

Cannabis

Tobacco and cannabis are two of the most commonly used substances among youth in the U.S.



More than

1 in 3

(34.4%) teens have tried cannabis by the 12th grade.



Among youth aged 12-17, **co-use of cannabis and tobacco is more prevalent** than using both substances alone.



Youth cannabis use **negatively impacts brain development** and shows links to depression and earlier onset symptoms of psychotic illness in those who are susceptible.



Nearly

1 in 10

adults who use cannabis will become dependent over their lifetime, and the odds of developing a dependence are higher in people who use cannabis during youth.

24
states
+ D.C.

have legalized cannabis for **adult recreational use**.



40
states
+ D.C.

have legalized **medical cannabis**.

The link between cannabis and tobacco

Many states have increased legal access to cannabis products recently, with 40 states plus D.C. legalizing medical cannabis, 31 states plus D.C. decriminalizing the possession of cannabis, and 24 states plus D.C. legalizing cannabis for adult recreational use. While cannabis use by teens has declined in the last few years after a decade of remaining relatively stable, young adult use has steadied after a period of rising prevalence¹ and vaping cannabis has become a commonly used method of consumption.²

Cannabis and tobacco products (including cigarettes, e-cigarettes, and smokeless tobacco products) are two of the most commonly used substances among U.S. youth.^{3,4} Tobacco and cannabis use patterns are also evolving, and many teens are combining the two products. Among youth aged 12-17, co-use of cannabis and tobacco is more prevalent than using both substances by themselves. A study that analyzed data collected from October 2018 also shows that odds of cannabis use were higher among youth who had a history of using e-cigarettes.⁵ These are concerning trends given that cannabis has potentially dangerous effects on young people; youth cannabis use negatively impacts brain development,⁶ and research shows worrying links to depression and earlier onset and worse symptoms of psychotic illness in those who are susceptible.^{7,8} Young people who use nicotine and cannabis are exposed to negative health effects of both substances — **nicotine is highly addictive and can also negatively impact developing brains**⁹ — warranting continued surveillance of youth cannabis use. In addition, the increase in cannabis legalization and an evolving policy landscape concerning cannabis has rapidly



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brought about new products that should be monitored to ensure that these products do not attract new youth users.

This resource presents information about the current state of legalization and changing state laws regarding cannabis, the evolving product landscape, as well as cannabis use patterns among youth and adults and the health effects resulting from such use.



What is cannabis?

- » Cannabis is a plant that produces active chemicals that can affect the entire body when consumed.
- » Cannabis is primarily used for the psychoactive mind-altering component known as Tetrahydrocannabinol (THC). Delta-9 THC is the primary form of THC consumed. The cannabis plant can be harvested to produce concentrates, extracts, and edibles.
- » THC can be ingested orally, smoked, inhaled as a vapor, sprayed under the tongue, used on skin, and mixed into food products.
- » Side effects of cannabis use can include impairment in attention, judgment and short-term memory, slow coordination, worsened balance, and increased heart rate. Users may experience anxiety and paranoia. It can also irritate the throat and lungs and disrupt sleeping patterns. Long-term use has been associated with impairments in learning and memory with a potential loss of IQ.¹⁰
- » Today's cannabis is substantially more potent than it was two decades ago, providing a more intense and longer high, and more pronounced physical and mental side effects.¹¹ THC concentrations of vaporized hash oil and waxes that are modified for use in vaping devices can exceed those of dried cannabis by four to 30 times.^{12,13}

Cannabis and hemp-derived products

The cannabis landscape is quickly evolving, and new products such as hemp-derived products are becoming more popular. These products have complicated regulations surrounding cannabis and cannabis use patterns.

- » **Cannabidiol (CBD)** is a non-psychoactive component of the cannabis plant. At the federal level, CBD derived from hemp with THC concentrations of less than 0.3 percent is legal, and some states have acted to legalize it in their jurisdictions.¹⁴
- » **Hemp** is another name for the cannabis plant usually grown with low amounts of THC specifically to make products like rope, paper, cloth and soap.¹⁹ Hemp was removed from the federal Controlled Substances Act in 2018, making it legal at the federal level. However, it is still illegal in some states.¹⁴
- » **Hemp-derived products** like Delta-8, Delta-10, and Hexahydrocannabinol have grown in popularity, producing a "high" milder than traditional Delta-9 THC. Because these products are made from hemp, they are federally legal. The 2018 Farm Bill Act defines hemp as "...the plant *Cannabis sativa L.* and any part of that plant, including the seeds thereof and all derivatives, extracts, cannabinoids, isomers, acids, salts, and salts of isomers, whether growing or not, with a Delta-9 tetrahydrocannabinol concentration of not more than 0.3 percent on a dry weight basis."¹⁵ The Farm Bill defined hemp as the cannabis plant with less than 0.3% of THC. This meant that the cannabis plant with less than 0.3% is no longer considered a Schedule I Drug subject to the Controlled Substances Act. In addition, this language is credited with unintentionally expanding the cannabis market beyond Delta-9 THC and the sale of certain CBD products like hemp-derived products.¹⁶ As of January 2023, 26 states have taken action to make these new hemp-derived products illegal.¹⁷ Furthermore, the Food and Drug Administration (FDA) has stated that it must approve any health claims in hemp-

- **Hexahydrocannabinol (HHC)** is created from CBD extracted from hemp and is primarily consumed in the form of vape cartridges.²⁷ Manufacturers state that the “high” experience from HHC is similar to a Delta-8 high, implying it is more subdued than traditional Delta-9. However, there is a lack of consensus on the potency of HHC.²⁷

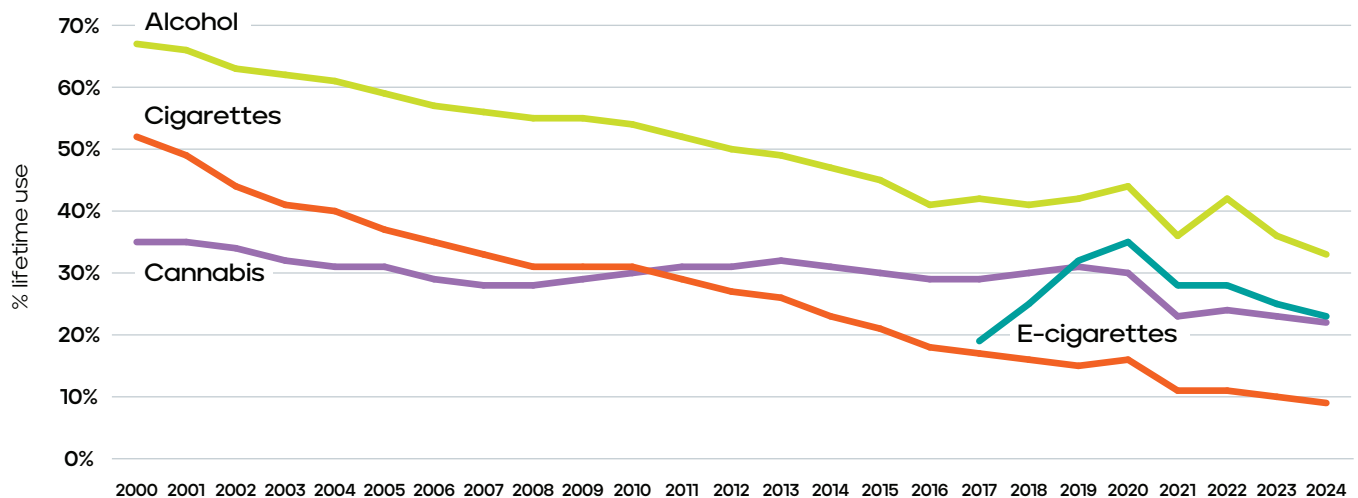
As alcohol and cigarette use decline among youth, cannabis is increasingly the first substance young people use.

