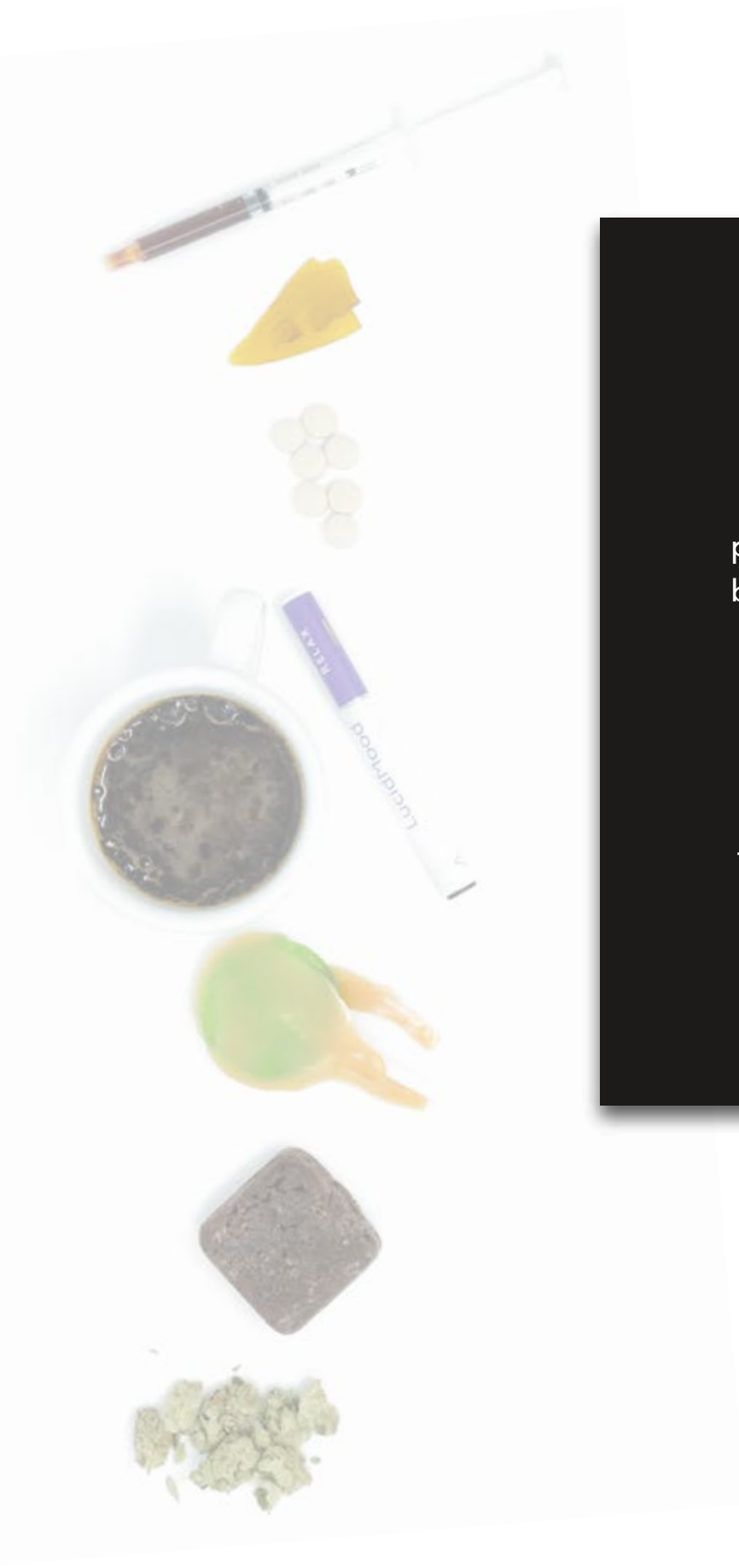


COLORADO KIDS ARE CANARIES

IN THE COAL MINE
OF MARIJUANA LEGALIZATION

By Rachel O'Bryan
Co-founder of Smart Colorado





About Smart Colorado

Smart Colorado is a non-profit, non-partisan organization dedicated to protecting the health, safety, and well-being of Colorado youth as marijuana becomes increasingly available and commercialized. Smart Colorado is a project of the Colorado Nonprofit Development Center.

To learn more about Smart Colorado, please visit smartcolorado.org

Many Colorado lawmakers and regulators have heralded the latest statistics from the Healthy Kids Colorado Survey (HKCS), collected in 2017, as evidence that Colorado kids have not been hurt by marijuana legalization in the state. They point to relatively unchanged rates of marijuana use reported by high schoolers from 2013 to 2017.

