

The Ripple Effect: How Legalized Marijuana Shapes Adolescent Choices and Public Perception

Authors:

Joseph Donnelly, PhD

Professor of Public Health/School Health Education
Montclair State University
1 Normal Avenue Upper Montclair, NJ 07043
Telephone: 973-655-7119
Email: donnellyj@montclair.edu

Elena Saldutti, PD, MA

Instructional Assistant
Montclair State University
1 Normal Avenue
Upper Montclair, NJ 07043
Telephone: 973-655-7119
Email: salduttie@montclair.edu

Abstract

Purpose: The legalization of marijuana for medical and recreational use has significantly reshaped societal norms, particularly around substance use. As marijuana becomes more accessible, adolescents are increasingly exposed to changing perceptions of its safety and social acceptability. Contrary to concerns, national survey data such as *Monitoring the Future* indicate that adolescent marijuana use has not increased; in fact, past 30-day use among 8th graders has declined by nearly 47% from 2010 until 2024 with similar decreases among 10th and 12th graders. Colorado-specific studies likewise show small relative declines in use following legalization (2011–2012 vs. 2015–2017). However, legalization has produced a ripple effect—increased availability of high-potency cannabis, rising emergency department visits and impaired driving, and normalization through media exposure. Beyond legal status, adolescent perceptions are shaped by parental permissiveness, peer influence, and targeted advertising, highlighting the need for comprehensive prevention strategies. **Methods:** This paper synthesizes current evidence demonstrating that, while adolescent marijuana use has declined, legalization has introduced new risks that require attention. **Conclusions:** Legalization has reshaped the environment in ways that affect adolescent health, requiring attention beyond prevalence statistics. **Recommendations:** Updating health curricula, regulating THC potency and advertising, supporting parental communication, and implementing state-level public health campaigns are essential to safeguarding adolescent well-being in the evolving landscape of legalization.

Keywords: marijuana legalization, adolescent perceptions, prevention strategies

INTRODUCTION

Despite marijuana remaining a Schedule I substance under the Controlled Substances Act at the federal level, state-level legalization efforts have expanded significantly in recent years. As of 2024, thirty-six states, four territories, and the District of Columbia have

enacted medical marijuana laws, while 24 states, two territories, and the District of Columbia have legalized recreational use (National Conference of State Legislatures [NCSL], 2024). This policy shift raises important questions about both the benefits and challenges of legalization, particularly regarding its impact on adolescent drug use.

The Ripple Effect: How Legalized Marijuana Shapes Adolescent Choices and Public Perception

© The Author(s). 2025. This is an open-access article distributed under the terms of the Creative Commons Attribution License (<http://creativecommons.org/licenses/by/4.0/>), which permits unrestricted use, distribution, and reproduction in any medium, provided the original work is properly cited.

One primary concern is the potential effect of legalization on adolescent consumption. Parents, educators, researchers, and public health professionals have long debated whether increased accessibility leads to higher rates of youth use. Yet research suggests that legalization has not resulted in widespread increases. For instance, Dilley et al. (2019), examining data from Colorado, found that past 30-day cannabis use among 8th graders declined from 9.8% in 2013 to 7.6% in 2017 (a 22% relative decline), and among 10th graders from 19.6% to 17.1% (a 12.7% relative decline), with 12th graders showing no significant change (remaining around 20%). Similarly, the Marijuana Policy Project (2023) reported continued declines since recreational legalization began in 2012, past 30-day use decreased by 40% among 8th graders (from 7.2% to 4.3%), 46% among 10th graders (from 17.6% to 9.5%), and 28% among 12th graders (from 22.6% to 16.2%). However, challenges in data collection, particularly during the COVID-19 pandemic, have complicated precise tracking of these trends.

While overall adolescent marijuana use has not shown a clear upward trend, some studies indicate increased usage among specific populations, such as recurrent users and college students. Additionally, Carda et al. (2019) observed a rise in past-month marijuana use among adults aged 26 and older increasing from 5.65% to 7.10% following the implementation of recreational marijuana laws. Despite these findings, concerns about adolescent access and shifting perceptions remain pressing.

Beyond youth use, marijuana legalization has raised broader public health concerns. Research has highlighted risks such as increased emergency room visits, motor vehicle crashes, and traffic fatalities. In Colorado, for example, significant increases in marijuana-related traffic accidents and hospitalizations were reported after legalization. These outcomes are compounded by the increasing potency of THC in both smoked and edible products, which makes unintentional overconsumption more likely and the drug's effects more intense. High-potency cannabis exacerbates marijuana's impact on cognitive functions such as motor skills, attention, and reaction times. For example, marijuana's interaction with the Reticular Activating System (RAS), which regulates attention and alertness (Lowry et al., 2010),

could theoretically reduce awareness of danger and impair decision-making. The more immediate concern, however, remains marijuana's direct impact on cognition and motor ability. These findings suggest that although legalization may not directly increase youth use, it creates secondary public health and safety challenges that warrant greater policy attention (Duan et al., 2022).

