may be replacing or reducing other medications such as anti-inflammatories. Make sure that any changes you implement to your healthcare are under the guidance of a medical health professional. If you're eliminating some of your medications, make certain that you and your medical professional have a plan to do this. Some medications require a weaning process of graduated titration to lower dosages for optimal patient safety. Also, some of the medications you are taking may have other properties, synergistic effects, or beneficial attributes than cannabis. Work in concert with your physician to make informed decisions about how cannabis interacts with the other medications and what the overall implications are for using cannabis in your healthcare regimen.

Chapter 2
HOW CANNABIS WORKS IN THE BODY

The Endocannabinoid System (ECS)

Humans have used drugs derived from plants such as the opium poppy for thousands of years to lessen pain and produce euphoria[1]. In 1973, scientists discovered the brain receptors that interact with these opiates, which include opium, morphine, and heroin. In 1975, the first of the brain's natural chemicals that bind with these receptors was identified. The similarity of this chemical, enkephalin, to morphine suggested opiate drugs work primarily by mimicking natural opiate-like molecules. The discovery of this endorphin (a term meaning endogenous morphine) system helped explain the effects of opiate drugs and opened the door to the development of powerful new therapeutic drugs that revolutionized pain management.

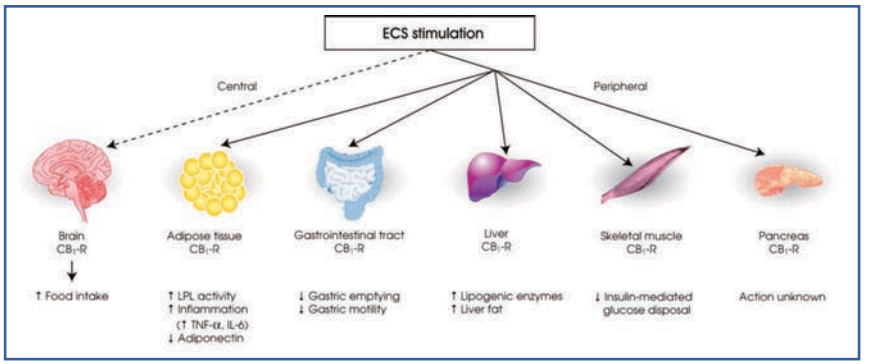
Similarly, humans have used the cannabis plant for thousands of years to reduce pain, control nausea, stimulate appetite, control anxiety, and produce feelings of euphoria. The first cannabinoid was isolated in 1899, but it wasn't until 1964 that THC was isolated[2,3]. Since the discovery of THC, researchers have made new discoveries that help us better understand not just why and how cannabis works so well for so many people but its full therapeutic potential.

The therapeutic benefits of cannabis are derived from the interactions of cannabinoids and the human body's endocannabinoid system (ECS), identified in 19884. The ECS is a sophisticated group of ligands (such as the natural cannabinoid anandamide), their receptors, and signaling pathways involved in regulating a

variety of physiological processes including movement, mood, memory, appetite, and pain[5].

One of the leading modern cannabinoid researchers, Dr. Ethan Russo, offers this comprehensive description of the ECS and its importance to a variety of physiological functions:

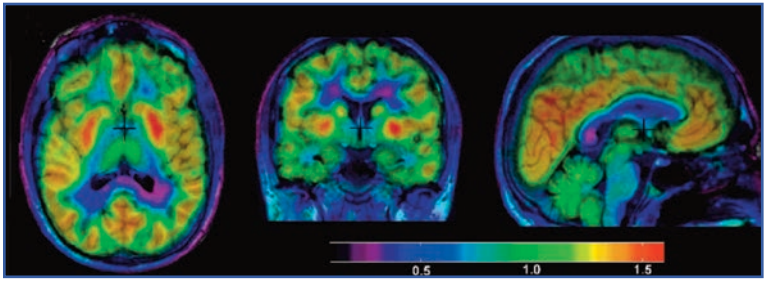
> The analgesic and palliative effects of the cannabis and cannabinoid preparations have been amply reported over the past generation.... In essence, the effects result from a combination of receptor and non-receptor mediated mechanisms. THC and other cannabinoids exert many actions through cannabinoid receptors, G-protein-coupled membrane receptors that are extremely densely represented in central, spinal, and peripheral nociceptive pathways. Endogenous cannabinoids (endocannabinoids) even regulate integrative pain structures such as the periaqueductal gray matter. The endocannabinoid system also interacts in numerous ways with the endogenous opioid and vanilloid systems that that can modulate analgesia and with a myriad of other neurotransmitter systems such as the serotonergic, dopaminergic, glutamatergic, etc, pertinent to pain. Research has shown that the addition of cannabinoid agonists to opiates enhances analgesic efficacy markedly in experimental animals, helps diminish the likelihood of the development of opiate tolerance, and prevents opiate withdrawal. Researchers have suggested that a clinical endocannabinoid deficiency may underlie the pathogenesis of migraine, fibromyalgia, idiopathic bowel syndrome, and numerous other painful conditions that defy modern pathophysiological explanation or adequate treatment.[6]"



Some of the effects of stimulating the endocannabinoid system

More than 20 years since researchers began developing an understanding of the ECS, two types of cannabinoid receptors, CB1 and CB2, have been identified, setting the stage for discoveries that have dramatically increased our understanding of how cannabis and its many constituent cannabinoids affect the human body[7,8].

CB1 receptors are found in the central nervous system, particularly the brain, and in other organs and tissues such as the eyes, lungs, kidneys, liver, and digestive



tract9. In fact, the brain's receptors for cannabinoids far outnumber the presence of all other neurotransmitter receptors combined, yet they are highly localized. The relative safety of cannabis is in part explained by the fact that cannabinoid receptors are virtually absent from those regions at the base of the brain (i.e., brain stem) that are responsible for such vital functions as breathing and heart control 210. CB2 receptors are primarily located in tissues associated with immune function, such as the spleen, thymus, tonsils, bone marrow, and white blood cells.[9]

Research is helping scientists and physicians understand the role of the ECS in regulating a variety of bodily functions. As noted by Raphael Mechoulam, the researcher who first identified THC, the discovery of the ECS has generated a great deal of interest in identifying opportunities for the development of a wide variety of cannabis-based and other cannabinoid therapeutic drugs[10-12].

Chapter 3
CANNABIS RESEARCH AND CLINICAL DATA

Locating accurate information about the safety and therapeutic value of cannabis can be difficult. An unfortunate result of the federal prohibition of cannabis has been limited clinical research to investigate the safety and efficacy of cannabis to control symptoms of serious and chronic illness. Many scientists have noted research is "hindered by a complicated federal approval process, limited availability of research grade marijuana, and the debate over legalization[13]."

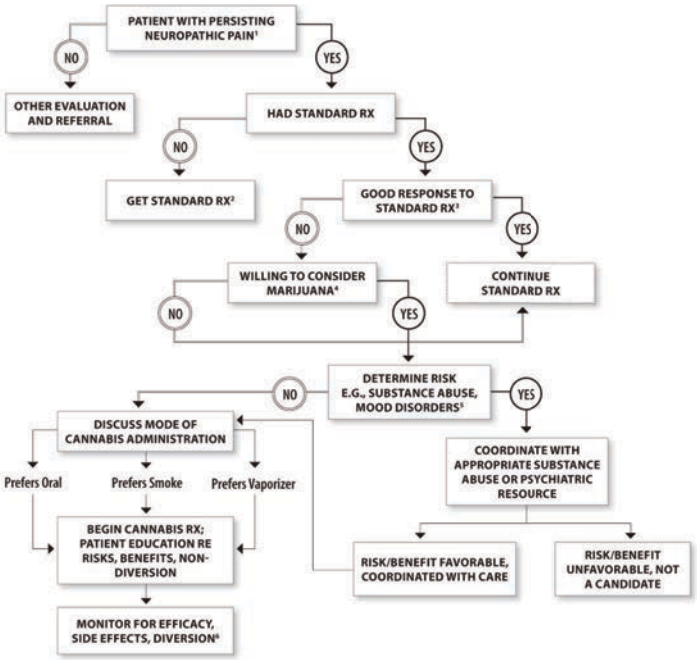
Nonetheless, the documented use of cannabis as a safe and effective therapeutic botanical dates to 2700 BC[14]. Between 1840 and 1900, European and American journals of medicine published more than 100 articles on the therapeutic use of cannabis. In fact, cannabis was part of the American pharmacopoeia until 1942, and is currently available by prescription in Canada, the Netherlands, Israel, Germany, and soon Australia.

The political interference with cannabis research and its use as a medicine originated with the Marihuana Tax Act of 1937. The United States Congress passed this first federal law restricting access to cannabis, even for medical and research purposes, over the objections of the American Medical Association[15]. Since then, numerous reviews by local, federal, and international commissions have confirmed the relative safety and efficacy of cannabis as a medicine. In recent decades, research studies have further shown cannabis has the potential to treat a variety

of debilitating conditions for which conventional treatments are lacking. Yet the use of cannabis remains completely prohibited by federal law—even for medical purposes.

RESEARCH AND CLINICAL DATA

Physicians are developing protocols for treating patients with cannabis medicines. For example, the University of California Center for Medicinal Cannabis Research (CMCR) has completed a series of randomized clinical trials with patients and published guidelines for using cannabis in medical care[16]. The researchers note that the decision to use cannabis therapeutics, like other treatment modes, should be based on careful assessment of the patient's condition with consideration for other possible treatments. They propose a treatment decision-tree for physicians, using neuropathic pain as an example, as reproduced below.



This is similar to the guidelines established by the California Medical Board for doctors. They indicate that physicians recommending medical cannabis should:

1. Take a history and conduct a good faith examination of the patient;
2. Develop a treatment plan with objectives;
3. Provide informed consent, including discussion of side effects;
4. Periodically review the treatment's efficacy
5. Obtain consultations, as necessary; and
6. Keep proper records supporting the decision to recommend the use of medical marijuana.

The Therapeutic Potential of Cannabis

While research in the United States has been sharply restricted by the federal prohibition on cannabis in the past, recent discoveries have increased interest among scientists in the more than 100 different cannabinoids so far identified in the cannabis plant. The International Cannabinoid Research Society (ICRS) was formally incorporated as a scientific research organization in 1991, and since its incorporation the membership has more than tripled. The International Association for Cannabinoids as Medicine (IACM), founded in 2000, publishes a bi-weekly newsletter and holds a bi-annual symposium to highlight emerging clinical research concerning cannabis therapeutics. The University of California established the Center for Medical Cannabis Research (CMCR) in 2001 to conduct scientific studies to ascertain the general medical safety and efficacy of cannabis products and examine alternative forms of cannabis administration. In 2010, the CMCR issued a report on the 14 clinical studies it has conducted, most of which were FDA-approved, double-blind, placebo-controlled clinical studies that have demonstrated that cannabis can control pain, in some cases better than the available alternatives[16].

Emerging Clinical Data

To date, more than 30,000 modern peer-reviewed scientific articles on the chemistry and pharmacology of cannabis and cannabinoids have been published, and more than 1,500 articles investigating the body's natural endocannabinoids are published every year. In recent years, more placebo-controlled human trials have also been conducted.

A 2009 review of clinical studies conducted over a 38-year period found that "nearly all of the 33 published controlled clinical trials conducted in the United States have shown significant and measurable benefits in subjects receiving the treatment7." The review's authors note that cannabinoids have the capacity for analgesia through neuromodulation in ascending and descending pain pathways, neuroprotection, and anti-inflammatory mechanisms—all of which indicates that the cannabinoids found in cannabis have applications in managing chronic pain, muscle spasticity, cachexia, and other debilitating conditions.

Currently, cannabis is most often recommended as complementary or adjunct medicine. But there is a substantial consensus among experts in the relevant disciplines, including the American College of Physicians, that cannabis and cannabis-based medicines have therapeutic properties that could potentially treat a variety of serious and chronic illness. What follows is a brief, annotated compilation of the emerging clinical data that support the therapeutic use of cannabis.

CANNABIS AND CANCER

People with cancer who undergo radiation and chemotherapy frequently stop treatments rather than suffer the nausea, pain, and other unpleasant side effects. The effects of inhaled or smoked cannabis and oral THC administration has been studied in more than 35 clinical trials (six of these clinical studies were state

sponsored) for the treatment of chemotherapy-induced nausea and vomiting. More than 40 clinical studies have looked at appetite modulation of cannabis and cannabinoids. Years before any state had authorized the medical use of cannabis, a 1991 Harvard Medical School study revealed that nearly half (44%) of U.S. oncologists were already recommending cannabis to their patients as a way of mitigating the side effects of cancer treatments[17].

In its 1999 review, the Institute of Medicine concluded that cannabis could be a valid alternative for many people living with cancer[18]. Specifically, the IOM notes, "[i]n patients already experiencing severe nausea or vomiting, pills are generally ineffective, because of the difficulty in swallowing or keeping a pill down, and slow onset of the drug effect[19]."

Since the release of the IOM report, new research has been published which supports the use of cannabis to curb the debilitating effects of cancer treatment. In 2001, a review of clinical studies conducted in several states during the past few decades revealed that, in nearly 2,000 individuals with cancer, inhaled cannabis and oral cannabinoids were effective anti-emetics[20]. Other studies have concluded that the active components in cannabis produce palliative effects in cancer patients by preventing nausea, vomiting, and pain and by stimulating appetite.

The tumor-fighting properties of cannabinoids have also been demonstrated in numerous laboratory studies and investigated in a successful Phase I clinical study looking at the safety of THC in patients with recurrent brain cancer. Researchers have observed that "these compounds have been shown to inhibit the growth of tumor cells in culture and animal models by modulating key cell-signaling pathways. Cannabinoids are usually well tolerated, and do not produce the generalized toxic effects of conventional chemotherapies[21]."

Combating Chemotherapy

Cannabis is used most often to combat nausea induced by chemotherapy agents and pain caused by various cancers. More than 35 human clinical trials have examined the effects of cannabis or synthetic cannabinoids on nausea, including several U.S. state sponsored trials that took place between 1978 and 198617,22. In reviewing this literature, scientists have concluded that, "THC is superior to placebo, and equivalent in effectiveness to other widely-used anti-emetic drugs, in its capacity to reduce the nausea and vomiting caused by some chemotherapy regimens in some cancer patients[22]."

Chemotherapy drugs

A 1998 review by the British House of Lords Science & Technology Select Committee concluded, "cannabinoids are undoubtedly effective as anti-emetic agents in vomiting induced by anti-cancer drugs. Some users of both find cannabis itself more effective[23]." The House of Lords review builds upon data provided in a 1997 inquiry by the British Medical Association that determined cannabis is, in some cases, more effective than Marinol, a synthetic THC preparation[24].

Cancer-fighting Cannabinoids

Recent scientific advances in the study of cannabinoid receptors and endocannabinoids have produced exciting new leads in the search for anti-cancer treatments. In the past decade, scores of studies, both in vivo and in vitro, have demonstrated that various cannabinoids have a significant effect fighting cancer cells. To date, studies have shown that cannabinoids arrest many kinds of cancer growth through promotion of apoptosis (programmed cell death) in tumors and by arresting angiogenesis (increased blood vessel production). Cannabinoids have also been shown to halt the proliferation or spread of cancer cells in a wide variety of cancer types. Unlike conventional chemotherapy treatments that work by creating a toxic environment in the body that frequently compromises overall health, cannabinoids have been shown to selectively target tumor cells.

Cannabinoids and Tumor Reduction

The direct anti-tumor and anti-proliferation activity of cannabinoids, specifically CB1 and CB2 agonists, has now been demonstrated in dozens of studies across a range of cancer types, including brain (gliomas), breast, liver, leukemic, melanoma, phaeochromocytoma, cervical, pituitary, prostate, and bowel[21,25-43]. The anti-tumor activity has led in laboratory animals and in-vitro human tissues to regression of tumors, reductions in vascularization (blood supply) and metastases (secondary tumors), as well as the direct destruction of cancer cells (apoptosis) [44-47]. A 2009 review of recent studies on the role of cannabinoids and cannabinoid receptors in the treatment of breast cancer notes that research on the complex interactions of endogenous cannabinoids and receptors is leading to greater scientific understanding of the basic mechanisms by which cancers develop[26,45].

Cannabinoids have been shown to inhibit tumor growth in laboratory animals in multiple studies[26,48,49]. In one study, injections of synthetic THC eradicated malignant brain tumors in one-third of treated rats and prolonged life in another third by as long as six weeks. Other research on pituitary cancers suggests that cannabinoids may be the key to regulating human pituitary hormone secretion [50,51].

Research published in 2009 found that cannabidiol (CBD), a non-intoxicating cannabinoid, inhibits the invasion of both human cervical cancer and human lung cancer cells. By manipulating cannabidiol's up-regulation of a tissue inhibitor, researchers may have revealed the mechanism of CBD's tumor-fighting effect[52]. A further in vivo study demonstrated "a significant inhibition" of lung cancer metastasis in mice treated with CBD[53]. The mechanism of the anti-cancer activity of CBD and other cannabinoids has also been repeatedly demonstrated with breast and brain cancers[54-57].

Scientists have also demonstrated the anti-tumor effects of the cannabinoid THC on cholangiocarcinoma cells, an often-fatal type of cancer that attacks the liver's bile ducts. A 2009 study found that "THC inhibited cell proliferation, migration and invasion, and induced cell apoptosis." At low levels, THC reduced the migration and invasion of cancer cells, while at high concentrations, THC triggered cell-death in tumors. In short, THC reduced the activity and number of cancer cells[39].

Research on cannabinoids and gliomas, a type of aggressive brain cancer for

which there is no cure, holds promise for future treatments for this disease. A study that examined both animal and human glioblastoma multiforme (GBM) tumors, the most common and aggressive form of brain cancer, describes how cannabinoids controlled glioma growth by regulating the blood vessels that supply the tumors[58]. In another study, researchers demonstrated that the administration of CBD significantly inhibited the growth of subcutaneously implanted U87 human glioma cells in mice[52]. The authors of the study noted that CBD was able to produce a significant antitumor activity both in vitro and in vivo, thus suggesting a possible application of CBD as an antineoplastic agent.

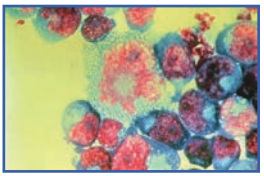
The targeted effects of cannabinoids on GBM were further demonstrated in 2005 by researchers who showed that the cannabinoid THC both selectively inhibited the proliferation of malignant cells and induced them to die off, while leaving healthy cells unaffected[59]. While CBD and THC have each been demonstrated to have tumor-fighting properties in isolation, research published in 2010 shows that they work better in combination, as CBD enhances the inhibitory effects of THC on GBM cell proliferation and survival[60].

Similarly, research reported in the last few years demonstrates the way cannabinoid and cannabinoid-like receptors in brain cells regulate these cells' differentiation, functions, and viability, suggesting cannabinoids and other drugs that target cannabinoid receptors can manage neuroinflammation and eradicate malignant astrocytomas, a type of glial cancer[26,61-63]. Recent studies confirm the findings of earlier studies that indicated the effectiveness of cannabinoids in fighting gliomas, some of the deadliest forms of brain cancer[25,64-66].