Cannabis is currently the most commonly used illicit drug in the United States.²⁸ Despite its federal status as an illegal substance, 24 states and D.C. have legalized adult use for those aged 21 and up and as of October 2025, 40 states and D.C. have legalized cannabis use for medicinal purposes.²⁹

At the federal level, cannabis (except cannabis with a THC concentration of 0.3 percent or less) remains a “Schedule I” substance, which is a drug or chemical the federal government considers at high risk for abuse and possesses little or no medical benefit.³⁰

The rapidly evolving legal status of cannabis has left the cannabis retail market in disarray with a dearth of federal standards and disparate policies and varying levels of enforcement at the state level. For instance, unlicensed stores and smoke shops that sell cannabis illegally are a known problem.³¹ Colorado has many inconsistencies in its cannabis regulations, yet several states and countries have used the state as a model for their policies.³² CBD products present another tricky aspect in retail and enforcement because they are federally illegal but legal in certain states.³³ The cannabis product itself varies widely because there are no standards for extraction, few testing labs, a lack of federal standards, and a variety of breeding practices.³⁴

Prevalence of Lifetime Use of Alcohol, Cigarettes, E-cigarettes, and Cannabis Among Youth: 2000–2024



Source: Monitoring the Future¹

Youth cannabis use shows recent declines

Nationwide, youth cannabis use has decreased steadily in the past two years after a sharp decline in 2021.^{1,35}

Research shows that cannabis-naïve adolescents who have used e-cigarettes are significantly more likely to report cannabis use one year later compared with those who have not used e-cigarettes.¹ Other recent surveys have found that:

- » **More than 1 in 3 (34.4%) teens** have tried cannabis by the 12th grade.³⁶
- » **Nearly 18% (17.9%) of teens used cannabis in the past year** and 11% used it in the past 30 days.¹
- » **A quarter (25.8) of 12th graders used cannabis in the past year.**³⁶
In 2024, 7.2% of 8th graders, 15.9% of 10th graders and 25.8% of 12th graders used cannabis in the past year.¹
- » **16.2% of high school seniors and 9.5% of 10th graders used cannabis in the past month.**
In 2024, 4.9% of 8th graders, 11.3% of 10th graders, and 21.7% of 12th graders used cannabis in the past month.¹
- » **5.1% of high school seniors used cannabis daily.**
- » **Cannabis is "fairly easy to obtain."**
70% of 12th graders who have used cannabis reported cannabis being fairly easy or very easy for them to obtain, including in states where it remained illegal, in 2021.³⁵
- » **Youth use may be affected by medical legalization.**
A 2022 study found that assuming states attain the median medical cannabis market size of around 1% of adults, the prevalence of cannabis use in the last month will rise from 7.6% to 8.2% for 12–17-year-olds.³⁷



- » **There is mixed evidence of adult recreational cannabis laws affecting youth use.**
A 2022 Colorado study evaluating the impact of recreational cannabis legalization found that cannabis use among adolescents has remained consistent, yet young adult use has grown. Also, the prevalence of cannabis use among Colorado adolescents of all ages is greater than that of youth in the rest of the United States.³⁸ A 2019 national study found that legalized adult cannabis use for non-medical purposes resulted in an increase in youth use of around 11%.³⁹ A review of multiple studies found that six studies reported a decrease in adolescent use, while seven studies reported an increase in use.⁴⁰
- » **For young people, smoking is the most common method of cannabis use.**
The most frequent and consistent route of cannabis use among adolescents was smoking (99%), followed by edible use (61%), and then vaping (44%) across their lifetimes, according to 2016 data.⁴¹

Adult cannabis use is on the rise

Adult past-year cannabis use has increased in recent years.^{42,43}

- » **More than 12% of adults used cannabis in the past month**

In 2021, nearly 14% (13.7%) of U.S. adults aged 18 and older — 34.9 million people — used cannabis in the past month.⁴⁴

- » **Most adults that currently use cannabis consume cannabis by smoking**

In 2014, the most popular way of consuming cannabis among adults that are current cannabis users was a bowl or pipe (49.5%), followed by a joint (49.2%). There is lesser use of a bong, water pipe, or hookah (21.7%), blunts (20.3%), edibles/drinks (16.1%), and vaporizers (7.6%).⁴⁵

- » **Men are more likely to regularly use cannabis than women**

Regular (i.e., past 30-day use) cannabis use is more common in men (16.2%) than women (11.4%).^{44,46}

- » **Adult use is higher in states where cannabis is legal**

Adult use is around two to three percentage points higher in states with legalized medical cannabis and as much as 23% higher among adults in states with legalized recreational cannabis.^{47,48}

Disparities in cannabis use

- » **Racial/ethnic disparities**

Several studies from 2022 have found that prevalence of tobacco and cannabis co-use is higher among Black populations compared to other racial/ethnic groups.⁴⁹ Additionally, within a sample of pregnant women in 2017, Black women have increased odds of co-using cannabis and tobacco compared to only using tobacco.⁵⁰

- » **Sexual minority disparities**

When compared to heterosexual women, bisexual women had 2.89x higher prevalence and lesbian/gay women had 2.04x higher prevalence of past year cannabis use.⁵¹ Bisexual men had 1.39x higher prevalence and gay men had 1.29x higher prevalence of past year cannabis use compared to heterosexual men.⁵¹ Compared to heterosexual youths, lesbian and gay youth had 2.67x higher odds and bisexual youth had 2.78x higher odds of co-using cannabis and nicotine.⁵²

- » **Income disparities**

The prevalence of cannabis use and cannabis use disorder was greatest in adults at the lowest income level (\$0-\$19,999), compared to those at all higher incomes (\$20,000-\$34,999, \$35,000-\$69,999, and \geq \$70,000) from 1991 to 2013.⁵³

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Cannabis and nicotine: common use patterns

Cannabis and tobacco products (including cigarettes, e-cigarettes, and smokeless tobacco products) are two of the most commonly used substances among youth in the United States.^{57,58} In addition, a 2018 study found that co-use of cannabis and tobacco is more prevalent than tobacco only or cannabis only use in U.S. among youth ages 12–17.⁵⁹

Young adults who use cannabis more frequently are likely at risk for greater tobacco exposure, and vice versa. Participants in a study of young adults in California who used cannabis recently were 65% more likely to report use of multiple tobacco products than those who reported no recent cannabis use at baseline.⁶⁰ Additionally, among U.S. youth and young adults who had never regularly used tobacco, cannabis use was associated with a large increase in current tobacco use four years later.⁶¹ Other notable patterns include:

- » **Past month cannabis use and daily cannabis use are more common among those who smoke cigarettes.** Among youth ages 12–17 who used cigarettes daily, 29.9% used cannabis daily.⁶²
- » A study published in 2022 analyzing data from 2017 and 2019 found that **youth who use e-cigarettes are over three times more likely to use cannabis** than those who do not.⁶³
- » **E-cigarette use predicts later cannabis use among youth**, especially among young adolescents.^{64,65}

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Racial and ethnic inequities regarding cannabis

- » Historically, Black and Hispanic/Latino people in the U.S. have been disproportionately targeted when it comes to cannabis enforcement.
 - Black people are more than 3x more likely to be arrested for cannabis possession compared to White people, despite similar prevalence of cannabis use.⁵⁴
 - More than three-quarters (77%) of federal cannabis sentences were for Hispanic/Latino people, even though they only comprised 20% of the U.S. population in 2015, and only 10.5% aged 12 or older used cannabis in the past month.^{54,55}
- » Recently, there have been efforts to attenuate racial/ethnic inequities surrounding cannabis enforcement.
 - As of 2020, at least 23 states and the District of Columbia have implemented cannabis conviction expungement and other ways to relieve past cannabis records.⁵⁴
 - Social equity programs have been implemented in some states. Six states and some localities have taken initiative to ensure that communities disproportionately affected by previous cannabis laws can participate in the legal cannabis industry.⁵⁴
 - On October 6, 2022, President Biden announced reforms on federal cannabis policy to pardon those who were convicted of simple cannabis convictions at the federal level and urged state governors to follow suit.⁵⁶

How cannabis is consumed

- » **Spliffs** – Rolled cannabis and tobacco cigarette.
- » **Blunts** – Cannabis rolled in tobacco leaf.
- » **Spliff vapes** – Vapes that combine cannabis oil and nicotine.
- » **DIY THC/CBD Juul Pods** – Juul-like pods that contain THC and/or CBD oil. This can be made at home or pre-filled pods can be sold.⁶⁹
- » **Disposable vapes, cartridges, and pods** – Vapes that can be disposed of after using the entire product. Similar to disposable nicotine vapes, but it may contain CBD and/or THC instead.⁶⁶
- » **Inhalers** – Inhalers containing THC.⁶⁷
- » **Edible/Gummies** – Food that contains THC and/or CBD.⁶⁸
- » **Oils** – Oil extracted from cannabis to get THC. Oils tend to be more potent since they are more concentrated.⁶⁹
- » **Wax** – Wax is extracted from cannabis through butane or hydrocarbon extraction, creating a potent concentrate.⁷⁰
- » **Shatter** – The extraction process is similar to wax, but shatter has a hard, glass-like consistency, whereas wax is softer and malleable.⁷¹
- » **Tinctures (product dissolved in alcohol)** – Cannabis-infused with alcohol.⁷²

Vaping cannabis is on the rise

Tobacco and cannabis use patterns are evolving,⁷⁷ with many of today's teens directly combining the two products. Vaping cannabis (i.e., heating the dried plant and using distillates or an "e-liquid" solution with a battery-powered e-cigarette to inhale a vapor)^{78,79} has been increasing.⁸⁰ A study that analyzed data collected between 2005-2014 also shows that

Is cannabis a gateway drug?

