

WELCOME

Addiction Medicine ECHO Clinic



The session will begin promptly at 12 pm.



Please mute the audio on your device.



Sessions take place Thursday on the 2^{cd} and 4th week of the month.



Please connect your camera.

Need technical assistance? Call [907.729.2622](tel:907.729.2622) or text your phone number into the chat.



Recording

We will record the **didactic portion** of every session. After the session, the didactic portion of this clinic will be available on the ANTHC Addiction Medicine ECHO page.

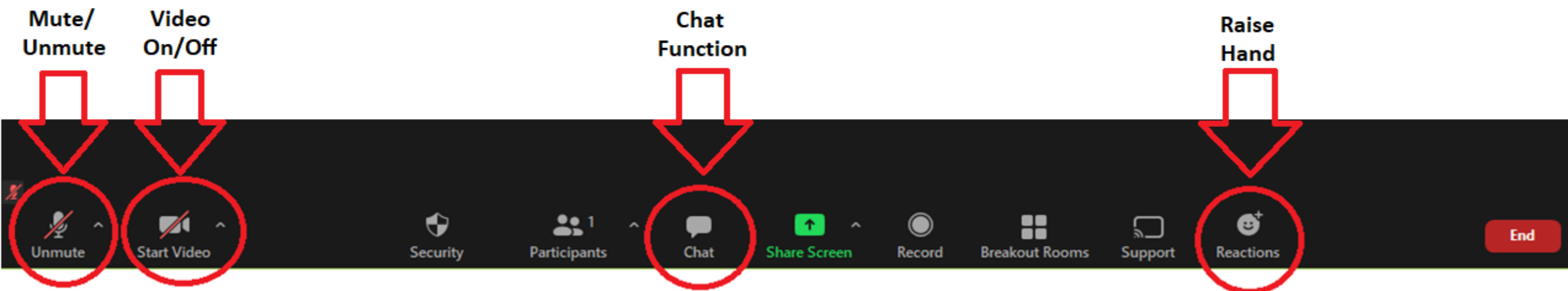
By participating in this clinic you are consenting to be recorded.

If you do not wish to be recorded, please email behavioralhealth@anthc.org at least one week prior to the ECHO Clinic you plan to attend.

Some Helpful Tips

- ▶ Please mute microphone when not speaking
- ▶ Use chat function
- ▶ Position webcam effectively
- ▶ Test both audio & video

Need technical assistance? Use the chat function or call 907-317-5209



ANTHC Clinical ECHO Series

Approved Provider Statements:

ANTHC is accredited by the Washington State Medical Association to provide continuing medical education for physicians.


ANTHC is approved as a provider of nursing continuing professional development by the Montana Nurses Association, an accredited approver with distinction by the American Nurses Credentialing Center's Commission on Accreditation.

AKPhA is accredited by the Accreditation Council for Pharmacy Education as a provider of Continuing Pharmacy Education.

Contact Hours:

ANTHC designates this Live/Virtual Activity for a maximum of 12 AMA PRA Category 1 Credit(s)™ for the entire series, provided in 1 credit/session certificates. Physicians should claim only the credit commensurate with the extent of their participation in the activity.

ANTHC designates this activity as meeting the criteria for one nursing contact hour credit for each hour of participation up to a maximum of 12 hour(s) for the entire series, provided in 1 contact hour certificates/session attended.

 The Alaska Pharmacists Association (AKPhA) is accredited by the Accreditation Council for Pharmacy Education as a provider of continuing pharmacy education. Through a Joint Providership, ANTHC and AKPhA designates this pharmacist activity for a maximum of 1 hours(s) per session. To receive CE credit, participants must be included in attendance record of facilitator/virtual format moderator with the NABP e-profile number including MM/DD birthdate, and complete the evaluation or post session survey. CPE credit will be posted to the online CPE Monitor System within 60 days of activity completion. CPE credit is offered at no charge to ANTHC/SCF employees and AKPhA members. Fees may apply to participants not affiliated with either organization.

