

Safe Consumption

Massachusetts

Consuming cannabis for new (or long-time) consumers can be an exciting and overwhelming experience. There are many choices when it comes to consumption methods (inhalation, edibles, topicals, sublingual, transdermal...) and types of cannabis (variety of strains, lab results, cannabinoid profiles). As Agents and guides, it's our responsibility to ensure our consumers are **informed about products, consumption methods, possible effects and protocols**.

Invite people to consume the smallest amount of cannabis to achieve the desired medicinal/wellness effects. We commonly refer to safe consumption as **“low and slow”**. Start with a **low amount of product (low dose) and proceed very slowly** with consumption. We also encourage people to **“fall in love with micro-dosing”**!

Encourage consumers to “pick a lane” and **NOT mix cannabis with other substances**. Patients should be in touch with their physicians about how/if cannabis may interact with other medications they are on.

Overconsumption of cannabis may result in unpleasant effects. Being informed and guiding (while never playing doctor) our consumers on how to **safely consume** cannabis is essential to ensure **positive experiences**.

The Basics

The Plant produces phyto-cannabinoids (chemical compounds in cannabis), terpenes (aromatic compounds found in plants, including cannabis), and flavonoids (affect the pigmentation of cannabis, just as they do with other flowers).

The Entourage Effect the theory that the full spectrum of the cannabis plant works best together. The interaction between all of the compounds from a cannabis plant, such as phytocannabinoids, terpenes, and flavonoids, come together to enhance their effects.

Our Body has an Endogenous Cannabinoid System (ECS) designed to interact with cannabinoids. We are currently aware of CB1 Receptors (typically in the brain & central nervous system) and CB2 Receptors (typically in the gastrointestinal system, organs and immune system). Our body produces two endo-cannabinoids; anandamide and 2AG.

Cannabinoids are molecules that interact with our cannabinoid receptors.

Common Cannabinoids (of 100+)

- | | |
|--------|--------|
| • THCa | • THCv |
| • THC | • CBN |
| • CBDa | • CBC |
| • CBD | • CBG |

Terpenes are compounds common to many plants. They're the aromatic constituent and provide the scent/fragrance of the plant. We're learning more about how terpenes interact with cannabinoids to affect the experience with cannabis.

Common Terpenes

- | | |
|----------------------|------------|
| • A-Pinene | • Myrcene |
| • Linalool | • Limonene |
| • Beta Caryophyllene | |

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The Effects of Cannabis

EveryBODY is different. It's important to be aware and track the consumption experience to understand how different products impact the consumer's body.

Encourage consumers to pay attention to: dosing, type of product, onset, effects/ feelings.

Always encourage consumers to "Please Consume Responsibly!"

Potential Pleasant Effects of Cannabis*:

- Euphoria
- Relaxation
- Heightened senses
- Amusement
- Increased appetite
- Pleasure/ Laughter
- Pain relief
- Ease with sleep

Potential Unpleasant Effects of Cannabis*:

- Altered perception of time
- Anxiety
- Fear
- Distrust
- Panic
- Acute psychosis

[*NIDA](#)

Factors that may affect the cannabis experience:

- Method/amount of consumption
- Cannabinoid, terpene, flavonoid profile
- THC potency
- Experience level
- Tolerance
- Set/Setting
- Mood

Common Methods of Consumption

- 1) **Inhalation:** smoking or vaporizing (flower or concentrates) with joints, pipes, water pipes and vaporizers.
- 2) **Ingestion:** eating products infused with cannabis (oil or flower). This may include; pills, gel caps, edible baked goods and tinctures.
- 3) **Oral absorption:** extracted oil is dissolved in the mouth and may include mints, lozenges and tinctures.
- 4) **Topical:** may be cannabis infused lotion, ointments and transdermal patches, bath salts.

