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***Re-entering the Age of the Sort of
Legal Drugs***

James Lange, Ph.D.
Director, Health Promotion
San Diego State University

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Legal and “Gray Area” Drugs

- Major categories:
 - Prescription medicines
 - Pharmaceutical
 - Marijuana – We’ve already covered
 - Uncontrolled Herbal Products
 - Designer Drugs
 - Other products and concoctions
- State vs Federal Law Conflicts

Uncontrolled Herbal Products

- Salvia is the hot one now.
- Lesser ones include: Kratom, Egyptian Lotus, Various Mushrooms.
- They'll never all be controlled. Most have side effects so unpleasant they do not catch on.
- Hold off on lumping K2, Spice and Bath Salts into this category. They're a different animal.

TABLE 9-2 (cont.)
Trends in Annual Prevalence of Various Types of Drugs
among College Students 1 to 4 Years beyond High School
(Entries are percentages.)

	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2012- 2013 change
Approximate Weighted N =	1,350	1,340	1,260	1,270	1,400	1,360	1,280	1,250	1,270	1,320	1,260	1,230	1,150	1,090	
Any Blicit Drug ^a	36.1	37.9	37.0	36.5	36.2	36.6	33.9	35.0	35.2	36.0	35.0	36.3	37.3	38.9	+1.7
Any Blicit Drug other than Marijuana ^a	15.6	16.4	16.6	17.9	18.6	18.5	18.1	17.3	15.3	16.9	17.1	16.8	17.1	19.0	+1.9
Synthetic Marijuana ^a	—	—	—	—	—	—	—	—	—	—	—	7.4	5.3	2.3	-3.0 ss
Marijuana	34.0	35.6	34.7	33.7	33.3	33.3	30.2	31.8	32.3	32.8	32.7	33.2	34.9	35.5	+0.6
Phallatens ^b	2.9	2.8	2.0	1.8	2.7	1.8	1.5	1.5	1.1	1.2	1.7	0.9	1.5	0.5	-1.0
Hallucinogens ^c	6.7	7.5	6.3	7.4	5.9	5.0	5.6	4.9	5.1	4.7	4.9	4.1	4.5	4.5	0.0
LSD	4.3	4.0	2.1	1.4	1.2	0.7	1.4	1.3	2.6	2.0	2.1	2.0	1.9	2.6	+0.7
Hallucinogens other than LSD ^c	4.4	5.5	5.8	7.1	5.6	5.0	5.4	4.7	4.4	4.1	4.4	3.4	3.9	3.7	-0.2
Ecstasy (MDMA) ^d	9.1	9.2	6.8	4.4	2.2	2.9	2.6	2.2	3.7	3.1	4.3	4.2	5.8	5.3	-0.5
Bath Salts ^e	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Cocaine	4.8	4.7	4.8	5.4	6.6	5.7	5.1	5.4	4.4	4.2	3.5	3.3	3.1	2.7	-0.4
Crack ^f	0.9	0.9	0.4	1.3	1.3	0.8	1.0	0.6	0.5	0.3	0.4	0.3	0.3	0.3	+0.0
Other Cocaine ^f	4.1	4.1	5.0	5.1	6.3	5.0	3.8	5.3	4.2	4.2	4.0	3.0	3.0	2.8	-0.1
Heroin	0.5	0.4	0.1	0.2	0.4	0.3	0.3	0.2	0.3	0.4	0.2	0.1	0.1	0.3	+0.2
Narcotics other than Heroin ^{g,h}	4.5	5.7	7.4	8.7	8.2	8.4	8.8	7.7	6.5	7.6	7.2	6.2	5.4	5.4	0.0
Oxycodone ^{h,i}	—	—	1.5	2.2	2.5	2.1	3.0	2.8	3.6	5.0	2.3	2.4	1.2	2.3	+1.2
Vicodin ^{h,i}	—	—	6.9	7.5	7.4	9.6	7.6	6.7	6.7	8.4	4.9	5.8	3.8	4.4	+0.6
Amphetamines ^j	6.6	7.2	7.0	7.1	7.0	6.7	6.0	6.9	5.7	7.5	9.0	9.3	11.1	10.6	-0.6
Ritalin ^{h,i}	—	—	5.7	4.7	4.7	4.2	3.9	3.7	3.2	1.7	1.9	2.3	1.8	3.6	+1.8
Adderall ^{h,i}	—	—	—	—	—	—	—	—	—	10.2	9.0	9.8	9.0	10.7	+1.6
Methamphetamine ^j	1.6	2.4	1.2	2.6	2.9	1.7	1.2	0.4	0.5	0.3	0.4	0.2	0.0	0.4	+0.4
Crystal Methamphetamine (Ice) ^j	0.5	0.6	0.8	0.9	1.1	1.4	0.6	0.7	0.1	0.1	0.5	0.1	0.6	—	-0.6
Bath Salts (synthetic stimulants) ^k	—	—	—	—	—	—	—	—	—	—	—	—	0.3	0.1	-0.2
Sedatives (Barbiturates) ^l	3.7	3.8	3.7	4.1	4.2	3.9	3.4	3.6	3.7	3.1	2.5	1.7	2.2	2.7	—
Sedatives, Adjusted ^l	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Methopropylone ^h	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Tranquilizers ^{h,i}	4.2	5.1	6.7	6.9	6.7	6.4	5.8	5.5	5.0	5.4	4.9	4.2	3.4	4.4	+1.0
Rohypnol ⁱ	—	—	0.7	0.4	0.3	0.1	0.2	0.1	0.3	—	—	—	—	—	—
GHB ^h	—	—	0.6	0.3	0.7	0.4	—	0.1	0.2	—	0.1	0.1	—	0.1	+0.1
Ketamine ^h	—	—	1.3	1.0	1.5	0.5	0.9	0.2	0.4	0.1	0.7	0.6	0.4	0.9	+0.5
Alcohol ^h	83.2	83.0	82.9	81.7	81.2	83.0	82.1	80.9	82.1	79.4	78.6	77.4	79.2	75.6	-3.6
Beer Drunk ^h	64.7	68.8	65.0	64.7	67.1	64.2	66.2	64.8	66.8	61.5	63.8	60.1	61.5	57.9	-3.5
Flavored Alcoholic Beverages ^h	—	—	—	—	63.2	67.0	63.5	62.6	65.0	66.1	60.3	63.0	58.1	57.6	-0.6
Alcoholic Beverages containing Caffeine ⁱ	—	—	—	—	—	—	—	—	—	—	—	33.6	33.8	39.1	+5.4
Cigarettes	41.3	39.0	38.3	35.2	36.7	36.0	30.9	30.7	30.9	29.9	28.1	25.8	23.4	23.2	-0.2
Tobacco Using a Hookah ⁱ	—	—	—	—	—	—	—	—	—	—	—	27.9	25.7	26.1	+0.3
Small Cigars ⁱ	—	—	—	—	—	—	—	—	—	—	—	23.6	20.3	19.0	-1.3
Snus ⁱ	—	—	—	—	—	—	—	—	—	—	—	6.5	4.7	4.8	+0.1
Dissolvable Tobacco ⁱ	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Steroids ^h	0.1	0.6	0.5	0.3	0.6	0.5	0.8	0.6	0.1	0.7	0.3	0.2	0.3	0.8	+0.5