Proponents of legalization argue that the policy provides substantial benefits. These include economic growth through taxation, reductions in marijuana-related arrests, and improved regulation of product safety. Moreover, legalization has expanded medical access to cannabis-based treatments for patients who benefit from its therapeutic effects. As Congress continues to debate federal marijuana reform, including potential decriminalization and reclassification, ongoing research and policy adjustments will be essential for balancing public health priorities with these advantages.

Trends in Adolescent Marijuana Use

Assessing trends in adolescent marijuana use is essential for evaluating the impact of legalization. Traditionally, researchers have relied on Monitoring the Future (MTF), the National Survey on Drug Use and Health, and the CDC's Youth Risk Behavior Surveillance System (YRBSS). While YRBSS data were originally unavailable due to a presidential executive order, they have since been released. For the purposes of this paper, however, the primary source of analysis is the MTF study, which has been conducted annually since 1975 and surveys approximately 25,000 students in grades 8, 10, and 12 about their substance use behaviors. Beyond its longevity, MTF offers consistent year-to-year data and grade-level comparisons, making it one of the most reliable indicators of long-term trends in adolescent substance use.

Using this dataset, clear downward patterns emerge across grade levels. Among 8th graders, 30-day marijuana use remained steady at 7–8% from 2010 to 2015 before declining to 5% in 2016. Although there were minor fluctuations between 4% and 7% in subsequent years, no sustained upward trend emerged. In 2021, the rate dropped to 4% likely influenced by pandemic-related restrictions on social access. It continued downward, reaching 4.3% in 2024 (Miech, et al., 2025; Johnston et al., 2020). This

The Ripple Effect: How Legalized Marijuana Shapes Adolescent Choices and Public Perception

© The Author(s). 2025. This is an open-access article distributed under the terms of the Creative Commons Attribution License (<http://creativecommons.org/licenses/by/4.0/>), which permits unrestricted use, distribution, and reproduction in any medium, provided the original work is properly cited.

reflects an overall decrease of approximately 46% since 2010.

Similarly, 12th graders' usage hovered between 21% and 23% from 2010 until 2019, after which a gradual decline occurred. In 2021, the rate fell to 20%, then to 18% in 2023, and reached a 15-year low of 16% in 2024 (Miech, et al., 2025; Johnston et al., 2020). This represents a 30.4% decrease since 2010 (from 23% to 16%). These findings indicate that, contrary to expectations, greater marijuana availability has not translated into higher youth consumption at the national level.

Research on the impact of recreational marijuana legalization (RML) at the state level presents more mixed results. In Alaska, legalization was associated with increased adolescent use, aligning with findings from Washington (Cerdá et al., 2017) and Oregon (Paschall & Grube, 2020). Conversely, studies in Colorado found no significant link between recreational marijuana laws and adolescent use. Some reported a decline from roughly 22% in 2011 to about 20% in the post-legalization period, representing an approximate 9% relative decrease (Anderson, 2019; Brooks-Russell, 2019; Cerdá, 2017). A meta-analysis of eight studies observed a slight increase in adolescent and young adult use post-legalization (Melchior, 2019), although variations in data sources, methodologies, and state policies may account for these inconsistencies (Mennis, 2020).

Taken together, 14 years of MTF data (2010–2024) indicate a consistent national decline in adolescent marijuana use despite legalization. Nonetheless, continued monitoring remains essential for understanding how future policy shifts might affect youth behavior.

Adolescent Brain Development

Adolescence is a time of rapid brain growth, especially in areas that are responsible for emotion regulation, decision-making, and memory. The prefrontal cortex, which is the home of reasoning and impulse control, continues to develop until the mid-20s. Cannabis interferes with this development by disrupting the brain's endocannabinoid system, which plays a crucial role in forming neural connections. According to Jaffe and Lewis (2024), regular marijuana use during adolescence can impair cognitive function and

emotional regulation, increasing vulnerability to depression, anxiety, and other mood disorders.

Functional imaging studies have shown changes in the hippocampus and amygdala, which are areas of the brain tied to memory and emotion, in adolescent marijuana users. These structures are still developing during puberty and are highly sensitive to THC. The natural emotional volatility of adolescence, combined with these disruptions, makes cannabis particularly harmful to teenagers. Researchers have found that the earlier the exposure to cannabis, the greater the effect on brain structures related to mental health (Hines et al., 2024). Teens are more likely than adults to develop cannabis use disorder and suffer from long-term effects, like thinning of the brain's cortex and disruption of neural circuit formation (Cunningham, 2024). Because their brains are still "pruning" and building connections, THC exposure at this age can lead to permanent changes in areas that control judgment, focus, and emotions (Jaffe & Lewis, 2024).