Inhalation

- 1) Smoking/combustion: flower from pipes, water pipes (bongs), joints
- 2) Vaporizing: flower or concentrated cannabis from cartridges/ pens, e-nails
- 3) Aerosols: concentrates that are consumed via an inhaler type device

Onset & duration

- 1–5-minute onset
- Full effect may be 15- 30 minutes
- 1–6-hour duration

Dose

- Varies depending on tolerance
- New consumers may start with 1-2 inhalation and wait at 10 - 15 minutes before consuming more

Ingestion: Oral Mucosal

Tinctures: liquid (oil or alcohol base) that typically goes under the tongue

Lozenges: confection intended to be sucked/absorbed in mouth

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Onset & Duration

- 30–45-minute onset
- Full effect may be 2+ hours
- 1-3+ hours duration

Dose

- Varies depending on tolerance
- New consumers may start with 2-3mgs and wait at least 2-hours before consuming more

Ingestion: Edibles

- Baked goods (cookies/ brownies)
- Chocolate
- Confections
- Gummies
- Capsules
- Beverages (single serving = 5mgs)

Onset & Duration

- 30-minute – 2-hour onset
- Full effect may be 2+ hours
- 6-8+ hours duration

Dose

- Varies depending on tolerance
- New consumers may start with 2-3mgs and wait at least 2-hours before consuming more

Topicals: topicals are generally non-psychoactive and do not create impairment.

- Salves
- Lotion
- Balms
- Bath Soaks

Topicals: Transdermal Patches & Gels are applied directly to the skin with an “uptake agent” that pulls the cannabinoids into the bloodstream and will likely have an impairing effect.

Onset & Duration

- 15 minute to 2-hour onset
- 8-12+ hours duration

Dose

- Varies depending on tolerance. Always start with a small amount (5mgs) and wait at least 2 hours

Disclaimer: this summary is produced for educational discussions only and is NOT medical advice. Marijuana Establishments Agents should never provide medical advice, unless they are trained medical professionals. Patients should always consult a physician before starting any cannabis program.

Potential Adverse Effects

According to the research that has been conducted thus far, cannabis has a strong safety profile overall. As with any other substance, **specific adverse effects are possible**. Potential impacts and adverse effects depend on many factors and are different for each person. As industry professionals, it is imperative that we help to ensure that **consumers are educated about these risks** so they can make good choices for themselves and their bodies.

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Short-term Effects

Potential short-term adverse effects of cannabis depend on the dose, the type of consumption, the user's previous experience, and the set and setting, which can include the consumer's expectations and attitudes towards the effects of cannabis, their mood, and the environment in which they are consuming.

Short-term adverse effects can include:

- Anxiety/agitation/panic
- Suspiciousness or paranoid ideation
- Auditory, visual, or tactile illusions
- Hallucinations with preserved orientation
- Other psychotic symptoms
- Depersonalization
- Derealization
- Interference with personal functioning
- Disinhibition
- Impairment/accidents
- Altered senses (for example, seeing brighter colors)
- Altered sense of time
- Changes in mood
- Impaired body movement/delayed motor reactions
- Impaired judgement
- Impaired attention
- Difficulty with thinking and problem-solving
- Impaired memory
- Breathing problems such as coughing or wheezing (if inhaled)
- Dry mouth
- Reddening of the eyes
- Increased appetite
- Blurred vision
- Dizziness
- Headache
- Vomiting
- Convulsions
- Increased heart rate
- Stroke or heart attack
- Sedation

Increased Heart Rate

Cannabis use raises the heart rate and blood pressure for up to 3 hours after consumption. This effect may increase the chance of heart attack or stroke. Older people and those with heart problems may be at higher risk.

Hallucinations

Hallucinations may occur after using high doses of THC, and may occur at lower doses in individuals with a pre-existing vulnerability to psychosis.

