

Salvia Divinorum: Establish Restrictions But Don't Criminalize It



Currently, 22 states have criminalized *Salvia divinorum*, either by placing it into a Schedule I category or by prohibiting its consumption;ⁱ several more state legislatures are considering legislation related to *Salvia*.ⁱⁱ However, some states have rejected criminalization and instead established age-control restrictions and other regulations such as marketing, branding and retail display limitations. Emerging scientific evidence demonstrates that *Salvia* has significant potential for medical applications and an extremely low risk for abuse. Outright prohibition of *Salvia* wastes scarce taxpayer funds, strains police resources, and deters scientists from studying its medical benefits. Moreover, criminalizing *Salvia* replaces a legal market that can be strictly and sensibly regulated with an underground economy that empowers black market criminals. The smarter approach is to keep *Salvia* legal while establishing restrictions to keep it out of the hands of minors.

Background

Salvia divinorum is a naturally occurring herb and a member of the *Lamiaceae* (mint) family. Basil, mint, common sage, rosemary and thyme are close relatives in the plant kingdom.ⁱⁱⁱ It is one of approximately 1,000 species that make up the *Salvia* genus.^v

Salvia is native to the Mazatec zone in the Mexican state of Oaxaca, where the Mazatec people have consumed fresh, whole leaves for a variety of therapeutic and religious purposes for centuries.^{vi} During a trip in Mexico, Harvard researchers first learned about *Salvia* and introduced the plant to the United States in 1962.^{vii}

Salvia is most often smoked, but can also be used sublingually or orally (chewed and swallowed),

producing effects that last longer but have a slower onset than when smoked. It is most commonly purchased online or at tobacco shops.

Facts

Salvia is not addictive. The scientific literature provides no indication that humans are susceptible to psychological or physiological dependence on or addiction to *Salvia*.^{viii} Rather, new research based on animal studies suggests that *Salvia* may have an “aversive” effect that would limit frequent or long-term use after initial exposure.^{ix} A growing body of evidence suggests that *Salvia* may even have the potential to treat drug dependence.^x

The effects of *Salvia* are extremely brief compared to other psychoactive drugs.^{xi} Psychoactive effects typically subside within fifteen minutes.^{xii} A recently conducted study of internet videos of *Salvia* users’ experiences found its effects to be short-lived (observable for about eight minutes), prompting the researchers to conclude that “the window of risk [for *Salvia*] seems much shorter than for most other drugs, including alcohol.”^{xiii}

There are no reported cases of *Salvia* poisoning or overdose. Research to date has failed to establish acute or chronic toxicity of *Salvia* in humans.^{xiv} No poisoning injuries or deaths have been reported as a result of *Salvia* consumption. No toxic effects to any organs or organ systems have resulted from either acute or long-term administration of the substance to animals, even at doses much higher than any human would ingest.^{xv}

The potential for harm and widespread abuse is low. The National Survey on Drug Use and Health released data on *Salvia* usage for the first time in 2009, which showed that less than one half of one

percent (0.3 percent) of people aged 12 and older reported past year use of the substance.^{xvi} Salvia's potential to induce anxiety is limited by its brief duration of effect.^{xvii} Researchers report that Salvia's psychoactive effects can be interrupted or terminated by speaking to the affected person or introducing other noise stimuli. As researchers note, "the plant's bitter taste...and its short term effects, combined with exacting cultivation parameters, make it an unlikely candidate for widespread use...neither *Salvia divinorum* nor Salvinorin A have a high potential for abuse."^{xviii}

Most people who try Salvia once choose not to use it again.^{xix} The psychoactive effects of Salvia are undesirable for most people. People who use the drug report an intensely bitter taste and inconsistent, often unpleasant psychoactive effects.^{xx} Of a large college student sample, less than a quarter (22.6%) of students surveyed had even heard of Salvia, and a majority of those who had tried it said they would not do so again.^{xxi} Importantly, the survey found, "Prevalence rates plummet when observing lifetime use (6.7%), to use within the last year (3.0%), and to use within the last month (0.5%)...this suggests Salvia has a low continuance rate."^{xxii} In fact, even the DEA in 2003 concluded that people who used the drug "indicate that they would not use it a second time," and that "Salvia divinorum most likely will not become widely abused at social events."^{xxiii}

Scheduling Salvia as a controlled substance will have unintended detrimental consequences. If Salvia were banned outright, young adults could face immediate, devastating and life-long legal barriers to education, employment, voting and government benefits for Salvia-related drug law violations, despite a lack of evidence of harm to themselves or others. The use of scarce government funds to enforce, prosecute and incarcerate people who use Salvia would put a strain on police and criminal justice resources.