Approved for 1 CHAP CE

Conflict of Interest Disclosures:

None of the presenters and planners for this educational activity have any relevant relationship(s) to disclose with ineligible companies whose primary business is producing, marketing, selling, re-selling, or distributing healthcare products used by or on patients.

Requirements for Successful Completion:

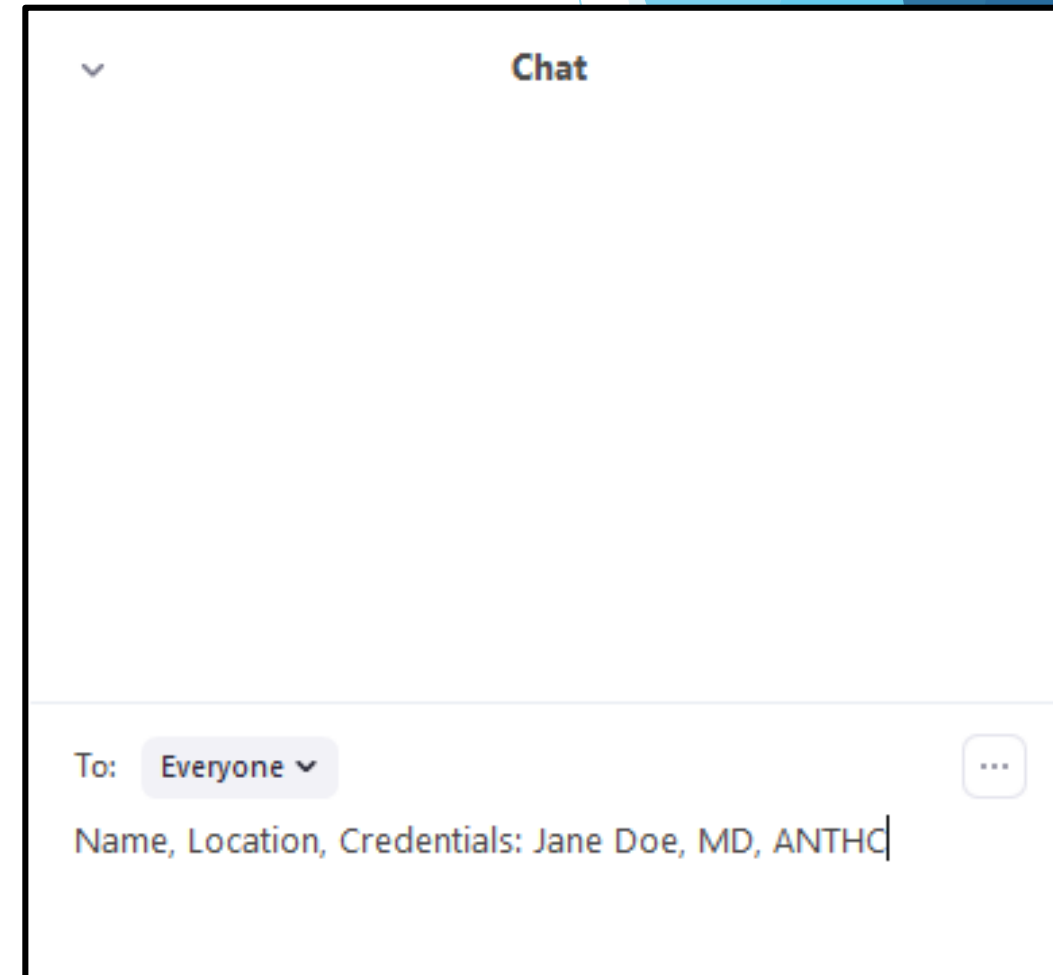
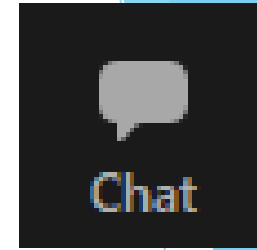
To receive CE credit be sure you are included in attendance record as directed by the facilitator/session moderator, and complete the course evaluation or post session survey via this link: <https://forms.gle/QhwCeGTf4zLNwpBX7>

For more information contact Jennifer Fielder at jfielder@anthc.org or (907) 729-1387

Introductions

Addiction Medicine ECHO

- Please introduce yourself in the chat :
 - Name
 - Location
 - Profession/Credentials
 - *Note:* The chat will be saved as our attendance record for continuing education credits.