Potential short-term effects summarized

The most obvious short-term health effect of cannabis is impairment marked by disturbances in the level of consciousness, cognition, perception, affect or behavior, and other psychophysiological functions and responses. A minority of first-time cannabis users become very anxious, have panic attacks, experience hallucinations and vomit. These symptoms may be sufficiently distressing to prompt affected users to seek medical care. Acute use impairs driving and contributes to an increased risk of traffic injuries. There is some evidence that cannabis use can trigger coronary events.

Long-term Effects

In epidemiological studies, heavy or regular cannabis use is usually defined as every day or almost every day use. This pattern, when continued over years, predicts an increased risk of some adverse health effects.

Long-term adverse effects can include:

- Cannabis Use Disorder
- Chronic bronchitis
- Increased rates of respiratory infections, pneumonia
- Immunologic competence of respiratory system may be compromised
- Psychotic symptoms and disorders, especially those with history of psychotic symptoms or a family history of these disorders (i.e., worsening symptoms in consumers with schizophrenia)
- Deficits in verbal learning, memory, and attention, which can affect relationships and mood
- Adverse effects of regular use on adolescent psychosocial development and mental health
- Impaired educational attainment in adolescents who are regular users
- Subtle cognitive impairment in those who are daily users
- Impaired respiratory function for smokers
- Cardiovascular disease

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Cardiovascular Disease

Cannabis use has been associated with vascular conditions that increase the risks of myocardial infarction, stroke, and transient ischemic attacks during intoxication.

Potential long-term effects summarized

Regular cannabis users can develop dependence. The risk may be around 1 in 10 among those who ever use cannabis, 1 in 6 among adolescent users, and 1 in 3 among daily users. Withdrawal syndrome is well documented in cannabis dependence.

Growing evidence reveals that regular, heavy cannabis use during adolescence is associated with more severe and persistent negative outcomes than use during adulthood. In a number of prospective studies there is a consistent dose–response relationship between cannabis use in adolescence and the risk of developing psychotic symptoms or schizophrenia.

The association between cannabis use and psychosis or schizophrenia has been recognized for over two decades in at least five ways:

1. Cannabis produces a full range of transient schizophrenia-like positive, negative and cognitive symptoms in some healthy individuals.
2. In those harboring a psychotic disorder, cannabis may exacerbate symptoms, trigger relapse and have negative consequences on the course of the illness.
3. With heavy cannabis use, susceptible individuals in the general population develop a psychotic illness which is associated with age of onset of use, strength of THC in the cannabis, frequency of use and duration of use.
4. Cannabis use is associated with lowering the age of onset of schizophrenia. It is likely that cannabis exposure is a “component cause” that interacts with other factors to precipitate schizophrenia or a psychotic disorder, but is neither necessary nor sufficient to do so alone. Symptoms of schizophrenia increase with cannabis use and strength. The magnitude of the symptoms is associated with the amount used and the frequency of use.
5. Daily use in adolescence and young adulthood is associated with a variety of negative health and psychological outcomes. These include:
 - early school-leaving
 - cognitive impairment
 - increased risk of using other illicit drugs
 - increased risk of depressive symptoms
 - increased rates of suicidal ideation and behavior

It remains to be determined which of these associations are causal. Long-term cannabis smoking produces symptoms of chronic and acute bronchitis, as well as microscopic injury to bronchial lining cells, but it does not appear to produce COPD. Long-term heavy cannabis smoking can potentially trigger myocardial infarctions and strokes in young cannabis users. Smoking a mix of cannabis and tobacco may increase the risk of cancer and other respiratory diseases but it has been difficult to decide whether cannabis smokers have a higher risk, over and above that of tobacco smokers.

Risk of Driving While Impaired

Impairment can include an increased reaction time and difficulty with information processing and decreased perceptual–motor coordination, motor performance, attention and tracking behavior. These particular effects can increase the risk of accidents if users drive while impaired. Both immediate exposure and long-term exposure to cannabis can impair driving ability. In the past two decades, better designed epidemiological studies have found that cannabis users who drive while intoxicated double their risk of a car crash.