Perceived Standardized Norms and the FOMO Fallacy

The concept of "Fear of Missing Out" (FOMO) has become a familiar phrase used to explain why adolescents engage in certain behaviors simply because they believe "everyone" else is doing it. In this sense, FOMO can pressure youth into experimenting with substances they may not otherwise have considered. Yet while catchy, this notion often misrepresents reality. National data show that the majority of adolescents are *not* engaging in substance use. For example, according to Monitoring the Future (2024), 16% of 12th graders reported marijuana use in the past 30 days. In other words, six out of seven students are not using marijuana. This reality directly contradicts the assumption behind FOMO, which implies that most or all peers are engaging in the behavior.

It may be useful to highlight an alternative narrative that not everyone is engaging in marijuana use, perhaps something closer to "Everyone Is 'NOT' Doing It" (EI"NDI). While not as catchy as FOMO, this framing more accurately reflects the research evidence and provides a powerful tool for educators, parents, and communities. Reinforcing that *the majority of youth are making healthy choices* can help dismantle misconceptions and reduce the social pressure adolescents feel when they hear

The Ripple Effect: How Legalized Marijuana Shapes Adolescent Choices and Public Perception

© The Author(s). 2025. This is an open-access article distributed under the terms of the Creative Commons Attribution License (<http://creativecommons.org/licenses/by/4.0/>), which permits unrestricted use, distribution, and reproduction in any medium, provided the original work is properly cited.

“everyone is doing it.” For instance, pointing out that only a minority of students report recent marijuana use not only undercuts the logic of FOMO but also empowers students to see non-use as the norm rather than the exception.

At the same time, it is important to acknowledge that shifting cultural and social forces complicate this message. As marijuana becomes more socially accepted and visible through legalization, media, and peer interactions, adolescent perceptions are changing. The normalization of marijuana use lowers social stigma and increases the likelihood that some teens will view it as socially acceptable, similar to alcohol or tobacco (Pacula et al., 2014). In states where marijuana is legal, studies show that adolescents are more likely to perceive the drug as low risk, which can increase experimentation (Shover et al., 2020; Wong et al., 2020). Peer influence remains one of the strongest predictors of use, especially when adolescents are surrounded by peers who approve of or use marijuana themselves (Berg et al., 2017).

Social media and digital advertising further amplify these influences. Platforms such as Instagram and Snapchat often portray marijuana in a positive light, reinforcing the perception that use is typical and acceptable (Roditis et al., 2016; Cristello et al., 2024). Exposure to such content desensitizes adolescents to the risks and increases the likelihood of experimentation (Hendricks & Leventhal, 2016; McGinty et al., 2021; Lee et al., 2022). Moreover, targeted advertising makes the effect even stronger: adolescents exposed to marijuana advertisements are significantly more likely to report recent use compared to those who were not (Trangenstein et al., 2019; Curtis et al., 2018; Moreno et al., 2016). Collectively, these forces create a cultural environment in which marijuana use appears common, despite the data indicating otherwise.

These contradictions present major challenges for prevention efforts. Traditional public health messaging has emphasized the risks of marijuana use, but its impact is weakened when youth are simultaneously surrounded by messages normalizing the drug. As Craig et al. (2023) emphasize, effective prevention must now directly counteract these shifting perceptions by pairing factual data about declining use rates with strategies to challenge

the cultural normalization of marijuana. Ultimately, reminding adolescents that the majority of their peers are *not* using offers a powerful counterbalance to FOMO and reinforces the reality that healthy, drug-free choices remain the true norm.

Media, Marketing, and Social Influence

One major reason marijuana is used so casually by teens is the misconception that it is safe. This misconception is usually heightened through its portrayal in social media, peer pressure, and family and friends' attitudes. On many social media platforms, cannabis use is glamorized, making it seem trendy, funny, or even therapeutic. Teens who follow influencers or musicians who endorse marijuana use may adopt similar behaviors without a full understanding of the consequences. Misinformation can also spread quickly online, with some content falsely claiming that cannabis has no side effects or is a cure for mental illness. According to the CDC (2024), only 35% of 12- to 17-year-olds believe that smoking marijuana regularly is risky. This disconnect between perception and evidence poses a major obstacle for prevention efforts.

Cunningham (2024) pointed out that teens are largely unaware of how much more potent modern marijuana is compared to what was used by previous generations. Public health messaging must evolve to counteract these narratives with accurate and relatable information. Schools and community programs should focus on reshaping the narrative, especially among young users who are increasingly skeptical of traditional anti-drug campaigns.

The Rise of High-Potency Cannabis and Its Impact

Cannabis today is not the same drug as it was 10 or even 20 years ago. Today, it is significantly more potent. In the 1990s, the average THC content was approximately 4%, whereas today, it regularly exceeds 20%, with some concentrates reaching up to 95% THC (Cunningham, 2024). Hines et al. (2024) found that adolescents who use high-potency cannabis are more likely to report symptoms of psychosis, such as paranoia and hallucinations. Even after accounting for alcohol and tobacco use, the risk of depression and anxiety was significantly higher among high-THC users.

The Ripple Effect: How Legalized Marijuana Shapes Adolescent Choices and Public Perception

© The Author(s). 2025. This is an open-access article distributed under the terms of the Creative Commons Attribution License (<http://creativecommons.org/licenses/by/4.0/>), which permits unrestricted use, distribution, and reproduction in any medium, provided the original work is properly cited.

