



IT MATTTRs

AN INTRODUCTION TO METHAMPHETAMINE USE AND TREATMENT FOR ADDICTION

PRIMARY CARE PRACTICE TEAM TRAINING

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AN INTRODUCTION TO METHAMPHETAMINES

- **Pharmacology:** What is methamphetamine? What does it do?
- **Neurobiology:** Tolerance, Dependence
- **Epidemiology**
- **What can primary care do?**
- **What will you do?**

Jan Knapp, Burlington, CO



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METHAMPHETAMINE PHARMACOLOGY

What is methamphetamine?

- Stimulant (psychostimulant)
- Affects the central nervous system
- Man-made drug (synthetic chemical compound)
 - Chemically similar to amphetamine (used to treat attention-deficit hyperactivity disorder, narcolepsy)
 - Much more potent
- Common names: blue, crystal, ice, meth, and speed
- Taken by:
 - Smoking
 - Swallowing (pill)
 - Snorting
 - Injecting powder dissolved in water/alcohol




- Bari AM, Parvathi WJ, MacLellan GW, et al. [The need for special attention to methamphetamine use in clinical practice.](#) J Psychiatry Neurosci. 2006;31(5):301-313.
- Substance Abuse and Mental Health Services Administration. [Trends in Trends: Polysubstance Use.](#) [https://www.samhsa.gov/2k16/trends](#). Accessed 15 December 2020.
- Substance Abuse and Mental Health Services Administration. [Know the Risk of Meth.](#) [https://www.samhsa.gov/2k16/know-the-risk-of-meth](#). Accessed 15 December 2020.
- [https://www.samhsa.gov/2k16/know-the-risk-of-meth](#)



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NEUROBIOLOGY

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Tolerance & physical dependence

Look familiar?

Erw#r#rdudqf#l#g#sk|v|fdghshghqf#uh#
sk|v|roj|fdghs#w|q#r#E#kurg|f#(srxu

TOLERANCE

- Increased dosage needed to produce specific effect
- Develops readily for central nervous system

PHYSICAL DEPENDENCE

- Signs and symptoms of withdrawal by abruptly stopping the stimulant

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Withdrawal Symptoms

<ul style="list-style-type: none"> Intense craving Depression Fatigue Unpleasant dreams 	<ul style="list-style-type: none"> Hypersomnia, then insomnia Increased appetite Agitation/ Anxiety/ Paranoia Limited ability to experience pleasure
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"upon"

epidemiology

"study"

"people"

EPIDEMIOLOGY

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Who is using and why?

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Supplementary Figure. Rate of Past-Year Methamphetamine Use per 1,000 Persons among Adults Age ≥18 Years — United States, 2017–2018

"The methamphetamine problem has come back with a vengeance."

*Jason Dunn,
Colorado's U.S. Attorney (2019)*

<https://www.cpr.org/2019/08/12/meth-has-come-back-with-a-vengeance-in-colorado/>

Past-year meth use:

- 2015 – 2018: 1.6 million U.S. adults
- 2019: 2 million Americans age 12+

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Jones CM, Compton WM, Mustaquim D. Patterns and Characteristics of Methamphetamine Use Among Adults — United States, 2015–2018. *MMWR Morb Mortal Wkly Rep* 2020;69:317–323. DOI: <http://dx.doi.org/10.15585/mmwr.mm6917a1>

Overdose Deaths

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- Stimulants alone can cause overdose – often causing stroke or heart attack
- Psychostimulant overdose deaths: increasing since 2010; 37% increase from 2016 – 2017
- 50% percent of psychostimulant deaths also involved an opioid (1/2 related to fentanyl; 2017)**

Fentanyl contributed to 102 deaths in 2018, up from 81 in 2017.

Number of Drug Poisoning Deaths in Colorado by Drug Type, 2000-2018

Categories are not mutually exclusive (may total to more than 100% of total drug overdoses) or comprehensive (other drugs not listed).

