

Policy Strategies to Reduce Youth Recreational Marijuana Use

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Legalization of marijuana for recreational use among adults could significantly increase access to the drug among youth and is a growing concern for pediatric health in the United States. In a January 2015 policy statement, the American Academy of Pediatrics (AAP) reaffirmed its opposition to legalization of recreational marijuana because of potential harms to youth. Alongside efforts to promote prevention and treatment, it advocated for decriminalization (reducing criminal penalties for marijuana possession) to reduce adverse effects of felony convictions on youth, especially minorities.¹ Adolescents who regularly use marijuana are at elevated risk for cognitive decline, poor educational achievement, mental illness in adulthood, and injury and death caused by marijuana-impaired driving. Marijuana potency has more than doubled since the 1990s, amplifying concerns about children accidentally consuming dangerous levels of tetrahydrocannabinol (THC) when marijuana is added to candies and baked goods, as such products are easily mistaken for marijuana-free goods.²

Despite these risks, the movement to legalize marijuana is gaining momentum. Voters in 4 states (Colorado, Washington, Oregon, and Alaska) and the District of Columbia have passed laws legalizing recreational marijuana, and additional states may follow in 2016. When marijuana is legalized for recreational use by adults, it is essential that states develop stringent regulations to protect children and adolescents. Legalization normalizes marijuana and reduces perceived risks, a concern raised by the AAP.¹ However, legalization with strong regulation potentially provides greater scope for protecting children than decriminalization policies, which on their own reduce criminal penalties without controlling marijuana supply and price.

On its current trajectory, marijuana legalization will likely result in a patchwork of state approaches lacking comprehensive federal oversight. The cultivation, sale, and possession of marijuana remain illegal under federal law, but the U.S. Department of Justice stated in 2013 that it is unlikely to aggressively enforce federal marijuana laws in states with legal markets, provided that legalization is accompanied by state-level regulatory and enforcement efforts that achieve several goals, including preventing marijuana distribution to minors.³ In jurisdictions with recreational marijuana laws, possession is legal only for



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individuals >21 years old. With the exception of District of Columbia, all allow for commercial production, processing, and sale (District of Columbia allows only home cultivation for personal use). Short of legalization, 14 additional states have decriminalization laws substantially reducing or eliminating criminal penalties for possession, and marijuana is legal for medical use in 23 states and District of Columbia.⁴

Experiences with tobacco and alcohol provide context for building a strong regulatory environment and offer 4 priorities for recreational marijuana regulation (summarized in Table 1) that could help advance the AAP's goals of protecting child and adolescent health.

First, taxes should be used to keep marijuana prices high. Excise taxes are associated with lower use of alcohol and tobacco by adolescents. Youth are especially price-sensitive

consumers and tend to reduce cigarette use at higher rates than adults after tax increases. Even though youth cannot legally buy marijuana, marijuana sold in legal markets could be illegally resold to youth. Thus, keeping taxes high in legal markets can increase resale prices in black markets. Measures to prevent black market marijuana from entering legal markets will also require strict monitoring of the supply chain.

Second, retail availability of marijuana should be tightly regulated. States should develop licensing policies applying to all actors in the recreational marijuana supply chain, including retailers. Despite age-limit restrictions, many youth are able to obtain alcohol and tobacco from retailers. This problem could be mitigated for marijuana by stronger enforcement of existing laws, including more compliance audits

and stiff penalties, which have been successful in reducing illegal tobacco and alcohol sales to minors.⁵ Additionally, states should regulate locations of marijuana retail establishments, keeping them away from playgrounds and schools and prohibiting stores that sell other products to minors from selling marijuana.

Third, regulations should be aimed at reducing the likelihood of children accidentally ingesting marijuana. States with legal marijuana can regulate the appearance, packaging, and labeling of products likely to be appealing to youth, such as marijuana-infused candy and baked goods. Requiring manufacturers to use child-resistant packaging (eg blister packs and opaque, sealed bottles) and clear labeling for all marijuana-infused edibles could prevent accidental ingestion. Child-resistant packaging is effective in

TABLE 1 Examples of Strategies to Regulate Legal Marijuana to Prevent Use Among Youth