What States Can Do: Regulate Salvia

By attempting to prohibit Salvia, lawmakers will miss the opportunity to establish greater control over access to the drug and ensure availability to researchers for continued study. Regulating Salvia, by restricting sale or use by persons under the age of 18, is the more sensible and effective approach.

Establish age-based restrictions. Prohibiting the sale or distribution of Salvia to minors is sensible policy. In 2006, the National Survey on Drug Use and Health determined that 1.8 million Americans had used Salvia in their lifetime. The survey found that Salvia use decreases with age, and that many respondents had already used Salvia by age 18.^{xxiv} Studies have also found that Salvia can be acquired through online retailers, many based in foreign countries, a threat that will not be removed if Salvia is prohibited.^{xxv} Outright criminalization would only drive the demand for the drug to the black market, which provides no age restrictions or other regulatory controls.

The most effective approach to Salvia combines age controls with comprehensive drug education. This approach is working for tobacco, a far more harmful drug that has contributed to more deaths than alcohol and illicit drugs combined.^{xxvi} As a result of education initiatives and age restrictions, tobacco use has declined dramatically over time despite its legality for adults.^{xxvii}

In addition to age controls, states can adopt other commonsense restrictions on Salvia, such as product labeling requirements to protect the health of adult consumers,^{xxviii} as well as marketing, branding and retail display restrictions—all of which are proven to reduce youth access to tobacco products and impulse tobacco purchases among adults.^{xxix}

Several states have rejected the criminalization of Salvia in favor of regulatory restrictions. In 2007, the Maine legislature enacted Legislative Document 66, outlawing the sale of Salvia or Salvinorin A to minors. The proposed legislation initially would have scheduled Salvia, but the Legislature wisely chose to amend the bill to prohibit sales to youth instead. According to the Legislature's Joint Standing Committee on Criminal Justice and Public Safety, the penalties for sale of Salvia to a minor are modeled on the penalties in Maine's statutes for tobacco sales to

minors.^{xxx}

The California State Assembly recently adopted Assembly Bill 259, which makes the sale or distribution of *Salvia* to any person under age 18 a misdemeanor, punishable by imprisonment in a county jail for not more than six months, by a fine of no more than \$1,000 or both.^{xxxi} The author of AB 259, Anthony Adams (R-Hesperia), has stated that the legislation seeks to "apply the same standard to *Salvia* that we apply to cigarettes."^{xxxii}

Like California and Maine, the Maryland Legislature rejected a bill that would have prohibited *Salvia*, instead unanimously adopting House Bill 1145, which makes sale of *Salvia* to any person under age 21 a misdemeanor, and possession of *Salvia* by persons under 21 a civil infraction.^{xxxiii} Arizona is considering following suit.^{xxxiv}

ⁱ States that have placed *Salvia divinorum* and/or Salvinorin A into a Schedule I category: Delaware, Florida, Georgia, Hawaii, Illinois, Kansas, Kentucky, Mississippi, Missouri, Nebraska, North Dakota, Ohio, Oklahoma, South Dakota, and Virginia; states that otherwise prohibit consumption: Alabama, Louisiana, Minnesota, North Carolina, Tennessee, West Virginia, and Wisconsin.

ⁱⁱ States considering legislation related to *Salvia divinorum* in 2010: Alaska, Arizona, Hawaii, Iowa, Massachusetts, Michigan, New Jersey, New York, Pennsylvania, Rhode Island and South Carolina; states that considered legislation related to *Salvia divinorum* in 2009: Connecticut, New Mexico, Texas and Utah.