Indications of the remarkable potential of cannabinoids to fight cancer in humans have also been seen in three recent large-scale population studies. The studies were designed to find correlations between smoking cannabis and cancers of the lung, throat, head, and neck. Instead, the researchers discovered that the cancer rates of cannabis smokers were at worst no greater than those who smoked nothing at all, or even significantly better[67]. One study found that 10-20 years of cannabis use was not associated with an increase of incidence of head, neck, and throat cancers. The researchers suggested that cannabinoids may have a prophylactic effect against cancer development, as seen in the anti-proliferation effect that has been demonstrated in vitro and in vivo[68].

CANNABIS, HIV/AIDS AND HEPATITIS-C

Cannabis helps to improve the lives of many people living with HIV/AIDS. Its effects help manage appetite loss, wasting, nausea, vomiting, pain, anxiety, stress, depression, and other symptoms of both the disease and the anti-retroviral regimes used to treat it. As many as one in four people living with HIV/AIDS use cannabis for medical purposes[69].



T4 Immune Cells

An international group of nursing researchers has determined from a longitudinal, multi-country, multi-site, randomized-control clinical trial that cannabis is frequently used to manage the six common symptoms of HIV/AIDS. The 2009 study found that a significant percentage of those with HIV/AIDS find cannabis effective

for anxiety, depression, fatigue, diarrhea, nausea, and peripheral neuropathy. Researchers note that "those who did use marijuana rate it as effective as prescribed or over the counter medicines for the majority of common symptoms.…[70]"

In addition to easing symptoms of the disease, cannabis has proven to be effective in controlling unpleasant effects of the drugs used to treat HIV/AIDS. People living with HIV/AIDS who use cannabis to combat the side-effects of the Highly Active Antiretroviral Therapy, more commonly know as HAART, are approximately three times more likely to remain on their prescribed drug therapies than those who do not use cannabis, according to a 2007 study[71].

In the 1970s, a series of human clinical trials established that cannabis stimulates food intake and weight gain in healthy volunteers, a finding confirmed by numerous subsequent studies. In a randomized trial in people living with AIDS, THC significantly improved appetite and nausea in comparison with placebo. There were also trends towards improved mood and weight gain. Unwanted effects—dry mouth, drowsiness and anxiety—were generally mild or moderate in intensity[72-74]. The Institute of Medicine's comprehensive review in their report Marijuana and Medicine concluded, "[f]or patients such as those with AIDS or who are undergoing chemotherapy and who suffer simultaneously from severe pain, nausea, and appetite loss, cannabinoid drugs might offer broad-spectrum relief not found in any other single medication."

An FDA-approved preliminary safety trial of smoked cannabis, conducted in 2003 at the University of California, San Francisco, concluded that neither synthetic THC nor inhaled cannabis had any significant effect on the immune system or viral load. Moreover, the researchers noted that study participants who used cannabis gained weight[74].

Cannabinoids may also inhibit the spread of the HIV virus within the body by acting on CD4+ T cells, which are critical to immune function and a target of the virus. A 2012 study found that a cannabinoid that activates CB2 receptors produced a dose-specific reduction of HIV infection of up to 50%, leading the researchers to suggest that the therapeutic use of cannabinoids may help fight the spread of the virus to uninfected T cells in late stages of HIV-1 infection[75].

Previous research has shown that the use of cannabinoid drugs in patients with HIV is associated with an increase in CD4+ T cell number and has been shown to reduce viral load in an animal model of HIV.

NEUROPATHIC PAIN

More than one-third of people living with HIV/AIDS suffer from excruciating nerve pain in the hands or feet, frequently in response to the antiretroviral therapies that constitute the first line of treatment for HIV/AIDS. This neuropathic pain is extremely difficult to treat, and as a result, many individuals reduce or discontinue their HIV/AIDS therapy because they cannot tolerate or get adequate relief from the debilitating side effects of the antiretroviral medications.

The effectiveness of cannabis and cannabinoids in managing pain has been demonstrated in more than three dozen preclinical and clinical trials, comprising

more than 6,000 patient-years of data as of 20121. A 2009 review noted that "a large number of research articles have demonstrated the efficacy of cannabinoids" and concluded that "cannabinoids show promise for treatment of neuropathic pain[76]."

A series of clinical studies of HIV/AIDS patients demonstrated that cannabis can reduce neuropathic pain and promote weight gain without compromising the immune system[77-79]. One randomized, placebo-controlled clinical trial of 50 people who had experienced neuropathic pain for an average of six years showed that smoked cannabis was well-tolerated and effectively relieved chronic neuropathic pain from HIV-associated sensory neuropathy, according to the researchers at the University of California, San Francisco[79]. Other double-blind, placebo-controlled clinical trials have found that cannabis provides significant pain relief with people living with HIV who experience neuropathic pain that was not adequately controlled by other pain-relievers, including opiates[78].

Nerve pain has many causes and may be difficult to treat

Recent randomized clinical trials conducted by the University of California Center for Medicinal Cannabis Research (CMCR) also demonstrated that smoked cannabis is effective in treating neuropathic pain80. Researchers found that over half of patients with painful HIV peripheral neuropathy experienced pain reduction of more than 30% when treated with cannabis, a level of relief pain researchers correlate with improved life quality. That improvement occurred in two CMCR trials of patients with HIV peripheral neuropathy and in a separate trial of patients with mixed neuropathic pain due to peripheral or central dysfunction of the nervous system[81-84].

Additional double-blind, placebo-controlled clinical trials indicate cannabis medicines may improve neuropathic pain associated with multiple sclerosis and mixed neuropathies resulting from herpes, trauma and vascular problems1. This research is also important for people with cancer, as many of them also experience neuropathic pain, as do those with diabetes.

While at least one study found that the effectiveness of cannabis as an analgesic was dose specific, with lower doses decreasing pain and higher doses increasing pain, many studies have indicated that low- and high-dose cannabis can produce similar levels of pain relief, reducing both the intensity and unpleasantness of unbearable nerve pain[1,8]5.

Researchers have found that cannabinoids such as THC work in concert with opiate-based painkillers to increase their effectiveness, particularly in neuropathic pain, allowing patients to reduce their opiate dosage[86-89].This synergistic or entourage effect also occurs between the various cannabinoids in cannabis, with multiple studies finding isolated synthetic cannabinoids such as THC (dronabinol) did not provide the same degree of efficacy as a whole-plant preparation[90].

HEPATITIS-C VIRUS

Cannabis may improve the effectiveness of drug therapy for the hepatitis C virus (HCV), a potentially deadly viral infection that affects more than three million Americans[91]. Treatment for HCV involves months of therapy with two powerful drugs, interferon and ribavirin, both of which have severe side effects, including extreme fatigue, nausea, muscle aches, loss of appetite and depression. Due to these side effects, people often do not finish treatment, which worsens their symptoms and can promote harm to the liver.

Researchers from the University of California, San Francisco medical school and the Organization to Achieve Solutions in Substance-Abuse (OASIS) found that "modest cannabis use may offer symptomatic and virological benefit to some patients undergoing HCV treatment by helping them maintain adherence to the challenging medication regimen[92]." Other research found that people combating HCV who used cannabis while undergoing combination ribavirin and interferon treatment were about three times more likely to complete their conventional medical treatment than those participants who did not use cannabis.

These studies indicate that for patients fighting HCV, cannabis-based medicine improves appetite and offers psychological benefits such as reduced depression that help them tolerate the treatment's unpleasant side effects.

CHRONIC PAIN

According to the American Academy of Pain, nearly 50 million Americans suffer from persistent pain. Unfortunately, it is estimated that four out of every ten people living with moderate-to-severe pain have yet to experience relief. After reviewing a series of trials in 1997, the U.S. Society for Neuroscience concluded that "substances similar to or derived from marijuana could benefit the more than 97 million Americans who experience some form of pain each year[93]."

Although a wide variety of prescription analgesic drugs ranging from aspirin to oxycontin are available to treat pain, none of these drugs are completely adequate for all patients and many cause severe side-effects with continued use. Opiate painkillers are notorious for causing severe nausea, constipation, disorientation, and drowsiness. Prolonged use of opiates can increase tolerance and, in some cases, result in dependence or addiction. Even milder, over the counter analgesics can pose serious toxic risks. Drugs such as aspirin can cause stomach irritation and in some cases ulceration. Prolonged use of acetaminophen can result in liver damage. Ibuprofen use can cause kidney failure and vascular damage. Each of these analgesics can produce fatal overdose, unlike cannabis.

The safety record of cannabis is remarkable, and its centuries of use as an analgesic well documented[94,95]. In their meta-analysis of the available data as of the late 1990s, the Institute of Medicine acknowledged the wide use of cannabis for pain, noting that "after nausea and vomiting, chronic pain was the condition cited most often to the IOM study team as a medicinal use for marijuana[10]." Currently, pain is by far the most common condition for which physicians recommend the use of cannabis.

Many well-designed, double-blind placebo-controlled clinical trials clearly demonstrate that cannabis can reduce pain of many types, not just hard-to-treat neuropathic pain. A review of the body of scientific research concerning the analgesic effects of cannabis concluded that there is now unequivocal evidence that cannabinoids are anti-nociceptive (capable of blocking the transmission of pain) in animal models of acute pain[96-100]."

FEDERATION OF AMERICAN SCIENTISTS

Based on much evidence, from patients and doctors alike, on the superior effectiveness and safety of whole cannabis compared to other medications,… the President should instruct the NIH and the FDA to make efforts to enroll seriously ill patients whose physicians believe that whole cannabis would be helpful to their conditions in clinical trials.

FAS Petition on Medical Marijuana, 1994

Human and animal studies have demonstrated that cannabinoids also work well in combination with opiate painkillers. One animal study found that the pain-relieving dose of morphine was lowered with the addition of a small dose of THC. Codeine's efficiency was also significantly enhanced[97]. Research suggests that direct and indirect interactions between opioid and cannabinoid receptors not only enhance analgesia but also reduce the development of tolerance to opiates in mammals. These interactions hold promise for developing therapeutic strategies that provide better pain relief with a lower doses of opiates, resulting in fewer of the dangerous and debilitating side effects that patients reliant on opiate pain killers experience[100,101].

Decades of research on cannabis' effectiveness in pain management include clinical human trials and volumes of anecdotal evidence, as well as new understanding of how activation of the cannabinoid system in the central nervous system reduces sensitivity to pain[76,102-107]. Some of the most encouraging clinical data on the effects of cannabinoids on pain involve the treatment of intractable cancer pain and hard-to-treat neuropathic pain. Somewhere between 25% and 45% of cancer patients experience neuropathic pain. As mentioned in the discussion of treating HIV, the effectiveness of cannabis and cannabinoids in relieving neuropathic pain has been demonstrated in dozens of preclinical and clinical trials. Reviews of the literature often note that a large number of research articles have demonstrated the efficacy of cannabinoids for treating neuropathic pain and conclude that cannabinoids show promise as a treatment[1,76,108-110].

Multiple clinical trials have shown that a dosage-controlled whole-plant extract of cannabis (Sativex) relieves intractable cancer pain, and does so better than THC alone. A recent double blind, randomized, placebo-controlled trial of 360 cancer patients in 14 countries found that pain scores improved significantly with a cannabis extract. Researchers report that the combination of natural cannabinoids in Sativex "is an efficacious adjunctive treatment for cancer-related pain" for patients who do not get adequate relief from opiate painkillers such as Oxycontin or Vicodin[111,112].

Pain from spinal injuries may also be treatable with cannabis. Several sets of researchers have recently published findings on the efficacy of cannabinoids in treating pain resulting from spinal cord injuries (SCI). A French team, noting that "very few pharmacological studies have dealt specifically with neuropathic pain

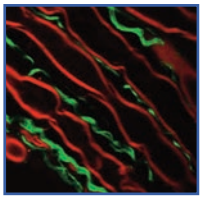
related to SCI," suggests that for "refractory central pain, cannabinoids may be proposed on the basis of positive results in other central pain conditions (e.g. multiple sclerosis)." Researchers have demonstrated in an animal model of SCI pain that cannabinoids yield more consistent positive results than conventional analgesics such as opiates, which "decrease in efficacy with repeated treatment over time," concluding that drugs targeting the body's cannabinoid receptors "hold promise for long-term use in alleviating chronic SCI pain[113]."

Researchers have also determined that neuropathic pain may be treatable via bolstering the body's natural cannabinoids, the endocannabinoids. A study that inhibited the two enzymes that break down the body's natural cannabinoids found that preserving them "reduces neuropathic pain through distinct receptor mechanisms of action" that "present viable targets" for developing new analgesic drugs[114].

Drugs which can selective target CB2 cannabinoid receptors, which are almost completely absent from the central nervous system, have also been shown to have therapeutic potential for both inflammatory and neuropathic pain control[115].

MULTIPLE SCLEROSIS (MS)

One survey of people living with multiple sclerosis reported that more than 40 percent of respondents have used cannabis to relieve symptoms of the disease. Among them, nearly three quarters said that cannabis mitigated their muscle spasms, and more than half said it alleviated their pain. A similar survey found that 96% of Canadians living with MS believe cannabis is therapeutically useful for treating the disease. Of those who admitted using cannabis to treat symptoms of MS, the majority cited relief of chronic pain, spasticity, and depression[116]. In addition, numerous studies have reported improvement in tremor, sexual dysfunction, bowel and bladder dysfunctions, vision dimness, dysfunctions of walking and balance (ataxia), and memory loss, as well as pain and spasticity[117-124].



T-cells attack myelin nerve sheaths in MS

In fact, cannabinoids have been shown in mammals to significantly lessen MS symptoms and slow or halt the progression of the neurodegenerative diseases. Cannabinoids have demonstrated effects on immune function that may reduce the autoimmune neuroinflammatory response which drives relapsing neurological attacks and increasing disability[125-127]. Clues as to why may lie in research that discovered that persons with multiple sclerosis have increased levels of endocannabinoids in their blood, indicating that the endocannabinoid system "may be dynamically modulated depending on the subtype of the disease[128]."

Previous studies of the pharmacology of cannabis have identified effects on motor portions of the central nervous system that have the potential of affecting tremor and spasticity. The distribution of CB1 cannabinoid receptors in the brain suggests that they may play a role in movement control. A controlled study of the efficacy of THC in the animal model of MS, experimental allergic encephalomyelitis (EAE), demonstrated significant amelioration of these two MS symptoms. A review of six randomized controlled trials of a cannabis extract that combines THC and CBD

finds "a trend of reduced spasticity in treated patients" and "evidence that combined THC and CBD extracts may provide therapeutic benefit for MS spasticity symptoms[126]." While objective measures of spasticity in humans have not consistently shown benefit from cannabinoid treatment, a randomized clinical trial with 189 MS patients being treated with a cannabis extract showed 40% achieved a greater than 30% improvement[131].

NEW ENGLAND JOURNAL OF MEDICINE

A federal policy that prohibits physicians from alleviating suffering by prescribing marijuana to seriously ill patients is misguided, heavy-handed, and inhumane.... It is also hypocritical to forbid physicians to prescribe marijuana while permitting them to prescribe morphine and meperidine to relieve extreme dyspnea and pain…there is no risk of death from smoking marijuana.... To demand evidence of therapeutic efficacy is equally hypocritical.

Jerome P. Kassirer, MD, editor

MS patients also frequently report cannabis helps with bladder control, and a review of studies on cannabinoid receptors in the bladder notes that non-psychoactive cannabinoids are effective, and psychotropic effects of THC can be mitigated by delivering cannabinoids directly into the bladder[130].

A dosage-controlled THC-CBD whole-plant extract—GW Pharmaceuticals' sublingual spray, Sativex®—has been shown in numerous clinical trials to ease pain, decrease spasm frequency, and improve bladder control and sleep. Clinical trials of Sativex® found that it "demonstrated a statistically significant and clinically relevant improvement in spasticity and was well tolerated in MS patients[129]." As of June 2012, Sativex® is available by prescription in the UK, Spain, Germany, and Denmark for the symptomatic relief of spasticity, neuropathic pain, or both in adults with multiple sclerosis. It has been approved for distribution in Italy, Sweden, Austria and the Czech Republic, with recommendations for approval in Belgium, Finland, Iceland, Ireland, Luxembourg, the Netherlands, Norway, Poland, Portugal and Slovakia.

In addition to studying the potential role of cannabis and its derivatives in the treatment of MS-related symptoms, scientists are exploring the potential of cannabinoids to inhibit neurodegeneration. A 2003 study that the National MS Society called "interesting and potentially exciting" demonstrated that cannabinoids were able to slow the disease process in mice by offering neuroprotection against EAE[132]. Neurodegeneration is implicated in a host of debilitating conditions.

OTHER MOVEMENT DISORDERS

Muscular spasticity is a problem not limited to MS patients. It is a common condition, affecting millions of people in the United States, including individuals who have suffered strokes, cerebral palsy, paraplegia, quadriplegia, and spinal cord injuries. Conventional medical therapy offers little relief for spasticity. Phenobarbital and diazepam (Valium) are commonly prescribed, but they rarely provide complete relief, and many patients develop a tolerance, become addicted, or complain of heavy sedation. These drugs also cause weakness, drowsiness and other side effects that many find intolerable.

The therapeutic use of cannabis for treating muscle problems and movement

disorders has been known to western medicine for nearly two centuries. In 1839, Dr. William B. O'Shaughnessy noted the plant's muscle relaxant and anti-convulsant properties, writing that doctors had "gained an anti-convulsive remedy of the greatest value[94]." Contemporary animal and human clinical studies reveal that cannabis and its constituent cannabinoids may effectively treat movement disorders affecting older patients, such as tremors and spasticity, because cannabis has anti-spasticity, analgesic, anti-tremor, and anti-ataxia actions[117,121,133-139].

As mentioned, the contemporary understanding of the actions of cannabis was advanced by the discovery of an endogenous cannabinoid system in the human body. This system appears to be intricately involved in regulating normal physiology[140-142]. Central cannabinoid receptors are densely located in the basal ganglia, the area of the brain that controls body movement. Endogenous cannabinoids also appear to play a role in the manipulation of other transmitter systems within the basal ganglia--increasing transmission of certain chemicals, inhibiting the release of others, and affecting how still others are absorbed. Most movement disorders are caused by a dysfunction of the chemical loops in this part of the brain. Research suggests that an endogenous cannabinoid "tone" participates in the control of movements[143-146].

Endocannabinoids have modulating effects on the nervous system: Sometimes they block neuronal excitability and other times they augment it. As scientists are developing a better understanding of the physiological role of endocannabinoids, it is becoming clear that these chemicals may be involved in the pathology of several neurological diseases. This means researchers are identifying an array of potential therapeutic targets within the human nervous system. They have determined that various cannabinoids found in the cannabis plant modulate the synthesis, uptake, or metabolism of the endocannabinoids that underlie the progression of Huntington's disease, Parkinson's disease, and tremor[147].