High-potency cannabis also increases the risk of dependency and emotional instability. Many teens mistakenly believe that higher THC content leads to stronger or better effects without realizing the increased psychological risks. These include panic attacks, paranoia, and long-term psychiatric complications. With the rise of vaping and dabbing, these products are more accessible and socially acceptable among young people. Cunningham (2024) emphasizes that teens often lack knowledge about how intense and long-lasting the effects of high-potency cannabis can be compared to traditional flower cannabis. According to Hines et al. (2024), teens who used cannabis with more than 10% THC were significantly more likely to show signs of depression, anxiety, and hallucinations than those who used lower-potency cannabis or never used it at all. The danger is especially high because teens don't always know what's in the products they're using. Vapes, oils, and dabs can contain extremely concentrated THC, often above 80%, and teens might not realize how powerful or risky these products are (Jaffe & Lewis, 2024; Cunningham, 2024).

Mental Health Disorders and Marijuana Use

Marijuana use doesn't just cause mental health problems, it often worsens existing ones. Teens who already have anxiety, depression, or PTSD are more likely to turn to marijuana as a coping mechanism. This pattern is called self-medication, and while it may provide temporary relief, it often leads to worsening symptoms over time. Jaffe and Lewis (2024) emphasized that the link between marijuana and mental health becomes more pronounced in individuals with early onset use.

According to Rup et al. (2021), adolescents with mental health conditions are also more likely to engage in daily cannabis use and prefer high-potency products. This can create a cycle of dependency and mental health decline. Additionally, Bataineh et al. (2023) found that teens who began using marijuana before the age of 16 had significantly higher rates of early onset depression and anxiety. For genetically predisposed individuals, cannabis use during adolescence can also trigger the onset of severe psychiatric disorders, including schizophrenia (Hines et al., 2024). A large study even showed that around 15% of schizophrenia cases in young men could have been avoided if they had not developed a cannabis use disorder

(Cunningham, 2024). Teens who think cannabis helps their anxiety or depression might not realize that the relief is only temporary, and over time, the drug can actually increase the severity of their symptoms and make them more dependent (Rup et al., 2021).

Teenagers with ADHD and PTSD are especially vulnerable to misusing cannabis as a coping mechanism, often exacerbating symptoms. This cycle of use and worsening mental health highlights the importance of early mental health screenings and providing safe alternatives for managing emotional distress. Healthcare providers and school counselors must be trained to recognize when cannabis use may be masking deeper issues. In treatment settings, teens often struggle to stop using cannabis even when they want to feel better mentally.

Co-Use of Marijuana and Other Substances

Marijuana use among teens is often not isolated. It is frequently accompanied by tobacco, alcohol, or other drug use. Bataineh et al. (2023) reported that co-use increases the risk of early-onset mental health disorders. When adolescents use marijuana and tobacco together, their risk of addiction and emotional instability rises. These substances work together to lower motivation and impair judgment, making it harder for teens to manage school, relationships, and responsibilities. Early exposure also increases the likelihood of developing a substance use disorder (SUD) later in life.

In addition, co-use makes it difficult to identify which substance is causing specific symptoms, complicating treatment efforts. Teens who are engaging in polysubstance use are more likely to hide their behaviors from adults, delaying necessary intervention. The overlapping use of cannabis with other substances heightens the urgency for targeted prevention strategies that address multiple forms of substance use. Additionally, research by Rup et al. (2021) found that youth with co-occurring mental health issues and cannabis use were significantly more likely to report suicidal ideation than those with mental health issues alone. According to Rup et al. (2021), teens with depression and anxiety are not only more likely to use cannabis, but they're also more likely to combine it with high-THC products like concentrates and vape oils. These combinations worsen mental health and can lead to more severe forms of substance use

The Ripple Effect: How Legalized Marijuana Shapes Adolescent Choices and Public Perception

© The Author(s). 2025. This is an open-access article distributed under the terms of the Creative Commons Attribution License (<http://creativecommons.org/licenses/by/4.0/>), which permits unrestricted use, distribution, and reproduction in any medium, provided the original work is properly cited.

disorder, especially if support or treatment is delayed.

Why This Matters and Why It Makes a Difference

Understanding how marijuana affects adolescent mental health is more than a research question. It represents a social responsibility, as research indicates that marijuana can trigger or worsen depression, anxiety, and psychosis, conditions that already affect many adolescents navigating school, friendships, and family life. If left unaddressed, these mental health challenges can derail futures. Early intervention and education can change that trajectory. When young people know the facts, they can make better decisions. This issue matters because it impacts people's ability to thrive academically, emotionally, and socially.

For example, in a 2023 study found that adolescents who used cannabis, including those without a diagnosed use disorder, were nearly twice as likely to report depression or suicidal thoughts compared to those who didn't use it (Cunningham, 2024). Teens who developed cannabis use disorder were two to three times more likely to experience those same outcomes. Even more alarming, early cannabis use has been shown to speed up the thinning of the prefrontal cortex, a part of the brain responsible for judgment and decision-making (Cunningham, 2024). These are long-term effects that can last well beyond high school.