There is a lot of debate on whether cannabis is a gateway drug. Some studies find that regular or heavy cannabis use is associated with an increased risk of using other illicit drugs, although this link may be because users of all of these substances share common risk traits (e.g. sensation seeking).⁷³ It is also theorized that any substance that decreases reactivity of brain receptors can lead to addiction vulnerability.⁷⁴ On the other hand, a 2022 study has found that cannabis use may not be a gateway drug for other illicit drug use.⁷⁵ That said, the majority of people who use cannabis do not go on to use other "harder" substances.⁷⁶



the odds of cannabis use were higher among youth who had a history of using e-cigarettes.⁸¹ Given the increase in cannabis legalizations⁷⁷ and increase in e-cigarette use, it is likely that vaping cannabis will continuously rise.⁸²

In 2022, 6%, 15% and 20.6% of 8th, 10th and 12th graders respectively, reported vaping cannabis in the last year.³⁵ While patterns across states are not fully known, individual states have

reported varying levels of the use of vaping devices for cannabis. For example, about 1 in 4 high school students in California and North Carolina and 1 in 5 high school students in Connecticut reported vaping cannabis.^{13,83,84} Furthermore, nearly 7% of youth and young adults (aged 15-24 years), report concurrent cannabis and e-cigarette use.⁸⁵ Among college students the numbers are even higher, with 29% reporting ever vaporizing cannabis products.⁸⁶

Reports of lung injury due to the use of e-cigarettes (EVALI – E-cigarette and Vaping Associated Lung Injury) have linked vaping cannabis with lung illnesses.⁸⁷ As of February 18, 2020, there have been 2,807 reported cases and 68 deaths related to EVALI. The Centers for Disease Control and Prevention identified vitamin E acetate as a significant concern in the outbreak, finding the chemical in 48 of 51 EVALI samples it had analyzed from victims. Vitamin E acetate is harmless when ingested or applied topically, but it can affect normal lung functioning when inhaled. The CDC advises that people do not use e-cigarettes or vaping products containing THC from non-regulated markets including friends, family, or in person or online dealers.⁸⁸

Connection between cannabis industry and tobacco industry

The tobacco industry sees cannabis as both a potential competitor as well as a potential product. Big Tobacco has previously shown interest in the legal cannabis business and recently, multiple tobacco companies have invested in cannabis companies.⁸⁹ Big Tobacco has also supported pro-cannabis groups that lobby for legalization.⁹⁰

- » Imperial Brands has a 20% stake in AuxlyCannabis⁹¹ and acquired a stake in the biopharmaceutical company Oxford Cannabinoid Technologies.⁹²
- » Altria (the maker of Marlboro) acquired a 41% stake in Cronos Group, a cannabis research and product development group in March 2019.⁹³

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- » British American Tobacco (BAT) acquired almost 45% of Organigram, a Canadian cannabis research company.⁹⁴
- » Philip Morris International acquired the Israeli medical cannabis company Syge Medical for \$650 million in July 2023.⁹⁵
- » A joint venture between BAT's subsidiary AJNA BioSciences PBC and Charlotte's Web, which BAT invested in last year, plans to seek approval from the US Food and Drug Administration for a treatment made from hemp extract. AJNA invested \$10 million in the deal. Charlotte's Web and AJNA each own 40% of the entity, while BAT controls the remaining stake, according to a [statement](#).
- » Even though the cannabis industry faces [hurdles](#), tobacco companies are increasingly investing in the sector to move away from legacy tobacco products, like cigarettes, that have experienced declining demand. BAT has also put money [into](#) OrganiGram, a Canadian cannabis firm, and German cannabis company Sanity Group in [joining](#) Snoop Dogg's Casa Verde Capital.
- » Avicanna Inc., a biopharmaceutical company focused on cannabis products joined a scientific and medical affairs partnership agreement with Vectura Fertin Pharma, which is owned by Phillip Morris International.⁹⁶

- » The tobacco industry may have an interest due to “the functional similarities of cannabis production; its use with tobacco roll-your-own (RYO) cigarettes; the ability to extract its active ingredients for use in e-cigarettes (THC and CBD), and its medicinal potential.”⁹⁰
- » Concerns have been raised that cannabis companies will target the same communities that were targeted by Big Tobacco.⁹⁷
- » CBD is becoming more prevalent in vape shops and online vape retailers as there are a growing number of restrictions that prevent e-cigarette products, especially those that come in flavors, from being manufactured, marketed, or sold. A study found that 73.3% of merchants in the study sold CBD vape products and 80% sold other CBD products.⁹⁸ Vape shops also sell CBD products like cannabis glassware, pipes, and accessories.⁹⁹

Cannabis use disorder

- » Cannabis use disorder is characterized by symptoms such as intense cravings, an inability to stop/reduce use or continuing use despite negative consequences.¹⁰⁸
- » Symptoms, ranging from mild to severe, can significantly impact a person’s quality of life and their ability to function.¹⁰⁸
- » Around 4.4 million people (age 12 and older) had cannabis use disorder in 2018.⁴⁶
- » Around 30% of those who use cannabis may have some degree of cannabis use disorder.¹⁰⁹

More research needed on benefits of medicinal cannabis

Despite the increasing number of states that have legalized cannabis for medicinal purposes, there is little evidence that points to specific medicinal benefits of cannabis. While users anecdotally report several medical benefits from cannabis, such as improved sleep and decreased anxiety, studies to date show mixed results for medicinal cannabis use, including:

- » Moderate evidence for the treatment of chronic pain, spasticity in MS patients.^{100,101}
- » Mixed evidence for the treatment of glaucoma.^{102,103}
- » Some evidence of improvements in nausea and vomiting due to chemotherapy, alleviation of fatigue, anxiety and increased appetite for people with HIV/AIDS, and a reduction in anxiety and sleep disorders.^{101,104,105}
- » Clinical research on cannabinoids for alleviating motor and nonmotor symptoms in Parkinson’s disease, Huntington’s disease, Tourette’s syndrome, dystonia, and other movement disorders is currently underway.^{106,107}

Cannabis can have negative impacts – posing harm to youth

Research has consistently found cannabis can have lasting impacts on the adolescent brain, which is still developing until around age 25.

- » **Disruption of brain’s architecture**
Early use of cannabis by teens and young adults disrupts the brain’s architecture, especially among chronic, heavy and early users, resulting in cognitive impairment. Also, exposure to THC during adolescence can impact structural, molecular, and functional alterations of brain circuits, especially in areas involving cognition and behavior.¹¹¹



» **Memory, learning, attention, and impulse control problems**

Regular cannabis use in adolescence may have long-term effects. Some studies suggest regular cannabis use in adolescence can negatively impact memory, learning and impulse control.¹⁰⁹ Acute and chronic exposure to cannabis can impair verbal learning, memory, and attention.¹¹²

» **Connections with mental health**

Cannabis use is associated with depression in young adults and is associated with earlier onset and worse symptoms of psychotic illness, including schizophrenia.⁷⁸

» **Higher dropout rates**

Heavy and frequent use of cannabis during the teenage years is also associated with higher high school dropout rates, lower grades and poorer attendance compared to nonusers.^{109,113} Multiple studies have also found that cannabis use can be associated with reduced educational attainment (i.e. reduced chances of graduating).¹¹⁴ However, it is unclear to what degree cannabis use is directly causing these associations as there may be other factors at play.