The neuroprotective qualities of cannabis mean it has enormous potential for protecting the brain and central nervous system from the damage from disease or injury that creates various disorders. Researchers have found that cannabinoids fight the effects of strokes, brain trauma, and spinal cord injury, as well as multiple sclerosis and neurodegenerative diseases. More than 100 research articles have been published on how cannabinoids act as neuroprotective agents that slow the progression of a host of neurological disorders in mammals including amyotrophic lateral sclerosis (ALS, or Lou Gehrig's disease), Huntington's, Alzheimer's, and Parkinson's disease. A neurodegenerative or neurological condition affects more than 52% of people over the age of 85[148-150].

ARTHRITIS

According to the Arthritis Foundation, arthritis is one of the most prevalent chronic health problems and the leading cause of disability in the U.S. A 2006 report estimated that 46 million Americans—nearly 1 in 5 adults—live with chronic joint pain and arthritis. The use of cannabis as a treatment for musculoskeletal pain in western medicine dates to the 1700s[14]. Modern research confirms that cannabis and related therapies can relieve the pain associated with arthritis and the other rheumatic and degenerative hip, joint, and connective

tissue disorders. Not only is cannabis an effective pain reliever and anti-inflammatory in its own right, it also has the potential to enhance the efficacy of opiate painkillers, allowing for better pain relief at reduced dosages. In their 1999 meta-analysis of the data then available, the Institutes of Medicine specifically noted that the anti-inflammatory properties of cannabinoids could have therapeutic application in preventing or reducing pain caused by swelling and inflammation (such as arthritis)[10].

Research has shown that the powerful immune-modulation and anti-inflammatory properties of cannabis and its constituent cannabinoids may treat chronic inflammatory diseases directly[151-154]. Many patients and doctors report cannabis has proven an effective treatment for rheumatoid arthritis, and it is one of the recognized conditions for which many states permit medical use. Specifically, cannabis has a demonstrated ability to improve mobility and reduce morning stiffness and inflammation, and research suggests that individuals can reduce their use of potentially harmful Non-Steroidal Anti-Inflammatory Drugs (NSAIDs) when using cannabis as an adjunct therapy[154,155].

Arthritis can be debilitating

One of the non-intoxicating psychoactive cannabinoid components of cannabis, i.e., cannabidol (CBD), has also been shown to have numerous medical applications as an anti-inflammatory and neuroprotective agent, including as a treatment for rheumatoid arthritis[156,157]. Research indicates that CBD suppresses the immune response in mice and rats that is responsible for a disease resembling arthritis, protecting them from severe damage to their joints and markedly improving their condition[158-160].

ALZHEIMER'S DISEASE

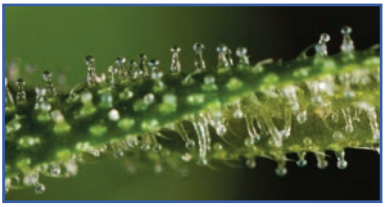
Alzheimer's disease is a neurodegenerative condition for which cannabis and cannabinoid therapies show promise, both for treating the symptoms and the underlying disease. Agitation is the most common behavioral management problem in people with Alzheimer's and affects an estimated 75 percent of people with the disease. It can include symptoms ranging from physical or verbal abusive behavior to pacing and restlessness, as well as disruptive behaviors such as screaming and repetitive requests for attention. Clinical research involving THC indicates that the cannabinoid reduced the agitation common to Alzheimer's sufferers[161-163]. THC is also proven effective in combating anorexia or wasting syndrome, a common problem for people with Alzheimer's disease[164]. Alzheimer's disease is widely held to be associated with oxidative stress due, in part, to the membrane action of beta-amyloid peptide aggregates. Recent studies have indicated that the cannabis plant's primary components, CBD and THC, combat that problem through a combination of neuroprotective, anti-oxidative, and anti-apoptotic effects by inhibiting the release of toxic beta-amyloid peptide[165].

This new research, coupled with the extensive work done on other neuroprotective properties of cannabis components, indicates that cannabis or cannabis-based therapy may become a source of effective treatments for battling the Central Nervous System diseases that afflict millions of elderly Americans[166,167].

Chapter 4
MEDICAL CANNABIS 101

CANNABIS 101

Cannabis is a flowering plant that has fibrous stalks used for paper, clothing, rope, and building materials. The leaves, flowers, and roots have been documented in medicinal use for millennia. The seeds used for food and, extracts thereof for fuel oil. Cannabis leaves and flowers are consumed in several forms: dried flower buds or various types of concentrated, loose, or pressed resin extracted from the flowers or leaves through a variety of methods.



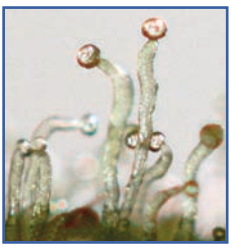
Trichomes contain the cannabinoids

Once mature, the plant's leaves and flowers are covered with trichomes, tiny glands of resinous oil containing cannabinoids and terpenes, the active ingredients of the cannabis plant.

- 100+ different types of cannabinoids and over 120 terpenes have been identified in varieties of cannabis.
- Concentrations or percent of each type of cannabinoid can vary widely in different varieties of cannabis
- The best-studied cannabinoid is THC (delta-9-tetrahydrocannabinol). THC has the most distinct psychoactive effect of the cannabinoids.
- The ratio of THC to other cannabinoids varies from strain to strain.

While THC has been the focus of breeding and research due to its various psychoactive and therapeutic effects, non-intoxicating cannabinoids have physiologic effects that can be therapeutic.

- Cannabidiol (CBD) relieves convulsions, inflammation, anxiety, and nausea—many of the same therapeutic qualities but without THC's distinct psychoactive effects. It is the main cannabinoid in low-THC cannabis strains, and modern breeders have been developing strains with greater CBD content for medical use.
- Cannabinol (CBN) when administered alone it has no reported effect in humans but may mildly increase the effects of THC related to psychoactivity, decreasing intraocular pressure, and seizures 208. CBN is the degradation product of THC.
- Cannabichromene (CBC) promotes the analgesic effects (pain relief) of THC and has sedative (calming) effects.
- Cannabigerol (CBG) has sedative effects and antimicrobial properties, as well as lowers intraocular pressure.
- Tetrahydrocannabivarin (THCV) is showing promise for



Trichome close-up

type 2 diabetes and related metabolic disorders.

In addition to cannabinoids, other cannabis plant molecules are biologically active. A few other molecules known to have health effects are flavonoids and terpenes or terpenoids (the flavor and smell of the strain). Cannabinoids, terpenoids, and other compounds are secreted by the glandular trichomes found most densely on the floral leaves and flowers of female plants. Recent research suggests terpenes may play a central role in the differing effects of cannabis varieties.

Effects

Different people have different experiences. One individual may feel energized, focused, and stress release, while another feels over-stimulated and anxious. There are many factors that impact the effect:

- Amount used (dosage)
- Strain of cannabis used and method of consumption
- Environment/setting
- Experience and history of cannabis use
- Biochemistry
- Mindset or mood
- Nutrition or diet

Types of Cannabis

Though cannabis is biologically classified as the single species, Cannabis Sativa, there are at least three distinct plant varieties: Cannabis Sativa, Cannabis Indica, and Cannabis Ruderalis, though the last is rare. There are also hybrids, which are crosses between sativa and indica varieties and occasionally ruderalis. Cannabis used for fiber or industrial purposes is typically referred to as hemp, and hemp products contain usually less than 0.3% of THC, any resinous extract, derivative of marijuana, or compound according to the controlled substances act.

The three types

- Genetic "breeders" of the cannabis seed have developed thousands of different strains of cannabis from these three varieties.
- Today, we mostly find hybrids of cannabis varieties. Nearly all cannabis varieties (i.e., indica and sativa) have been extensively interbred.

All types of medical cannabis can produce effects, including pain reduction, nausea control, appetite stimulation, reduced muscle spasm, improved sleep, and others. But individual strains will have differing cannabinoid and terpene content, potentially producing noticeably different effects. Many people report finding some strains more beneficial than others. For instance, strains with more CBD tend to produce fewer side effects related to THC. As noted above, effects will also vary for an individual based on the setting in which it is used and the person's physiological state when using it.

In general, sativas and indicas are frequently distinguished as follows:

Sativas

The primary effects are on thoughts and feelings. Sativas tend to produces stimulating feelings, and many prefer it for daytime use.

Some noted therapeutic effects from use of Sativas:


Sativa

- Stimulating/energizing
- Increased sense of well-being, focus, creativity
- Reduces depression, elevates mood
- Relieves headaches/migraines/nausea
- Increases appetite

Some noted Side-Effects from use of Sativas:

- Increased anxiety feelings
- Increased paranoia feelings

Indicas

The primary effects are on the body. Indicas tend to produce sedated feelings, and many prefer it for nighttime use.

Some noted therapeutic effects from use of Indicas:


Indica

- Provides relaxation/reduces stress
- Relaxes muscles/spasms
- Reduces pain/inflammation/headaches/migraines
- Helps sleep
- Reduces anxiety
- Reduces nausea, stimulates appetite
- Reduces intra-ocular pressure
- Reduces seizure frequency/anti-convulsant

Some noted side-effects from use of Indicas:

- Feelings of tiredness
- "Fuzzy" thinking

Hybrids

Strains bred from crossing two or more varieties, with typically one dominant. For example, a sativa-dominant cross may be helpful in stimulating appetite and relaxing muscle spasms. Crosses are reported to work well to combat nausea and increase appetite.

Cannabis Extracts and Concentrates

The dried flower or bud from the manicured, mature female plant is the most widely consumed form of cannabis in the U.S. Elsewhere in the world, extracts or concentrates of the cannabis plant are more commonly used.

Concentrates are made from cannabinoid-rich glandular trichomes, which are found in varying amounts on cannabis flowers, leaves and stalks. The flowers of a

mature female plant contain the most trichomes.

Many methods are used to separate the trichomes from the plant:

- Sift the cannabis flower and/or leaves through a fine screen either via a mechanical/motorized tumbler or by hand. Called "dry sift." What passes through the screen is primarily the oil-rich glandular heads.
- Roll the cannabis flowers between the fingers to rupture the trichomes and collect the resin that sticks to the fingers. Called "finger hash."
- Submerge cannabis leaves in ice water and agitate mixture to solidify trichomes. Filter mixture through series of increasingly fine screens or bags. Dry the trichomes and press into blocks. Called "bubble hash." This method has increased yield.

There are other ways to separate the trichomes from other plant material, such as butane extractions, but consult your local medical cannabis laws concerning restrictions on certain types of preparations and use caution as some methods can create serious combustion dangers.

TYPES OF PRODUCTS

Kief

Kief is a powder made from trichomes removed from the leaves and flowers of cannabis plants. It can be compressed to produce cakes of hashish or consumed (typically smoked) in powder form in a pipe or with cannabis bud or other herbs.

Kief

Hashish

Hashish (also known as hash or hashisha) is a collection of compressed or concentrated resin glands (trichomes). Hash contains the same active cannabinoids as the flower and leaves but typically in higher concentrations (in other words, hash is more potent by volume than the plant material from which it was made).

Hashish usually is a paste-like substance with varying hardness. Good quality is typically described as soft and pliable. It becomes progressively harder and less potent as it oxidizes and oil evaporates.

- THC content of hashish ranges from 15-70%.
- Often smoked with a small pipe. Can be used in food, in a hookah, vaporizer, mixed with joints of cannabis bud or aromatic herbs.
- Color varies from black to brown to golden or blonde. Color typically reflects methods of harvesting, manufacturing, and storage.

MYTH: The effects from smoking hash are different. FACT: The effects of hash vary in the same way strains of cannabis do. This stems from differences in potency of hash and the regional variations between cannabis strains used for making it.

Hash oil

Hash oil

Hash oil is a mix of essential oils and resins extracted from mature cannabis foliage through the use of various solvents such as ethanol or hexane. The solvent is then evaporated, which leaves the oil.

- Honey oil contains waxes and essential oils.
- Tends to have a high proportion of cannabinoids—a range from 30 to 90% THC content can be found.
- Can smoke with a specialty pipe for hash oil or hash, with a vaporizer, with cannabis bud in a pipe, joint, or added to food.

Cannabis Edibles

Cannabis can be ingested or eaten when added to cake, cookies, dressings, and other foods. It can also be brewed into a tea or other beverage. Cannabis and its extracts or concentrates must be heated or decarboxylated in order to convert the cannabinoid tetrahydrocannabinolic acid (THCA) into active THC. THCA does not cause intoxication and does not work through CB1 or CB2 receptors as THC does.

Digestive processes alter the metabolism of cannabinoids and produce a different metabolite of THC in the liver. That metabolite may produce markedly different effects, as the metabolite of oral THC, 11-OH-THC is more potent than THC. Onset of effects are often delayed and last longer due to slower absorption of the cannabinoids.

- Cannabinoids are fat-soluble, hydrophobic oils, meaning they dissolve in oils, butters, fats, and alcohol—but not water.
- Processes using oil, butter, fat, or alcohol can extract the cannabinoids from plant material.

Various forms of converted cannabis can be used for edible medicating. Each can be made from cannabis flowers, leaves, or concentrates such as hash. The potency of the edible will depend on the material used in making it and the amount used. Edibles made with hash will be stronger than those made from leaf trim.

Cannabis Oil

Cannabis Oil (cannaoil) is cooking oil infused with cannabinoids. Various means to extract include heating the oil and cannabis mixture at low temperature in a frying pan or pot, double boiler, or slow cooker then straining out the plant material. Can be used in any recipe that includes oil and that doesn't go over 280 degrees Fahrenheit (evaporating point of active ingredients). Think cookies, cakes, candies, and other food items.

Cannabis Butter

Cannabis Butter (cannabutter) is butter infused with cannabinoids. Heat raw cannabis with butter to extract cannabinoids into the fat. Various methods include heating the butter and cannabis mixture at low temperature in a frying

pan or pot, double boiler, or slow cooker then straining out the plant material. Can be used in recipes that include oil and don't go over 280 degrees Fahrenheit.

Tincture

Tinctures use ethanol alcohol (e.g. pure grain alcohol, NOT isopropyl rubbing alcohol) to extract the cannabinoids. You use droplet amounts, and it is absorbed through the mucous membranes in the mouth. Liquor may be infused with cannabinoids. Best to cook stems and leaves into brandy or rum. Can be added to coffee and other beverages.

Oral Spray

Sublingual sprays are another way of using a tincture. Use ethanol alcohol to extract the cannabinoids. You use a pump to spray cannabis-alcohol solution under your tongue.

Cannabis Topicals (applied to the skin)

Cannabinoids combined with a penetrating topical cream can enter the skin and allow for direct application to affected areas (e.g. allergic skin reactions, post-herpes neuralgia, muscle strain, inflammation, swelling, etc.).

- Cannabinoids interact with CB1 and CB2 receptors that are found all over the body, including the skin.
- Both THC and Cannabidiol (CBD) have been found to provide pain relief and reduce inflammation.
- Topical cannabis use may not produce a psychoactive effect when used as directed, which is different from eating or inhaling the medicine.


Cannabis salve

Different types of cannabis topicals include:

- Salve: cannabinoids heated into coconut oil combined with bees wax and cooled. Rub directly on skin.
- Cream: cannabinoids heated into shea butter combined with other ingredients and cooled. Rub directly on skin.

Topicals may produce anti-inflammatory and analgesic or pain relief effects. Research has been limited to studies on allergic and post-herpes skin reactions and pain relief. Anecdotal reports on topical treatment efficacy include:

- Certain types of dermatitis (including atopic) and psoriasis
- Balm for lips, fever blisters, herpes
- Superficial wounds, cuts, acne pimples, furuncles, corns, certain nail fungus
- Rheumatism and arthritic pains (up to the 2nd degree of arthritis)
- Torticollis, back pains, muscular pains, cramps, sprains, and contusions
- Phlebitis, venous ulcerations
- Hemorrhoids
- Menstruation pains
- Migraine, head pains, tension headaches

PHARMACEUTICAL CANNABIS OR CANNABINOIDS

Pharmaceutical cannabis or cannabinoid drugs are those that have been standardized in composition, formulation and dose. That means you always know exactly what and how much you are getting with each pill or spray. These are drugs which have been developed to meet regulatory requirements for prescribing by physicians.

Dronabinol (Marinol®)

Dronabinol (Marinol®) is a prescribed capsule classified as a Schedule III drug used to treat nausea and vomiting caused by chemotherapy, and loss of appetite and weight loss in people who have acquired immunodeficiency syndrome (AIDS). It is a synthetic version of THC suspended in sesame oil and does not contain CBD (cannabidiol) or other synergistic cannabinoids.

Sativex®

Sativex® is a prescribed oromucosal (mouth) spray to alleviate various symptoms of MS and cancer, including neuropathic pain, spasticity, overactive bladder, and other symptoms, depending on the country. Derived from two strains of cannabis, the principal active cannabinoid components are THC and CBD suspended in ethanol. Each spray of Sativex® delivers a fixed dose of 2.7mg THC and 2.5mg CBD.

Sativex® spray

Chapter 5
CHOOSING YOUR MEDICINE

Potency, Delivery Methods, Dosage

Unlike prescription medications, cannabis therapeutics do not come with a specific dose. Successful use of herbal medicines such as cannabis requires active patient engagement, awareness, and feedback. Products and dosages that work for one patient may not work for another. The good news is that, unlike most prescription drugs, the patient has more personal control over the dose (self-titration), and there are a variety of delivery methods (routes of administration) that a patient can use to find the optimal treatment of symptoms. Experimentation may be necessary to determine the therapeutic threshold and preferred delivery methods.

Emerging regulations in some states, such as lab testing and labeling requirements, are creating more tools for patients to make educated decisions about product selection. Healthcare professionals and medical cannabis providers may play a bigger role in helping legal patients establish dose and delivery method as clinical research, experience, and the regulatory environment develop. In the meantime, however, patients must take the lead in finding the best solution.

SELECTING CANNABIS PRODUCTS

Medical cannabis products can vary from crop to crop, and sometimes medicine from the same garden can have different effects and potency. Broadly speaking, there are two main criteria used in identifying medical cannabis products: (1) Strain and (2) Potency.

Strains

No one knows exactly how many strains or varieties of medical cannabis there are, but cultivators are continuously crossbreeding existing strains to create new varieties. There are no regulations or accepted conventions in naming strains of medical cannabis, so the colloquial or "street" names vary and overlap. You cannot make too many assumptions regarding the properties of a given strain based on a colloquial name, such as Skunk, Kush, Trainwreck, Strawberry Cough, etc. Patients can expect greater consistency in the future, as laws and industry standards evolve.