Conflict of Interest Disclosure

- ▶ No conflicts to disclose.

Polysubstance Use

Kristen Maves, PharmD
& Amber Frasure, MS



Objectives

- ▶ Describe polysubstance use and patterns of polysubstance use.
- ▶ Identify the effects of using substances in combination.
- ▶ Discuss general approach to treating polysubstance use.

- ▶ The National Survey on Drug Use and Health found that 80% of people with an opioid use disorder have a co-occurring substance use disorder.
- ▶ A clinical sample of people with opioid use disorder showed rates of comorbidity:
 - ▶ 80% - 95% tobacco use disorder
 - ▶ 13% - 49% alcohol use disorder
 - ▶ 28% - 41% stimulant use disorder
 - ▶ 28% - 41% cannabis use disorder
- ▶ For every drug consumed in combination with an opioid, the risk for overdose death doubles.
- ▶ Patterns of polysubstance use vary based on substances of misuse, population, location, and availability of substances.

Polysubstance Use



”

Polysubstance
use as the
norm, not the
exception.

Define Polysubstance Use

Also known as polydrug use with various definitions often used to refer to the consumption of two or more substances simultaneous or over a defined period of time

*A person is considered a polysubstance user if they use more than one substance, including use of multiple drugs on separate occasions (sequential use) or at the same time (concurrent/simultaneous) (Crummy et al., 2020).

ICD 10 Code F19 = ...use of other psychoactive substances and multiple drug use

It was eliminated from the DSM-5 but was in past editions; now diagnosis each substance use disorder per substance.

Polysubstance use increases the risk for:

Death and comorbidity

- Increased risk for overdose death, more complex and acute health concerns, increased likelihood of viral hepatitis and criminal involvement, and a three-fold higher mortality rate compared to mono-substance use

Poorer mental health

- Increased psychological distress, depressive and anxiety symptoms, suicidality, severity of psychopathology, and more difficulty engaging and retaining in treatment.

Increased substance use

- More severe levels of substance use, frequency of use, increased severity of side effects, persistence of substance use disorders, higher rates of relapse, and poorer substance use treatment outcomes.

Three Main Forms of Polysubstance Use

1

The mixture of drugs to have a cumulative or new effect

2

The use of a drug to decrease the effects of another drug

3

A drug is replaced by another drug due to low price, availability, or fashion

▶ Using more than one drug at a time can intensify the effects of any individual drug, produce a more euphoric high and increase risk of harm and negative effects. For example:

- ▶ Alcohol can intensify the effects of opioids but increases the risk of respiratory depression
- ▶ Combining opioids/heroin with benzodiazepines increases relaxation or sedative effects which exponentially increases risk for respiratory depression

✓ <https://www.sciencedirect.com/science/article/pii/S09780128006344000834>

✓ <https://www.addictioncenter.com/addiction/polydrug-use/>

Polysubstance Use

Drug of Choice

- “My drug of choice, I would mix both heroin and meth... Do speed balls.”

Availability & Cost

- “I’d start on meth and then I tried to go down and then if I went down too much I’d come back up, so then I wouldn’t just be doing meth. I’d be doing up to five drugs at once... I would do like pills, crack, spice, weed, alcohol, and meth, and heroin. Up to seven, not usually all at once, usually only maybe five. Like I would keep going for days and days.”

Polysubstance Use

Desired Effect

- “I’d get up in the morning. I would most definitely hit the pipe [meth] first, and then if I’d get a little too wired up, I would hit some heroin, so I could just have a calm day.”
- “I don’t know how to explain being high on meth and having it [heroin] at the same time, but you’ll feel like you’ll be going a million miles an hour, and your body won’t hurt because you’re numbed by the heroin.”
- “The opioids would bring me too down, so I’d always use the meth to bring me back up, so it’d be like a happy medium. If I did just one, it’d be too much of that just one... Before I started using heroin, I would drink to bring me to that same medium.”
- “I used drugs to be functional... My priority was not to get dope sick from heroin and to keep the nausea, diarrhea away.”