Source: The Monitoring the Future study, The University of Michigan.
See footnotes following Table 9-1.

What is Salvia divinorum



Example 1



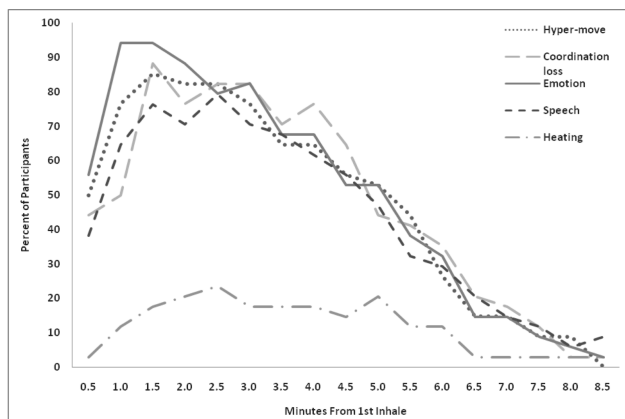
Example 2



Example 3



Documenting its effects



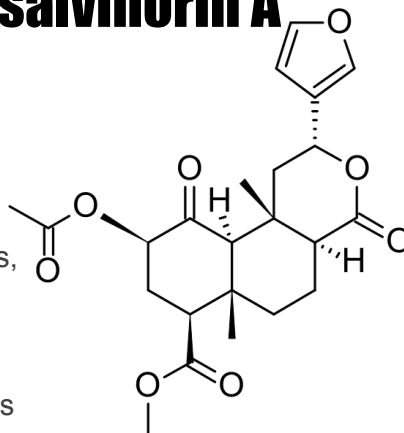
Lange, J. E., Daniel, J., Homer, K., Reed, M. B., & Clapp, J. D. (2010). Salvia divinorum: Effects and use among YouTube users. *Drug and Alcohol Dependence*, 108, 138–140

What are the risks?