» **Increased traffic deaths**

One study found that a larger medical cannabis market size is associated with increased traffic deaths among drivers aged 15-20. It's important to note that this study found that there is a potential synergistic effect between alcohol and cannabis use among youth. They indicate that although cannabis' effect on driver impairment is moderate in comparison to alcohol effects, using cannabis and alcohol together may have an enhanced effect on driver impairment.³⁷

Dependence in youth

» **Youth use may lead to dependence**

A study published in 2008 that analyzed data from 2003 found that people who begin using cannabis before age 18 are four to seven times more likely than adults to develop a cannabis use disorder.¹¹⁵

» **Nearly 1 in 10 adults who use cannabis will become dependent over their lifetime.**¹⁰⁵

The odds of developing cannabis use disorder are higher in people who start using cannabis during youth or adolescence.¹¹⁶

» **Current heavy use**

Frequent cannabis use among youth (defined as using at least weekly to 20-30 days a month) can be associated with a variety of mental health disorders, health risks, and poor psychosocial outcomes.¹¹⁷

Nearly

1 in 10



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Interventions to promote cannabis cessation

A text message quit-vaping program designed to help young people quit nicotine — part of **EX Program** by Truth Initiative — **can also help them quit cannabis use**¹¹⁸. Among teens, 38.5% of those receiving the text message intervention achieved dual abstinence from both nicotine e-cigarettes and cannabis, compared to 25.0% in the control group — a 13.5% advantage. Among young adults, 17.9% of intervention participants achieved dual abstinence versus 13.3% in the control group.

Preventing youth-appealing marketing of cannabis products is key

Given the serious consequences of cannabis use on the adolescent brain, it is critical to highlight and regulate marketing practices that may appeal to young people. Like the tobacco industry, which has created products designed to appeal to young users, certain cannabis products may be desirable to underage users. Baked goods, gummies, candy, chocolates, and flavored cannabis products are frequently sold at legal dispensaries.^{119,120} Illegal distributors have also created products that resemble popular food brands among kids, such as Cheetos, Fruity Pebbles, Sour Patch Kids, and Oreos.¹²¹ Creameries across Massachusetts have recently begun selling cannabis-infused ice cream, and snack companies like Guy's Chips are developing cannabis infused potato chips.¹²²

As businesses continue to acquire licensing and approval at the state level to create new cannabis-infused products, public health concerns must be considered. Since business interests push commercialization, strong regulation to prohibit any product branding or marketing that would appeal to youth is paramount. This problem is certain to increase

exponentially as tobacco company interests continue to acquire cannabis companies, a phenomenon that is sure to accelerate if cannabis legalization increases in the U.S. Altria, Imperial Brands, and British American Tobacco are some companies that have acquired shares in cannabis companies.⁹²⁻⁹⁴

Federal cannabis policy

The federal government has taken varying approaches to drug enforcement throughout our nation's history that have tended to shifted focus from criminal enforcement to prevention and rehabilitation. With the emergence of state laws allowing medical and recreational cannabis, the federal government has had to determine how to respond since cannabis remains illegal at the federal level. A few recent developments are important to note:

- ” In 2014, Congress passed a provision that prohibits the U.S. Justice Department from interfering in the implementation of state medical cannabis laws. While the provision does not change the federal legal status of cannabis, Congress must renew it every fiscal year to remain in effect. The provision was effective until September 30, 2024, and has yet to be renewed in a spending bill as of October 2025 and has so far done so.^{123,124}





The U.S. Surgeon General issued a formal advisory stating that cannabis usage can harm the brain development of young people and fetuses in pregnant women.

- » As of December 2018, the Farm Bill of 2018 expanded pilot programs begun in 2014 to remove hemp from the controlled substances list and established hemp as an industrial product. The Farm Bill defined hemp as the cannabis plant with less than 0.3% of Delta-9 THC and allows hemp-derived products to be sold across state lines.^{15,116} Therefore, any cannabis plant with more than 0.3% delta-9 THC is considered a Schedule 1 drug subject to the Controlled Substances Act. While this was the first time hemp was de-scheduled, the law did create some unintended consequences, including the rise of Delta-8 and Delta-10 use, which were not addressed, nor was the regulation of CBD products over 0.3% Delta-8 THC. Congress is currently negotiating the 2025 Farm Bill and it remains to be seen if it will address any of these issues. Hemp products used as or in drugs, foods, dietary supplements, cosmetics, and veterinary products are subject to FDA regulation under the Food, Drug & Cosmetic Act.⁹
- » On August 29, 2019, in the first Surgeon General's advisory on cannabis since 1982, the U.S. Surgeon General issued a formal advisory¹²⁵ stating that cannabis usage can harm the brain development of young people and fetuses in pregnant women.¹²⁶ The advisory provided specific information for parents, youth, state and local governments, and health care providers.
- » On October 6, 2022, President Biden announced reforms on federal cannabis policy to pardon those who were convicted of simple cannabis possession crimes while urging state governors to follow suit.⁵⁶ This does not apply to those convicted for distributing or selling cannabis. President Biden also called on the Secretary of Health and Human Services and the Attorney General to review cannabis' status as a schedule 1 drug, which puts it in the same tier as drugs like heroin and LSD.²⁹ As part of this review, the FDA has been tasked with evaluating the data and making a recommendation on either rescheduling or descheduling cannabis.
- » On January 26, 2023, the FDA announced that it will not regulate CBD as a dietary supplement or food stating that it is not apparent how CBD products could meet safety standards for dietary supplements or food additives.¹²⁷ The FDA stated that they believe CBD requires a new regulatory pathway which would require congressional action. The FDA suggested such a pathway should include measures to address contamination, youth use prevention, labeling, and limits on the amount of CBD in these products.
 - Nonetheless, the FDA has issued warning letters to firms marketing CBD products with therapeutic claims, concerning routes of administration, egregious Delta-8 THC products and foods for humans and animals with added CBD.^{128,129}

State regulation of recreational cannabis

States that have legalized recreational use of cannabis have taken various approaches to regulating it. Most states that allow cannabis sales have at least some sales and advertising restrictions; however, several states are still determining recreational cannabis regulations, and it will be important to monitor these policies as more are put into place.

Some key elements of current state policies include:

- » **Licensing:** All states that allow cannabis sales currently require some sort of license to sell cannabis recreationally.
- » **Amount:** All states that have legalized recreational cannabis have a limit on either the amount someone can possess at any one time, or limits on how much a person can purchase in a single transaction, or both.¹³⁴
- » **Other substances:** All states that allow sales of recreational cannabis prohibit the sale of other substances, such as tobacco or alcohol, in cannabis dispensaries. However, there are known concerns with illegal unlicensed cannabis dispensaries despite these policies. In New York City and New Jersey, for example, there are unlicensed stores and smoke shops selling cannabis and tobacco.^{135,136}

However, not all states have adopted some key policies that will protect public health. Some missing elements include:

- » **Clean indoor air laws:** As of July 1, 2025, 1109 localities and 40 states, territories, and commonwealths restrict cannabis use in some or all smokefree spaces. Of these, 608 localities and 23 states, territories, and commonwealths prohibit smoking and vaping of recreational and medical cannabis in one or more of the following venues: non-hospitality workplaces, restaurants, bars, and/or

gambling facilities.¹¹⁹ However, states such as California, Nevada, and Colorado have exemptions for cannabis smoking in restaurants in their smokefree laws and Michigan has an exemption for cannabis smoking in restaurants and bars in its smokefree law.¹³⁸

- » **Restricting youth advertising:** As of January 1, 2024, 21 of 24 states that allow recreational cannabis sales specifically prohibit advertising content that targets children.¹³⁹ Despite these restrictions, studies show that some cannabis retailers in states like Washington, Oregon, Alaska, and Colorado emulate Big Tobacco by promoting their products on social media using cartoon characters and branded merchandise.¹⁴⁰
- » **Buffer zones:** As of September 2024, 16 of 38 states, including D.C., with legalized medical and/or adult-use cannabis have buffer zones around schools and other child-centered locations that restrict where recreational cannabis can be advertised. The distance varies by state, with New Jersey having the smallest buffer zone of 200 feet and Connecticut having the largest buffer zone of 1500 feet.¹⁴¹
- » **Flavors:** States such as New York prohibit processors of vaporized or inhaled adult-use cannabis from making these products flavored. Additionally, several local jurisdictions have included flavored cannabis vapes in their flavored tobacco product restrictions.¹⁴²

Policies needed to protect young people

As the number of states that have legalized cannabis in some form continues to grow, it is essential to put policies in place that prevent and restrict use among youth. Commonsense regulations, such as minimum age purchasing laws, universal product standards and restrictions on marketing to young people, must be enacted and enforced to minimize youth use and harmful effects on developing brains.