CDC: <https://www.cdc.gov/drugoverdose/data/overdose.html#policyupdate>
 NIDA, May 2019: <https://www.drugabuse.gov/states/colorado-drug-overdose-trends>
 CDC Wonder Multiple Causes of Death—see #42 on Meth RR
 Colorado Health Institute, Nov 2019: <https://www.coloradohealthinstitute.org/research/more-coloradans-died-meth-overdoses-2018-ever>

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Who is using and why?

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Demographic Considerations

- Rates of use are higher in:
 - Men
 - Non-Hispanic Whites (than Non-Hispanic Black)
 - Ages 26 – 34
 - Small-metro or rural counties
 - Persons with Medicaid only or uninsured

Contextual Considerations:

- People without sheltered homes (remain hyper-vigilant to surroundings to protect themselves and possessions; stay warm)
- People managing emotions and moods (I feel tired today, I took too much of my benzos)
- People partaking in risky sexual behaviors (e.g., high number of partners)

What is a person's motivation to use meth? Can you talk to your patient about this?

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 Conversation with Leslie Brooks, MD, 2020.

Treatment

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Treatment: what primary care can do



- Treatment Gap: Less than 1 in 3 of those with methamphetamine use disorder received substance use treatment in the past year.
- Unlike buprenorphine for opioid use disorder, no medication has been approved by the FDA for the treatment of methamphetamine addiction.
- **Most effective treatments for methamphetamine addiction are cognitive behavioral therapies (CBT).**

"Opioid use disorder is easier. We know what can do about it. For stimulants, like meth, it's harder. There's no robust support for a medication. There's no equivalent to buprenorphine."

- Leslie Brooks, MD,
primary care physician

O'Donnell J, Gladden RM, Mattson CL, Hunter CT, Davis NL. Vital Signs: Characteristics of Drug Overdose Deaths Involving Opioids and Stimulants — 24 States and the District of Columbia, January–June 2019. *MMWR Morb Mortal Wkly Rep* 2020;69:1189–1197.
DOI: <http://dx.doi.org/10.15585/mmwr.mm6935a1externalicon>

NIDA. 2021, April 13. What treatments are effective for people who misuse methamphetamine?. Retrieved from <https://www.drugabuse.gov/publications/research-features/methamphetamine/what-treatments-are-effective-people-who-misuse-methamphetamine>



Treatment: what primary care can do



Primary care practices can:

- Assess and identify people with potential stimulant use disorder
- Utilize cognitive therapy techniques and interventions
- Coordinate with behavioral health care team or refer to behavioral health team
- Medication treatments?
- Serve as the patient's medical home!
 - *Treatment for alcohol or drug use disorders is as effective as treatment for other chronic medical conditions. You can help coordinate care.*
 - *You know the patient's other health conditions and behaviors. You will likely need to help monitor, coordinate care, and treat the long-term effects of meth use.*

O'Donnell J, Gladden RM, Mattson CL, Hunter CT, Davis NL. Vital Signs: Characteristics of Drug Overdose Deaths Involving Opioids and Stimulants — 24 States and the District of Columbia, January–June 2019. *MMWR Morb Mortal Wkly Rep* 2020;69:1189–1197.
DOI: <http://dx.doi.org/10.15585/mmwr.mm6935a1externalicon>



Assess and Identify



Practices can actively screen for drug use:

- Who does screening for other conditions in your practice?
- Who can do these screenings? Anyone? Just the prescriber?
- Has your practice received implementation support for SBIRT?
(*screen, brief intervention, referral to treatment*)



Assess and Identify: What to look for?



What might make you wonder if someone using a stimulant, such as meth?

- Loss of interest in life (hobbies, relationships, career)
 - Hyperactivity
 - Twitching, facial tics, jerky movements
 - Paranoia
 - Dilated pupils
 - Noticeable and sudden weight loss
 - Rapid eye movement
 - Burns, particularly on the lips or fingers
 - Erratic sleeping patterns
 - Rotting teeth
 - Outbursts or mood swings
- "Tweaking":**
- Often lasts 3 to 15 days
 - Anxiety, insomnia, irritability, confusion
- "Crashing":**
- Often lasts 1 to 3 days
 - Exhaustion, intense drug cravings, depression