It also matters because our public health systems are still catching up. Legalization moved faster than education. We need updated policies that regulate THC potency and marketing toward teens. Schools must incorporate current cannabis education into health curricula. Healthcare providers should screen for marijuana use during adolescent check-ups, especially when mental health concerns are present. Parents and communities need to be equipped with facts, not fear tactics, so they can support teens in making healthy choices.

The THC levels in cannabis products today are far higher than in the past. Some vapes and concentrates can be up to 95% THC, drastically increasing the chances of addiction and psychosis, especially in young people whose brains are still developing (Jaffe & Lewis, 2024; Hines et al., 2024). This matters because many

teens don't know how strong these newer products are. Teens are also more likely to use these high-potency products if they already struggle with mental health, creating a dangerous cycle of dependency and worsening symptoms (Rup et al., 2021).

State Influence and Responsibility

In states where marijuana has been legalized, the cannabis market has expanded rapidly, leading to a notable increase in dispensaries and commercial sales (Wu et al., 2022). This rapid market expansion has created new opportunities for adolescents to encounter cannabis in their communities, raising concerns about the substance's influence on youth perceptions. Critics argue that legalizing recreational marijuana sends a message to young people that the drug is safe and socially acceptable, potentially altering their views on its risks (Schmidt et al., 2016).

However, research on the impact of cannabis legalization on adolescent use has yielded mixed results. Some studies suggest that legalization may increase cannabis use among youth, while others indicate little to no effect (Anderson et al., 2019; Choo et al., 2014; Carliner et al., 2017). Based on 14 years of *Monitoring the Future* data, overall adolescent cannabis usage trends have not risen as feared. In fact, national survey results show a sustained downward trend in past-30-day marijuana use among youth. Among 8th graders, use declined from about 8.0% in 2010 to 4.3% in 2024, representing a 46% decrease. Comparable reductions are seen among 10th graders, dropping from approximately 16.7% to 9.5% (43% decline), while 12th graders decreased from 21.4% to 16.2% (24% decline) over the same period (Miech, et al., 2025; Johnston et al., 2020). These consistent declines highlight that legalization itself has not driven an increase in adolescent use; instead, other influences such as parental communication, peer norms, and prevention initiatives play a more decisive role in shaping youth behavior.

To mitigate the potential risks associated with increased cannabis availability, state-sponsored public health campaigns have become essential in shaping adolescents' understanding of marijuana's health risks. Washington Initiative 502, passed in 2012 and implemented in 2015, directed the Washington State Department of Health to take several key actions: establishing

The Ripple Effect: How Legalized Marijuana Shapes Adolescent Choices and Public Perception

© The Author(s). 2025. This is an open-access article distributed under the terms of the Creative Commons Attribution License (<http://creativecommons.org/licenses/by/4.0/>), which permits unrestricted use, distribution, and reproduction in any medium, provided the original work is properly cited.

a cannabis use public health hotline, funding local intervention programs, and launching comprehensive media-based education campaigns. These initiatives provide medically and scientifically accurate information about the health risks of cannabis use for both youth and adults (Learn about Cannabis, 2015).

State-level policies thus serve not only to regulate the legal market but also to shape public health narratives. The expansion of cannabis markets offers adolescents greater exposure to the substance; however, targeted public health interventions, such as those in Washington, can help counteract the normalization of marijuana use and reinforce awareness of its potential harms. This underscores the importance of continued state-level engagement in educating both adolescents and adults about the risks of cannabis use, irrespective of its legal status.

Parental Perspectives and Permissive Attitudes

Parental attitudes play a critical role in shaping adolescent behavior. Research indicates that when parents adopt more lenient or permissive attitudes toward substance use, including marijuana, adolescents are more likely to experiment with or regularly use drugs (Jackson et al., 2000). Specifically, permissive parental behaviors, such as reduced monitoring or downplaying the risks associated with drug use, are linked to higher rates of adolescent substance use. Griffin et al. (2000) emphasize that parental norms and behaviors directly influence how adolescents perceive the dangers of drug use. As a result, youth may internalize these permissive attitudes, underestimating the risks and increasing their likelihood of experimentation and continued use.

Parental decision-making further influences this dynamic. Studies have shown that adolescents who perceive parental cannabis use tend to develop more positive attitudes toward the drug and are more inclined to consider using it. Moreover, the quality of the parent-child relationship plays a significant role. For example, adolescents who feel close to non-cannabis-using mothers generally have lower intentions to use cannabis, whereas closeness to cannabis-using mothers is associated with more favorable attitudes toward the drug. Interestingly, a close relationship with fathers, regardless of their cannabis use, has also been

linked to more positive attitudes toward cannabis. These findings underscore the importance of open, honest discussions between parents and adolescents about cannabis use. Such conversations can help clarify misconceptions, establish clear boundaries, and potentially reduce the influence of perceived parental use on adolescent behavior (Hust et al., 2024).