Dispensaries may offer many strains

You can start identifying strains by classifying medical cannabis into two broad varieties—Cannabis indica and Cannabis sativa. Sativa based medicines are typically reported as invigorating and mentally stimulating. Indica based medicines are typically reported to have a more sedative or calming effect, which often includes sensations more associated with the body than the mind. Many cultivators have crossbred the varieties of cannabis, and the characteristics of these new strains may favor one over the other. This is why you might hear a strain of medical cannabis referred to as a Sativa-dominant hybrid, Indica-dominant hybrid, or a balanced hybrid.

Peer-to-peer information among individuals using cannabis to treat similar symptoms is a helpful tool. Many online platforms provide some peer information about various strains. Engaged providers are also constantly collecting feedback from the patients they serve and may also help you find a starting point. If you obtain your medical cannabis from a dispensary, the staff may have knowledge and resources to help you identify and find what you need.

Potency

While cannabis contains over a hundred compounds, tetrahydrocannabinol (THC) and cannabidiol (CBD) are the two most active in interacting with your endocannabinoid system—a system of nerve receptors in your brain and body that affect appetite, pain sensation, mood, and memory. As medical cannabis regulations evolve, more states are requiring testing and labeling of potency for both THC and CBD.

THC and CBD occur as acids in the cannabis plant (THCA and CBDA). Once these compounds are heated, they convert to THC and CBD that can affect your endocannabinoid system and treat your symptoms. Studies have shown that in some instances, a combination of THC and CBD may be needed to produce a

desired therapeutic effect. If THC is the compound that you need, using a product with a high CBD ratio can curb some of THC's potential side effects such as anxiety.

Selecting Delivery Methods

There are some basic things to consider before choosing a delivery method for medical cannabis:

Comfort: One great thing about the variety of delivery methods is that patients can choose what works best for them. For example, some patients will appreciate how easy it is to self-titrate with smoked cannabis, while others may prefer an edible preparation or a vaporizer to avoid inhaling smoke (see below).

Cost: Cannabis is not covered under insurance, and the price is still influenced by the unregulated illicit market to some degree. The various delivery methods vary greatly in cost as well as duration of efficacy. It takes more cannabis to prepare an edible preparation or concentrate than it does to smoke cannabis from a pipe.

Lifestyle: Delivery methods have varying degrees of odor, side effects, and discretion associated with each. Choose a delivery method that will allow you to integrate the medication into all aspects of your life.

Availability: Every state law is different, and every provider may have a different range of products available. If your licensed producers do not have a delivery method you desire, talk to them about products you want to see. In some states, you can also make your own edibles and tinctures using whole plant cannabis purchased from a provider.

Effectiveness: Experimenting with various delivery methods will help you find products that work for you. You may find that it takes a combination of products to achieve therapeutic effects.

Mode of Use	How Enters Body	Notice of Effects	Length of Effects
Inhale or Vaporize	Absorbed through lungs	0-10 minutes	Generally 2-3 hours
Tincture/Spray	Absorbed through mucus membranes	10-40 minutes	Generally 2-4 hours
Eat/Drink	Absorbed through the digestive tract	30-90 minutes	Generally 3-6 hours
Skin Topical	Absorbed through the skin	2-3 minutes	Generally 1-2 hours

Delivery methods

Smoking

- Types of products: whole plant, oils, waxes, and concentrates
- Expected onset: 0-10 minutes

- Duration: 1-4 hours
- Equipment needs: grinders, pipes, rolling papers, lighter
- Pros: rapid onset, easy method to titrate
- Cons: odor, sore throat, throat irritation, high visibility, costs (use more cannabis compared to other delivery methods)

Vaporizing

- Types of products: whole plant, oils, waxes, concentrates
- Expected onset: 0-10 minutes
- Duration: 1-4 hours
- Equipment needs: grinders, large table top vaporizers, portable vaporizers
- Pros: rapid onset, easy method to titrate
- Cons: costs (use more cannabis compared to other delivery methods and price of vaporizer)

Vaporizers come in many sizes, from tabletop to pocket

Topicals

- Types of products: lotions, salves, oils
- Expected onset: a few minutes
- Duration: 1-4 hours
- Equipment needs: just product
- Pros: easy to use, discreet, rapid onset, localized treatment benefits
- Cons: difficult to find proper medicine that works and thus requires experimentation, odor issues

Food and Drink

- Product types: edible products, beverages, teas, capsules
- Expected onset: 30 to 90 minutes
- Duration: Up to 8 hours
- Equipment needs: just product or foodstuffs if you are making these on your own. Here are some tips on creating these products http://www.safeaccessnow.org/non_inhalation_delivery_methods
- Pros: longer duration, sustained therapeutic value, discreet, ease of transport, cheaper
- Cons: harder to titrate, during the digestion process THC converts to a more potent molecule creating a delayed and sometimes intense experience

Sublingual

- Types of products: alcohol-based tinctures, lozenges
- Expected onset: 0-60 minutes
- Duration: 1-8 hours
- Equipment needs: product
- Pros: rapid onset, discreet
- Cons: alcohol-based, cost

TIPS FOR TITRATION AND DOSAGE

Start with small doses: While some products may have suggested dosages, it is a good practice to start with a very low dose and gradually increase the dose. Each delivery method has a different onset and duration.

Choose when to experiment with new products: Every delivery method and product will have a different set of therapeutic benefits and side effects. When trying a new product, make sure you are in a setting where you can address any unwanted side effects safely. Try using new products at night when you are getting ready for bed. After a few days, start integrating the products into your daytime routine. Let family members know that you are trying new products and that you may need help mitigating side effects.

Keep a product log

To establish an optimal treatment regime with cannabis, you will need to balance the effects of different strains, doses, and methods of ingestion. It may be helpful to record your therapeutic experience on an ongoing basis.

One method is keeping a cannabis-use log that captures your experience, including thoughts, feelings and behaviors. Periodically reviewing the log can help both you and your doctor make decisions about what works best.

To start, keep a detailed log, as described below, for at least one week. Once you've got a week's worth of information, complete the self-assessment worksheet that follows. This worksheet will help you better understand many things, including: your ailments and symptom patterns, your treatment behaviors, and the efficacy and side effects of the cannabis medicines you use.

In keeping a medication log, try to use a system that is easy to remember, and be as consistent as possible. Here are some logging tips on useful information to collect:

- **Date/Time**: Record every time you consume cannabis with the current date and time of day.
- **Amount**: The amount of cannabis used (gram estimate or other consistent measure).
- **Strain**: The name, strain or variety of the cannabis strain or variety of cannabis medicine used. If you don't know the name, write a detailed description of the medicine.
- **Code**: Strains are generally described as Indica, Sativa, or hybrid. You may

want to code your entries: I=Indica, S=Sativa, S/I=Sativa-dominant Indica Cross, and I/S= Indica-dominant Sativa Cross.

- **Type** is the form of cannabis consumed: dried bud flower (most common), concentrates, tincture/sprays, edibles/drinks or topical. You may want to use: F=flower, C=concentrate, T=tincture/spray, E=edible, TO=topical.
- **Cannabinoid Content**: refers to the percent of THC, CBD and/or CBN. If you have this information available to you, write down percentages of each cannabinoid. If you're using edibles or similar, a description of potency and preparation is helpful.
- **Mode**: Write down how you used your medication. Either inhale via S=smoke or V=vaporize, E=eat/digest, T=tincture or spray, TO=topical.
- **Therapeutic Effects**: List any positive effects you experience (physical, mental, social, behavioral, etc).
- **Negative Side Effects**: List your negative effects
- **Timing**: How quickly did you experience the first therapeutic effects? When did you feel the peak of relief? When did it start to noticeably dissipate? How long until effects were gone?
- **What prompted your cannabis use?** List the specific factors that told you it was time for medicine, as well as the general symptoms or conditions being treated (e.g. pain, nausea, anxiety, etc.
- **How did you feel (mindset)?** Record your mood and feelings before and after you used cannabis.
- **Where were you (setting)?** Were you at home, at a collective, in your office? Sitting, standing, lying down?
- **Who were you with?** Were you by yourself, with a friend, a large group, among other cannabis consumers, etc?
- **What were you doing?** Just before you used cannabis, what was going on? What were the activities or circumstances leading up to it?

Assessing Your Cannabis Use

After you've completed at least a week of your cannabis-use log, you can complete Part Two, the self-assessment exercise that follows.

This worksheet is designed to clarify how you typically use cannabis and how it fits into your life, both in terms of what factors are related to your use and what impact cannabis may have on other aspects of life.

Refer to the data in your log to answer each question. Some questions require knowing the percentages of different cannabinoids in the cannabis you consume. If you obtain your cannabis from a dispensary, they may know the cannabinoid profile of different strains. It's also possible to obtain laboratory testing in some areas.

If you don't know or can't get answers to some questions, just skip them.

SELF-ASSESSMENT WORKSHEET

YOUR PATTERNS OF CANNABIS USE

(When, Where, How and How much you use)

1. Amount

In a 7-day span, I used cannabis _____ days. During that time, I consumed a total of _____ grams of cannabis.

2. Times

You may use cannabis during different times of the day. Let's figure out when you consume the most and the least. Mark with a dash each time you consumed cannabis during that time frame, then record how much you consumed at each use.

Time	Times per week	Quantity	Total
5am-7am			
7am-9am			
9am-11am			
11am-1pm			
1pm-3pm			
3pm-5pm			
5pm-7pm			
7pm-9pm			
9pm-11pm			
11pm-1am			
1am-3am			
3am-5am			

After you've recorded your consumption times above, add each time frame to find the total number of times you consumed cannabis during that week, then multiple by the average quantity consumed during that time period to find your total for the two-hour time period.

What times of the day are you most likely to consume cannabis?

_____

What times of the day are you consuming cannabis the least?

_____

3. Strains and Varieties

During the 7-day period, what sort of cannabis did you use most and least? List the names of strains in the first box, then put check marks for each time you consumed that strain in the second box, then total the check marks for each strain.

Name of Strain	Times per week	Total

After you've recorded the names above, add each slash mark to find the total number. What strain of cannabis are you consuming the most?

_____

Use the following table to record the varieties for those strains. After you've recorded the varieties above, add each slash mark to find the total number.

Variety	Times consumed	Total
Indica		
Sativa		
Indica dominant Sativa cross		
Sativa dominant Indica cross		

What variety of cannabis are you consuming the most?_____

What variety of cannabis are you consuming the least?_____

4. Cannabinoid Ratios

How does the varying cannabinoid content impact you? Let's look into this factor. To complete this, you will need to know the THC, CBD and CBN percentages for all the cannabis products you consumed.

Strain/Extract/Edible	THC %	CBD %	CBN %

Let's take a look at the range of THC % consumed. What is the highest THC % consumed? _____

What was your lowest THC% consumed? _____

Let's take a look at the range of CBD % consumed. What is the highest CBD% consumed? _____

What was your lowest CBD% consumed? _____

Let's take a look at the range of CBN % consumed. What is the highest CBN % consumed? _____

What was your lowest CBN% consumed? _____

5. Modes of Use

Use the following table to record the types of cannabis products (flower, edible, tincture, etc.) you consume.

Type of Cannabis	Times consumed	Total
Flower		
Concentrate (hash/kief)		
Tincture/Spray		
Edible		
Topical		

What cannabis product are you consuming the most? _____

What cannabis product are you consuming the least?_____

CONTEXT TO YOUR USE

6. Emotions

How did you feel-what does cannabis do for you emotionally? Tally the number of times you listed each feeling under the how column.

Emotion	Times consumed	Total
Stressed		
Anxious		
Angry		
Relaxed		
Happy		

7. Location

Let's explore the environment, or your settings that you conusume cannabis most and least often.

Location	Times consumed	Total

Where are you consuming the most often? _____

Where are you consuming the least often? _____

8. Activities

Are there particular activities associated with your cannabis use? What precedes or follows your consumption? Is there a pattern?

Activity	Times consumed	Total

EVALUATING THE RESULTS

9. Effects

What therapeutic benefits are you getting from using cannabis? Be as detailed as possible for each strain of cannabis you use and mode of use.

Strain / Mode of Use **Therapeutic Effect(s)**

_____

_____

_____

_____

_____

Why You Consumed	Times consumed	Total

How effective is cannabis at managing your condition(s) or symptom(s)? Did it deliver what you wanted?

10. Side Effects

Some people report non-therapeutic effects. What are your side effects, if any?

What stands out as the most negative side effect?

11. Weighing the Benefits

Compare your Therapeutic Effects (benefits) and Side Effects (limitations) from medical cannabis use.

Therapeutic Benefits Side Effects

12. Why You Use Cannabis

Why do you consume cannabis? What are your patterns of use?

13. Impact

Consider how your cannabis use positively and negatively affects various areas of life. List its effects in each area.

Physical Health:

Mental Health (Mood/Thoughts/Feelings):

Family Relationships:

Friend/Co-worker Relationships:

Romantic Relationships:

Employment/Work/Career:

Goals:

Money/Finances:

Legal Matters:

Spirituality/Religion:

Identity or sense of who you are:

Self-Esteem:

Overall wellness:

Other Areas:

PREPARING FOR SIDE EFFECTS

Different people have different experiences with medical cannabis. One individual may feel stress release, while another feels over-stimulated and stressed, and still another feels energized and on-task. Based on thousands of years of use, anecdotal reports, and extensive research, we know that cannabis is one of the safest medicines. It is impossible to consume enough to produce a fatal toxic effect in the body.

There are many factors that impact the effect of cannabis and how an individual patient feels. Consider these factors in deciding what dose is right for you:

- Strain of cannabis used
- Route of administration (delivery method)
- Environment/setting
- Your experience and history of cannabis use
- Your individual biochemistry
- Mindset or mood
- Nutrition or diet
- Overall health and wellbeing
- Relative physical strength or weakness

If you are unfamiliar with cannabis use or you are inexperienced, you should familiarize yourself with the side effects prior to use, so that you can use cannabis effectively. Remember that what may seem like negative side effects to one user smay be the desired therapeutic benefit to another. Some possible side effects include:

- Uneasiness
- Hunger and thirst
- Redness in the eyes
- Drowsiness
- Sleeplessness
- Short-term memory loss
- Feelings of euphoria
- Decrease in blood pressure
- Increase in heart rate

Tools for THC "overdoses"

Cannabis has been safely used as medicine for thousands of years. In fact, its safety record is so strong that, following a review of the science in 1988, a US Drug Enforcement Administration judge noted "it is physically impossible to eat enough marijuana to induce death."

Despite its overall safety, patients may still experience unwanted side effects. Even after carefully choosing a cannabis product and delivery method, a patient may experience acute uneasiness, palpitations, disorientation, and/or nausea. These side effects are typically temporary but can be quite frightening. There are simple antidotes that a patient can use to help reduce these side effects. They include:

- Lemon juice
- Pine nuts
- Water
- Smelling pine essential oils
- Calm breathing

See taming THC at http://www.ncbi.nlm.nih.gov/pmc/articles/PMC3165946/

As with all medicines, if the side effects are causing significant distress, seek medical attention.

Control your environsment

Make sure that you are in the appropriate setting and have the time to address the side effects of your medication. Don't try new products in public settings until you know the effects. If you are inexperienced with cannabis, or you are trying new strains, higher doses, or a new delivery method, consider having a family member or caregiver present to help.

Finally, do not attempt to drive, operate machinery, or do anything else that could jeopardize your safety or anyone else's while you are experiencing any mental or physical impairment from medical cannabis use. It is better to be too cautious on this point than not careful enough. Be aware that most states have strict laws and severe penalties for driving while impaired by any substance.

Chapter 6
HOW SAFE IS CANNABIS?

Cannabis and its psychoactive cannabinoid, THC, have an excellent safety profile. The Drug Awareness Warning Network Annual Report, published by the Substance Abuse and Mental Health Services Administration (SAMHSA), contains a statistical compilation of all drug deaths that occur in the United States. According to this report, there has never been a death recorded from the use of cannabis. Pharmacology expert and author Dr. Iverson explains the enormous doses that have been tested:

Laboratory animals (rats, mice, dogs, and monkeys) can tolerate doses of up to 1000mg/kg. This would be equivalent to a 70-kg person swallowing 70g of the drug (i.e. THC)—about 5,000 times more than is required to produce a high. Despite widespread illicit use of cannabis, there are very few if any instances of people dying from a toxic overdose[105].

DEA Chief Administrative Law Judge Francis Young, in response to a petition to reschedule cannabis under federal law, concluded in 1988 that "In strict medical terms marijuana is far safer than many foods we commonly consume.... Marijuana in its natural form is one of the safest therapeutically active substances known to man. By any measure of rational analysis marijuana can be safely used within the supervised routine of medical care[168]."

More than a decade later, Institute of Medicine investigators considered the physiological risks of using cannabis and concluded "Marijuana is not a completely benign substance. It is a powerful drug with a variety of effects. However, except for the harms associated with smoking, the adverse effects of marijuana use are within the range of effects tolerated for other medications[10]."

Since the IOM report, research on the long-term effects of smoking cannabis that studied thousands of users over decades has shown that smoking moderate amounts of cannabis (equivalent to a joint a day) has no negative effects on lung function or association with cancer, even in those who have consumed more than 10,000 joints.

NEW ENGLAND JOURNAL OF MEDICINE

A federal policy that prohibits physicians from alleviating suffering by prescribing marijuana to seriously ill patients is misguided, heavy-handed, and inhumane.... It is also hypocritical to forbid physicians to prescribe marijuana while permitting them to prescribe morphine and meperidine to relieve extreme dyspnea and pain…there is no risk of death from smoking marijuana.... To demand evidence of therapeutic efficacy is equally hypocritical.

Jerome P. Kassirer, MD, editor

Toxicity, Risk of Overdose

Cannabis has an extraordinarily high estimated lethal dose, equivalent to smoking approximately 1,500 pounds in 15 minutes, a physical impossibility. Scientists have had to estimate the LD50, or Lethal Dose for 50% of the human population, because it has never been demonstrated[166]. This puts cannabis in a class of its own, since even relatively safe medications such as aspirin and penicillin have a lethal dose. Dr. Grinspoon had this to say in a 1995 article in the Journal of the American Medical Association:

> One of marihuana's greatest advantages as a medicine is its remarkable safety. It has little effect on major physiological functions. There is no known case of a lethal overdose; on the basis of animal models, the ratio of lethal to effective dose is estimated as 40,000 to 1. By comparison, the ratio is between 3 and 50 to 1 for secobarbital and between 4 and 10 to 1 for ethanol. Marihuana is also far less addictive and far less subject to abuse than many drugs now used as muscle relaxants, hypnotics, and analgesics. The chief legitimate concern is the effect of smoking on the lungs. Cannabis smoke carries even more tars and other particulate matter than tobacco smoke. But the amount smoked is much less, especially in medical use, and once marihuana is an openly recognized medicine, solutions may be found; ultimately a technology for the inhalation of cannabinoid vapors could be developed[169].

That technology Dr. Grinspoon envisioned is now readily available in the form of vaporizing devices, manufactured by many companies. And, as mentioned previously, recent research on the rate of lung cancer and pulmonary diseases among even heavy cannabis smokers has revealed that they have no greater risk of lung cancer, obstructive pulmonary disease, or other adverse effects on pulmonary function than those who smoke nothing at all.