<https://www.addictioncenter.com/drugs/meth/symptoms-signs/>



Establish a Diagnosis

F u h u b # r u # h w d p s k h d p l q h 0 h a i w g G l r g h u # w b x o l g # v h # g l r g h u # G V P 0 8 ,

1. Stimulant taken in larger amounts or over a longer period than intended
2. Persistent desire for or unsuccessful attempts to cut down
3. Great deal of effort and time devoted to obtain, use, or recover from effects of the stimulant
4. Craving
5. Recurrent use leading to failure to fulfill major obligations (work, school, home)
6. Continued use despite persistent or recurrent social problems caused or exacerbated by use
7. Important social, occupational, or recreational activities given up due to use
8. Recurrent use in physically hazardous situations
9. Continued use despite persistent or recurrent physical or psychological problems caused or exacerbated by use
10. Tolerance
11. Withdrawal

Not applicable if used as prescribed in pain program

Presence of...

- 2 – 3 = mild
- 4 – 5 = moderate
- 6 or more = severe stimulant use disorder

DSM-5: Diagnostic and Statistical Manual of Mental Disorders: fifth edition. Released May 2013.

Counseling and Behavioral Interventions

- Most effective treatments for methamphetamine addiction come from psychotherapy and behavioral interventions, such as:
 - Motivational interviewing
 - Contingency management
 - Relapse prevention [identify and prevention high-risk situations (e.g., bars, friends who use) that encourage substance use; change expectation of perceived positive effect of use]
 - Couples and family therapies

NIDA. 2021, April 13. What treatments are effective for people who misuse methamphetamine?. Retrieved from <https://www.drugabuse.gov/publications/research-reports/methamphetamine/what-treatments-are-effective-people-who-misuse-methamphetamine>

McHugh RK, Heaton BA, Otto MW. Cognitive behavioral therapy for substance use disorders. *Psychiatr Clin North Am.* 2010;33(3):511-525. doi:10.1016/j.psc.2010.04.012

Motivational Interviewing

Why use MI?

- It works! It's effective in medical settings and associated with improved health outcomes.

How is MI different from everything else?

- Recognizes the expertise of the patient on his/her own motivations
- Guides a patient to examine and resolve ambivalence about problem

Motivational Interviewing

Four Steps of MI

1. Building rapport with the patient
 - *Would you mind taking a few minutes to talk with me about your screening results?*
2. Focusing on the topic
3. Evoking or eliciting thoughts/emotions about the topic
 - *On a scale of 0 -10, how important is it to you to decrease your drug use?*
 - *What makes you a X and not a lower number?*
4. Planning for change
 - *What do you like/what are not so good things about your current level of drug use?*
 - *What are some reasons you can think of to make a change?*
 - *Let's say you did decide to quit, how would you go about doing it?*



Contingency Management

Contingency Management (CM)

- Behavioral therapy in which individuals are rewarded (or "reinforced") for evidence of positive behavior change. A way to incentivize a person to achieve a goal or benchmark
- Examples:
 - Reward for drug-free urine test (payment, prize, drawing, voucher)
 - Reward for # of days in treatment program
 - Variation in reinforcement amount, value, type based on # times patient achieves benchmark

Contingency Management

Evidence for CM

- Decades of studies support CM ability to:
 - Promote abstinence from methamphetamine, opiates, alcohol, tobacco (e.g., 61% successful treatment episodes vs 39% for other modalities)
 - Reduce drug use for the long-term (12 – 18 months after treatment completion)
- Patients report CM is acceptable form of intervention/treatment!
- Recommended readings:

Hayley D. Brown, Anthony DeFulio. Contingency management for the treatment of methamphetamine use disorder: A systematic review. *Drug and Alcohol Dependence*. 2020;216. <https://doi.org/10.1016/j.drugalcdep.2020.108307>

McPherson SM, Burduli E, Smith CL, Herron J, Oluwoye O, Hirschak K, Orr MF, McDonnell MG, Roll JM. A review of contingency management for the treatment of substance-use disorders: adaptation for underserved populations, use of experimental technologies, and personalized optimization strategies. *Subst Abuse Rehabil*. 2018;9:43-57 <https://doi.org/10.2147/SAR.S138439>