CONCLUSION

Adolescent marijuana use has declined substantially over the past decade, even as legalization has expanded nationwide. This challenges the assumption that broader access inevitably leads to higher youth use. Yet legalization has produced ripple effects that extend far beyond prevalence. These include shifting norms, amplified social media messaging, parental permissiveness, and exposure to high-potency products, all of which profoundly shape adolescent health and decision-making.

Answering the “so what?” is straightforward: the health and future of an entire generation are at stake. Marijuana may seem harmless to some, but for adolescents with developing brains and emotional vulnerabilities, it can be life-changing in damaging ways. Early use has been linked to higher rates of depression, anxiety, and suicidal ideation, as well as poorer academic performance and strained relationships (Bataineh et al., 2023). Risks intensify when marijuana is used alongside substances like tobacco, increasing the likelihood of addiction and emotional instability. Ignoring these issues only compounds the problem.

To meet these challenges, prevention efforts must evolve alongside policy. Schools should modernize health curricula, states should regulate potency and advertising, parents should engage in open communication, and public health campaigns should promote narratives such as EINDI to counter the FOMO fallacy. In short, legalization’s impact cannot be measured by prevalence alone. Its ripple effects are reshaping perceptions, environments, and risks and demand coordinated, evidence-based responses to protect adolescent well-being now and for the future.

The Ripple Effect: How Legalized Marijuana Shapes Adolescent Choices and Public Perception

© The Author(s). 2025. This is an open-access article distributed under the terms of the Creative Commons Attribution License (<http://creativecommons.org/licenses/by/4.0/>), which permits unrestricted use, distribution, and reproduction in any medium, provided the original work is properly cited.

REFERENCES

- Anderson, D. M., Hansen, B., & Rees, D. I. (2019). Medical marijuana laws and teen marijuana use. *American Economic Journal: Economic Policy*, 11(3), 1–26. <https://doi.org/10.1257/pol.20170575>
- Bataineh, B. S., Wilkinson, A. V., Sumbe, A., Clendennen, S. L., Chen, B., Messiah, S. E., & Harrell, M. B. (2023). The Association Between Tobacco and Cannabis Use and the Age of Onset of Depression and Anxiety Symptoms: Among Adolescents and Young Adults. *Nicotine and Tobacco Research*, 25(8), 1455–1464. <https://doi.org/10.1093/ntr/ntad058>
- Berg, C. J., Stratton, E., Schauer, G. L., Lewis Thames, M., Cao, Y., & Pinsky, E. A. (2017). Perceived harm, addictiveness, and social acceptability of tobacco products and marijuana among young adults. *Drug and Alcohol Dependence*, 177, 113–119. <https://doi.org/10.1016/j.drugalcdep.2017.03.030>
- Brooks-Russell, A., Ma, M., Levinson, A. H., & Levinson, D. (2019). Adolescent marijuana use, norms, and risk perceptions after state retail marijuana legalization. *American Journal of Preventive Medicine*, 57(4), 451–457. <https://doi.org/10.1016/j.amepre.2019.05.017>
- Carliner, H., Brown, Q. L., Sarvet, A. L., & Hasin, D. S. (2017). Cannabis use, attitudes, and legal status in the U.S.: A review. *Preventive Medicine*, 104, 13–23. <https://doi.org/10.1016/j.ypmed.2017.07.008>
- Centers for Disease Control and Prevention. (2024). *Cannabis and Teens | Cannabis and Public Health*. <https://www.cdc.gov/cannabis/health-effects/cannabis-and-teens.html>
- Cerdá, M., Mauro, C., Hamilton, A., Levy, N. S., Santaella-Tenorio, J., Hasin, D., Martins, S. S., & Keyes, K. M. (2019). Association between recreational marijuana legalization in the United States and changes in marijuana use and cannabis use disorder from 2008 to 2016. *JAMA Psychiatry*, 77(2), 165–171. <https://doi.org/10.1001/jamapsychiatry.2019.324>
- Cerdá, M., Wall, M., Feng, T., Keyes, K. M., Sarvet, A., Schulenberg, J., O'Malley, P. M., Pacula, R. L., Galea, S., & Hasin, D. S. (2017). Association of state recreational marijuana laws with adolescent marijuana use. *JAMA Pediatrics*, 171(2), 142–149. <https://doi.org/10.1001/jamapediatrics.2016.364>
- Choo, E. K., Benz, M., Zaller, N., Warren, O., Rising, K. L., & McConnell, K. J. (2014). The impact of state medical marijuana legislation on adolescent marijuana use. *Journal of Adolescent Health*, 55(2), 160–166. <https://doi.org/10.1016/j.jadohealth.2014.02.018>
- Craig, P., Gray, D., & Harris, D. (2023). Re evaluating adolescent messaging in the age of cannabis legalization. *Journal of Substance Use & Misuse*, 58(3), 321–334. <https://doi.org/10.1080/10826084.2022.2135010>
- Cristello, J. V., Martinez, S., & Goldstein, A. L. (2024). Adolescent marijuana exposure on social media and perceived norms of use. *Journal of Adolescent Health*, 74(1), 74–81. <https://doi.org/10.1016/j.jadohealth.2023.07.016>
- Cunningham, A. (2024, January 5). The teen brain is especially susceptible to the harms of THC. *Science News*. How does THC affect teens' mental health? <https://www.sciencenews.org/article/cannabis-high-thc-teen-mental-health>
- Dilley, J. A., Richardson, S. M., Kilmer, B., Pacula, R. L., Segawa, M. B., & Cerdá, M. (2019). Prevalence of marijuana use among youth in Colorado: Results from 2013–2017 Healthy Kids Colorado Survey. *American Journal of Public Health*, 109(4), 500–506. <https://doi.org/10.2105/AJPH.2018.304881>
- Duan, Z., Wang, Y., Weaver, S.R., Spears, C.A., Zheng, P., Pinpin, Self-Brown, S. R., Eriksen, M. P., & Huang, J. (2022). Effect modification of recreational cannabis legalization on adolescent cannabis initiation associated with e-cigarette use. *Drug and Alcohol Dependence*, 232, 109260. <https://doi.org/10.1016/j.drugalcdep.2021.109260>
- Drug Enforcement Administration. (2018). Drug scheduling. United States Department of Justice. <https://www.dea.gov/drug-scheduling>
- Farrelly, K.M., Wardell, J.D., Marsden, E., Scarfe, M.L., Najdzionek, P., Turma, J., & MacKillop, J. (2023). The impact of recreational cannabis legalization on cannabis