References:

- 1 Miech RA, Johnston LD, Patrick ME, O'Malley PM, Bachman JG. Monitoring the Future National Survey Results on Drug Use, 1975–2023: Overview and Detailed Results for Secondary School Students. *Inst Soc Res*. Published online 2024.
- 2 Prevalence/Trends. Accessed February 18, 2026. <https://monitoringthefuture.org/data/bx-by/drug-prevalence/index.html#drug=%22Vaping+Marijuana+%28Cannabis%29%22>
- 3 Audrain-McGovern J, Stone MD, Barrington-Trimis J, Unger JB, Leventhal AM. Adolescent e-cigarette, hookah, and conventional cigarette use and subsequent marijuana use. *Pediatrics*. 2018;142(3):e20173616.
- 4 Smith CL, Cooper BR, Miguel A, Hill L, Roll J, McPherson S. Predictors of cannabis and tobacco co-use in youth: exploring the mediating role of age at first use in the population assessment of tobacco health (PATH) study. *J Cannabis Res*. 2021;3(1):16.
- 5 Chadi N, Schroeder R, Jensen JW, Levy S. Association between electronic cigarette use and marijuana use among adolescents and young adults: a systematic review and meta-analysis. *JAMA Pediatr*. 2019;173(10):e192574–e192574.
- 6 Jacobus J, F Tapert S. Effects of cannabis on the adolescent brain. *Curr Pharm Des*. 2014;20(13):2186–2193.
- 7 Moore TH, Zammit S, Lingford-Hughes A, et al. Cannabis use and risk of psychotic or affective mental health outcomes: a systematic review. *The Lancet*. 2007;370(9584):319–328.
- 8 Starzer MSK, Nordentoft M, Hjorthøj C. Rates and predictors of conversion to schizophrenia or bipolar disorder following substance-induced psychosis. *Am J Psychiatry*. 2018;175(4):343–350.
- 9 Cournoyer P. A New Way Forward for Cannabidiol (CBD) and Other Hemp Products. Published online 2024.
- 10 Volkow ND, Baler RD, Compton WM, Weiss SR. Adverse health effects of marijuana use. *N Engl J Med*. 2014;370(23):2219–2227.
- 11 Mehmedic Z, Chandra S, Slade D, et al. Potency trends of Δ9-THC and other cannabinoids in confiscated cannabis preparations from 1993 to 2008. *J Forensic Sci*. 2010;55(5):1209–1217.
- 12 Cork K. Toking, Smoking & Public Health: Lessons from Tobacco Control for Marijuana Regulation. *Tob Control Leg Consort Rep*. Published online 2015.
- 13 Morean ME, Kong G, Camenga DR, Cavallo DA, Krishnan-Sarin S. High school students' use of electronic cigarettes to vaporize cannabis. *Pediatrics*. 2015;136(4):611–616.
- 14 *Centers of Disease Control and Prevention. Cannabis and Public Health*. 2025.
- 15 *Agriculture Improvement Act of 2018, 4490 (2018)*.
- 16 The 2018 Farm Bill's Hemp Definition and Legal Challenges to State Laws Restricting Certain THC Products. Accessed November 13, 2025. <https://www.congress.gov/crs-product/R48637>
- 17 Delta 10 THC: Where Is It Legal? State-by-State List. ATL RX.
- 18 Bonn-Miller MO, Loflin MJE, Thomas BF, Marcu JP, Hyke T, Vandrey R. Labeling Accuracy of Cannabidiol Extracts Sold Online. *JAMA*. 2017;318(17):1708–1709. doi:10.1001/jama.2017.11909
- 19 FDA Hears Concerns About The Unregulated CBD Market. *Forbes*. 2019.
- 20 *What You Need to Know (And What We're Working to Find Out) About Products Containing Cannabis-Derived Compounds, Including CBD*. 2020.
- 21 Rep. Cole T [R O 4. Text – H.R.5371 – 119th Congress (2025–2026): Continuing Appropriations, Agriculture, Legislative Branch, Military Construction and Veterans Affairs, and Extensions Act, 2026. November 12, 2025. Accessed February 18, 2026. <https://www.congress.gov/bill/119th-congress/house-bill/5371/text>
- 22 New federal restrictions on hemp and hemp-derived products: Top points | DLA Piper. Accessed February 18, 2026. <https://www.dlapiper.com/en-us/insights/publications/2025/11/new-federal-restrictions-on-hemp-and-hemp-derived-products>
- 23 admin. Federal Spending Bill Triggers Major Regulatory Shift for Hemp—With a 365-Day Countdown for Reform. Holon Law Partners – Collaborative Legal Counsel. November 13, 2025. Accessed February 18, 2026. <https://holonlaw.com/cannabis-law/federal-funding-deal-triggers-major-regulatory-shift-for-hemp-derived-products/>
- 24 Oleinik G. Is Delta 8 THC Legal in Your State? Laws and Map. *CBD Thinker*. January 2023.
- 25 5 Things to Know about Delta-8 Tetrahydrocannabinol – Delta-8 THC. May 2022.
- 26 Goggins P. What is delta-10? leafly. 2025.
- 27 Levenson M. What is HHC. 2021.
- 28 SAMHSA. National Survey on Drug Use and Health: Comparison of 2008–2009 and 2016–2017 Population Percentages (50 States and The District of Columbia). Published online 2018.
- 29 Marijuana Legality by State 2025. September 30, 2025.
- 30 *Drug Scheduling 2019*. Drug Enforcement Administration; 2019.
- 31 Adams D. Bragg Announce Joint Efforts to Combat Proliferation of Illegal Unlicensed Cannabis Dispensaries [press release]. Published online February 7, 2023.
- 32 Yates D, Speer J. Over and under-regulation in the Colorado Cannabis industry—A data-analytic perspective. *Int J Drug Policy*. 2018;59:63–66.
- 33 Yacowicz W. Where is Cannabis Legal? A Guide to All 50 States. Published online September 5, 2025.
- 34 Swann O, Wood C. Your guide to reading cannabis product labels and lab test results. Published online October 3, 2025.
- 35 Johnston LD, Miech RA, O'Malley PM, Bachman JG, Schulenberg JE, Patrick ME. Monitoring the Future national survey results on drug use, 1975–2021: Overview, key findings on adolescent drug use. *University of Michigan*. Preprint posted online 2022. doi:10.7302/4142
- 36 NSDUH. 2023 NSDUH Detailed Tables. Published online 2023.
- 37 Smart R, Doremus J. The kids aren't alright: The effects of medical marijuana market size on adolescents. *J Health Econ*. 2023;87:102700. doi:10.1016/j.jhealeco.2022.102700
- 38 Hinckley J, Bhatia D, Ellingson J, Molinero K, Hopfer C. The impact of recreational cannabis legalization on youth: the Colorado experience. *Eur Child Adolesc Psychiatry*. 2024;33(3):637–650.
- 39 Hollingsworth A, Wing C, Bradford A. Comparative Effects of Recreational and Medical Marijuana Laws on Drug Use among Adults and Adolescents. *J Law Econ*. 2022;65(3). <https://chicagounbound.uchicago.edu/jle/vol65/iss3/4>
- 40 O'Grady MA, Iverson MG, Suleiman AO, Rhee TG. Is legalization of recreational cannabis associated with levels of use and cannabis use disorder among youth in the United States? A rapid systematic review. *Eur Child Adolesc Psychiatry*. 2024;33(3):701–723.

