



Appendix A

Research and data demonstrate why federal safeguards on THC products are urgently needed.

Today's THC products have dramatically changed concerning the type of products, their THC potencies, and how they are being labeled, packaged, and marketed. This has created tremendous confusion and misinformation for the general public and has put too many at undue risk of harm.

Most particularly, our nation's young people remain at greatest risk, because their brains are still developing. These risks are compounded by dangerous public misperceptions that all marijuana is natural and benign when the science shows otherwise. Considerable data already shows our nation's youngest citizens are being harmed and negatively impacted, unnecessarily.

Kid-friendly deceptive products with THC (in all forms) are harming kids

- Nationally, there has been a [1375% increase](#) in pediatric edible cannabis accidental ingestions over the five-year period from 2017–2021, with the potential for significant toxicity and hospitalizations. Symptoms reported include agitation, confusion, slow heartbeat, respiratory depression, rapid heart rate and breathing, fever, nausea/vomiting, stupor, tremor, and seizures. Recent [news](#) coverage has reported on the death of children from eating their caregivers' edibles.
- [Hidden THC](#) is a marketing tactic used to target children and underage youth while deceiving the public, whether labeled, marketed, and sold as "marijuana," "cannabis," "hemp," or "CBD." Vaporizers, cupcakes, candies, sodas, eyedrops, breath mints, look-alike asthma relief inhalers, and powders to sprinkle on foods and drinks are being sold in today's commercial markets.

- Past experiences with tobacco and the vaping industry, including most recently JUUL, show three factors that impact youth use and its unacceptable harms: 1) kid-friendly marketing tactics, 2) kid-friendly products and flavors, and 3) concentrated amounts of the addicting substances. JUUL creator said he modeled JUUL products after [Pax](#) THC products in a recent "[Big Vape](#)" Netflix Documentary.

The 2018 U.S. Farm Bill unleashed [hemp-derived psychoactive THC](#) products that are being sold as “hemp” and “CBD” in gas stations, grocery stores, convenience stores, online, and smoke shops across the country without any age requirements or adequate warnings.

- National poison centers received 2,362 cases of hemp-derived Delta-8-THC exposure with 41% involving kids under the age of 18 years old between January 1, 2021, and February 2022. [A SAMHSA Advisory](#) published in February 2023 details why urgent Congressional action is needed.
- Delta-8 THC use was measured for the first time in the 2023 Monitoring the Future [survey](#), with 11.4% of 12th graders reporting use in the past year.
- [A 2022 study published in JAMA](#) conducted a case series of buying products online and from popular national retail stores finding hemp derived topical products labeled CBD were often inaccurately labeled and contained THC. The findings identified the need for improved oversight of hemp and cannabis products to ensure quality assurances, and to prevent misleading claims and negative effects for consumers.

High levels of youth use and sky-rocketing THC potency increase the risks and harms

- The Centers for Disease Control and Prevention’s Youth Risk Behavior Survey found that in 2019 [22% of high school students](#) reported using marijuana in the past 30 days, and 37% reported lifetime use. At the same time, today’s marijuana has become a more potent drug that can harm the brain, which is growing until age 25.

- THC vaping increased in all grades nationally, with a reported [doubling of THC vaping](#) among high school seniors. The most significant youth use increase ever reported for a substance other than nicotine vaping (2019 Monitoring the Future National Youth Survey).
- When certain states first legalized marijuana for medicinal purposes, the average THC potency of the plant [was less than 5%](#). Today, it averages [19%](#) THC in Colorado, and processed products can reach as high as 98% pure THC.

High potency THC, defined in research as anything over 10%, has been associated with severe physical and mental effects, symptoms, and disorders. These negative impacts include psychotic symptoms and psychotic disorders, including schizophrenia; mental health symptoms and problems, including anxiety, depression, and suicidal ideation; cannabis hyperemesis syndrome (uncontrolled vomiting); and cannabis use disorder/dependence, including physical and psychological dependence. [2019 CDPHE "THC Concentration Report"](#)

- These negative impacts have high societal and healthcare costs.
 - According to a [2021 study](#) by the Schizophrenia & Psychosis Action Alliance, for every 25-year-old diagnosed with schizophrenia, the cost to the economy is approximately \$92,000 per year and a lifetime cost of \$3.8 million.
 - A recent [study](#) found Cannabis Hyperemesis costs for combined ED visits, and radiologic evaluations averaged \$76,920.92 per patient. On average, it took 17.9 ED visits before a proper diagnosis was made with total radiologic costs ranging from \$17,133 to \$210,010.
- A report by the [Senate on International Narcotics Control](#) in March 2021 summarized that daily use of cannabis containing 10% or more THC increases the chance of developing psychosis almost five times compared to non-users, while researchers suggested that if the federal government were to cap cannabis potency the incidence of psychosis and other adverse mental health disorders could be reduced.