Please **encourage consumers to** determine the expected duration of their cannabis experience, based on the product type, and **create a safe transportation plan**, which may include waiting until impairment has ceased or identifying an alternative mode of transportation.

High-potency Cannabis

Researchers do not yet know the full extent of the consequences when the body and brain (especially the developing brain) are exposed to high concentrations of THC or how recent increases in potency affect the risk of someone becoming addicted.

The following risks may be exacerbated when taking high-potency cannabis:

- Hallucinations
- Delusions
- Psychosis (risk is highest with regular use of high potency marijuana)

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Risks with Inhaling Cannabis

Whether smoking or vaporizing flower or concentrates, inhaled cannabis irritates the lungs. People who inhale cannabis frequently can have the same lung and cardiovascular problems as those who smoke tobacco. Inhaling cannabis, in any form, can harm lung tissues and cause scarring and damage to small blood vessels. Smoke and vapor from cannabis contains many of the same toxins, irritants, and carcinogens as tobacco smoke, some in higher concentrations. These problems can include daily cough and phlegm, more frequent lung illness, and a higher risk of lung infections. Regular cannabis smokers report more symptoms of chronic bronchitis (wheeze, sputum production, and chronic coughs) than do non-smokers. Cannabis smoking is also associated with inflammation of the large airways, increased airway resistance, and lung hyperinflation. The immunological competence of the respiratory system in cannabis smokers is also impaired, increasing their health service use for respiratory infections. These symptoms generally improve when those who inhale cannabis quit.

Additional Risks with Concentrates

Not only do concentrates have high levels of THC, but dabbers inhale the entire amount all at once—in a single breath. As a result, concentrates can deliver extremely large amounts of THC to the body quickly. The risks of physical dependence and addiction increase with exposure to high concentrations of THC, and higher doses of THC are more likely to produce anxiety, agitation, paranoia, and psychosis. Additional research is needed to understand how the use of concentrate affects these risks.

In addition, contaminants in concentrate products may be cause for concern. Users of BHO, for example, likely inhale some butane and other impurities along with the vaporized THC. It is important to note that direct inhalation of concentrated butane among recreational inhalant users carries multiple risks, including reported deaths. However, it is unclear what negative health outcomes result from the inhalation of residual butane, other solvents, or leftover contaminants during the dabbing process.

Additional Risks with Edibles

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 cannabis psychosis, it can be severe enough to compel admission to an emergency hospital.

Unlike smoked cannabis, edibles can:

- Take from 30 minutes to 2 hours+ to take effect. Some people eat too much, which can lead to poisoning and/or serious injury.
- Effects may last longer than expected depending on the amount, the last food eaten, and medications or alcohol used at the same time.

Keep all cannabis products locked up, especially edibles. It's important to remember that marijuana affects children differently than adults. Children have accidentally eaten marijuana products that looked like treats, which made them sick enough to need emergency medical care.

Of course, edibles are simply food that is infused with cannabis. It is extremely important to remember all food safety protocols with regard to storing and using edibles. This includes reading the label for each product to identify potential allergies and unwanted ingredients.

Cannabis Use Disorder/Addiction

Humans develop tolerance to THC (Lichtman & Martin, 2005). Despite some contentious discussions regarding the addictiveness of cannabis, the evidence clearly indicates that long-term cannabis use can lead to addiction. Research suggests that between 9 and 30 percent of those who use cannabis may develop some degree of cannabis use disorder. People who begin using cannabis before age 18 are four to seven times more likely than adults to develop a cannabis use disorder. The number goes up to about 1 in 6 among those who start using cannabis as teenagers and to 25 to 50% among those who use cannabis daily.

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There is also recognition of a bona fide cannabis withdrawal syndrome which makes cessation difficult and contributes to relapse. These symptoms are most intense in the first week of abstinence but can persist for as long as a month.