However, cannabis should not be considered a harmless substance. Cannabis has a number of physiological effects, such as rapid heart rate and dilation of the blood vessels, that in limited cases could be hazardous, particularly for those with

pre-existing cardiac conditions. These adverse effects are within the range tolerated for most FDA-approved medications, and tend to dissipate with continued use[167].

As Dr. Grinspoon observes, "The greatest danger in medical use of marihuana is its illegality, which imposes much anxiety and expense on suffering people, forces them to bargain with illicit drug dealers, and exposes them to the threat of criminal prosecution."

The Acute Effects of Cannabis

The acute, or short-term, effects of cannabis may begin when the drug is first taken, if it is inhaled, or within an hour or more if ingested as an edible. Effects can last between one and three hours, longer if taken as edibles. Individual response varies, depending upon both the individual, the situation in which it is taken, and whether cannabis is ingested or inhaled. Short-term effects from using cannabis may include: coughing or wheezing if cannabis is inhaled, euphoria, dry mouth, reddening of the eyes, increased appetite, blurred vision, dizziness, headache, delayed motor reactions, sedation, and anxiety. Many of the psychoactive effects will decrease with prolonged use. In most cases, side effects are mild, well tolerated, and can be controlled with careful dose management.

In rare cases, usually as a result of consuming large doses of cannabis in food or drink, individuals may experience acute complications such as anxiety attacks, temporary psychosis, or convulsions. Referred to in medical literature as marijuana psychosis, it can be severe enough to compel admission to an emergency hospital[10].

Effects of Prolonged Use of Cannabis

Cannabis is a psychoactive drug, and legitimate concerns have been raised about the effects of prolonged use. Although cannabis remains a prohibited substance, tightly controlled even for medical research purposes, the FDA has approved synthetic derivatives of cannabis' psychoactive cannabinoid, THC, and classified them as Schedule III drugs with less likelihood of creating dependency than many other medications.

In considering the consequences of cannabis use, the Institute of Medicine concluded in 1999 that these concerns fall into two categories: the effects of chronic smoking of cannabis and the effects of THC.

Hazards of Smoking Cannabis

Because cannabis smoke shares many of the same dangerous compounds found in tobacco smoke, concerns have been raised that smoking cannabis can lead to the same increased risk of lung cancer and other chronic respiratory diseases found in tobacco smokers. However, the research done to date indicates that the long term health consequences of cannabis smoking are considerably less serious, if not negligible[169].

Population studies have found mild lung function changes in heavy cannabis smokers and long-term heavy use may generate symptoms of bronchitis,

including wheezing, production of phlegm, and chronic cough10,67,105. More study is required to determine any causal relationship between smoked cannabis and the development of respiratory infections, but anyone needing large or frequent doses may benefit from choosing alternative delivery methods, especially if they smoke tobacco.

1988 DEA Ruling on Rescheduling Petition

In strict medical terms, marijuana is far safer than many foods we commonly consume. For example, eating 10 raw potatoes can result in a toxic response. By comparison, it is physically impossible to eat enough marijuana to induce death. Marijuana in its natural form is one of the safest therapeutically active substances known to man. By any measure of rational analysis marijuana can be safely used within the supervised routine of medical care.

DEA Administrative Law Judge Francis L. Young
Opinion and Recommended Ruling, Findings of Fact,
Conclusions of Law and Decision—September 6, 1988
(Ruling voided by DEA on procedural technicality)

While many have historically maintained that heavy cannabis smokers are at higher risk of contracting cancer, new research does not support these claims[170]. While studies at the cellular and molecular level have suggested that byproducts in smoked cannabis may cause cancer, new evidence indicates that cannabinoids themselves may decrease the cancer-causing effect of the carcinogens typically inhaled from smoking cannabis, preventing cancers from developing. That prophylactic effect makes cannabis smoke inherently less dangerous than tobacco smoke, even though they contain some similar chemicals[171].

In 2006, the results of a five year, case-controlled investigation—the largest study of its kind—unexpectedly found that smoking cannabis, even regularly and heavily, was not associated with an increased risk of lung cancer. Lead investigator Dr. Donald Tashkin, chief of pulmonary medicine at UCLA medical school, speculated on the basis of other research that cannabis may contain key components that regulate aging cells and keep them from becoming cancerous[172]. Dr. Tashkin's findings reaffirm the results of prior case-control studies dismissing a causal link between cannabis use and certain types of lung and upper aerodigestive tract (UAT) cancers[171,173]. Other studies have found significant differences between the health effects of cannabis and tobacco smoking. Even heavy smokers of cannabis do not have an increased rate of Obstructive Pulmonary Disease, a common affliction for tobacco smokers, and the rate of head, neck, and throat cancers, common problems for tobacco smokers, is considerably lower among moderate cannabis smokers than among those who smoke nothing at all.

To avoid smoke inhalation, cannabis can be used with a vaporizer, orally in baked goods and other food product, in oral sprays, or in a suppository. No data exists suggesting that orally ingested cannabis may cause cancer.

Effects on Cognition

Cannabis use can temporarily impair cognition involving short-term memory performance, attention, and concentration among long-term heavy smokers[174]. While some studies have suggested that deficits in attention and memory occur more often with heavy cannabis use, and that these deficits can extend beyond

the period of intoxication, a 2003 meta-analysis of the 15 relevant studies on non-acute effects found that "there might be decrements in the ability to learn and remember new information in chronic users," but "other cognitive abilities are unaffected." The researchers note that, despite their expectations to the contrary, all studies done to date have "failed to demonstrate a substantial, systematic, and detrimental effect of cannabis use on neuropsychological performance[67]." Research by Pope et al. 2001 demonstrated that all negative effects on neurocognitive abilities are reversible[175].

Effects on psychomotor performance

The most common types of psychomotor functions impaired by cannabis use include body sway, hand steadiness, motor skill performance involving tracking a rotating target, driving and flying simulation, divided attention, sustained attention, and the digit-symbol substitution test, which involves remembering symbols arbitrarily matched to numbers[176]. The effects are generally short-lived and do not appear to persist over the long-term, that is when not using cannabis. Research clearly indicates that cannabis use impairs psychomotor performance, and studies have shown that those unaccustomed to cannabis use are less able to compensate for its effects[10]. With prolonged use, many people develop ways of compensating that mitigate the effects. No one using cannabis should drive or operate dangerous machinery if they feel intoxicated.

Effects on the immune system

The effects of cannabis use on the immune system are not yet fully understood. The discovery of CB2 receptors in the various cell types of the immune system has excited interest in the interaction of cannabinoids and immune function. Several pharmaceutical companies have expressed interest in developing CB2 receptor selective drugs, which might have utility as immunosuppressants, or in the treatment of arthritis, multiple sclerosis, and other autoimmune disorders[177].

People living with AIDS may experience opportunistic bacterial and fungal infections associated with exposure to pathogens from contaminated cannabis material, according to one study178. Yet there is no evidence that the long-term use of cannabis renders users more susceptible to bacterial or additional viral infections[70,179-180]. Recent studies have shown cannabis use has no adverse effect on immune function for people living with HIV/AIDS. A 2003 randomized, placebo-controlled clinical trial demonstrated that cannabis did not affect HIV RNA levels, CD4+ and CD8+ cell counts, or protease inhibitor levels. In another randomized, placebo-controlled study, the administration of oral THC or smoked cannabis did not significantly alter pharmacokinetic properties of the protease inhibitors tested and had no effect on antiretroviral efficacy[74].

In fact, as mentioned in the earlier section on HIV, a 2012 study found that cannabinoids can strengthen immune function. Researchers demonstrated CB2 activation has an anti-viral effect on CD4+ T cells, reducing cell-to-cell HIV infection up to 50%. The authors of that study suggest that the therapeutic use of cannabinoids may help fight the spread of the virus to uninfected T cells in late stages of HIV-1 infection[75].

Chapter 7
OBTAINING YOUR MEDICINE

The methods for obtaining medical cannabis depend on your state's law. You can learn more about your state's law and regulations on the website: http://www.safeaccessnow.org/state_and_federal_law. Most states also have printed and digital material available for legal patients, caregivers, and providers. Be sure you know your rights and responsibilities.

How do patients and patient caregivers obtain medical cannabis?

There are three usual ways to obtain medical cannabis, depending on your state's law: (1) cultivate your own medical cannabis, (2) obtain cannabis from a caregiver who cultivates it on your behalf, or (3) buy medical cannabis from a licensed dispensary. Not all of these options are available in every medical cannabis state. For example, most of the more recently adopted laws do not allow for personal cultivation.

Cultivation

Some state laws, like California's, allow patients to cultivate their own medical cannabis. If you live in a state where this is allowed, you may enjoy some significant benefits. Personal cultivation can be inexpensive, especially when it is done outside using natural sunlight. Personal cultivation allows the patient to have full control of how the medicine is grown – organically, conventionally, with or without pesticides, indoors or outdoors, etc. Furthermore, personal cultivation allows the patient a chance to grow the ideal strain for his/her specific needs. This may not be the case in states where licensed cultivators provide strains in demand in the marketplace but fail to cultivate medicine for niche markets.

Medical cannabis can be grown outdoors or indoors. Growing cannabis outdoors is a lot like having a garden. The sun provides the necessary light and the plants can be rooted directly in the soil. Some patients have a strong preference for sun-grown medical cannabis.

Many patients choose to cultivate medical cannabis indoors due to the local climate, concerns about discretion, or safety. Growing medical cannabis indoors requires an investment in specially designed grow lamps, a watering system, and other equipment. Indoor cultivation is more expensive and technically challenging than outdoor cultivation. However, some patients prefer the extra degree of control and care they can give to plants shielded from the elements and pests indoors.

In order to grow your own medical cannabis, you will need to obtain seeds or cuttings (sometimes called "clones"). Your state may allow you to obtain a clone from dispensaries or other medical cannabis businesses. To choose clones or seeds use the same tools you would use to choose a strain for medicine. Otherwise, you may have to obtain them from another legal patient. Obtaining seeds and clones outside of a licensed dispensary or other legal business may or may not be

sanctioned under state law. Be informed.

Patients with experience in gardening will have an easier time cultivating medical cannabis. However, there are unique aspects to grown the plant that every new cultivator must learn. ASA provides some basic information on cultivation on our website. Look here for information about growing mediums, lighting, fertilizers, and more: http://www.safeaccessnow.org/growing_tips. There are also a number of books and websites designed for novice cultivators.

Caregivers

Some states allow legal patients to designate a primary caregiver to cultivate medical cannabis on their behalf. If this is allowed in your state, you may be required to designate that person as your caregiver so that he or she is protected under the law. State laws differ regarding the rights and responsibilities of caregivers. Check your state's regulations to see what is required of you and your caregiver.

Caregivers may be paid or they may volunteer their services. Regardless of what arrangement you have with your caregiver, it is a good idea to make a written agreement about how the costs of cultivation will be covered and how the caregiver will be compensated, if at all. Remember that the medicine cultivated by a caregiver is intended for the patient.

Patients who live in California have the option of joining patient cultivation cooperatives and collectives. If you live in California and want to join a patients' association like this, be sure to read all of the membership information, ask questions, and get legal advice about your liabilities and benefits.

Dispensaries

Dispensaries are organizations or businesses licensed under state and/or local law to provide medical cannabis to legal patients. The terminology for dispensaries can vary from state to state – Medical Marijuana Business, Licensed Dispensing Facility, Patient Cooperative, etc. Dispensaries require patients to prove their status as a legal medical cannabis patient by presenting a state medical cannabis ID card or other documentation. Some dispensaries require membership and may have other rules for obtaining medicine. Some states require patients to register with a single dispensary to obtain medicine, while other states allow patients to visit multiple facilities.

Because some states require you to designate a dispensary when you register as a legal medical cannabis patient, you may need to do some research in advance. You can contact dispensaries to ask about products, prices, and services. You will also find a lot of this information online on webpages hosted by the dispensaries or on patient resource sites such as Leafly.com. Take note of any state regulations that impact how and how often you can change your designated dispensary.

Some questions you might want to ask when choosing a dispensary include:

- Is the facility licensed to operate?
- Are the facility and staff certified by a third-party agency, like ASA's Patient

Focused Certification (see below)?

- Does it feel safe? Is security adequate?
- Is the dispensary comfortable?
- Is the variety of medicine suitable?
- Is the medicine laboratory tested and clearly labeled?
- Are the prices reasonable?
- Does the dispensary take credit cards or have an ATM?
- Is the staff friendly, respectful and knowledgeable?
- Does the dispensary deliver?
- Are the hours of operation convenient?

A well-regulated and properly operated dispensary will conform to contemporary standards for retail or healthcare facilities. Décor and ambiance may run the gamut from clinical and sterile to whimsical and fun, but every legal dispensary should be clean, safe, and accessible for patients with disabilities.

The process of registering with or joining a dispensary differs from state to state, but patients should expect to complete some kind of paper work and provide appropriate documentation and identification. Dispensaries may have a formal or informal orientation process for new patients, and many provide printed materials with information about membership. Ask the intake staff at your chosen dispensary what resources or educational materials they provide for new members or clients.

Most dispensaries will have a variety of medical cannabis and medical cannabis infused products from which patients can choose. The staff should be knowledgeable about the products and able to answer questions. Dispensaries often provide additional resources for patients choosing medicine, like books, online resources, brochures, etc. Don't be afraid to ask questions, especially if you are an inexperienced medical cannabis user. The dispensary and its staff are there for you, and helping you make good decisions about your health care should be a top priority.

Expect to see more security at a medical cannabis dispensary than you would at an ordinary retail store, pharmacy, or doctor's office. State and local regulations typically require a robust security plan, and some providers choose to exceed the minimum requirements so that patients and staff can feel safe. There is no evidence that it is dangerous to visit properly operated medical cannabis dispensaries. You can be confident that security guards, cameras, locking doors, and other safety measures represent an abundance of caution; they are not signs of danger.

PATIENTS BILL OF RIGHTS

ASA has developed a patient's Bill of Rights to help evaluate dispensaries and other providers and ensure patient welfare. Consumer advocacy is an important component in ensuring that the emerging medical cannabis industry serves the needs of patients. While state regulators and third-party certifiers also help, there is no replacement for an informed consumer who insists on fair treatment.

ASA's Patient Bill of Rights was designed for a nationwide audience. Some rights,

like personal cultivation, may not be allowed in your state.

1. You have a right to respect and non-discrimination. You have a right to considerate respectful non-discriminatory care from your dispensary.
2. You have a right to confidentiality of your health information, you have a right to talk in confidence with your provider, and to have your healthcare information protected under all applicable laws. So, you may want to ask how the dispensary handles their paperwork, files and administration to assure it is HIPPA compliant as required by Federal law.
3. You have the right to information disclosure. You have the right to accurate and easy to understand information about the local, state and federal laws and regulations. This course is going to help you with some of that information but dispensaries should also be able to provide you with this information, as well.
4. You have a right to adequate quality control. You have the right to cannabis products that are free of mold, mildew, pesticides, adulterants, and pests. You have the right to know how the cannabis was produced. All of these are questions that your dispensary should be able to answer.
5. Regardless if the state law requires you to select one provider there are provisions so that you can change your preferred dispensary but it may take a few weeks to implement the change.
6. You have the right to obtain your medicine in a safe environment, which includes but isn't limited to security, health and safety protocols and legal business practices.
7. You have the right to have input and to make a complaint at your dispensary, without the fear of losing access. This includes complaints about waiting times, operation hours, conduct of personnel, and adequacy of the facility.
8. You have the right to medicine that is labeled and weighed accurately. No dispensary should deliberately mislead a patient about the quantity of or variety of medication that is being provided.
9. You have the right to pay a fair and reasonable price for your cannabis and cannabis products.

ASA PATIENT FOCUSED CERTIFICATION

ASA created the Patient Focused Certification (PFC) program to ensure that medical cannabis businesses were operating in the optimal manner to serve legal patients. Independent PFC inspectors certify that dispensaries, cultivators, manufacturers, and testing laboratories are legally operated and adhere to the best scientific and operational protocols in the industry. PFC certification includes staff training, following up with providers, and a complaint resolution process.

ASA suggests you look for PFC-certified facilities and products when you are looking for medical cannabis. If none exist where you live, suggest that they apply for PFC certification at once. Learn more at: www.PatientFocusedCertification.org

READING LABELS

Reading product labels is a key component of using medical cannabis safely and effectively. Labeling requirements differ from state to state. Labeling

requirements might include information about state and federal law, the variety of medicine, a list of ingredients, potency, and safety testing.

There are no regulations or accepted conventions in naming strains of medical cannabis, so names do not reflect the properties of the variety and the same name may be used for different strains. You can expect greater consistency in the future, as laws and industry standards evolve.

As discussed previously in the Choosing a Medicine segment, there are two broad categories of medical cannabis – Cannabis sativa and Cannabis indica. Many strains are hybrids of the two. Ask a dispensary employee how the dispensary indicates sativa, indica, and hybrid strains on a label. You may also want to know how the colloquial names are determined or kept consistent.

Patients need to know what kind of cannabis and other ingredients are in medical cannabis and medical cannabis preparations in order to make informed choices. For example, patients using cannabis tinctures may want or need to know if the preparation is alcohol or glycerin based. Likewise, patients consuming edible preparations of cannabis need to know the precise contents to address dietary restrictions. Some patients may have serious allergies to peanuts, gluten, or other ingredients; and diabetics may have restrictions on how much sugar they can safely consume.

One of the most important things that patients need to see on the label is potency. Unlike prescription medicines, the correct dose of herbal medication is based in large part on the experience of the user. Accurate potency labeling makes finding the right dose easier and reduces the chance of taking too little or too much. Potency levels have not been standardized yet, and therefore there is still some inconsistency when reporting potency. Unfortunately, there are also some dispensaries that will inflate potency levels on labels to make less potent medicine seem more desirable. As a result, you must be cautious when evaluating claims about potency.

Medical cannabis with high levels of Cannabidiol (CBD) or Tetrahydrocannabinol (THC) may or may not be your best choice. Many patients find that balanced cannabinoid profiles offer the best relief. You will have to determine whether you need cannabis rich in CBD or THC. Remember that the label is just a tool to help you make that decision.

If a product label indicates a certain percentage of CBD or THC in the product, it is fair to ask a dispensary employee how the dispensary or manufacturer determined these levels. The best benchmark for accuracy in potency labeling is to look for results from independent third-party testing laboratories, such as those certified by ASA's Patient Focused Certification program.

If the dispensary is using a third party to test their products, you can ask to see the lab work on that product. Look for the date on the lab results. If the date is old, you can ask for a product that has been tested more recently. Also, you might want to retain a copy of the lab results to discuss with your doctor or retain for your records.

Talking to your friends and family

You should be prepared to talk with your friends and family about your medical cannabis use and the medical benefits of cannabis.