The Ripple Effect: How Legalized Marijuana Shapes Adolescent Choices and Public Perception

© The Author(s). 2025. This is an open-access article distributed under the terms of the Creative Commons Attribution License (<http://creativecommons.org/licenses/by/4.0/>), which permits unrestricted use, distribution, and reproduction in any medium, provided the original work is properly cited.

use and related outcomes: A longitudinal review. *Substance Abuse: Research and Treatment*, 17. <https://doi.org/10.1177/11782218231172054>

Griffin, K. W., Botvin, G. J., & Scheier, L. M. (2000). Parental monitoring, peer influences, and substance use among urban adolescents.

Applied Developmental Science, 4(2), 73–85. https://doi.org/10.1207/S1532480XADS0402_3

Hendricks, P. S., & Leventhal, A. M. (2016). A meta-analysis of messages promoting the positive effects of marijuana: Do they influence adolescents? *Prevention Science*, 17(6), 722–731. <https://doi.org/10.1007/s1121-016-0652-2>

Hines, L. A., Cannings-John, R., Hawkins, J., Bonell, C., Hickman, M., Zammitt, S., ... & White, J. (2024). Association between cannabis potency and mental health in adolescence. *Drug and Alcohol Dependence*, 261, 111359. <https://doi.org/10.1016/j.drugalcdep.2024.111359>

Hust, S. J. T., Brown, J. D., & McCool, J. P. (2024). Parent–teen communication about cannabis use in states with legalized marijuana. *Health Communication*, 39(2), 128–140. <https://doi.org/10.1080/10410236.2023.2175021>

Jackson, C., Henriksen, L., Dickinson, D., & Levine, D. W. (2000). The early use of alcohol and tobacco: Its relation to children's competence and parents' behavior. *American Journal of Public Health*, 90(1), 190–196. <https://doi.org/10.2105/ajph.90.1.190>

Jaffe, S. L., & Lewis, D. R. (2024, January 17). THC and Adolescents: An Overlooked Issue in Youth Mental Health. *Psychiatric Times*. THC and Adolescents: An Overlooked Issue in Youth Mental Health. <https://www.psychiatristimes.com/view/thc-and-adolescents-an-overlooked-issue-in-youth-mental-health>

Johnston, L. D., Miech, R. A., O'Malley, P. M., Bachman, J. G., Schulenberg, J. E., & Patrick, M. E. (2020). Monitoring the Future national survey results on drug use, 1975–2019: Overview, key findings on adolescent drug use. Institute for Social Research, University of Michigan. <https://monitoringthefuture.org>

Learn about Cannabis. (2015). Washington State Department of Health. <https://www.learnaboutcannabiswa.org/>

Lee, J. C., Patton, D., & Barnes, M. (2022). Social media exposure and adolescent marijuana use in the digital age. *Substance Use & Misuse*, 57(2), 145–153. <https://doi.org/10.1080/10826084.2021.2001234>

Lowry, C. A., Johnson, P. L., Hay-Schmidt, A., Mikkelsen, J., & Shekhar, A. (2010). Modulation of the reticular activating system by cannabinoids: Implications for arousal and cognition. *Neuropharmacology*, 58(3), 616–623. <https://doi.org/10.1016/j.neuropharm.2009.10.01>

Marijuana Policy Project. (2023). Teen marijuana use continues to decline in legal states. <https://www.mpp.org/news/2023/youth-use-decline/>