ⁱⁱⁱ Thomas E. Prisinzano, "Psychopharmacology of the Hallucinogenic Sage *Salvia divinorum*," *Life Sciences* 78, no. 5 (2005): 527-531.

^{iv} Richard Glen Boire et al., *Salvia divinorum: Information Concerning the Plant and its Active Principle*, Davis, CA: Center for Cognitive Liberty and Ethics, 2002, http://www.cognitiveliberty.org/pdf/salvia_dea.pdf.

^v Prisinzano, 527.

^{vi} Daniel J. Siebert, "Salvia divinorum and Salvinorin A: New Pharmacologic Findings," *Journal of Ethnopharmacology* 43 (1994): 53-56.

^{vii} Richard G. Wasson, "A New Mexican Psychotropic Drug from the Mint Family," *Botanical Museum Leaflets, Harvard University* 20, no. 3 (1962): 77-84.

^{viii} Kavita M. Babu, Christopher R. McCurdy, and Edward W. Boyer, "Opioid Receptors and Legal Highs: *Salvia divinorum* and Kratom," *Clinical Toxicology* 46 (2008): 146-152.

^{ix} Babu, 148; Yong Zhang et al., "Effects of the Plant-derived Hallucinogen Salvinorin A on Basal Dopamine Levels in the Caudate Putamen and in a Conditioned Place Aversion Assay in Mice," *Psychopharmacology* 179 (2005): 551-558.

^x Aashish S. Morani et al., "Effect of Kappa-Opioid Receptor Agonists U69593, U50488H, Spiradoline and Salvinorin A on Cocaine-Induced Drug-Seeking in Rats," *Pharmacology, Biochemistry, and Behavior* 94 (2009): 244-249; Oliver Grundmann et al., "Salvia divinorum and Salvinorin A: An Update on Pharmacology and Analytical Methodology," *Planta Medica* 73 (2007): 1039-1046; Catherine B. Willmore-Fordham et al., "The Hallucinogen Derived from *Salvia divinorum*, Salvinorin A, Has K-opioid Agonist Discriminative Stimulus Effects in Rats," *Neuropharmacology* 53 (2007): 481-486.

^{xi} Debra Gonzalez et al., "Pattern of Use and Subjective Effects of *Salvia divinorum* Among Recreational Users," *Drug and Alcohol Dependence* 85 (2006): 157-162; Michael A. Ansonoff et al., "Antinociceptive and Hypothermic Effects of Salvinorin A Are Abolished in a Novel Strain of K-Opioid Receptor-1 Knockout Mice," *Journal of Pharmacology and Experimental Therapeutics* 318 (2006): 641-648; Matthew D. Schmidt et al., "Pharmacokinetics of the Plant-Derived K-Opioid Hallucinogen Salvinorin A in Nonhuman Primates," *Synapse* 58 (2005): 208-210.

^{xii} Gonzalez, 157-162; Teksin ZS et al., "Evaluation of the Transport, In Vitro Metabolism and Pharmacokinetics of Salvinorin A, a Potent Hallucinogen," *European Journal of Pharmaceutics and Biopharmaceutics* 72 (2009): 471-477.

^{xiii} Lange JE et al., "Salvia divinorum: Effects and Use Among YouTube Users," *Drug and Alcohol Dependence* 108 (2010): 138-140.

^{xiv} Babu, 146-148; Prisinzano, 527-531.

^{xv} Mark Mowry, Michael Mosher, and Wayne Briner, "Acute Physiologic and Chronic Histological Changes in Rats and Mice Exposed to the Unique Hallucinogen Salvinorin A," *Journal of Psychoactive Drugs* 35 (2003): 379-382.

^{xvi} Substance Abuse and Mental Health Services Administration (SAMHSA), Office of Applied Studies, *The NSDUH Report: Use of Specific Hallucinogens: 2006*, Rockville, MD: SAMHSA, 2008, <http://oas.samhsa.gov/2k8/hallucinogens/hallucinogens.pdf>.

^{xvii} Gussow, 23.

^{xviii} Boire, 8-9.

^{xix} Leon Gussow, "Salvia divinorum: A Unique Hallucinogen," *Emergency Medicine News* 28, no. 7 (2006): 22-23; National Institute on Drug Abuse, NIDA, "Info Facts: Salvia," December 2009, <http://www.nida.nih.gov/PDF/Infofacts/salvia.pdf>.