There are a lot of implied jokes in the media about using medical cannabis. Be prepared to encounter people who don't believe cannabis is medicine and discount its medical value and utility. Arm yourself with information. Engage those people and help to educate them about medical cannabis. Bring one of the condition-based booklets to your family, and show them how you're going to be using your medication. Let them know this treatment is happening under the care of a physician. Invite them to deepen their knowledge. They can access the booklets online at: **http://www.safeaccessnow.org/asa_condition_based_booklets**

Also, be prepared if a person asks to try your cannabis medication. They're going to be curious. Again, the same laws that apply to other medications also apply to medical cannabis. It is illegal for you to share your medication.

Keep cannabis and all other medications out of the reach of children and pets. Make certain your children understand that it's a medication and not for their use. Parents successfully have these conversations with their children about other pharmaceuticals, and cannabis is no different. When talking to your children about your medical cannabis use, be as forthright as possible. Yes, people use cannabis for recreational uses, just as people use pharmaceuticals for recreational uses.

Children need to understand that this is not something for them. Although they may not die from consuming the medication, there are considerations around long-term usage of medical cannabis by children, as their brains are developing.

Most importantly, talk to your children about discretion. It is not any of their friends' business what medications you are using. Your medical cannabis use is not something that your children should share with teachers, classmates, or others. All medical issues are private and need to be treated as personal and confidential.

If you are the parent of a pediatric medical cannabis patient who has siblings, it's important to address this issue as a family. Explain why the child is using medical cannabis. These are never easy topics to discuss with your children, but the more you address the problem head on, the fewer problems you're going to have.

Talking to your employer

Medical cannabis use should be treated like a prescription medication in the workplace. You should not use any medication that affects your productivity in the workplace. You shouldn't experiment with new or different delivery systems while you're at work.

You have a right to privacy. You don't need to tell everyone that you're using

medical cannabis. Do some research and learn what policies are in place for drugs in your workplace. These policies may mean that you don't medicate on the work premises or may require you to leave and take your medication on your lunch break. You need to be sensitive to whether or not your medication is affecting or impairing your ability to do the job that you have.

For some workplaces there are required drug tests; some of these are scheduled, some are random. Medical cannabis should be treated like any other prescription drug, and you should follow whatever policies are in place for medication reporting. If there is a scheduled drug test coming up, you might want to talk with your employer and let him/her know that you are going to test positive for THC. When this happens, you should also provide him/her with documentation of your doctor's recommendation and/or your medical cannabis patient ID card.

Being honest with your employer is the best policy. You may provide additional educational materials for your employer to gain factual information about medical cannabis and the law. There are numerous educational materials on americansforsafeaccess.org that discuss medical cannabis and the laws.

At this time, there are few protections for employees who use medical cannabis. In many states, if an employer wants to terminate your employment for testing positive, he/she can. Again, it's important to have a functional knowledge of your state's medical cannabis laws and your rights as an employee. Some states have employee protections and others do not.

Medical Cannabis and Child Protective Services:

Another important consideration is cannabis and parental rights, especially as they relate to custody. While some of the new state medical cannabis laws have specific protections for parents' rights, a lot of these laws are being tested in the courts. Obviously, having Child Protective Services in your life could be problematic. Take steps to decrease this risk.

Properly store your medical cannabis out of sight and keep it locked. Take steps to assure your medication is out of the reach of your children. Exercise great discretion when taking your medications. Consider your child's exposure to your medication. Take your medication when you're not in plain sight of your children.

Make sure you have your proper documentation at all times, including your current doctor's recommendation and your state medical cannabis patient ID. If you are in a state that allows you to cultivate cannabis in your home, have your documentation and cultivate in a locked space, away from your children.

Medical cannabis issues have been presented in divorce proceedings; one parent may try to use the other parent's medical cannabis use as a means to gain child custody. You can't protect yourself from all of these issues, but make sure that you are thinking about how your cannabis use may be perceived or represented by your child. Know the law and your rights.

Chapter 9
SAFELY USING, STORING & TRANSPORTING CANNABIS

Medical cannabis should fit into your health regimen just like any other medication you use, but there are unique qualifiers to think about and considerations to make when using, storing, and transporting your medicines.

Using Medical Cannabis

There are certain things to consider when you start to use prescription drugs – dosage, safety, side effects, contraindications, etc. Doctors are experienced with talking to patients about these things, but there are some special considerations for using medical cannabis. Your doctor may not be able to talk to you about things like safety, storage, and transportation of medical cannabis.

Safety

Be mindful of when and where you use medical cannabis. Mental and physical impairment can last for several hours, and these side effects can be more pronounced for inexperienced or infrequent users. It's best to medicate at a time when there is no cause for concern about impairment. It is important to understand the peak levels of your medication and how it is going to affect you. While cannabis impairment is generally less severe than impairment caused by alcohol or sedatives, it can be a factor if you are driving or have safety-sensitive tasks to complete at home or work. It is better to be too cautious than not careful enough.

Under some of the new state laws, there are arbitrary legal limits for levels of cannabis in the blood while operating vehicles. Five nanograms of THC per milliliter of blood is an emerging standard for judging impairment while driving. Unfortunately, this extremely low level was decided by politicians, not by science, so any patient who uses cannabis on a daily basis will test positive for use, regardless of whether or not he or she is impaired.

Another important aspect is to consider your surroundings. Know your local laws. Some laws only allow medicating in your own home; once you purchase your medicine, you are only legally protected if you use your medication in your own home. Make sure you understand what the local laws are.

You want to avoid nuisance complaints. Medical cannabis has a very distinct odor, and that odor is not pleasant to everyone. Whether you're consuming your medication in public or in your own home, make sure you're aware of the odor.

Use discretion. Just be conscious and considerate when you are using your medication. Medicate in a well-ventilated and private area to avoid unwanted attention. You may want to avoid using your medication in areas where someone could rob you of your medication or try to solicit cannabis from you.

You should be very judicious and selective about whom you tell about your medical cannabis use. This is very important for numerous reasons – preventing

robbery of your person or your home, for example. If you have children, it is important to let them know that this is private, confidential information and not to be shared with others, including teachers and classmates.

Few states have civil protections for medical cannabis patients. Legal patients face pervasive discrimination in employment, housing, parental rights, and equal access to healthcare (e.g. prescription pain medication and organ transplants). State legislation and case law around medical cannabis discrimination is still evolving. It is prudent for legal patients to be discreet about their cannabis use to avoid unnecessary problems, especially at work or school.

Storing Medical Cannabis

Use the same precautions when storing your cannabis medication as you do with your other pharmaceuticals. Because cannabis is a combustible herbal product, you must take additional precautions to assure its potency and effectiveness.

The optimal storage temperature of cannabis is 50 to 55 degrees Fahrenheit. Room temperature in your home or refrigerator should suffice. Be sure it's not being stored in temperatures higher than room temperature.

You should store cannabis out of sunlight. Ultraviolet rays in sunlight actually diminish the quality of the cannabis and will affect the potency. There are dark-colored containers that can assist with this.

Keep your cannabis in an airtight container. This is going to help to prevent oxidation and the drying out of the cannabis. This will impact the flavor as well as the potency. Some people prefer to use Mason jars or glass containers, while others prefer plastic containers. You may be receiving your medications from a dispensary that has already taken considerable care in packaging your cannabis. Some states require all cannabis products to be in child-safe containers.

You definitely want to think about security and keeping your medications in a safe place in your home and out of the reach of children. If you live with others who might want to use cannabis, you may want to keep it in a locked secure spot where only you know where it's located.

If you're using edible products, these may look like candy or other edible products; be sure to keep them out of children's reach and stored in a way so that only you can access. Always store edible preparations of cannabis in a food-safe container. Perishable edible preparations should be stored at 41 degrees Fahrenheit or lower to prevent spoilage.

Remember to store any pipes or paraphernalia needed for your medication in a secure area. Exercise good judgment and discretion with all your medications and their storage. Keep things discreet, out of sight, and air tight to decrease the potential for loss, theft, and damage.

Transporting Medical Cannabis

There are important considerations in transporting your medications. Again, it's important to know your local laws. Some states require that you carry it on your person; others states require that you place it in the trunk of your car. Always be

aware of odors.

Never consume cannabis in your car, whether driving or otherwise. If you do, you run the risk that those odors remain and could change what was a routine traffic stop into a different experience where you are being questioned about the legality of carrying cannabis on your person.

Traveling by air with your medicine can be challenging. Some airports in California and Washington have said that they have relaxed rules for cannabis patients and will not confiscate the cannabis. Be cautious, as these are just policies and not laws, so at any time airport staff could decide they are going to do something different.

You should avoid interstate transportation of medical cannabis. It is a crime to move illegal drugs across state lines, and all cannabis is still illegal under federal law. While medical cannabis may be legal in your state, it may not be legal in the state to which you are going. Even if it is legal in that state that you are visiting, one of the most common requirements for the medical cannabis programs is that you live within that state. There are a handful of states that have reciprocity laws recognizing qualified individuals from other states, including Montana, Michigan and Nevada. But there are very specific rules about using those rights, so look at those laws in advance of your travel. For most of those states it doesn't mean you have the right to transport medicine into the state. It means you have the right to participate in the medical cannabis program of that state once there. You might be required to obtain your medication within that state.

With regards to international travel, the United States has unique medical cannabis policies. Outside of the U.S., medical cannabis is only allowed through prescription. Those rules are very strict. It is recommended that you do not carry your medication on your person or in your luggage when travelling internationally.

Chapter 10
GROWING TIPS

First-time cannabis growers should start with a soil-based system rather than other more complicated methods such as hydroponics. Your first harvest will help you get the feel for the growth and life cycle of cannabis. This will help you build confidence that things are going well for your next harvest.

Growing Medium

Soil is the easiest medium to grow from for a number of reasons. First, micronutrients, which are critical to proper growth and vigor of the plan, exist in gardening or potting soil naturally. Good quality soil is inexpensively available at any gardening store and not suspicious to neighbors who may wonder what all the equipment is for otherwise.

Make sure that the soil is not too dense. Use perlite, a natural volcanic glass, to lighten and loosen the soil. This provides necessary space in the medium for air. Air

is an important factor in cultivating any type of plant. Do not use soil from your yard as it may have pH imbalances, lack nutrients, or contain insects or mold spores that could harm your plants.

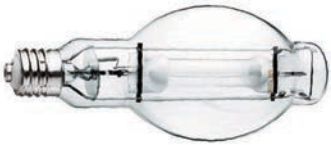
Perlite

Light

If growing indoors, use a high-intensity discharge (HID) light, either a high-pressure sodium (HPS) or a Metal Halide (MH) bulb. Both work well, but HPS systems are the best for flowering.

While fluorescent grow bulbs work for the vegetative growth of the plant, they lack the proper light spectrum and intensity to produce dense buds. Never use regular incandescent bulbs —they will not provide the correct spectrum of light for the plants and are expensive to run. Specialty incandescent "grow bulbs" don't have the intensity needed to grow dense buds, but they will definitely keep the plants alive. New LED bulb technology draws far less power and generates much less heat than HIDs, with better light spectrum output than fluorescents, though yield may not be quite as good as with an HID.

High-Pressure Sodium (HPS) bulb



Metal Halide (MH) bulb

Cannabis flowers form naturally outdoors in the fall, as the nights grow longer. Indoors, we can force cannabis to flower when we want by creating a growing space where the light cycle can be controlled. At least 12 hours of uninterrupted darkness is necessary to force cannabis to flower. This period, known as the flowering period, lasts approximately 6-10 weeks, depending on the strain of cannabis.

Vegetative growth

The vegetative period, which precedes the flowering period, is usually done under 24 hours of continuous light. If starting with clones, that is rooted cuttings from a mature plant, this period usually lasts from five days to a month depending on strain, vigor, and the desired plant size. If starting from seed (not recommended), the vegetative period will be longer to allow the plant to mature.

Seeds will produce both male and female plants. Males should be culled before they can pollinate the female plants. You can determine the sex of the plant as it begins the flowering cycle.

Male flowers

Cannabis plants will usually increase in size 50% during the flowering period, so plan for that in relation to the height and width of your garden.

Nutrients

There are three main nutrients that plants need to flourish: Nitrogen (N), Phosphorus (P) and Potassium (K). Plant food labels show their N-P-K content as relative percentages. That means a high-nitrogen food good for vegetative growth would be listed as 20-10-10 or 20% nitrogen, 10% phosphorus, and 10% potassium.

When forcing the plants from vegetative to flowering growth (i.e. changing the light cycle from 24 hours of continuous light to 12 hours of light and 12 hours of uninterrupted darkness), the nutrient ratio must change as well. Plants use P and K to make flowers or "buds." During the flowering stage, feed your plants a plant food high in P and K. Something like 1-10-12 would be appropriate, but some nitrogen is necessary. Don't get hung up on the actual numbers. It is the ratio that is actually important. Follow the instructions on the label and be careful not to overfeed!

Water

Water your plants once the top two inches of soil are dry. Overwatering is a common cause of death for cannabis. Overwatered plants droop and may look like they need water. What the plants are actually lacking is air, because the roots are drowning. One simple way to check for the proper time to water is with a wand-type water meter, another is to lift the pot after watering. Feel its weight, or put it on a scale and make a note. Next time you think the plant needs water, lift the pot and see how heavy it is. If it is light, then water it. If it feels heavy, then don't. Young plants will use less water. As the plant grows and the root ball fills the container, it will use more water.

pH

pH is a measure of the acidity or alkalinity of the planting mix and water. The right pH is critical to the plant's ability to absorb nutrients. In general cannabis likes the root zone to be acidic; around 5.8-6.5 is the ideal range for soil, and no lower than 5.5. The only way to know and adjust the pH of your plants' environment is with pH test strips or a pH test kit that you can use to check the plants' runoff. The pH of your tap water may change from season to season, so it's best to check it frequently.

pH litmus strips

If you are maintaining proper pH and providing appropriate nutrients and your plants are still not thriving, or are turning yellow or appear to be burning at the edges of the leaf, you should consult a more exhaustive source of information about how to go about solving these problems.

Air and temperature

Cannabis needs circulating air rich in carbon dioxide or CO2. Fresh air from the outside can be used if you are ventilating an indoor garden with fans. Cannabis

plants can consume far more CO2 than is in the atmosphere naturally, so for maximum yield some method of CO2 enrichment is frequently used. The easiest is using a regulator attached to a CO2 tank, which can be found at beverage supply stores. Without enrichment or fresh air, plants will consume all the CO2 in the environment and replace it with oxygen, leaving them without the carbon dioxide needed to grow well.

CO2 regulator

Whether enriched or not, air circulation also helps manage temperature and create stronger plants. HID lights in particular generate a lot of heat, and temperatures above 95 degrees will inhibit growth. Keep the cultivation area temperature between 80 and 85 degrees, using an air conditioner or fans with outside air to cool the space. Too cold is bad as well, especially in the root zone. Below 60 degrees, the plant will be unable to photosynthesize and stops growing.

If you're using fans to bring in outside air and exhausting air from the garden, you may want to use carbon filters or other odor-scrubbing devices on the exhaust. Cannabis emits powerful, distinctive aromas, particularly during flowering, that can attract unwanted attention.

If you keep the basic needs of the plant in mind, cannabis will reward you enormously. For information on managing pests or creating sophisticated hydroponic systems, consult one of the books by experts such as Ed Rosenthal or Jorge Cervantes. Suggested reading for detailed information on cannabis cultivation:

- *Marijuana Growers Handbook: Official Course Book of Oaksterdam University* by Ed Rosenthal
- *Marijuana Garden Saver* by Ed Rosenthal and JC Stitch
- *Indoor Horticulture* by Jorge Cervantes

Chapter 11
RECIPES

The following recipes come from the Vancouver Island Compassion Society (www.thevics.com). Please note that not all state medical cannabis laws allow for cannabis concentrates. Where they do not, manufacture or possession of these substances usually carries serious penalties.

VICS CANNAMIST/TINCTURE

Recipe and Instructions on How to Convert THCA Into THC

A tincture is an alcohol-based solution of a non-volatile medicine (in this case cannabis). In a cannabis tincture, alcohol is not only the solvent used to separate

cannabinoids from the plant matter, it is what makes this type of application (particularly in fine-mist form) more bio-available and therefore effective.

In whole-plant cannabis, THC content is expressed as THCA (tetrahydrocannabolic acid) prior to decarboxilation into THC, which takes place when cannabis is heated during cooking, smoking or vaporized ingestion. THCA is a mild analgesic and anti-inflammatory but in order to make a THC-rich tincture that has many of the same therapeutic effects as smoked ingestion (including rapid absorption, quick relief and ease of self-titration), we must convert the THCA in the plant matter into THC prior to extracting it through an alcohol soak.

Supplies

Converted cannabis
Alcohol (50% is preferred, but 40% vodka works just fine)
Organic mint
Organic honey
Large mason jar, x 2
Cheesecloth or fine mesh sieve

Dry heat conversion of THCA into THC

- Preheat oven to exactly 325°F (160°C). Use an oven thermometer to be sure.
- Spread leaf or bud in a 1 inch (2.5 cm) layer on a clean cookie sheet.
- Put in the oven until the first hint of smoke or 5 minutes, whichever is first; remove and transfer to a glass or ceramic container to cool.

Tincture/Cannamist Recipe:

- Pack a mason jar loosely but completely with converted cannabis product.
- Add alcohol until the jar is full.
- Seal, shake and put in a dark, cool place.
- After week one, strain mixture through cheesecloth or fine mesh sieve and add to another mason jar packed with converted cannabis and a few sprigs of fresh organic mint.
- After week two, strain through cheesecloth or fine mesh into mason jar.
- Add organic honey to taste.
- Shake/mix and then decant into bottles fitted with fine mist spray tops.

Dosage

Initial Dosage: Spray two times on the inside of the cheek, and wait 30 seconds before swallowing. Wait ten minutes. If desired effect has not been reached, repeat on the opposite cheek. Wait ten minutes.Repeat until desired effect is achieved. Dosage will vary between users, but should remain fairly constant once established.

Effect will last for between 1-2 hours. Repeat use as needed. If you feel dizzy or disoriented, immediately discontinue use. Do not operate heavy machinery or drive during use of this product.

THE VICS CANNABIS OIL RECIPE

Makes about 2 Liters of oil.

Supplies

200 to 250 grams good quality organic cannabis shake (trim)
Slow cooker
Cheese cloth
Silkscreen, min. 200+ thread count per inch
3 Liters Extra Virgin Olive Oil
Colander or strainer

Recipe

- Put cannabis into slow cooker
- Add olive oil until it just covers the cannabis.
- Turn slow cooker to High for 2 hours, and then turn down to Low for an additional 4 to 6 hours, stirring occasionally.

To make a stronger product, add fresh cannabis to the previously heated oil left in the slow cooker and top up oil to cover the cannabis; keep cooking on low heat overnight or up to two days.

- Strain oil, as warm as possible, through cheese cloth, then strain through silkscreen. The oil is ready to use as is. It will keep for up to 3 months.

Cannabis oil can be quite potent and have a very narcotic effect. It is recommended that you do not drive or perform difficult tasks after consumption.