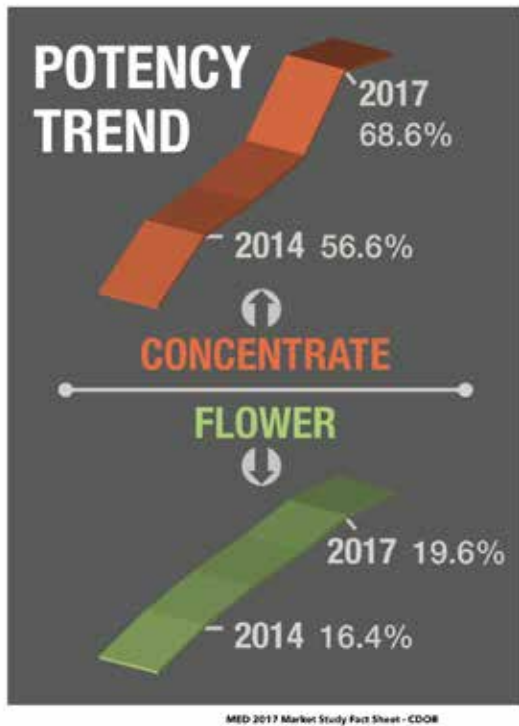
The problem is that the HKCS, which asks kids if they have ever used marijuana or used it in the past 30 days, lumps all marijuana products together. The term “marijuana” is only defined through slang terms: “also called grass, pot, or weed.” This creates a flaw in present day surveying and data collection.

Marijuana in post-legalization Colorado has changed significantly in both the potencies of products sold and the methods of use. The term “marijuana” can encompass everything from mostly CBD, non-psychoactive extracts to almost pure, psychoactive THC distillates (commonly referred to as hash oil, wax or shatter) used with a vaporizer or a blow torch-ignited delivery system commonly referred to as a dab rig.



73% THC shatter for sale in Colorado in 2018. This product is for dabbing. Shatter is sold in other states where marijuana is legal.

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There are no restrictions in Colorado on the potency of marijuana products sold. Consequently, Colorado marijuana products continue to increase in potency. The recent Marijuana Market Study commissioned by the Marijuana Enforcement Division (MED) of the Colorado Department of Revenue found that average potency for marijuana flower sold in stores increased from 16.4% THC in 2014 to 19.6% THC in 2017. That is a potency increase of almost 20% in just three years.

Similar increases were found in marijuana concentrates used for vaping and dabbing; THC potency increased 21% in the same three-year period from an average potency of 56.6% THC in 2014 to 68.6% THC in 2017. This average is for all forms of concentrates. The Marijuana Market Study acknowledged that some products exceed 90% THC.

These latest potency figures are dramatic when compared to average rates of 3.8% THC potency in the 1990s reported by the National Institute on Drug Abuse.

This growing THC potency presents a threat to public health. The Colorado Department of Public Health and Environment (CDPHE) has stated that:

- (1) there is an absence of research on the products currently sold in Colorado,
- (2) it does not know the safety of vaporizing or dabbing marijuana, and
- (3) marijuana users can become addicted to marijuana.



THC-infused tea, honey, powder dissolved in water, and coffee.

As of fall 2018, there also are no restrictions on the methods of use of marijuana sold in Colorado. The joint and brownie are passé. The edible marijuana industry evolved quickly from marijuana gummies to marijuana liquids ranging from THC-infused coffee and tea to colorless, odorless powdered THC that users can sprinkle on any food or beverage.

Cumbersome and hard-to-hide bongs have given way to slim vaping devices that resemble a computer USB flash drive, and even an asthma inhaler. The newest products sold as recreational marijuana utilize medical-like delivery methods including eye drops, nasal sprays, inhalers and vaginal/rectal suppositories. Parents and educators find it difficult to spot today's pot. They may not know to look beyond the telltale leaf, smell, bongs and pipes that once were a dead giveaway.

Colorado's MED is constantly two steps behind the industry because there is no pre-approval of products before they can be sold in stores. The federal Food and Drug Administration does not enforce safety rules for these THC-based products, as it does for similar non-THC products sold in drug stores and pharmacies. That is because marijuana and THC are illegal under federal law. This puts state and local health departments in the challenging position of serving as the regulators of last resort. The jury is still out on whether these entities are up to the task after one Colorado health department official described their efforts as "chasing cheetahs with butterfly nets."

These highly potent, deceptively different marijuana products are getting into the hands of Colorado kids. The Marijuana Market Study concluded that "there are individuals under the age of 21 who consume marijuana and it seems reasonable that the source for some portion of the marijuana consumed is from the regulated market."

In the City and County of Denver, where 34% of statewide marijuana sales occur, high school students say marijuana tops the list for substances "sort of easy" or "very easy" to get. They say marijuana is easier to get than alcohol, cigarettes or pharmaceuticals, according to HKCS.

Lumping all of the diverse marijuana products together under the heading "marijuana" has created a false sense of security. Even if the overall use rate of marijuana has not increased, the products being used have changed. Kids' use of high-potency concentrates in dab rigs and edibles is increasing. This development makes "marijuana" youth use rates red herrings. To accurately assess the impact of marijuana legalization on kids requires tracking how youth use has changed over time in terms of frequency of use, potency of the products used and methods of delivery.