- 41 Knapp AA, Lee DC, Borodovsky JT, Auty SG, Gabrielli J, Budney AJ. Emerging trends in cannabis administration among adolescent cannabis users. *J Adolesc Health*. 2019;64(4):487-493.
- 42 Substance Abuse and Mental Health Services Administration. (2025). Key substance use and mental health indicators in the United States: Results from the 2024 National Survey on Drug Use and Health (HHS Publication No. PEP25-07-007, NSDUH Series H-60). <https://www.samhsa.gov/data/sites/default/files/reports/rpt56287/2024-nsduh-annual-national/2024-nsduh-annual-national-html-071425-edited/2024-nsduh-annual-national.htm#ill2>
- 43 Substance Abuse and Mental Health Services Administration. (2025). Key substance use and mental health indicators in the United States: Results from the 2024 National Survey on Drug Use and Health (HHS Publication No. PEP25-07-007, NSDUH Series H-60). <https://www.samhsa.gov/data/sites/default/files/reports/rpt56287/2024-nsduh-annual-national/2024-nsduh-annual-national-html-071425-edited/2024-nsduh-annual-national.htm#taba.12b>
- 44 Key Substance Use and Mental Health Indicators in the United States: Results from the 2023 National Survey on Drug Use and Health.
- 45 Schauer GL, King BA, Bunnell RE, Promoff G, McAfee TA. Toking, vaping, and eating for health or fun: marijuana use patterns in adults, US, 2014. *Am J Prev Med*. 2016;50(1):1-8.
- 46 SAMHSA. 2018 NSDUH Detailed Tables | CBHSQ Data. Accessed October 29, 2025. <https://www.samhsa.gov/data/report/2018-nsduh-detailed-tables>
- 47 Choi A, Dave D, Sabia JJ. Smoke gets in your eyes: medical marijuana laws and tobacco cigarette use. *Am J Health Econ*. 2019;5(3):303-333.
- 48 Mauro CM, Newswanger P, Santaella-Tenorio J, Mauro PM, Carlner H, Martins SS. Impact of medical marijuana laws on state-level marijuana use by age and gender, 2004–2013. *Prev Sci*. 2019;20(2):205-214.
- 49 Montgomery L, Dixon S, Mantey DS. Racial and ethnic differences in cannabis use and cannabis use disorder: Implications for researchers. *Curr Addict Rep*. 2022;9(1):14-22.
- 50 Coleman-Cowger VH, Schauer GL, Peters EN. Marijuana and tobacco co-use among a nationally representative sample of US pregnant and non-pregnant women: 2005–2014 National Survey on Drug Use and Health findings. *Drug Alcohol Depend*. 2017;177:130-135.
- 51 Schuler MS, Collins RL. Sexual minority substance use disparities: Bisexual women at elevated risk relative to other sexual minority groups. *Drug Alcohol Depend*. 2020;206:107755.
- 52 Dermody SS. Risk of polysubstance use among sexual minority and heterosexual youth. *Drug Alcohol Depend*. 2018;192:38-44.
- 53 Hasin DS, Shmulewitz D, Sarvet AL. Time trends in US cannabis use and cannabis use disorders overall and by sociodemographic subgroups: a narrative review and new findings. *Am J Drug Alcohol Abuse*. 2019;45(6):623-643.
- 54 Jernigan DH, Ramirez RL, Castrucci BC, Patterson CD, Castillo G. *Cannabis: Moving Forward Protecting Health*. American Public Health Association; 2021.
- 55 Delphin-Rittmon ME. 2023 National Survey on Drug Use and Health: Among the Hispanic or Latino Population Aged 12 or Older.
- 56 The White House. A Proclamation on Granting Pardon for the Offense of Simple Possession of Marijuana, Attempted Simple Possession of Marijuana, or Use of Marijuana. The White House. December 22, 2023. Accessed October 30, 2025. <https://bidenwhitehouse.archives.gov/briefing-room/presidential-actions/2023/12/22/a-proclamation-on-granting-pardon-for-the-offense-of-simple-possession-of-marijuana-attempted-simple-possession-of-marijuana-or-use-of-marijuana/>
- 57 Audrain-McGovern J, Stone MD, Barrington-Trimis J, Unger JB, Leventhal AM. Adolescent e-cigarette, hookah, and conventional cigarette use and subsequent marijuana use. *Pediatrics*. 2018;142(3):e20173616.
- 58 Smith CL, Cooper BR, Miguel A, Hill L, Roll J, McPherson S. Predictors of cannabis and tobacco co-use in youth: exploring the mediating role of age at first use in the population assessment of tobacco health (PATH) study. *J Cannabis Res*. 2021;3(1):16.
- 59 Schauer GL, Peters EN. Correlates and trends in youth co-use of marijuana and tobacco in the United States, 2005–2014. *Drug Alcohol Depend*. 2018;185:238-244.
- 60 Doran N, Myers MG, Correa J, Strong DR, Tully L, Pulvers K. Marijuana use among young adult non-daily cigarette smokers over time. *Addict Behav*. 2019;95:91-97.
- 61 Cannabis use and progression to regular tobacco use among United States youth and young adults: evidence from the Population Assessment of Tobacco and Health (PATH) study, 2017–2021 | Tobacco Control. Accessed November 13, 2025. <https://tobaccocontrol.bmj.com/content/early/2025/10/13/tc-2025-059634>
- 62 Weinberger AH, Wyka K, Goodwin RD. Impact of cannabis legalization in the United States on trends in cannabis use and daily cannabis use among individuals who smoke cigarettes. *Drug Alcohol Depend*. 2022;238:109563.
- 63 Sun R, Mendez D, Warner KE. Use of electronic cigarettes among cannabis-naïve adolescents and its association with future cannabis use. *JAMA Netw Open*. 2022;5(7):e2223277-e2223277.
- 64 Dai H, Catley D, Richter KP, Goggin K, Ellerbeck EF. Electronic cigarettes and future marijuana use: a longitudinal study. *Pediatrics*. 2018;141(5).
- 65 Evans-Polce RJ, Veliz PT, Boyd CJ, McCabe SE. E-cigarette and cigarette use among US adolescents: Longitudinal associations with marijuana use and perceptions. *Am J Prev Med*. 2020;58(6):854-857.
- 66 Champoux D. How To Use A Disposable Vape Pen: Beginner Vaping Tips. Greentank. June 15, 2019. Accessed October 29, 2025. <https://www.greentanktech.com/education/disposable-vape-pen-beginner-guide/>
- 67 MÜV Cannabis THC Inhaler | Medical THC Inhaler. Accessed October 29, 2025. <https://muvfl.com/product/thc-inhaler>
- 68 Editorial Staff. Marijuana Edibles: Risks, Dangers & Effects of Edibles. American Addiction Centers. April 17, 2025. Accessed October 29, 2025. <https://americanaddictioncenters.org/marijuana-rehab/risks-of-edibles>
- 69 agsocial. What is THC Oil? Silver Therapeutics. May 14, 2021. Accessed October 29, 2025. <https://silver-therapeutics.com/blog/what-is-thc-oil/>
- 70 Wax. Leafly. Accessed October 29, 2025. <https://www.leafly.com/learn/cannabis-glossary/wax>
- 71 Shatter. Leafly. Accessed October 29, 2025. <https://www.leafly.com/learn/cannabis-glossary/shatter>
- 72 agsocial. Tinctures 101: A Complete Guide to Cannabis Tinctures. Silver Therapeutics. March 17, 2022. Accessed October 29, 2025. <https://silver-therapeutics.com/blog/guide-to-cannabis-tinctures/>
- 73 LaSpada N, Delker E, East P, et al. Risk taking, sensation seeking and personality as related to changes in substance use from adolescence to young adulthood. *J Adolesc*. 2020;82:23-31. doi:10.1016/j.adolescence.2020.04.011
- 74 Fosnocht AQ, Briand LA. Substance use modulates stress reactivity: Behavioral and physiological outcomes. *Physiol Behav*. 2016;166:32-42. doi:10.1016/j.physbeh.2016.02.024