THE VICS SALVE RECIPE

This recipe yields roughly 525 ml of topical salve; vary ingredients proportionately for a smaller or larger batch.

Supplies

400 ml Cannaoil (converted cannabis and olive oil - see our Cannaoil recipe)
40 grams shaved beeswax
45 drops lavender oil
30 drops mint oil
1?2 tsp. of honey

Recipe

- Combine Cannaoil and beeswax in a small crockpot, or a small double boiler; put on low heat, no higher than 150oF (65oC).
- Stir constantly until all the beeswax is melted.
- Add lavender and mint oil to the Cannaoil/beeswax. Stir to blend oils. Allow to sit for a few minutes.
- Keeping the crockpot, or double boiler, on very low heat, pour the salve into container(s); stir the mix prior to pouring in order to maintain

consistency.
- Let salve cool completely before putting lid(s) on.

Benefits: Fast skin absorption with minimal residual effect. Eases dry skin conditions. Provides mild pain relief for muscular and/or joint pain.

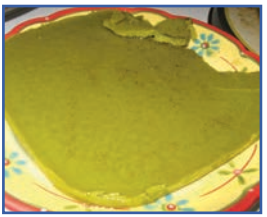
THE VICS CANNABUTTER RECIPE

Supplies

Good quality organic cannabis (14 grams of bud or 76 grams of shake (trim) per 454 grams (1 lb.) of butter)
6 to 8 Litre (1.5 gallon) capacity boiling pot
Fine mesh strainer, or colander, or large coffee filter, or nylon stockings
Large refrigerator-safe pot

Recipe

- Fill a 6 to 8 litre pot with cold water and bring to boil.
- Add butter and cannabis.
- Mix.
- Lower heat and simmer for 2 to 3 hours, stirring occasionally (add water if necessary).
- Strain out liquid into refrigerator-safe bowl using fine strainer, large coffee filter or nylon stocking. Squeeze butter out of remaining leaf (wear gloves, the leaf is hot!).
- Discard strained leaf.
- Let liquid cool, and then put into refrigerator overnight. Butter will separate from water and form a hard crust on surface of liquid.
- Lift out butter crust and put into large mixing bowl. Cream and fold butter using a large metal or wooden spoon. Discard remaining liquid.



Separated cannabutter

Butter is ready to use as is. It will keep in freezer up to 3 months.

When baking with cannabutter, select recipes such as cookies with short, low-heat cooking instructions (below 163 degrees C or 325 degrees F) At higher temperatures, the cannabinoids in the butter will break down and be lost while cooking.

Products baked with cannabutter take effect within 30 to 90 minutes from initial ingestion and can last for several hours. For maximum effect, ingest on an empty stomach. Cannabutter can be quite potent and have a strong narcotic effect. It is recommended that you not drive or perform difficult tasks after ingesting.

Chapter 12
STATE BY STATE

BECOMING A MEDICAL CANNABIS PATIENT

The laws and regulations pertaining to state medical cannabis programs change rapidly, so it's critically important that patients stay up to date on information pertaining to their state. For that reason, ASA maintains online resource pages at AmericansForSafeAccess.org for each state medical cannabis program. The information below is accurate as of the time of its writing but is in abbreviated form. Please check the relevant online resource page for your state, too.

For more information on becoming a patient and other issues, check the state resources page on our website: AmericansForSafeAccess.org/local_resources.

Chapter 13
KNOW YOUR RIGHTS

Medical cannabis patients and their providers are vulnerable to federal and state raids, arrest, prosecution, and incarceration. As a result, these individuals may suffer pervasive discrimination in employment, child custody, housing, public accommodation, education and medical care. Laws protecting patients and their providers vary from state to state and, in some cases, may vary from county to county. Many individuals choose to break outdated state laws that do not account for medical use or their access. And no matter what state you are living in, medical cannabis patients and their providers are always violating federal law.

Making the choice to participate in a medical cannabis program or to resist current laws should be done with thoughtful consideration. Following the law in your local area may not always protect you from law enforcement encounters, and the more you know about your rights, the more likely you will be to have a successful encounter with law enforcement. It's important to also remember that the best law enforcement encounter is the one that never happens.

The information found in this section is meant to educate patients and their providers about the existing federal laws, how to avoid law enforcement encounters, how to be prepared for encounters, how to understand your rights during encounters, and how to navigate the legal system after an encounter. After you understand this material, be sure to share this information with your family, friends, or anyone who may be at risk.

STATE LAWS

Medical cannabis laws vary from state to state. The section on state laws summarizes some of the key information, with links to more details. If you live in a medical cannabis state, consult AmericansForSafeaccess.org/LocalResources to find out about your state's medical cannabis program. Finally, consult local laws and regulations to make sure that you are adhering to any guidelines developed by your county or city. Following each law to the letter may not prevent you from having a law enforcement encounter, but it will help you have a successful one.

FEDERAL LAWS

Despite the promises made by the Obama campaign and the memo issued in 2009 by the Department of Justice, medical cannabis remains illegal at the federal level and carries severe penalties. Federal interference with state medical cannabis programs can happen in every state, and there is no "medical" defense within the federal justice system. If you're participating in your state's medical cannabis program, you are in direct violation of federal law. It is important to remember that even though the media has hyped the meager promises made by different parts of the federal government, patients have no federal protection and are still at risk. Until federal law changes, patients across the country face dire choices between violating the laws of their country and treating their illness with the medication deemed most appropriate by their physician.

The federal government regulates drugs through the Controlled Substances Act (CSA) (21 U.S.C. § 811), which places every controlled substance in a schedule, according to its relative potential for abuse and medicinal value. Under the CSA, cannabis is classified as a Schedule I drug, which means that the federal government views cannabis as being highly addictive and having no medical value. Doctors may not "prescribe" cannabis for medical use, though they can "recommend" or "approve" its use under the First Amendment. This recommendation or approval does not provide patients with any sort of legal protection under federal law, but it may be the basis for legal protection under state law. Under federal law, you and your doctor are free to discuss the possible benefits and side effects of medical cannabis.

The Drug Enforcement Administration (DEA), charged with enforcing federal drug laws, has taken a substantial interest in individual medical cannabis patients and caregivers, particularly those involved in large cultivation and distribution operations. Over the past decade, hundreds of people have been the targets of federal enforcement actions. Many of them have been arrested and had property seized. More than a hundred medical cannabis providers are currently in prison or are facing charges.

Federal cannabis laws are very serious, and punishment for people found guilty is frequently severe. Federal judges have ruled that medical necessity cannot be used as a defense. In fact, medical cannabis cannot even be mentioned during a

federal trial. Patients may not use evidence related to their state's medical cannabis program, their doctor's recommendation, their illness, or anything else related to medical cannabis.

Federal sentencing guidelines take into account not only the amount of cannabis but also past convictions. Not all cannabis convictions require jail time under federal sentencing guidelines, but some do and all are eligible for imprisonment. If convicted and sentenced to jail, a minimum of 85% of that sentence must be served. The greater the quantity of cannabis involved, the more likely one is to be sentenced to jail time, as opposed to probation or alternative sentencing.

In addition to the sentencing guidelines, there are statutory mandatory minimum sentences, which primarily target offenses involving large quantities of cannabis. There is a five-year mandatory minimum for cultivation of 100 plants or possession of 100kgs, and there is a ten-year mandatory minimum for these offenses if the defendant has a prior felony drug conviction. Cultivation of 1,000 plants or possession of 1,000kg triggers a ten-year mandatory minimum, with a twenty-year mandatory sentence if the defendant has one prior felony drug conviction, and a life sentence with two prior felony drug convictions.

The 2005 US Supreme Court decision in *US v. Booker* altered the mandatory minimums to make them effectively advisory, requiring a sentencing court to consider Guidelines ranges. Nonetheless, to avoid a five-year federal sentence, it is advisable to cultivate well below 100 plants, including any rooted cuttings or clones.

Roots count

Low-level federal offenders, even with multiple prior convictions, may end up with probation for the entire sentence of one to twelve months and no jail time required. Possession of over one kg (2.2 lbs.) of cannabis with no prior convictions carries a sentence of six to twelve months with a possibility of probation and alternative sentencing. Over 2.5 kg with no criminal record carries a sentence of at least six months in jail; with multiple prior convictions, a sentence might be up to two years to three years in prison with no chance for probation.

Keep in mind that even though medical cannabis protections may exist in your state, the federal government allows no medical defense to possession, cultivation, or distribution charges. Even though the Obama administration and the Department of Justice have made statements that prosecuting patients is a low priority, patients and providers are still being harassed, raided, arrested, and convicted throughout the U.S. Until federal law changes, participating in your state's medical cannabis program still carries some risk.

OTHER APPLICABLE LAWS

School Zones

Patients and providers should avoid possession and cultivation of cannabis in school zones—a 1,000-foot radius around any school, including any daycare facility—as there are typically additional penalties for the possession, use, and

cultivation of cannabis near schools, whether it is for medical or recreational use. Some state medical cannabis laws have limitations on "sensitive use" areas, limiting cultivation, use, and possession of medical cannabis within a specific amount of space of a school, playground, etc. Most use the federal 1,000-foot radius but some mandate up to 1,500 feet. In addition, keep in mind that Drug Free School Zone laws can double the maximum sentences in federal court, where the mention of "medical cannabis" is prohibited.

Firearms

Firearms can result in harsher federal sentencing and may draw attention to patients. Even if your state protects patients' right to safe access to medical cannabis, the presence of firearms may increase the chances of an adverse state or federal law enforcement encounter, and harsher sentences if convicted. Again, the best law enforcement encounter is the one that never happens.

Under federal law, "any person who, during any drug trafficking crime for which the person may be prosecuted in a court of the United States, uses or carries a firearm, or who, in furtherance of any such crime, possesses a firearm, shall:

(i) Be sentenced to a term of imprisonment of not less than 5 years;
(ii) If the firearm is brandished, not less than 7 years; and (iii) If the firearm is discharged, not less than 10 years."

Although the U.S. Constitution confers a right to carry firearms, we have seen many patients face extreme legal consequences for having firearms.

In addition, the memo issued by the Department of Justice in 2009, which was intended to provide the U.S. Attorneys' Offices with guidance on the prosecution of medical cannabis patients and providers, specifically mentions the presence of firearms as an example of "potential federal interest" that probably falls outside of "clear and unambiguous compliance" with underlying state law. In other words, beyond the sentencing enhancements, the presence of firearms makes patients and providers a more likely target for federal prosecution.

ASA strongly advises that, if you are a medical cannabis patient, do not carry firearms or keep them on your property or allow others to do so.

Civil Asset Forfeiture

Federal law provides for the forfeiture of property and profits obtained through or used in the commission of felony drug offenses. Prosecutors have incentives to include forfeiture offences in all drug indictments. Forfeiture can apply to landlords who rent to people considered in violation of federal law, and therefore can also be used to intimidate the landlords of patients who cultivate or use their medicine on the premises. It should be noted, however, that landlords do have defenses available to them in these types of civil actions, and that they are rarely targets of forfeiture if they themselves were not participating in the use, possession, or cultivation of medical cannabis.

B. BEST LAW ENFORCEMENT ENCOUNTER IS THE ENCOUNTER THAT NEVER OCCURS

While your state may have extensive laws that protect your right to use medical cannabis, many law enforcement officers still believe that medical cannabis is a "sham" and that all use of cannabis is recreational use. Law enforcement officers often seize medicine, harass patients, issue citations, and even arrest patients for exercising their rights. Carry your doctor's written recommendation and/or state-issued ID Card (following your state's requirement) at all times, but do not present it to law enforcement unless accused of a cannabis-related crime. Dealing with criminal charges and/or getting your medicine back can be stressful and costly, and may cause you to be "outed" as a medical cannabis patient. That's why we say that the best law enforcement encounter is the one that never occurs. If you follow these tips, you will be that much less likely to be harassed by law enforcement.

1. Use Common Sense

Consider safety when and where you choose to medicate; cannabis smoke and vapor have very distinctive smells. You will attract less attention if you do not consume cannabis in plain view or near open windows.

Do not drive your car while medicating. If law enforcement officers smell cannabis, they have probable cause to search your vehicle. If you are going somewhere, medicate after you arrive. Please note that no medical cannabis laws protect you from charges of driving under the influence of cannabis, and cannabis can impair motor skills. Every state has the ability to prosecute patients for driving under the influence if they are impaired while driving.

Although it may help with dosages and rationing, packaging your medicine in multiple bags looks suspicious. Cannabis stores best in glass jars or airtight plastic containers in cool dark places, so carry only what you need.

Fewer plants attract less attention from thieves and others who may wish you harm, so be realistic about the amount of cannabis you will need.

Try to limit the amount of cannabis you have with you at any given time. While you may seal your medication in airtight containers, there is still a distinctive odor that is hard to prevent and can lead to law enforcement encounters. The less medicine you have with you, the less smell there is.

2. Be a Good Neighbor

A common cause of trouble for both patients and caregivers is complaints from neighbors. This problem might begin with an unpleasant personal confrontation, or the neighbors may notice your cannabis use and report concerns about nuisance and safety to landlords or police. Subsequent investigations can lead to the arrest of patients and caregivers and to the closure of medical cannabis dispensing centers.

Neighbors and nearby businesses may or may not share your opinion about

medical cannabis, but they will be much more likely to respect your right to safe access if you are not causing them problems. By being conscious of neighbors' rights, privacy, and property, patients and dispensing centers can establish and maintain harmonious relationships.

Other issues with your neighbors can lead to law enforcement encounters. Domestic disputes, loud music, illegal parking, barking dogs, and other nuisances should be kept to a minimum. Police are required to investigate these reports, and they will come to your location, giving them an opportunity to find grounds for a search. When neighbors complain to law enforcement, citations or criminal charges for nuisance violations can be difficult to deal with, and investigation into these types of charges may lead to charges related to your medical cannabis use. Being a good neighbor can help you avoid these types of encounters.

3. Sensible Medical Cannabis Use

Patients and caregivers should educate themselves about medical cannabis and understand the benefits and potential side effects of their medicine. If you are new to using medical cannabis, or are trying a new strain, strength, or route of administration, it might be best to do so when you have no other responsibilities or plans. New routes of administration in particular may cause somnolence, or tiredness. By being a sensible medical cannabis user and making informed decisions, you can not only be as healthy as possible and help change the way people think about medical cannabis use, but also limit your chances of a law enforcement encounter.

Guidelines for Sensible Medical Cannabis Use:

1. Always listen to the advice of your doctor and use good judgment when using medical cannabis.
2. Carefully determine the amount of cannabis that is right for you. Start with a small amount and slowly increase your dosage to find the proper level for symptomatic relief.
3. Be informed about the side effects of cannabis. It is also important to be aware of the possible risks of using medical cannabis.
4. Think carefully and in detail about the benefits of cannabis and relief that its use provides you. Being able to explain your use of medical cannabis can help you be an effective advocate, and you can be an example that helps your friends, family, and community forum their own opinions of medical cannabis.
5. Avoid medical cannabis use that puts you or others at risk, such as using it while driving, at work, or in public places. Remember, you can still be arrested for cannabis use and penalties can be stiff. As with any other medication, it remains illegal to drive while under the influence.
6. Always carry a copy of your physician's recommendation, caregiver's agreement, and/or ID card when in possession of medical cannabis.

Travel Safely

Many arrests for cannabis possession arise from traffic stops. Do not medicate and

drive. If you travel with cannabis, make sure your vehicle is up to code and your cannabis is concealed—preferably in your trunk.

Don't tempt TSA

Recently, news outlets have reported that some TSA and airport officials have relaxed their policy regarding flying with medical cannabis; please note that these officials may still turn patients over to local law enforcement. It's also important to remember that airports and planes are under federal jurisdiction, so you are much more likely to interact with federal law enforcement when flying, and there is NO medical defense to possession, transportation, or trafficking charges at the federal level. Federal fines are steep, and these types of charges may also lead to jail time. In addition, some states' medical cannabis protections do not extend to people who intend to leave the state with their medicine, so even if you are arrested in the state where you are a qualified patient, you may still face state criminal charges and conviction. It's best NOT to fly with medicine, EVEN if your flight never leaves your home state.

Also, keep in mind that most medical cannabis states do NOT recognize patient status for travelers (except Arizona, Maine, Michigan, Montana, and Rhode Island). Being a qualified medical cannabis patient in your home state, does NOT always make you a qualified patient elsewhere.

C. BEING PREPARED IN ADVANCE FOR SUCCESSFUL LAW ENFORCEMENT ENCOUNTERS

Fortunately, many patients and caregivers never have law enforcement problems. Even those who do regularly report successful interactions with local and county police; many municipalities offer strong protection to medical cannabis patients. Yet even in friendly jurisdictions, qualified patients are still being harassed and arrested for medical cannabis, despite proof of their patient status.

Any patient or caregiver can become the target of a law enforcement action. Each person who decides to use medical cannabis or help a patient to do so should be prepared to successfully maneuver through these encounters. You might not be able to avoid arrest in each instance, but chances of successfully fighting charges are greatly improved by education and careful planning.

There are many measures you can take before legal problems occur. You should carefully study the Law Enforcement Encounters section of this manual and, if possible, attend an ASA "Know Your Rights" training to most effectively learn this detailed information.

The first step is to stay on top of the basics. This includes maintaining a current doctor's recommendation and having a clearly defined patient/caregiver relationship. Keep a copy of your recommendation or ID Card or both (depending on the state) in your wallet or purse at all times. You may want to memorize your physician's and lawyer's phone numbers, or write them down to keep with your doctor's recommendation or identification.

It is very important to inform the people in your life, such as family, friends, and roommates, about your medical use of cannabis. They should be prepared to assist if you are harassed or arrested. They should also be educated about their own legal rights (see the "Know Your Rights" information), as they may be questioned in an investigation about your cannabis use. Also, be aware of how to get out of jail if you are arrested. You may want to make a plan for bail, bond, or being released from jail on your own recognizance. You may want to protect and organize your personal belongings and financial data, as well as make a plan for emergency child, pet, and plant care. Lastly, always stay alert for signs of surveillance and be aware of potential conflicts with the neighbors to avert problems early.

1. Safe Gardening

Have Your Paperwork Together

Post a copy of patient medical cannabis recommendation(s) and/or caregiver paperwork and/or other required paperwork prominently at any place where cannabis is cultivated. Keep a copy of all of your paperwork at an off-site location; if a raid occurs, your paperwork may be destroyed or seized.

In the Garden

Don't be sloppy. Compost or eliminate trash off site. The larger the garden appears, the more likely you are to attract the attention of thieves or others who wish to cause you harm. Cultivating indoors is generally considered safer because it helps avoid nosy neighbors and reduces the risk of theft. Use extra odor control methods during harvest to avoid offending neighbors. The plants smell especially pungent during harvest, as they are particularly resinous, and you may find the smell lingering in the air, on your clothes, and in your hair.

Compost off site

Be Smart: Be discreet

Be mindful about hauling grow equipment, tools, and plants into your home or grow site in view of neighbors. In the same vein, as tempting as it may be to talk about, tell as few people as possible about the location of the site.