McGinty, E. E., Niederdeppe, J., Heley, K., & Barry, C. L. (2021). The effects of marijuana messaging on adolescent attitudes and intentions. *Journal of Health Communication*, 26(1), 44–52. <https://doi.org/10.1080/10810730.2021.1887981>

Melchior, M., Nakamura, B. J., & Nakamura, C. M. (2019). Recreational marijuana laws and youth use: A meta-analytic review. *Addiction*, 114(3), 545–556. <https://doi.org/10.1111/add.14435>

Mennis, J., & Stahler, G. J. (2020). Trends in adolescent marijuana use in the context of national marijuana policy reform: 2002–2018. *Journal of Adolescent Health*, 66(1), 10–12. <https://doi.org/10.1016/j.jadohealth.2019.10.005>

Miech, R. A., Johnston, L. D., Patrick, M. E., & O'Malley, P. M. (2025). Monitoring the Future national survey results on drug use, 1975–2024: Overview and detailed results for secondary school students. Monitoring the Future Monograph Series. Ann Arbor, MI: Institute for Social Research, University of Michigan. <https://monitoringthefuture.org/results/annual-reports/>

National Conference of State Legislatures. (2024). State medical cannabis laws. <https://www.ncsl.org/research/health/state-medical-marijuana-laws.aspx>

The Ripple Effect: How Legalized Marijuana Shapes Adolescent Choices and Public Perception

© The Author(s). 2025. This is an open-access article distributed under the terms of the Creative Commons Attribution License (<http://creativecommons.org/licenses/by/4.0/>), which permits unrestricted use, distribution, and reproduction in any medium, provided the original work is properly cited.

- Pacula, R. L., Kilmer, B., Wagenaar, A. C., Chaloupka, F. J., & Caulkins, J. P. (2014). Developing public health regulations for marijuana: Lessons from alcohol and tobacco. *American Journal of Public Health, 104*(6), 1021–1028.
<https://doi.org/10.2105/AJPH.2013.301766>
- Paschall, M. J., & Grube, J. W. (2020). Recreational marijuana legalization and youth marijuana use: Examining the influence of exposure to retail outlets. *Drug and Alcohol Review, 39*(5), 464–471.
<https://doi.org/10.1111/dar.13044>
- Roditis, M. L., Delucchi, K., Chang, A., & Halpern-Felsher, B. (2016). Perceptions of social norms and exposure to pro-marijuana messages are associated with adolescent marijuana use. *Preventive Medicine, 93*, 171–176.
<https://doi.org/10.1016/j.ypmed.2016.10.013>
- Rup, J., Freeman, T. P., Perlman, C., & Hammond, D. (2021). Cannabis and mental health: Prevalence of use and modes of cannabis administration by mental health status. *Addictive Behaviors, 121*, 106991. Prevalence of use and modes of cannabis administration by mental health status – Science Direct
- Schmidt, L. A., Jacobs, L. M., & Spetz, J. (2016). Young people's more favorable marijuana views: The role of legalization and media. *Journal of Adolescent Health, 58*(5), 527–532.
<https://doi.org/10.1016/j.jadohealth.2016.02.008>
- Shover, C. L., Davis, C. S., Gordon, S. C., & Humphreys, K. (2020). Association between medical cannabis laws and opioid overdose mortality has reversed over time. *Proceedings of the National Academy of Sciences, 116*(26), 12624–12626.
<https://doi.org/10.1073/pnas.1903434116>
- Smart, R. G., & Ogborne, A. C. (2000). Drug use and drinking among students in the United States and Canada. *Addictive Behaviors, 25*(3), 385–395.
[https://doi.org/10.1016/S03064603\(99\)00059-7](https://doi.org/10.1016/S03064603(99)00059-7)
- Trangenstein, P. J., Jenkins, M. C., Cassell, J., & Barry, C. L. (2019). Marijuana marketing exposure among adolescents in states with legal retail marijuana. *JAMA Pediatrics, 173*(8), 766–773.
<https://doi.org/10.1001/jamapediatrics.2019.073>
- United States Congress. (2023). H.R.610 – Marijuana 1-to-3 Act of 2023.
<https://www.congress.gov/bill/118thcongress/house-bill/610>
- Willoughby, J. F., Hust, S. J. T., Li, J., & Couto, L. (2024). Exposure to pro- and anti-cannabis social media messages and teens' and college students' intentions to use cannabis. *Health Communication, 39*(1), 183–194.
<https://doi.org/10.1080/10410236.2022.2162707>
- Wong, S. S., Zhou, S., & Goebert, D. (2020). The impact of medical marijuana legislation on adolescent use: New findings. *Journal of Studies on Alcohol and Drugs, 81*(2), 232–240.
<https://doi.org/10.15288/jsad.2020.81.232>
- Wu, L. T., Swartz, M. S., & Brady, K. T. (2022). Dispensary proximity and youth cannabis use following recreational marijuana legalization. *Addiction, 117*(4), 1045–1053.
<https://doi.org/10.1111/add.15791>