^{xx} Babu, 146-148; O. Hayden Griffin, III, Bryan Lee Miller, and David N. Khey, "Legally High? Legal Considerations of *Salvia divinorum*," *Journal of Psychoactive Drugs* 40 no. 2 (2008): 188.

^{xxi} Bryan Lee Miller et al., "Trippin' on Sally D: Exploring Predictors of *Salvia divinorum* Experimentation," *Journal of Criminal Justice* 37 (2009): 401-402; David N. Khey, Bryan Lee Miller, and O. Hayden Griffin, "Salvia divinorum Use Among a College Student Sample," *Journal of Drug Education* 38, no. 3 (2008): 297-306.

^{xxii} Khey, 302.

^{xxiii} United States, Drug Enforcement Administration, "Information Bulletin: *Salvia divinorum*," June 2003, <http://www.usdoj.gov/dea/programs/forensicsci/microgram/mg0603/mg0603.html>.

^{xxiv} Substance Abuse and Mental Health Services Administration (SAMHSA). *Use of Specific Hallucinogens*.

^{xxxv} Jennifer Hillebrand, Deborah A. Olszewski, and Roumen Sedefov, "Legal Highs on the Internet," *Substance Use & Misuse*, 45 (2010): 330-40.

^{xxxvi} Centers for Disease Control and Prevention, National Center for Chronic Disease Prevention and Health Promotion, Office on Smoking and Health, "Smoking & Tobacco Use Fact Sheet: Tobacco-related mortality (updated September 2006)," 3 December 2008, http://www.cdc.gov/tobacco/data_statistics/fact_sheets/health_effects/tobacco_related_mortality.htm.

^{xxxvii} Lloyd D. Johnston et al., *Smoking Continues Gradual Decline Among U.S. Teens, Smokeless Tobacco Threatens a Comeback*, Ann Arbor, MI: University of Michigan News Service, 14 December 2009, http://monitoringthefuture.org/pressreleases/09cigpr_complete.pdf; Lloyd D. Johnston et al., "Teen Smoking Resumes Decline," Ann Arbor, MI: University of Michigan News Service, 11 December 2007, <http://monitoringthefuture.org/pressreleases/07cigpr.pdf>; Lloyd D. Johnston, et al., "Table 1 - Trends in Prevalence of Use of Cigarettes for Eighth, Tenth, and Twelfth Graders," *Monitoring the Future: 2007 Data From In-School Surveys of 8th-, 10th-, and 12th-Grade Students*, Ann Arbor, MI: University of Michigan, 2007, <http://monitoringthefuture.org/data/07data/pr07cig1.pdf>.

^{xxxviii} William R. Wolowich, Alisha M. Perkins, and John J. Cienki, "Analysis of the Psychoactive Terpenoid Salvinorin A Content in Five *Salvia divinorum* Herbal Products," *Pharmacotherapy* 26 (2006): 1268–1272; K. Tsujikawa et al., "Determination of Salvinorin A and Salvinorin B in *Salvia divinorum*-Related Products Circulated in Japan," *Forensic Science International* 180, no. 2-3 (2008): 105-109.; Hillebrand, 336-337.

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^{xxx} Maine State Legislature, *Legislative Document 66: An Act to Prohibit the Transfer of *Salvia Divinorum* to Minors and to Prohibit Possession of *Salvia Divinorum* by Minors*, 2007, <http://www.mainelegislature.org/legis/bills/chapters/PUBLIC120.asp>.

^{xxxi} California State Assembly, Assembly Bill 259, 2008, http://www.leginfo.ca.gov/pub/07-08/bill/asm/ab_0251-0300/ab_259_bill_20080722_chaptered.html.

^{xxxii} Roan, F1.

^{xxxiii} Maryland General Assembly, *House Bill 1145*, 2010, <http://mlis.state.md.us/2010rs/billfile/HB1145.htm>.

^{xxxiv} Arizona State Legislature, *House Bill 2687*, 2010, http://www.azleg.gov/DocumentsForBill.asp?Bill_Number=HB2687.