Cost of Common Substances

- ▶ Cocaine \$112 (Per Gram)
- ▶ Crack \$60 (Per Gram)
- ▶ Heroin \$100-\$200 (Per Gram)
- ▶ Meth \$3-\$500 (Per Gram)
- ▶ Oxycodone \$20 (Per Pill)
- ▶ OxyContin \$15 (Per Pill)
- ▶ Percocet \$10 (Per Pill)
- ▶ Suboxone \$20 (Per Film)
- ▶ Tramadol \$5 (Per Pill)
 - ▶ The cost can be even greater in rural areas.

Summary of the effects of specific combinations

(Crummy et al., 2020)

Sensitization	- ↑	↑	*			↓ -		↑	-		
Conditioned place preference	* *	↑ ↑	-	↓ *		↑		-	↓		
Drug intake	↑ *	- -	- -	↓ *	↑	↑	↑ ↓	↓	↓	↓ ↑	
Motivation	↑	* *	↓	* *	↑	↑		*			
Drug craving	*	- -		↓	↑		↑ ↑	-	↓	- -	

<p>Drugs</p> <ul style="list-style-type: none"> psychostimulants nicotine opioids cannabinoids alcohol 	<p>Polydrug combo</p>	<p>Change in behavior</p> <ul style="list-style-type: none"> increase decrease mixed findings no change 	<p>Example: Polydrug effects on drug intake</p> <p>Prior nicotine use increases alcohol intake...</p> <p>...but prior alcohol use decreases nicotine intake.</p>
---	------------------------------	--	---

Other Substances

Wang et al. (2017) state it is important to take the time to fully understand a person's pattern of polysubstance use to inform coordinated and effective treatment.

LIST OF COMMONLY USED DRUGS:

Alcohol:	Beer, wine, liquor
Methadone:	Dolophine, LAAM
Opiates:	Painkillers = Morphine; Dilaudid; Demerol; Percocet; Darvon; Talwin; Codeine; Tylenol 2, 3, 4
Barbiturates:	Nembutal, Seconal, Tuinol, Amytal, Pentobarbital, Secobarbital, Phenobarbital, Fiorinol
Sedatives/ Hypnotics/ Tranquilizers	Benzodiazepines, Valium, Librium, Ativan, Serax Tranxene, Dalmane, Halcion, Xanax, Miltown Chloral Hydrate (Noctex), Quaaludes
Cocaine:	Cocaine Crystal, Freebase Cocaine or "Crack," and "Rock Cocaine"
Amphetamines:	Monster, Crank, Benzedrine, Dexedrine, Ritalin, Preludin, Methamphetamine, Speed, Ice, Crystal
Cannabis	Marijuana, Hashish
Hallucinogens:	LSD (Acid), Mescaline, Mushrooms (Psilocybin), Peyote, Green, PCP (Phencyclidine), Angel Dust, Ecstasy
Inhalants:	Nitrous Oxide, Amyl Nitrate (Whippets, Poppers), Glue, Solvents, Gasoline, Toluene, etc.

Just note if these are used:

Antidepressants

Ulcer Medications—Zantac, Tagamet

Asthma Medications—Ventoline Inhaler, Theo-Dur

Other Medications—Antipsychotics, Lithium



Two Most Commonly Misused Over the Counter Medications

1. **Dextromethorphan** (i.e., Robitussin Cough & Cold D)
2. **Loperamide** (i.e., Imodium)

FSA Eligible



Loperamide

- ▶ Loperamide (Imodium) is an anti-diarrheal that is available in tablet, capsule, or liquid form. When misusing loperamide, people swallow large quantities of the medicine.
- ▶ Loperamide is an opioid designed not to enter the brain but can act on the opioid receptor in the brain stem which control breathing, blood pressure and arousal.
- ▶ When taken in large amounts and combined with other substances, it causes the drug to act in a similar way to other opioids causing euphoric and analgesic effects. Often used to treat opioid withdrawal and cravings leading it to become known as “the poor man’s methadone.”
- ▶ Currently, there is a new trend where people use over 400 mg of Imodium creating a heroin like effect, an overdose on Imodium.
 - ▶ “We’ve had patients tell us they take 400 to 500 tablets day ... They put it in a blender and make a smoothie and drink it over one or two hours.”