- ❖ Largely unknown...
 - ❖ No long-term studies available
 - ❖ Few regular users
 - ❖ User reports of minor injuries
- ❖ Vohra et al (2011) documents CA Poison Control System from Jan 1998 to May 2008.
 - ❖ 37 cases of *S. divinorum*
 - ❖ 16 were known to have taken something else as well
 - ❖ Most Salvia only cases (16 out of 18) had normal vital signs
 - ❖ When mixed with other drugs irregular vital signs more likely, as are seizures.
- ❖ Animal studies suggest an addictive potential (Listos et al., 2011)
- ❖ A few popularly reported cases of suicide and other psychiatric consequences

Understanding: salvinorin A

- ❖ κ opioid receptor agonist
- ❖ Does not affect serotonin receptors (unlike LSD)
- ❖ κ opioid agonists usually produce aversion
- ❖ Low dose may produce increase in dopamine levels, thus increasing reward.
- ❖ High doses may reduce dopamine (benefit for addiction treatment), may explain the motor symptoms



Wikipedia contributors. (2012). Salvia divinorum. *Wikipedia, the free encyclopedia*. Wikimedia Foundation, Inc. Retrieved from http://en.wikipedia.org/w/index.php?title=Salvia_divinorum&oldid=493942522

Controls on Salvia

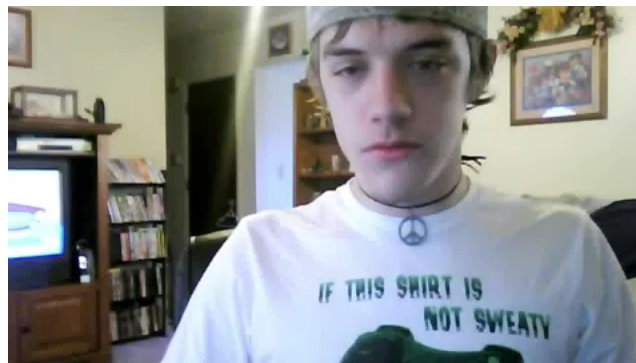
- No DEA action.
- Considered a drug of concern.
- Many states have banned it entirely
- California has made it illegal to sell to someone under 18.
- eBay has taken salvia off its site.
- Still widely available on the internet and at smoke shops.



What is Spice?

- History of the product
 - Spice : Herbal Smoke :: Kleenex : Facial Tissue
 - Many names include: K2, Kronik, Buzz, Ice Bud
 - Between 2004 and 2008 considered just an herbal mix.
 - Now understood to often contain synthetic chemicals
 - Federal Schedule I
- How available is it?
 - Sold mostly as incense
 - Not for Human Consumption
 - Internet and Smoke Shops
 - Usually about \$20-\$30 for 3g of product
 - Sold in packets or already rolled joints

Example 1

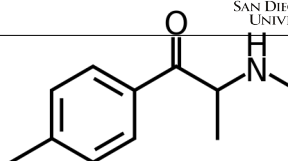


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Bath Salts

- Not for the bath.
- Was sold by the gram at smoke shops
- Probably contain:
 - mephedrone (4-methylmethcathinone)
 - MDPV (3,4-methylenedioxypyrovalerone)
- Stimulants with action similar to amphetamines
- Documentation of prevalence is scarce. May be regional.
- Federally Controlled Schedule I



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Let's Watch

- Sorry, too scary!



A few very recent notices

- The greatest contributor to Misuse and Abuse (MUA) visits involving atypical antipsychotic drugs was quetiapine, accounting for 27,114 [ED] visits out of a total of 43,409 visits (62%) involving atypical antipsychotics.
 - Soon to be published in Substance Abuse: Research and Treatment (email from editor March 27, 2015)
 - Quetiapine is an antipsychotic that can produce a “high” but not previously considered a high abuse potential.
- DEA Nationwide Alert: “Drug incidents and overdoses related to fentanyl are occurring at an alarming rate throughout the United States and represent a significant threat to public health and safety,” DEA administrator Michele M. Leonhart said in a statement.”