- 75 Is marijuana really a gateway drug? A nationally representative test of the marijuana gateway hypothesis using a propensity score matching design | Request PDF. *ResearchGate*. doi:10.1007/s11292-021-09464-z
- 76 Abuse NI on D. Cannabis (Marijuana) | National Institute on Drug Abuse (NIDA). September 24, 2024. Accessed November 13, 2025. <https://nida.nih.gov/research-topics/cannabis-marijuana>
- 77 Nicksic NE, Do EK, Barnes AJ. Cannabis legalization, tobacco prevention policies, and Cannabis use in E-cigarettes among youth. *Drug Alcohol Depend*. 2020;206:107730. doi:10.1016/j.drugalcdep.2019.107730
- 78 Lland R. Product Review: Pax 2 Vaporizer. *Weedist*. June 2015. Accessed October 29, 2025. <https://www.weedist.com/2015/06/product-review-pax-2-vaporizer/>
- 79 Ryan S. Use of Cannabis Concentrates by Adolescents. *Pediatrics*. 2019;144(3):e20191256. doi:10.1542/peds.2019-1256
- 80 Keyes KM, Kreski NT, Ankrum H, et al. Frequency of adolescent cannabis smoking and vaping in the United States: Trends, disparities and concurrent substance use, 2017-19. *Addiction*. 2022;117(8):2316-2324.
- 81 Chadi N, Schroeder R, Jensen JW, Levy S. Association between electronic cigarette use and marijuana use among adolescents and young adults: a systematic review and meta-analysis. *JAMA Pediatr*. 2019;173(10):e192574-e192574.
- 82 Uddin SMI, Osei AD, Obisesan OH, et al. Prevalence, Trends, and Distribution of Nicotine and Marijuana use in E-cigarettes among US adults: The Behavioral Risk Factor Surveillance System 2016-2018. *Prev Med*. 2020;139:106175. doi:10.1016/j.ypmed.2020.106175
- 83 California Department of Public Health. Tobacco Control Branch. September 16, 2025. Accessed October 29, 2025. <https://www.cdph.ca.gov/Programs/CCDCPP/DCDIC/CTCB/Pages/CaliforniaTobaccoControlBranch.aspx>
- 84 North Carolina Department of Health and Human Services, North Carolina Public Health. Brochure Tobacco. February 2021. Accessed October 29, 2025. <https://tobaccopreventionandcontrol.dph.ncdhhs.gov/data/yts/docs/YouthTobaccoSurveyFactSheet-2019.pdf>
- 85 Do EK, Yoon SN, McKay T, Schillo BA, Hair EC. Cannabis and vaping nicotine: An exploration of risk factors using a nationally representative sample of youth and young adults. *Addict Behav*. 2024;157:108094. doi:10.1016/j.addbeh.2024.108094
- 86 Frohe T, Leeman RF, Patock-Peckham J, Ecker A, Kraus S, Foster DW. Correlates of cannabis vape-pen use and knowledge among U.S. college students. *Addict Behav Rep*. 2018;7:32-39. doi:10.1016/j.abrep.2017.11.004
- 87 Sun LH. Contaminant found in marijuana vaping products linked to deadly lung illnesses, tests show. *Wash Post*. September 5, 2019. Accessed October 29, 2025. <https://www.washingtonpost.com/health/2019/09/05/contaminant-found-vaping-products-linked-deadly-lung-illnesses-state-federal-labs-show/>
- 88 Centers for Disease Control and Prevention. Smoking and Tobacco Use; Electronic Cigarettes. Centers for Disease Control and Prevention. August 3, 2021. Accessed October 29, 2025. https://archive.cdc.gov/www_cdc_gov/tobacco/basic_information/e-cigarettes/severe-lung-disease.html
- 89 Ongenaert M, Decorte T. Like birds of a feather? A multi-case study on the connections between cannabis, tobacco, alcohol and pharmaceutical companies in legalized cannabis markets. *Int J Drug Policy*. 2025;143:104863. doi:10.1016/j.drugpo.2025.104863
- 90 University of Bath. Cannabis. Tobacco Tactics. March 31, 2023. Accessed October 29, 2025. <https://www.tobaccotactics.org/article/cannabis/>
- 91 NVC Newswire. Tobacco Giant Imperial Brands to Take 20% Stake in Canadian... New Cannabis Ventures. July 25, 2019. Accessed October 29, 2025. <https://www.newcannabisventures.com/tobacco-giant-imperial-brands-to-take-20-stake-in-canadian-cannabis-company-auxly-for-c123-million/>
- 92 Imperial Brands. Investment in Oxford Cannabinoid Technologies. Imperial Brand Plc 2022 Corporate Website 2022. June 28, 2018. Accessed October 29, 2025. <https://www.imperialbrandsplc.com/news/key-announcements/2018/investment-in-oxford-cannabinoid-technologies>
- 93 Altria. Altria Abandons Expiring Cronos Warrant; Maintains Initial Investment. Accessed October 29, 2025. <https://investor.altria.com/press-releases/news-details/2022/Altria-Abandons-Expiring-Cronos-Warrant-Maintains-Initial-Investment/default.aspx>
- 94 British American Tobacco. British American Tobacco - BAT enters strategic RD collaboration to accelerate 'beyond nicotine' strategy with Organigram. March 11, 2021. Accessed October 29, 2025. https://www.bat.com/media/press-releases/_2021/march/mar-11---bat-enters-strategic-r-d-collaboration-to-accelerate--b
- 95 Sabaghi D. Philip Morris To Acquire Israeli Cannabis Inhaler Company Syqe Medical For Up To \$650 Million. July 20, 2023. Accessed October 29, 2025. <https://www.forbes.com/sites/dariosabaghi/2023/07/20/philip-morris-to-acquire-israeli-cannabis-inhaler-company-syqe-medical-for-up-to-650-million/>
- 96 Avicanna. Avicanna Announces Scientific and Medical Affairs Collaboration with Vectura Fertin Pharma. Avicanna. January 16, 2025. Accessed October 29, 2025. <https://www.avicanna.com/avicanna-announces-scientific-and-medical-affairs-collaboration-with-vectura-fertin-pharma/>
- 97 Title S, Tan A. Big tobacco is coming for legal marijuana - The Boston Globe. *BostonGlobe.com*. April 8, 2021. Accessed October 29, 2025. <https://www.bostonglobe.com/2021/04/08/opinion/big-tobacco-is-coming-legal-marijuana/>
- 98 Duan Z, Romm KF, Henriksen L, et al. The Impact of Recent Tobacco Regulations and COVID-19 Restrictions and Implications for Future E-Cigarette Retail: Perspectives from Vape and Vape-and-Smoke Shop Merchants. *Int J Environ Res Public Health*. 2022;19(7):3855. doi:10.3390/ijerph19073855
- 99 Duan Z, Romm KF, Henriksen L, et al. The Impact of Recent Tobacco Regulations and COVID-19 Restrictions and Implications for Future E-Cigarette Retail: Perspectives from Vape and Vape-and-Smoke Shop Merchants. *Int J Environ Res Public Health*. 2022;19(7):3855. doi:10.3390/ijerph19073855
- 100 Haddad F, Dokmak G, Karaman R. The Efficacy of Cannabis on Multiple Sclerosis-Related Symptoms. *Life*. 2022;12(5):682. doi:10.3390/life12050682
- 101 Whiting PF, Wolff RF, Deshpande S, et al. Cannabinoids for Medical Use: A Systematic Review and Meta-analysis. *JAMA*. 2015;313(24):2456. doi:10.1001/jama.2015.6358
- 102 Lopez MJ, Nataneli N. Cannabis Use for Glaucoma and Associated Pain(Archived). In: *StatPearls*. StatPearls Publishing; 2025. Accessed October 29, 2025. <http://www.ncbi.nlm.nih.gov/books/NBK572112/>
- 103 Novack GD. Cannabinoids for treatment of glaucoma: *Curr Opin Ophthalmol*. 2016;27(2):146-150. doi:10.1097/ICU.0000000000000242
- 104 Algarin AB, Plazarte GN, Sovich KR, et al. Marijuana Use and Health Outcomes in Persons Living With HIV: Protocol for the Marijuana Associated Planning and Long-term Effects (MAPLE) Longitudinal Cohort Study. *JMIR Res Protoc*. 2022;11(8):e37153. doi:10.2196/37153