\$7.99
66.6¢ / ea.

<https://www.drugabuse.gov/publications/drugfacts/over-counter-medicines>

Imodium Multi-Symptom Relief Caplets, 12CT
Imodium
★★★★☆ 225

Free shipping with \$35+ orders

Add to basket

order

FSA
Eligible

Dextromethorphan

- ▶ Dextromethorphan (DXM; often use Robitussin Cough & Cold D) is a cough suppressant found in many OTC cold medicines which often also contain antihistamines and decongestants.
 - ▶ The most common sources of used DXM are "extra-strength" cough syrup, tablets and gel capsules.
 - ▶ When misusing DXM, people swallow large quantities of the medicine, sometimes mixing it with soda for flavor, called "robo-tripping," "purple drank," or "skittling"; some people may inject or mix with alcohol and marijuana.
 - ▶ DXM is an opioid without effects on pain reduction and does not act on the opioid receptors.
 - ▶ When taken in large doses, DXM causes a depressant effect and sometimes a hallucinogenic effect, similar to PCP and ketamine. Short-term effects of DXM misuse can range from mild stimulation to alcohol- or marijuana-like intoxication. At high doses, a person may have hallucinations or feelings of physical distortion, extreme panic, paranoia, anxiety, and aggression.
 - ▶ People who misuse dextromethorphan report four dose-dependent plateaus:
 1. Plateau 1 [100 - 200 mg] euphoria and restlessness.
 2. Plateau 2 [200 - 500 mg] exaggerated auditory or visual sensations, psychedelic effects, dizzy or imbalanced, and closed-eye hallucinations.
 3. Plateau 3 [500 - 1,000 mg] visual and auditory hallucinations or disturbances, altered consciousness, delayed reaction times, mania, panic and paranoia, and partial dissociation from reality.
 4. Plateau 4 [Over 1000 mg] psychotic symptoms, complete dissociation, and impaired balance and physical coordination.
- <https://footprintstorecovery.com/otc-classification/dextromethorphan-dxm-abuse/>
 - <https://www.drugabuse.gov/publications/drugfacts/over-counter-medicines>



Choose options

3 per order

\$8.99

(\$2.25 / oz.)

Robitussin Adult Maximum
Strength Cough + Chest

(148)

Ships Free With
CarePass™

- ▶ Not regulated and is categorized as a botanic dietary supplement that chemically acts as a partial opioid receptor agonist
- ▶ Popular for pain relief, calming effect while boosting energy
 - ▶ Chew leaves, brew tea, drink liquid Kratom, mixing powder into a drink, or capsule
 - ▶ Other natural supplement alternatives to Kratom are blue lotus flowers, Kanna succulent, Kava Kava plant, White Willow bark, Akuamma seeds, Mitragyna Hirsuta, Muira Puama wood, Sakae Naa tree, etc.
- ▶ “Yeah, I have friend who openly admitted he uses it [Kratom]. I’ve known about it for a really long time, I used it when I was pregnant with my son because I often times was too afraid to use enough heroin. You can buy it at most cigarette shops or mom and pop smoke shops. It does help with heroin withdrawals.”

Kratom



Maeng Da Thai Kratom Capsules (OG Red Vein)

★★★★★ (285)