Contingency Management

Considerations for implementing Contingency Management

- Can be embedded in behavioral treatment programs and in group visits (including in primary care settings)
- Rewards:
 - Make relevant to patient (e.g., if patient is a mother, make reward relevant to ability to care for child)
 - Can be financially burdensome to the practice. Studies show that the effect of CM is influenced by the size of the reward.
 - Centers for Medicare/Medicaid Services or certain health plans impose limits on monetary incentives (\$75 - \$100), although there is a push to eliminate these policies.
 - You or your colleagues might need to be creative.

Medications

- Recent studies have explored treating meth addiction with a variety of medications, such as:
 - Stimulant agonist treatment (dexamphetamine and methylphenidate)
 - Naltrexone
 - Injectable Naltrexone + oral bupropion (Jan 2021)
 - Topiramate (a prescription medication to treat epilepsy)
 - Mirtazapine (a prescription medicine to treat depression and sometimes and anxiety disorders)

Suggested article: Siefried KJ, Acheson LS, Lintzeris N, Ezard N. Pharmacological Treatment of Methamphetamine/Amphetamine Dependence: A Systematic Review. *CNS Drugs*. 2020;34(4):337-365. doi:10.1007/s40263-020-00711-x

- However, there are currently no medications that counteract the specific effects of methamphetamine or that prolong abstinence from and reduce the misuse of methamphetamine by an individual addicted to the drug.

- National Institute of Drug Abuse (April 2021)

Treatment: What's on the Horizon?

- Research continues on a range of treatments for meth and other stimulant use disorders, including:
 - Medications (both to treat addiction and to treat physical and cognitive consequences of long-term use)
 - Vaccines and antibodies
 - Neuro-feedback
 - Noninvasive stimulation of the brain using magnetic fields.
- **Recommended Website:** National Institute on Drug Abuse (<https://www.drugabuse.gov/>) for regular updates

Treatment: What can Primary Care Do?

- Assess and identify people using opioids. *Remember comorbidity rates for opioid and meth use?*
- Assess and identify people using methamphetamine (implement SBIRT)
- Utilize behavioral health interventions within the practice, including individual and group visits
- Refer patients to behavioral health care providers that offer evidence-based approaches
 - Substance use treatment services
 - Employee Assistance Programs (EAPs)
 - Faith community/clergy support
 - Mutual support self-help groups (AA, Life Ring, Smart Recovery, etc.)
- Be the medical home! *Patients are more receptive to treatment when primary care is involved. PCP involvement increases likelihood of successful long-term recovery.*

Utilize Resources

- University of Colorado [Practice Innovation Program](#) offers:
 - Interactive online Forums (free, 2x a month, with Consultant Panel)
 - Consultant Panel (clinicians, staff, and others with expertise)
 - www.practiceinnovationco.org
- University of California – San Francisco “Warmline”
 - Free and confidential clinician-to-clinician telephone consultation
 - For primary care clinicians
 - 1-855-300-3595

Utilize Resources

- No cost SBIRT Training:
 - Peer Assistance Services, Inc (Parker, CO; <https://www.peerassistanceservices.org/>)
 - In person and online
- Motivational Interviewing
 - University of Colorado College of Nursing MI Course (<https://cucon.regfox.com/CUMotivate>)
 - <https://www.youtube.com/watch?edufilter=NULL&feature=youtu.be&v=win1GhtFq0M>
(Peer Assistance Services)

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Questions

- What conversations will you have with your care team? Who will you talk to?
- What's a case for primary care engaging in any aspect of care around meth use?
- What are you risking by not knowing if someone is using meth?
- How does use impact your care for the person otherwise?
- What additional information do you want?



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The IT MATTTrs Primary Care and Behavioral Health Team Training curricula were created with support from the Agency for Healthcare Research and Quality (grant number 5R18HS025056-02).

The IT MATTTrs Introduction to Methamphetamines was created in partnership with the High Plains Research Network and CU Practice Innovation Program with funding from the Colorado Department of Human Services Office of Behavioral Health.