- 105 Cranford JA, Arnedt JT, Conroy DA, et al. Prevalence and correlates of sleep-related problems in adults receiving medical cannabis for chronic pain. *Drug Alcohol Depend.* 2017;180:227-233. doi:10.1016/j.drugalcdep.2017.08.017
- 106 Abi-Jaoude E, Chen L, Cheung P, Bhikram T, Sandor P. Preliminary Evidence on Cannabis Effectiveness and Tolerability for Adults With Tourette Syndrome. *J Neuropsychiatry Clin Neurosci.* 2017;29(4):391-400. doi:10.1176/appi.neuropsych.16110310
- 107 Kluger BM, Huang AP, Miyasaki JM. Cannabinoids in movement disorders. *Parkinsonism Relat Disord.* 2022;102:124-130. doi:10.1016/j.parkreldis.2022.08.014
- 108 Patel J, Marwaha R. Cannabis Use Disorder. In: *StatPearls*. StatPearls Publishing; 2025. Accessed October 29, 2025. <http://www.ncbi.nlm.nih.gov/books/NBK538131/>
- 109 National Institute on Drug. Cannabis (Marijuana) | National Institute on Drug Abuse (NIDA). September 24, 2024. Accessed October 29, 2025. <https://nida.nih.gov/research-topics/cannabis-marijuana>
- 110 Filbey FM, McQueeney T, DeWitt SJ, Mishra V. Preliminary findings demonstrating latent effects of early adolescent marijuana use onset on cortical architecture. *Dev Cogn Neurosci.* 2015;16:16-22. doi:10.1016/j.dcn.2015.10.001
- 111 Testai FD, Gorelick PB, Aparicio HJ, et al. Use of Marijuana: Effect on Brain Health: A Scientific Statement From the American Heart Association. *Stroke.* 2022;53(4). doi:10.1161/STR.0000000000000396
- 112 Broyd SJ, Van Hell HH, Beale C, Yücel M, Solowij N. Acute and Chronic Effects of Cannabinoids on Human Cognition—A Systematic Review. *Biol Psychiatry.* 2016;79(7):557-567. doi:10.1016/j.biopsych.2015.12.002
- 113 McCaffrey DF, Liccardo Pacula R, Han B, Ellickson P. Marijuana use and high school dropout: the influence of unobservables. *Health Econ.* 2010;19(11):1281-1299. doi:10.1002/hec.1561
- 114 National Institute on Drug. Cannabis (Marijuana) Research Report. July 2020. Accessed October 29, 2025. <https://www.drugsandalcohol.ie/37727/1/cannabis-marijuana-research-report.pdf>
- 115 Winters KC, Lee CYS. Likelihood of developing an alcohol and cannabis use disorder during youth: Association with recent use and age. *Drug Alcohol Depend.* 2008;92(1-3):239-247. doi:10.1016/j.drugalcdep.2007.08.005
- 116 Hudak J. The Farm Bill, hemp legalization and the status of CBD: An explainer. Brookings. December 14, 2018. Accessed October 30, 2025. <https://www.brookings.edu/articles/the-farm-bill-hemp-and-cbd-explainer/>
- 117 Römer Thomsen K, Thylstrup B, Kenyon EA, et al. Cannabinoids for the treatment of cannabis use disorder: New avenues for reaching and helping youth? *Neurosci Biobehav Rev.* 2022;132:169-180. doi:10.1016/j.neubiorev.2021.11.033
- 118 Graham AL, Cha S, Do EK, Jacobs MA, Edwards G, Papandonatos GD. Dual abstinence from nicotine vaping and cannabis use among young people: secondary analyses from two U.S.-based randomized controlled trials of vaping cessation. *Subst Abuse Treat Prev Policy.* 2025;20(1):48. doi:10.1186/s13011-025-00679-1
- 119 Barrus D, Capogrossi K, Cates S, et al. *Tasty THC: Promises and Challenges of Cannabis Edibles*. RTI Press; 2016. doi:10.3768/rtipress.2016.op.0035.1611
- 120 Calvin -Bobby Caina, Calvin APBC, Press A. Flavored cannabis marketing criticized for targeting children. PBS News. January 19, 2023. Accessed October 30, 2025. <https://www.pbs.org/newshour/economy/flavored-cannabis-marketing-criticized-for-targeting-children>
- 121 State of California Department of Justice. Attorney General Bonta: Cannabis-Infused Edibles Packaged as Popular Food and Candy Products Are Unsafe and Illegal. State of California - Department of Justice - Office of the Attorney General. October 28, 2021. Accessed October 30, 2025. <https://oag.ca.gov/news/press-releases/attorney-general-bonta-cannabis-infused-edibles-packaged-popular-food-and-candy>
- 122 Evans M. Guy's Chips is developing weed-infused chips in Missouri. September 21, 2022. Accessed October 30, 2025. <https://www.kmbc.com/article/guys-weed-chips-kc-brands-legal-marijuana-missouri/41319617>
- 123 Fertig N, Demko P. POLITICO Pro: FDA rejects CBD as dietary supplement, calls for Congress to help develop new regs. January 26, 2023. Accessed October 30, 2025. <https://subscriber.politicopro.com/article/2023/01/fda-rejects-cbd-as-dietary-supplement-calls-for-congress-to-help-develop-new-regs-00079645>
- 124 Marijuana Policy Project. Federal Policy. MPP. October 9, 2025. Accessed October 30, 2025. <https://www.mpp.org/policy/federal/>
- 125 Office of the Surgeon General. U.S. Surgeon General's Advisory: Marijuana Use and the Developing Brain. August 29, 2019. Accessed October 30, 2025. <https://www.hhs.gov/surgeongeneral/reports-and-publications/addiction-and-substance-misuse/advisory-on-marijuana-use-and-developing-brain/index.html>
- 126 Rouben R. Surgeon general advises pregnant people, youth against marijuana use - POLITICO. August 29, 2019. Accessed October 30, 2025. <https://www.politico.com/story/2019/08/29/surgeon-general-marijuana-warning-pregnant-people-youth-1477850>
- 127 Commissioner O of the. FDA Concludes that Existing Regulatory Frameworks for Foods and Supplements are Not Appropriate for Cannabidiol, Will Work with Congress on a New Way Forward. FDA. August 9, 2024. Accessed November 13, 2025. <https://www.fda.gov/news-events/press-announcements/fda-concludes-existing-regulatory-frameworks-foods-and-supplements-are-not-appropriate-cannabidiol>
- 128 Commissioner O of the. FDA Issues Warning Letters to Companies Illegally Selling CBD and Delta-8 THC Products. FDA. February 14, 2024. Accessed November 13, 2025. <https://www.fda.gov/news-events/press-announcements/fda-issues-warning-letters-companies-illegally-selling-cbd-and-delta-8-thc-products>
- 129 Commissioner O of the. Warning Letters for Cannabis-Derived Products. FDA. Published online September 5, 2025. Accessed November 13, 2025. <https://www.fda.gov/news-events/public-health-focus/warning-letters-cannabis-derived-products>
- 130 Congress Enacts Sweeping Recriminalization of Hemp-Derived THC Products in Federal Spending Bill Ending Government Shutdown. Akerman LLP. Accessed February 18, 2026. <https://www.akerman.com/en/perspectives/congress-enacts-sweeping-recriminalization-of-hemp-derived-thc-products-in-federal-spending-bill-ending-government-shutdown.html>
- 131 What to Expect in the Wake of the Federal Hemp Product Ban. Accessed February 18, 2026. <https://www.wilsonelser.com/publications/what-to-expect-in-the-wake-of-the-federal-hemp-product-ban>
- 132 Martinez A. Congress Bans Delta-8 & THCA Under New Hemp Law. Forbes. Accessed February 18, 2026. <https://www.forbes.com/sites/alonzomartinez/2025/12/05/congress-bans-delta-8-and-thca-under-new-hemp-law/>
- 133 Change to Federal Definition of Hemp and Implications for Federal Enforcement. Accessed February 18, 2026. <https://www.congress.gov/crs-product/IN12620>

- 134 Burtka J. Marijuana Possession Laws by State. FindLaw. December 12, 2024. Accessed October 30, 2025. <https://www.findlaw.com/state/criminal-laws/marijuana-possession-laws-by-state.html>
- 135 DeLoreto M. Whose Role Is It Anyway: Why the State Needs to Lead on Closing Unlicensed Cannabis Shops. July 14, 2025. Accessed October 30, 2025. <https://www.gibbonslaw.com/resources/publications/whose-role-is-it-anyway-why-the-state-needs-to-lead-on-closing-unlicensed-cannabis-shops>
- 136 Moynihan C. A Neighborhood Battles Illegal Weed Shops: 'We've Been Begging for Help.' *N Y Times*. June 8, 2024. Accessed October 30, 2025. <https://www.nytimes.com/2024/06/08/nyregion/lower-east-side-cannabis-stores.html>
- 137 American Nonsmokers; Rights Foundation. Overview List – Number of Smokefree and Other Tobacco-Related Laws. July 1, 2025. Accessed October 30, 2025. <https://no-smoke.org/wp-content/uploads/pdf/mediaordlist.pdf>
- 138 U.S. 100% Smokefree Laws in Non-Hospitality Workplaces AND Restaurants AND Bars.
- 139 Alcohol Policy Information System. Cannabis Advertising Restrictions | APIS – Alcohol Policy Information System. Accessed October 30, 2025. <https://alcoholpolicy.niaaa.nih.gov/cannabis-policy-topics/cannabis-advertising-restrictions/167>
- 140 Moreno MA, Jenkins M, Binger K, et al. A Content Analysis of Cannabis Company Adherence to Marketing Requirements in Four States. *J Stud Alcohol Drugs*. 2022;83(1):27-36. doi:10.15288/jsad.2022.83.27
- 141 The Network for Public Health Law. BaseArial_QuaterTabs.pdf. September 2024. Accessed October 30, 2025. <https://www.networkforphl.org/wp-content/uploads/2024/09/State-Regulation-of-Adult-Use-Cannabis-Advertising.pdf>
- 142 New York State Office of Cannabis Management. requirements-for-flavored-vaporized-or-inhaled-cannabis-products.pdf. September 29, 2023. Accessed October 30, 2025. <https://cannabis.ny.gov/system/files/documents/2023/09/requirements-for-flavored-vaporized-or-inhaled-cannabis-products.pdf>



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