Starting at: \$21.45

Xylazine



Xylazine/Anased/Rompun 100mg/ml 50ml Vial

☆☆☆☆☆ 1 Review | 4 Questions, 1 Answer

- ▶ Xylazine found in one-third of fatal opioid overdoses in Philadelphia
- ▶ Xylazine is a non-opioid sedative, muscle relaxant and analgesic that is marketed as a veterinary drug and as such is not a Drug Enforcement Administration-scheduled drug.
 - ▶ AnaSed (Xylazine) 100 mg/ml, 50ml is approved in horses to produce a state of sedation with a shorter period of analgesia, and as pre-anesthetic before local or general anesthetic.
- ▶ Xylazine mainly is injected, and reports show people most often mix it with heroin and meth.
- ▶ Street names include tranq/tranquilizer, tranq dope, sleep cut
- ▶ In humans, it could cause central nervous system depression, respiratory depression, bradycardia, hypotension, and even death. Its chronic use is associated with physical deterioration and skin ulceration.
- ▶ Literature shows some similar pharmacologic effects between xylazine and heroin in humans. These similar pharmacologic effects may create synergistic toxic effects in humans and increases the risk of fatal overdose when combined with other drugs.

Bath Salts

- ▶ “Bath Salts” are synthetic cathinones which are similar to the stimulant found in the khat plant of Africa and Arabia, sometimes marketed as cheap substitutes for other drugs such as MDMA (Molly or Ecstasy) or Cocaine
 - ▶ “Take all the bad attributes of ecstasy, PCP, LSD, cocaine, methamphetamine: lump them together, and that’s what you get with bath salts,” says Mark Ryan, PharmD, director of the Louisiana Poison Center and assistant professor of clinical emergency medicine at Louisiana State University Health Sciences Center in Shreveport.
- ▶ A 200-mg package of bath salts—which may be 3 hits—sells for as little as \$15 to \$20; also known as Flakka, Bloom, Cloud Nine, Vanilla Sky, White Lightning
- ▶ Bath Salts are usually white or brown crystal-like powder in small plastic or foil packages labeled “Not for human consumption.” They can be labeled Plant Food, Jewelry Cleaner or Phone Screen Cleaner to avoid detection by the DEA or local police. There is no way to know what is in the dose of bath salts without testing in a lab thus are promoted as providing a “legal high.”
- ▶ Bath Salts are usually swallowed, snorted through the nose, inhaled or injected with a needle. Snorting or injecting is the most harmful
- ▶ Bath Salts can produce temporary feelings of joy, increased social interaction, increased sex drive, paranoia, nervousness, nausea, vomiting, sweating, hallucinations, increased heart rate, violent behavior and panic attacks
- ▶ Use of bath salts can cause severe intoxication and some users experience “excited delirium” where they become psychotic and violent. Bath salts are intended to mimic the hallucinogenic and euphoric highs of methamphetamine or cocaine. At lower doses, they’ve also been marketed as a substitute for methylphenidate (Ritalin) to sharpen mental concentration and as an aphrodisiac.

• <https://jamanetwork.com/journals/jama/fullarticle/1486827>

• <https://teens.drugabuse.gov/drug-facts/bath-salts#topic-5>

• [http://www.med.uvm.edu/docs/default-source/family-medicine-documents/bath-salt-flyer-\(s-lazarev-schouyem\).pdf?sfvrsn=2](http://www.med.uvm.edu/docs/default-source/family-medicine-documents/bath-salt-flyer-(s-lazarev-schouyem).pdf?sfvrsn=2)



Synthetic Cannabinoids (K2/Spice)

It's often called *synthetic marijuana* or *fake weed* because some of its chemicals are like those in marijuana. The effects can be unpredictable and in some cases, severe or even life-threatening.



Shredded, dried
plant material

+



Man-made
chemicals

=



A "natural" drug?
Not even close.



For more information, visit:
[drugabuse.gov/publications/drugfacts/synthetic-cannabinoids](https://teens.drugabuse.gov/publications/drugfacts/synthetic-cannabinoids)

Spice

- ▶ Spice is a mix of herbs (shredded plant material) and laboratory-made chemicals with mind-altering effects. It is sometimes misleadingly called “synthetic marijuana” or “fake weed”
- ▶ Spice is most often labeled "not for human consumption" and disguised as incense. Consumers are led to believe Spice is “natural” therefor less harmful
- ▶ Common Names: K2 or Black Mamba
- ▶ Spice is most commonly used by rolling into papers and smoking it similar to marijuana and is cheap [\$1 per joint while cannabis is \$5-10]. It can also be made into herbal tea.
- ▶ The chemicals in Spice attach to the same receptors as the THC (tetrahydrocannabinol) they often attach more strongly and may have a stronger effect. There are many unknow chemicals that are not regulated and may be dangerous
- ▶ Effects: Relaxation and elevated mood, altered perception, confusion, psychosis, hallucinations, fast heart rate, vomiting, extreme anxiety or nervousness, violent behavior, suicidal ideation, and has been linked to heart attacks and deaths