The medical studies indicate marijuana use poses great risk to our kids. According to CDPHE, here is what we know from the limited research on marijuana far less potent than Colorado kids are currently consuming:

- Weekly marijuana use by adolescents is associated with impaired learning, memory, math and reading, and a failure to graduate from high school.
- Adolescents who use marijuana are more likely to experience hallucinations, paranoia and delusions as adults. Psychotic symptoms are worse with higher doses.
- Marijuana use that begins in adolescence (9-17 years of age) is associated with future marijuana addiction.
- Daily or near daily users can experience withdrawal symptoms after stopping use.

The survey question “How did you use marijuana?” provides telling answers from Colorado kids on the many ways their use has evolved beyond smoking a joint. Of high school respondents who used marijuana in the past 30 days, 20% vaped it, 35.6% ate it and 34.4% dabbed it, according to the most recent survey. That is no typo. Over one third of Colorado high school marijuana users use highly potent, distilled THC concentrates in a given month.

*The variety of commercialized THC products in Colorado.
From left: 22% THC bud, THC-infused brownie, 73% THC shatter,
THC-infused lollipop, 74% THC hash oil syringe, THC-infused
breath mints, THC-infused coffee, e-cigarette with THC.*



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A variety of THC-infused candies and sweets sold in Colorado between 2014 and 2018. Some of these products are no longer legal in the state of Colorado, including the THC-sprayed Swedish Fish, THC-sprayed gummy bears and THC-sprayed grapefruit gems. THC-infused candies and sweets are sold in other states where marijuana is legal.

In the past two years, many Colorado kids have shifted away from smoking marijuana to using other more potent methods of intake. Since 2015, Colorado has seen a statistically significant increase in the percentages of high school students usually using processed, distilled THC products by eating or dabbing.

As of 2017, 22% of high school current marijuana users reported that they usually eat, vape or dab their marijuana. This is no surprise, as Colorado kids are influenced by the adults around them. The Marijuana Market Study found that demand for flower as a portion of sales has fallen every year since the recreational market opened in 2014, while concentrate market share has more than doubled.

Although 78% of high school current marijuana users still prefer to smoke marijuana, according to HKCS, this is bitter consolation when the average potency of flower in Colorado is four times stronger than just a few decades ago.



Commercialized THC products from Colorado. Clockwise from top left: e-cigarette with THC, THC-sprayed gummy bear, THC-infused brownie, 73% THC shatter, THC-infused breath mints, THC powder, 74% THC hash oil syringe, 22% THC bud.

The risks associated with these highly potent products have led a renowned medical marijuana doctor and author to call for a ban on marijuana concentrates. Dr. Rav Ivker told the Westword, a weekly alternative newspaper in Denver, "I think they should be illegal...The only thing they're good for is getting really high. But they're high risk, and there's no benefit from them." He said marijuana's reputation as non-addictive is dated, "goes back to maybe a decade or two ago", when potency was much lower. He is convinced that marijuana concentrates like shatter and wax have increased marijuana addiction, "it's well known within the addiction-medicine community that this is a problem." And teens are especially at risk. The people "most attracted to these products happen to be adolescents and young adults" said Dr. Ivker. And he warned Westword readers, "even more concerning than the addiction problem is the fact that our brains are still developing until we're in our mid-to-late twenties."

These shifting use patterns should be an early warning to parents, teachers, elected officials, regulators and healthcare professionals because these kids are using marijuana in ways and at potency levels that CDPHE states have not been studied. These kids are experiencing marijuana in a distilled form that is exponentially stronger than what their parents may have experienced in high school or college.

In other states with similarly structured marijuana markets – unlimited potency, unrestricted products, ex post facto regulations – the actual consequences of legalization on kids likewise may be hidden far below the surface of surveys.

About the Author:

Attorney Rachel O'Bryan, a graduate of University of Michigan School of Law, has been involved in Colorado's historic recreational marijuana legislative and regulatory process since 2013. She was appointed by Governor John Hickenlooper's office to serve on a subcommittee of the Amendment 64 Implementation Task Force to provide a voice of citizens, including community and kids. She was also appointed by the State Marijuana Enforcement Division to serve on several stakeholder working groups focused on rule-making for Retail Marijuana Product Potency and Serving Size, Production Caps, Record-keeping, Enforcement and Discipline. At the local level, Rachel served on Denver's Marijuana Social Consumption Advisory Committee to assist Denver Excise and License with implementation of 2016 Denver voter Initiative 300.

She is a co-founder of Smart Colorado, a non-profit organization dedicated to protecting the health, safety and well-being of Colorado youth as marijuana becomes increasingly available and commercialized. Smart Colorado provides information to policy makers, parents and adults, youth-serving organizations and the press about the impacts of commercialized marijuana and the consequences to Colorado youth.

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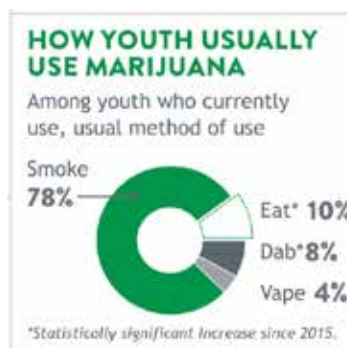
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