2. Create Security Culture in Your Community

"Security Culture" refers to the importance of developing unbreakable unity within the medical cannabis community. If everyone involved maintains this unity, the entire community will be safer. Law enforcement agents rely on turning people against each other and disorganize or disband the community.

Implement a Security Culture

Take care of yourself and your community. Don't gossip, brag or ask for compromising or unnecessary information about medical cannabis operations and activities. Although such behavior may be entertaining, it puts you at greater risk of arrest and law enforcement officers may use personal splits to divide the

community. When you are about to discuss your personal involvement in any medical cannabis activity, consider the following:

- Would this person repeat what you are about to tell them to anyone else? When you share information about your use or cultivation of medical cannabis, you are providing evidence that may be used against you in court if this person is ever interrogated as a witness. You should also be cautious of theft. Patients and providers have been robbed, so it's best to limit the dissemination of sensitive information.
- Would you want this person to have to perjure him or herself? Think carefully: you may be giving people information that may cause harm to you or to them.

If someone you know is giving out sensitive information, talk to him or her in private about why such talk can be hazardous. Someone who repeatedly engages in gossip, bragging or seeking unnecessary information about inappropriate topics after repeated educational talks is a grave risk at best, and an informant looking to incriminate others at worst.

Keeping an Eye Out for Surveillance

Take precautions. Assume you are under surveillance if you are in any way involved in cultivating medical cannabis for yourself or other patients. Do not discuss sensitive matters on the telephone, through the mail, by email, or in your home, car, dispensing collective, or office. Be cautious with whom you discuss sensitive information. Keep written materials and lists of other patients in a secure place. If you are arrested, law enforcement officers may investigate all of your contacts. Law enforcement officers have the right not only to go through your address book, but can also answer any calls made to your phone. Keep in mind that electronic data such as emails and text messages still exist even after they've been deleted, and your phone company or service privder may turn them over to law enforcement.

Excerpted from "Security Culture," Slingshot Issue #72, http://slingshot.tao.ca/ with modifications by ASA.

D. SUCCESSFUL LAW ENFORCEMENT ENCOUNTERS

When dealing with law enforcement officers, keep your hands in view and don't make sudden movements. Avoid passing behind them. Nervous officers are dangerous officers. Also, never touch law enforcement officers or their equipment—you can get injured and/or charged with assault and battery. Law enforcement officersdo not decide your charges; they can only make recommendations. The prosecutor is the only person who can actually charge you. Remember that law enforcement officers have no power to negotiate or charge; promises of leniency or threats of harsher penalties are all lies and are designed to get you to start talking.

1. Law Enforcement Encounters

Conversation.

When law enforcement officers are trying to get information, but don't have enough evidence to detain or arrest you, they'll try to coerce information from

you. They may call this a "casual encounter" or a "friendly conversation." If you talk to them, you may give them the information they need to arrest you or your friends. In most situations, it is not advisable to volunteer information to law enforcement officers. During a law enforcement encounter that involves an officer asking you questions or trying to engage you in conversation, ask "Am I being detained or Arrested?" If you are not being detained or arrested, walk away. If you are being detained or arrested, let the officer know that you do not consent to a search and that you wish to remain silent and want a lawyer.

Detention

Law enforcement officerscan detain you only if they have reasonable suspicion (see below) that you are involved in a crime. Detention means that, though you aren't arrested, you can't leave. Detention is supposed to last a short time, and they are not supposed to move you. During detention, law enforcement officers can pat you down and go into your bag to make sure you don't have any weapons. They aren't supposed to go into your pockets unless they feel a weapon.

Be polite during encounters

If law enforcement officers are asking you questions, ask if you are being detained. If not, leave and say nothing else to them. If you are being detained, you should ask why, and remember their answer. Then you should say the Magic Words: "I am going to remain silent. I want a lawyer" and nothing else. Remain silent. Anything you say to law enforcement may be used against you, and sometimes it's hard to recognize that the information you are volunteering might harm you. It is always better to say nothing at all. If they ask to search your person or belongings, say, "I do not consent to a search." They may say, "Empty your pockets." You are within your rights to refuse. If you do empty your pockets, it is considered consent and anything they find in your pockets may be used against you.

A detention can easily turn into arrest. If law enforcement officers are detaining you and they get information that you are involved in a crime, they will arrest you, even if it has nothing to do with your detention.

For example, if someone is pulled over for speeding (detained) and the officer sees drugs in the car, the officer may arrest her for possession of the drugs, even though it has nothing to do with her being pulled over. Law enforcement officers have two reasons to detain you: 1) they are writing you a citation (a traffic ticket, for example), or 2) they want to arrest you but they don't yet have enough information to do so.

Arrest

Law enforcement officerscan arrest you only if they have probable cause (see below) that you are involved in a crime. When you are arrested, the officers can search you to the skin and go through your car and any belongings. By law, an officer strip-searching you must be the same gender as you. If arrested, you should still say, "I do not consent to a search" to preserve your rights. After that, say, "I choose to remain silent and I want a lawyer." After that, remain silent. Law

enforcement will try to get you to give them information about the crime(s) they are holding you for. Keep in mind that denying things that they say is NOT remaining silent.

Reasonable Suspicion vs. Probable Cause

Reasonable suspicion must be based on more than a hunch—law enforcement officers must be able to put their suspicion into words. For example, an officer can't just stop someone and say, "She looked like she was up to something." They need to be more specific, such as, "She was standing under the overpass staring up at graffiti that wasn't there two hours earlier. She had the same graffiti pattern written on her backpack. I suspected that she had put up the graffiti."

Law enforcement officers need more proof to say they have probable cause than to say they have a reasonable suspicion. For example, "A store owner called to report someone matching her description tagging a wall across the street. As I drove up to the store, I saw her running away spattered with paint and carrying a spray can in her hand."

Searches

Never consent to a search

Never consent to a search. If police try to search your house, car, backpack, pockets, etc. say the Magic Words: "I do not consent to this search." This may not stop them from forcing their way in and searching anyway, but if they search you illegally, they probably won't be able to use the evidence against you in court. You have nothing to lose from refusing to consent to a search and lots to gain. Do not physically resist officers when they are trying to search, because you could get hurt and/or charged with resisting arrest or assault and battery. Just keep repeating the Magic Words "I do not consent to a search" so that the officers and all witnesses know that this is your stance.

Be careful about casual consent. That is, if the officers stop you and you get out of the car but don't close the door, they might search the car and claim that they thought you were indicating consent by leaving the door ajar. Also, if you say, "I'd rather you didn't search," they can claim that you were reluctantly giving them permission to search. Always just say the Magic Words: "I do not consent to this search."

Questioning

Interrogation isn't always bright lights and rubber hoses—usually it's just a conversation. Whenever law enforcement officers ask you anything besides your name and address, it's legally safest to say these Magic Words:

"I am going to remain silent. I want to see a lawyer." This invokes legal rights, which protect you from interrogation. When you say this, all law enforcement officials are legally required to stop asking you questions. They probably won't stop, so just repeat the Magic Words or remain silent until they catch on. If you forget your decision to remain silent and start talking to the officers, you can and should re-invoke the Magic Words, then remain silent. Do not raise your status as a medical cannabis patient, unless you are specifically asked about this or the

medicine has already been found.

Remember, anything you say to the authorities can and will be used against you and your friends in court. There's no way to predict what information law enforcement officers might try to use or how they will use it. Plus, law enforcement officers often misquote or lie altogether about what was said. So say only the Magic Words and let all the cops and witnesses know that this is your policy. Make sure that when you're arrested with other people, the rest of the group knows the Magic Words and promises to use them.

Don't answer questions

One of the jobs of law enforcement officersis to get information out of people. Law enforcement officersare legally allowed to lie when they're investigating, and they are trained to be manipulative. The only thing you should say to law enforcement officers, other than identifying yourself, are the Magic Words: "I am going to remain silent. I want to see a lawyer."

Here are some lies they may tell you:

- "You're not a suspect—just help us understand what happened here and then you can go."
- "If you don't answer my questions, I'll have no choice but to arrest you. Do you want to go to jail?"
- "If you don't answer my questions, I'm going to charge you with resisting arrest."
- "All of your friends have cooperated, and we let them go home. You're the only one left."

Law enforcement officers can be sneaky, and there are lots of ways they can trick you into talking. Here are some scams they may pull:

- "Good Cop, Bad Cop": "Bad cop" is aggressive and menacing, while "good cop" is nice, friendly, and familiar (frequently the "good cop" will be the one who is the same race and gender as you). The idea is "bad cop" scares you so badly you are desperately looking for a friend. "Good cop" is that friend.
- Prisoners' Dilemma: The officerswill tell you that your friends ratted on you so that you will snitch on them. Meanwhile, they tell your friends the same thing. If anyone breaks down and talks, you all go down.
- The officers will tell you that they have all the evidence they need to convict you, but that if you "take responsibility" and confess, the judge will be impressed by your honesty and go easy on you. What they really mean is: "We don't have enough evidence yet, please confess."

Jail is a very isolating and intimidating place. It is really easy to believe what the officers tell you. Insist on speaking with a lawyer before you answer any questions or sign anything.

Miranda Rights

Law enforcement officers do not have to read you your rights (also known as the Miranda warnings). Miranda applies when there is (a) an interrogation (b) by a police officer or other agent of law enforcement (c) while the suspect is in custody (you do not have to be formally arrested to be "in custody"). Even when all of these conditions are met, law enforcement officers intentionally violate the Miranda requirement. And though your rights have been violated, what you say can be used against you. For this reason, it is better not to wait for the cops to inform you of your rights. You know what your rights are, so you can invoke them by saying the Magic Words, "I am going to remain silent. I want to see a lawyer."

If you've been arrested and realize that you have started answering questions, don't panic. Just re-invoke your rights by saying the Magic Words again. Don't let them trick you into thinking that because you answered some of their questions, you have to answer all of them.

Arrest and Search Warrants

If law enforcement officers come to your door with an arrest warrant, step outside and lock the door behind you. Law enforcement officers are allowed to search any room you go into, so don't go back into the house for any reason. If they have an arrest warrant, hiding won't help, because they are allowed to force their way in if they know you are there. It's usually better to just go with them without giving them an opportunity to search.

If law enforcement officers have a search warrant, nothing changes—it's legally safest to say the Magic Words. Again, you have nothing to lose from refusing to consent to a search and lots to gain if the search warrant is found to be incorrect or invalid. If they do have a search warrant, ask to read it. A valid warrant must have a recent date, the correct address, and a judge's or magistrate's signature; some warrants also indicate the time of day the cops can search. You should say the Magic Words whether or not the search warrant appears correct. The same goes for encounters with any other government official who tries to search you, your belongings, or your house.

Infiltrators and Informants

Undercover law enforcement officers sometimes infiltrate political organizations. They can lie about being officers even if asked directly. Undercover officers can even break the law (undercover officers get hazard pay for doing drugs as part of their cover) and encourage others to do so as well. This is not legally entrapment.

FBI, DEA, and Other Government Agents

The essence of the Magic Words "I'm keeping my mouth shut until I talk to a lawyer" not only applies to police but also to the FBI, DEA, INS, CIA, even the IRS. If you want to be nice and polite, say that you don't wish to speak with them until you've spoken with your lawyer or that you won't answer questions without a lawyer present.

Phone Calls in Jail

You're entitled to make a phone call from jail, but that doesn't mean you're going

to get one right away. Jail telephones are often rigged to only make collect calls, although some take coins as well. All telephone calls from people in custody can be monitored. You should not discuss anything on the phone that is secret or sensitive—circumstances of your arrest, people you are close to, any contact information for those people, etc.

Taking Notes

Whenever you interact with or observe law enforcement officers, always write down what is said and who said it. Write down the officers' names and badge numbers and the names and contact information of any witnesses. Record everything that happens. If you are expecting a lot of police contact, get in the habit of carrying a small tape recorder and a camera with you. Be careful—law enforcement officers don't like people taking notes, especially if they are planning on doing something illegal. Observing them and documenting their actions may have very different results; for example, it may cause them to respond aggressively, or it may prevent them from abusing you or your friends.

People deal with law enforcement officers in all kinds of circumstances. You must make an individual decision about how you will interact with law enforcement. It is important to know your legal rights, but it is also important for you to decide when and how to use them in order to best protect yourself.

DEMYSTIFYING THE LEGAL SYSTEM

1. Getting Out of Jail

There are several procedures for getting out of jail while a case is in process. Once arrested, the judge will decide whether to offer you bail, bond, or release you on your own recognizance (OR).

Citation: Citing out is a type of release from custody in which you sign a citation, which is a promise to appear in court. It is usually a form that looks like a traffic ticket. Never sign a piece of paper that is an admission of guilt. Read the form closely and make sure you know what you are signing.

Bail: Bail is money you pay to the court, to be forfeited if you don't appear at scheduled hearings. A bail bondsman can put up the money for you, but you have to give the bondsman a percentage of the total bail, which the bondsman keeps as payment. Often, there is a pre-set bail for misdemeanors and lesser felonies that you can pay at the jail without waiting to go before a judge.

Bond: A bond is like bail except that you put up collateral instead of paying money. Collateral is something of value, like a car, a house, or property.

OR: Release on your own recognizance (OR, ROR or PR) is based simply on your promise to come to court for scheduled hearings, without having to put up bond or pay bail. Usually you will only be released on your own recognizance if you can prove that: (1) you are not a danger to the community; and (2) you are not a flight risk or unlikely to return for court appearances.

You are likely to be kept in jail if you:

- Have an outstanding warrant for another charge
- Are already out on OR, bond or bail for another charge
- Are currently on probation or parole
- Have failed to appear for court dates in the past
- Have immigration problems

You are likely to be released from jail if you can prove you're not a flight risk by organizing documents for your first court appearance that show the judge you have long-term ties to the community and are therefore unlikely to skip town. Assemble as many of the following documents as possible. You need the originals, plus a copy to give the court:

- Lease, rent receipts, utility bills, phone bills (both current bills and old ones to show the time you've been at this residence)
- Employment contract, pay stubs, records of volunteer work
- School ID, school records
- Proof of membership in community organizations or churches
- General character reference letters from landlords, roommates, employers, teachers, clergy
- List of character references with phone numbers
- Letters on doctor's stationery about any medical conditions or appointments that necessitate your release

It would be very difficult for your friends to assemble such materials while you are sitting in jail. It makes more sense for you to put together this packet in advance and keep it in a safe and accessible place. If you are arrested, your friends can bring these papers to your lawyer so that you will have this material in court.

2. Going to Court

When do I go to court for the first time?

If you are in custody, the authorities are legally obligated to bring you to court within two business days or "as soon as reasonably possible." If you are not being held in jail, your first court date may be anywhere from one week to a month after arrest. Court dates should be written on the citation or release forms.

What happens at the first court appearance?

The first hearing generally involves the appointment of counsel. You indicate who is going to represent you: yourself, a private attorney, or a court-appointed lawyer. Also at the first hearing, you find out the charges against you, and respond by making a demurrer or entering a plea. This part is the arraignment.

If you've been in jail up until your first court appearance, the first hearing usually focuses on release issues: bail, bond or release on your own recognizance (OR). This part is called a bail hearing. Even if you're not released the first time, the subject can be brought up at later hearings. The appointment of counsel, arraignment, and bail hearing can be separate appearances. Many people choose to waive the right to a speedy trial at this time, called "waiving time." This is mainly done to have time to plan a defense and build public support.

What are the choices when it's time to enter a plea?

Pleas generally fall into two categories: guilty and not guilty. Normally, people only plead guilty if they've negotiated a plea bargain. If you do not reach or want a plea bargain plead "not guilty" and go to trial.

What happens if I don't show up for a court hearing?

If you miss a scheduled hearing, the judge will usually issue a bench warrant. If an individual with an outstanding bench warrant gets into any kind of trouble, like a traffic violation, that person is subject to arrest. Judges usually accept extreme excuses for missing a hearing, like funerals or medical emergencies. Conflicts with school or work schedules are not acceptable excuses.

When does the trial happen?

When you do not waive time, trial usually occurs a month or two after arraignment. When time is waived, trial might not begin for many months. In both cases, trials are often preceded by hearings at which written and/or oral "motions" are made and heard.

What goes on at trial?

At trial, you can testify if you want to. You can also put on witnesses and possibly witnesses to testify about your good character. In addition, you have the right to cross-examine the witnesses against you, who will probably be law enforcement officers. You also get to make opening and closing arguments.

The judge may try to forbid you from talking about anything political, and even disallow mention of medical cannabis, on the grounds that it would be irrelevant. Lawyers may be able to get around the judge's prohibitions, but there's considerable precedent (published results of earlier trials) supporting the notion that judges can forbid discussion of political matters at trial.

Your lawyer will handle witnesses, make opening and closing arguments, and file motions. All you do is testify. Sometimes, people represent themselves (called *pro per* or *pro se*). In these cases, it's useful to have an attorney as advisory counsel or co-counsel for technical legal matters.

You don't necessarily get a jury trial. The alternative is a bench trial, or trial by judge in which the judge hears the evidence and reaches a verdict. The judge will also decide what will be allowed as testimony and evidence. In state court, you must be charged with at least a misdemeanor to get a jury trial. In federal court, you must be charged with an offense that carries a maximum sentence of greater than six months to get a jury trial. This requirement rules out all infractions and most misdemeanors.

The trial ends with the verdict: guilty, not guilty, or a hung jury. If found not guilty, celebrate. If there is a hung jury (the jury couldn't agree on the verdict), then the prosecutor gets to decide whether to retry you or dismiss the case. Prosecutors often give up or offer a really good deal at this point. If you're found guilty, then the judge sentences you. The judge can either sentence you immediately after the verdict or set a separate hearing for sentencing. You may be qualified to appeal this sentence or the original case ruling, so consult an attorney.

What happens at sentencing?

You can pack the courthouse. You get to make a speech, because you have the right to allocution. This sentencing statement is normally a chance to ask for mercy and explain mitigating factors, but activists often use it as a chance to discuss political matters, especially if they didn't get to speak their minds or offer complete evidence at trial.

3. Return of Property

In nearly every case where a patient or caregiver is cited or arrested for medical cannabis, law enforcement will seize the medicine and often other property they feel is connected with the alleged offense. If this happens and you are found not guilty or have your charges dismissed or dropped, you can petition the court for the return of your property. Law enforcement typically does not return property without a court order. This requires you to file a motion for return of property. See AmericansForSafeAccess.org/ROP for more information about filing.

If you are certain that the property has been destroyed or damaged beyond use, you may want to file a civil suit against the city or county responsible. This process can take years to complete. In order to qualify for filing a civil suit, you must first file a claim form with the appropriate government entity shortly after the seizure. It may be helpful to have the civil suit complaint drafted by an attorney, but that is not necessary. Contact ASA about how to file a claim .

This section is adapted from information provided to ASA by the Midnight Special Law Collective—www.midnightspecial.net.

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