Treating Polysubstance Use

“Human centered design; meeting people where they are and really taking their needs and feedback into account. When you let people participate in the design process, you find that they often have ingenious ideas about what would really help them. And it’s not a onetime thing; it’s an iterative process.”

Treating Polysubstance Use

- 1. Treat all substance use disorders (SUD) at the same time.**
 - ▶ Educate client about potential effects or symptoms of stopping all substances, beyond withdrawal, especially for clients where you are aware that the substances serve to treat symptoms of pain, anxiety, etc.
- 2. Treat the SUD the person presented for, reducing their risk for harm.**
 - ▶ Capitalize on the opportunity of engagement and use motivational interviewing to engage in treatment of all substances.
 - ▶ Real time treatment availability:
www.treatmentconnection.com

“The only way to help people move forward is by building relationships and understanding where their journey begins, not focusing solely on where you want them to be.”

A Few Resources: Current Trends

- ▶ How much people pay for prescription medication on the street:
<https://streetrx.com/> or <https://www.addictionresource.net/blog/cost-of-illegal-drugs/>
- ▶ Other informative links about drug culture are:
 - ▶ [Erowid](#)
 - ▶ [PsychonautWiki](#)
 - ▶ [PsychedSubstance](#)
- ▶ Article on how different substances interact when used together:
 - ▶ Crummy, E.A., O'Neal, T.J., Baskin, B.M., & Susan M. Ferguson, S.M. (2020). One Is Not Enough: [Understanding and Modeling Polysubstance Use](#). *Frontiers in Neuroscience*, 14(569), 1-27.