Withdrawal symptoms can include:

- Irritability
- Sleeping difficulties
- Dysphoria
- Craving
- Anxiety
- Restlessness
- Depression
- Aggressiveness
- Loss of appetite
- Pain
- Shivering
- Sweating
- Elevated body temperatures
- Chills

Rates of cannabis dependence are higher among individuals reporting any lifetime psychiatric disorder, mood disorder, anxiety disorder, conduct disorder, personality disorder or attention deficit hyperactivity disorder (ADHD). Persons with cannabis-use disorders have higher rates of depressive disorders (Swift, Hall & Teesson, 2001). Persons with cannabis-use disorders also have higher rates of anxiety, conduct disorders, eating disorders and personality disorders (Goodman & George, 2015).

Severe substance use disorders are also known as addiction. People who are addicted to cannabis may also be at a higher risk of other negative consequences of using the drug, such as problems with attention, memory, and learning.

Some of the signs that someone **might be addicted** include:

- Unsuccessful efforts to quit using cannabis
- Giving up important activities with friends and family in favor of using cannabis
- Using cannabis even when it is known that it causes problems fulfilling everyday jobs at home, school or work

Cannabis dependence in and of itself is not the only problem for heavy users. By increasing the duration of regular use, dependence may also increase the risk of any long-term health risks of cannabis that may occur after decades of use, such as cardiovascular and respiratory diseases, and possibly cancers.

Cannabis Use by Adolescents

Adolescents' increased vulnerability to adverse long-term outcomes from cannabis use is probably related to the fact that the brain, including the endocannabinoid system, undergoes active development during adolescence. Early and regular cannabis use predicts an increased risk of cannabis addiction. As compared with persons who begin to use cannabis in adulthood, those who begin in adolescence are approximately 2 to 4 times as likely to have symptoms of cannabis dependence within 2 years after first use. In addition, early cannabis use is associated with impaired school performance and an increased risk of dropping out of school.

Cannabis also affects brain development. When cannabis users begin using as teenagers, the drug may reduce attention, memory, and learning functions and affect how the brain builds connections between the areas necessary for these functions. Cannabis' effects on these abilities may last a long time or even be permanent.

Cannabinoid Hyperemesis Syndrome

Cannabinoid Hyperemesis Syndrome is characterized by chronic cannabis use, cyclic episodes of nausea and vomiting, and frequent hot bathing.

If you know someone who is experiencing these symptoms, please encourage them to speak with a qualified healthcare provider.

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References

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[Adverse Health Effects of Marijuana Use](#)”: Nora D. Volkow, M.D., Ruben D. Baler, Ph.D., Wilson M. Compton, M.D., and Susan R.B. Weiss, Ph.D.

[NIDA – Marijuana Drug Facts](#)

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[Americans for Safe Access – Information on Cannabis Safety](#)

[Cannabinoid Hyperemesis Syndrome](#): Jonathan A. Galli, M.D., Ronald Andari Sawaya, M.D., and Frank K. Friedenberg, M.D.

[Healer – Introduction to Cannabis 4 Day Program: Inhalation](#)

[Healer – Introduction to Cannabis 4 Day Program: Tinctures](#)

[American Addiction Centers – What Are The Signs That Someone Is High?](#)

[OLCC – 50 Signs of Visible Intoxication](#)

Additional Resources

[More About Marijuana](#)

[Cannabis Control Commission - Parents](#)

[Cannabis Control Commission – Adult Consumers](#)

[Responsibility Grows Here](#)

[NIDA - Marijuana](#)

[NIDA – Is Marijuana Addictive?](#)

[Marijuana As Medicine? The Science Beyond the Controversy](#) Mack A, Joy J. Washington

[NCCIH – Cannabis \(Marijuana\) and Cannabinoids: What You Need to Know](#)

[The Health Effects of Cannabis and Cannabinoids: The Current State of Evidence and Recommendations for Research](#)

[More About Marijuana Flyer](#)

[Healer](#)