- A 2017 [study in the American Journal of Psychiatry](#) found that just one psychotic episode following cannabis use was associated with a 47% probability of the person developing bipolar or schizophrenia disorder. The risk is highest for young people ages 16 to 25 years old, and the risk is higher than for other substances, including alcohol, opioids, amphetamines, and hallucinogens. A [recent Wall Street Journal](#) article highlights the data and dismal outcomes.
- The U.S. Surgeon General recently issued a rare [Public Health Advisory Warning and Call to Action on Youth Mental Health Crisis](#) (12/8/2021) reporting that "anxiety, depression and suicide attempts are up over 50%". Research shows that youth substance use and abuse and mental health concerns commonly co-occur.
- National Survey on Drug Use and Health (2019) [presentation](#) shows that Colorado (the state with the longest experience with commercial marijuana sales) has higher rates of marijuana use and mental health/substance use disorders compared to nationwide rates.

Comparison of Rates of Mental/Substance Use Disorders Associated with Marijuana Use: National vs. Colorado Data from the National Survey on Drug Use and Health (2019)

Measure/Age Group	National (%)	Colorado (%)	National vs. Colorado P-value
Past Month Marijuana Use (18-25 y)	23.0	37.0	0.0009
Past Year Daily Marijuana Use (18-25y)	7.5	14.8	0.0085
Past Month Marijuana Use (≥ 26y)	10.2	18.8	<0.0001
Substance Use Disorder (SUD) (18+)	7.7	10.9	0.0206
Co-occurring SUD and SMI (18+)	1.4	2.5	0.0430

Estimates for Colorado are direct single-year estimates for 2019 and will differ from model-based estimates using data from 2018 and 2019.

- [A 2023 study published in Frontiers in Psychiatry](#) found suicide behaviors and suicide ideation increased between 2015 and 2019 for adolescents who used marijuana.
- [A 2023 study found](#) associations between exclusive marijuana use and internal lead and cadmium levels highlighting concerns for policy, regulations, and harmful exposure impacts. Exposure to these metals have been associated with cardiopulmonary disease, neurodevelopmental effects and cancer.
- [A 16 year study in the Netherlands](#) found positive time-dependent associations between first-time cannabis addiction treatment admissions and changes in cannabis potency.

Public misperceptions of safety have influenced use during pregnancy.

- [Marijuana is the most widely used drug during pregnancy](#), according to the National Institute of Drug Abuse (NIDA). From 2008–2016, self-reported pregnancy use increased from 4% to 7%, while NIDA reports that those numbers may under-report use. Potential harms include reduced fetal growth, greater risk of stillbirth, preterm birth, low birth weight, and long-term brain development issues affecting memory, cognition, and behavior.
- A [2018 study](#) found that 69% of 400 Colorado marijuana dispensaries surveyed (both medical and recreational) were recommending marijuana to pregnant women.

Cannabis use may result in future substance use and substance use disorders beyond cannabis, including opioids.

- [Emerging research](#) shows that marijuana use before the age of 18 is associated with future opioid use disorder.

- A [2017](#) study found that cannabis use seems to increase opioid use disorder including non-prescription opioid disorder rather than reduce it.
- As vaping becomes increasingly popular among adolescents and young adults, [a 2023 study](#) found that those who vape cannabis have a higher likelihood of using other substances when compared to those who do not vape cannabis.

In Colorado, the first state to commercialize marijuana and study its impact with a wide range of legislated THC reporting, **teens bear the burdens of changing marijuana policy.**

- Teens also report using more potent THC products, with almost [60%](#) of those high school students who reported past month use consuming highly concentrated THC, including wax and hash oil.
- [THC has been the #1 substance](#) found in teens 15-18 who died by suicide in Colorado since 2015. A number more than twice as high as those who died by suicide with alcohol present.
 - Black youth: 66.7% (Males 62.5%)
 - Hispanic youth: 49% (Males: 56.3%)
 - White youth: 33.3% (Males: 41.7%)
- Since 2015, 126 teens (ages 15-18) have died by suicide with THC present.
- Recent Colorado [report](#) shows the age group with the highest rate of cannabis-related emergency and hospital admissions is teens aged 13-17. In just two years from 2020-2022, cannabis-like emergency visits increased by 88%, and cannabis-likely hospitalizations increased by 368%. Nationally, rates of cannabis ED visits were highest for ages 18-25, according to [SAMHSA](#) data published in 2022.

THC marketing, commercial sales, and retailer density target the vulnerable and the young.

- Commercial THC sales and THC retailer outlets are often located and concentrated in neighborhoods already facing severe challenges, including high levels of poverty and crime, causing new and additional inequalities (2022 City of Denver Child Health & Well-being Index).
- Nearly 1 in 5 U.S. marijuana dispensaries selling online do not perform age verification, 84% allow untraceable payment options that permit kids to hide their purchases, and 28%, have out-of-state delivery options, according to findings published in [JAMA Pediatrics](#).
- [A Rand report on research out of California](#) shows that young people aged 18-22 who live in neighborhoods with more sales outlets and storefront signage use marijuana more frequently than their peers and have a more positive view of the drug.
- [Another California study](#) found that adolescents who reported higher-than-average exposure to marijuana advertising also tended to report greater marijuana use, and adolescents who reported increasing exposure to marijuana ads over the seven-year study period also reported increases in their marijuana use.

One Chance to Grow Up protects kids from THC through transparency, education, empowerment, and policy. We don't take sides on the politics of legalization for adults but instead serve as a reliable resource for parents, media, policymakers, and all those who care about kids.

Started by concerned parents and supported entirely by charitable contributions, One Chance is a 501(c)(3) nonprofit project of the Colorado Nonprofit Development Center.

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