References

- ▶ Andreas, J.B., Lauritzen, G., & Nordfjern, T. (2015). Co-occurrence between mental distress and poly-drug use: A ten-year perspective study of patients from substance abuse treatment. *Addictive Behaviors*, 48, 71-78. <https://doi.org/10.1016/j.addbeh.2015.05.001>
- ▶ Beletsky, L., LaSalle, L., Newman, M.A., Pare, J.M., Tam, J.S., & Tochka, A.B. (2015). Fatal re-entry: Legal and programmatic opportunities to curb opioid overdose among individuals newly released from incarceration. *Northeastern University Law Journal*, 7(1), 155-2015. https://papers.ssrn.com/sol3/papers.cfm?abstract_id=2628297
- ▶ Brecht, M.L., Huang, D., Evans, E., & Hser, Y.I. (2008). Polydrug use and implications for longitudinal research: Ten-year trajectories for heroin, cocaine, and methamphetamine users. *Drug and Alcohol Dependence*, 96, 193-201. <https://doi.org/10.1016/j.drugalcdep.2008.01.021>
- ▶ Center for Behavioral Health Statistics and Quality (2015). 2014-2015 national survey on drug use and health: Model-based prevalence estimates (50 States and the District of Columbia). Rockville, MD.
- ▶ **Crummy, E.A., O'Neal, T.J., Baskin, B.M., & Susan M. Ferguson, S.M. (2020). One Is Not Enough: Understanding and Modeling Polysubstance Use. *Frontiers in Neuroscience*, 14(569), 1-27. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7309369/>
- ▶ Darke, S., Torok, M., McKetin, R., Kaye, S., & Ross, J. (2011). Patterns of psychological distress related to regular methamphetamine and opioid use. *Addiction Research and Theory*, 19(2), 121-127. <https://doi.org/10.3109/16066351003695631>
- ▶ Frasure, A. S. (2019). Medication Assisted Treatment, Opioid Use Disorder, and Incarceration: Experiences as Told by People with a History of Polysubstance Use (Order No. 27547588). Available from ProQuest Dissertations & Theses Global. (2323127675). <https://proxy.consortiumlibrary.org/login?url=https://www-proquest-com.proxy.consortiumlibrary.org/dissertations-theses/medication-assisted-treatment-opioid-use-disorder/docview/2323127675/se-2?accountid=14473>
- ▶ Hser, Y., Evans, E., Huang, D., Brecht, M., & Li, L. (2008). Comparing the dynamic course of heroin, cocaine, and methamphetamine use over 10 years. *Addictive Behaviors*, 33, 1581-1589. <https://doi.org/10.1016/j.addbeh.2008.07.024>
- ▶ Kenney, S.R., Bailey, G.L., Anderson, B.J., & Stein, M.D. (2017). Heroin refusal self-efficacy and preference for medication-assisted treatment after inpatient detoxification. *Addictive Behaviors*, 73, 124-128. <https://doi.org/10.1016/j.addbeh.2017.05.009>
- ▶ Lorvick, J., Browne, E.N., Lambdin, B.H., & Comfort, M. (2018). Polydrug use patterns, risk behavior and unmet healthcare need in a community-based sample of women who use cocaine, heroin or methamphetamine. *Addictive Behaviors*, 85, 94-99. <https://doi.org/10.1016/j.addbeh.2018.05.013>
- ▶ Marel, C., Mills, K.L., Darke, S., Ross, J., Slade, T., Burns, L., & Teesson, M. (2013). Static and dynamic predictors of criminal involvement among people with heroin dependence: Findings from a 3-year longitudinal study. *Drug and Alcohol Dependence*, 133, 600-606. <https://doi.org/10.1016/j.drugalcdep.2013.08.003>
- ▶ National Institute on Drug Abuse (2017). Over-the-Counter Medicines DrugFacts. Retrieved from <https://www.drugabuse.gov/publications/drugfacts/over-counter-medicines>
- ▶ National Academies of Sciences, Engineering, and Medicine (NASEM) (2019). Medications for opioid use disorder save lives. Washington, DC: The National Academies Press. <https://doi.org/10.17226/25310>
- ▶ Ruiz-Colón K, Chavez-Arias C, Díaz-Alcalá JE, Martínez MA. (2014). Xylazine intoxication in humans and its importance as an emerging adulterant in abused drugs: A comprehensive review of the literature. *Forensic Sci Int*. 240:1-8. <https://doi.org/10.1016/j.forsciint.2014.03.015>
- ▶ Shearer, R.D., Howell, B.A., Bart, G., & Winkelman, T.N. (2020). Substance use patterns and health profiles among US adults who use opioids, methamphetamine, or both, 2015-2018. *Drug and Alcohol Dependence*, 214, 108162. <https://doi.org/10.1016/j.drugalcdep.2020.108162>
- ▶ Substance Abuse and Mental Health Services Administration (SAMHSA) (2013). Einstein expert panel medication-assisted treatment and the criminal justice system: October 6-7, 2011 report of proceedings. Prepared by JBS International, Inc. Retrieved from <https://www.samhsa.gov/sites/default/files/mat-criminal-justice-panel-2011.pdf>
- ▶ Wang, L., Min, J. E., Krebs, E., Evans, E., Huang, D., Liu, L., ... Nosyk, B. (2017). Polydrug use and its association with drug treatment outcomes among primary heroin, methamphetamine, and cocaine users. *International Journal of Drug Policy*, 49, 32-40. <https://doi.org/10.1016/j.drugpo.2017.07.009>



Didactic Presentation

Case Presentation

Project ECHO's goal is to protect patient privacy

- ▶ To help Project ECHO accomplish that goal, please only display or say information that doesn't identify a patient or that cannot be linked to a patient.
- ▶ **References: For a complete list of protected information under HIPAA, please visit www.hipaa.com**

Thank you for joining us today.
We appreciate your participation and hope
to see you at the **NEXT ECHO Session:**
June 24, 2021 from 12pm -1 PM

You will be receiving a follow up survey that we hope you will complete to help us improve. If you are requesting continuing education credits, you will be required to complete the survey to receive your CMEs.