Regulatory Priority and Approach	Mechanism to Reduce Youth Access	Enforcement Considerations	Research Evidence
Use tax policy to keep the price high Taxation	Taxes in the legal market should reduce use among youth by increasing the illegal resale price	Possible tax evasion and continued sale in illegal markets	Taxes on cigarettes and alcohol reduce underage use of those products
Tightly regulate retail availability Licensing of retailers	Licensing combined with enforcement should reduce retailers' willingness to sell to minors	Requires auditing to ensure compliance with laws; systems are needed to track inventory along the production and sale continuum	Licensing alcohol retailers is effective at preventing sales to minors, owing to retailers' fear of license revocation
Location restrictions	Prohibiting retailers from locating near schools, playgrounds, or other places frequented by youth should limit youth access	Could increase the presence of illegal markets in areas without a legal retailer; requires supportive zoning policy and ongoing monitoring	Proximity to retail establishments that sell cigarettes and alcohol increases risk of underage use of these products
Prevent accidental ingestion among children Regulate appearance of edibles that appeal to children	Regulating the appearance of edibles most likely to be appealing to youth can be used to make them less visually appealing	Home growing and small-scale markets for edibles are difficult to regulate; defining types of allowed edibles entails regulatory complexity	Tobacco products that feature candy or fruit flavors encourage experimentation, regular use, and addiction among youth
Require childproof packaging and clear labeling	Childproof packaging can prevent accidental ingestion by children	Home growing and small-scale markets for edibles are difficult to regulate	Childproof packaging for prescription drugs reduces accidental ingestion; clear labeling enhances adults' ability to identify harmful products
Minimize youth advertisement exposure Restrict marketing	Minimizing youth exposure to advertising should reduce initiation and use	Retail displays, branded merchandise, and online advertising can be difficult to regulate	Exposure to alcohol and tobacco advertising is associated with increases in use by youth

Links to supporting research studies can be found in the Supplementary Appendix.

other contexts, including reducing accidental ingestion of oral prescription drugs by young children.⁶ Clear labeling enhances adults' ability to identify harmful products and keep them away from children. Legislatures could additionally empower state health departments to regulate marijuana as a potentially unsafe food additive, giving them authority to limit THC quantity in edibles.

Fourth, youth exposure to marijuana marketing should be minimized. Exposure to alcohol and tobacco advertising lowers adolescents' perceptions of risk and increases perceived social desirability, initiation, and substance use. States should be as comprehensive as possible in regulation of marijuana marketing. Even with partial marketing bans forbidding certain forms of advertising (eg, television ads), youth may continue to be exposed to advertising through other sources. In the United States, commercial free speech has been interpreted to allow some marketing restrictions targeting media sources likely to be viewed by youth, including youth-focused television programs, magazines popular with youth, and online social media sites.⁵ As with tobacco and alcohol, online marijuana advertising is not stringently restricted, but websites such as Google voluntarily ban marijuana advertising. Banning branded apparel and other promotional materials and requiring plain packaging for marijuana products could mitigate harmful effects of marijuana advertising on youth. Regulating marketing of marijuana-infused candies can also limit youth use, as research suggests that candy-flavored tobacco products are very appealing to adolescents.

Adoption of these 4 approaches could substantially reduce, but not eliminate, health risks of legalized marijuana on youth. In addition to informing parents and patients about marijuana risks, pediatricians in states legalizing marijuana can advise regulators and legislators about risky new marijuana products and points of access. If states fail to contain diversion of marijuana from legal to illegal markets, youth will be able to obtain marijuana from illicit sellers. Even with stringent regulations, it will be difficult to limit availability of marijuana to youth through home cultivation, which is allowed in all jurisdictions with legalized marijuana except Washington state. Relatedly, states have limited ability to prevent homemade marijuana-infused edibles from falling into children's hands. Nevertheless, policymakers can take evidence-informed steps to improve regulations controlling marijuana production and sale.

The early days of marijuana legalization represent a unique window of opportunity to create a regulatory environment that minimizes youth access. States should heed lessons learned from tobacco and alcohol regulations, which have proven very difficult to change despite research linking weak monitoring and low prices to underage use. Early regulations enacted in Colorado and Washington meet some but not all of the recommendations presented here, but there may yet be scope for improvements that could advance the AAP priorities. For example, in June 2014, Washington state enacted emergency rules banning images on marijuana-infused edible products of cartoons, toys, and other pictures appealing to young children, and Colorado adopted comprehensive

regulations in 2013, including child-safe packaging of marijuana products, based on recommendations of a state task force.⁷ Future regulations will need to be coupled with credible enforcement and penalties; keeping children and adolescents safe means keeping those who sell and use marijuana for recreational purposes accountable.

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