

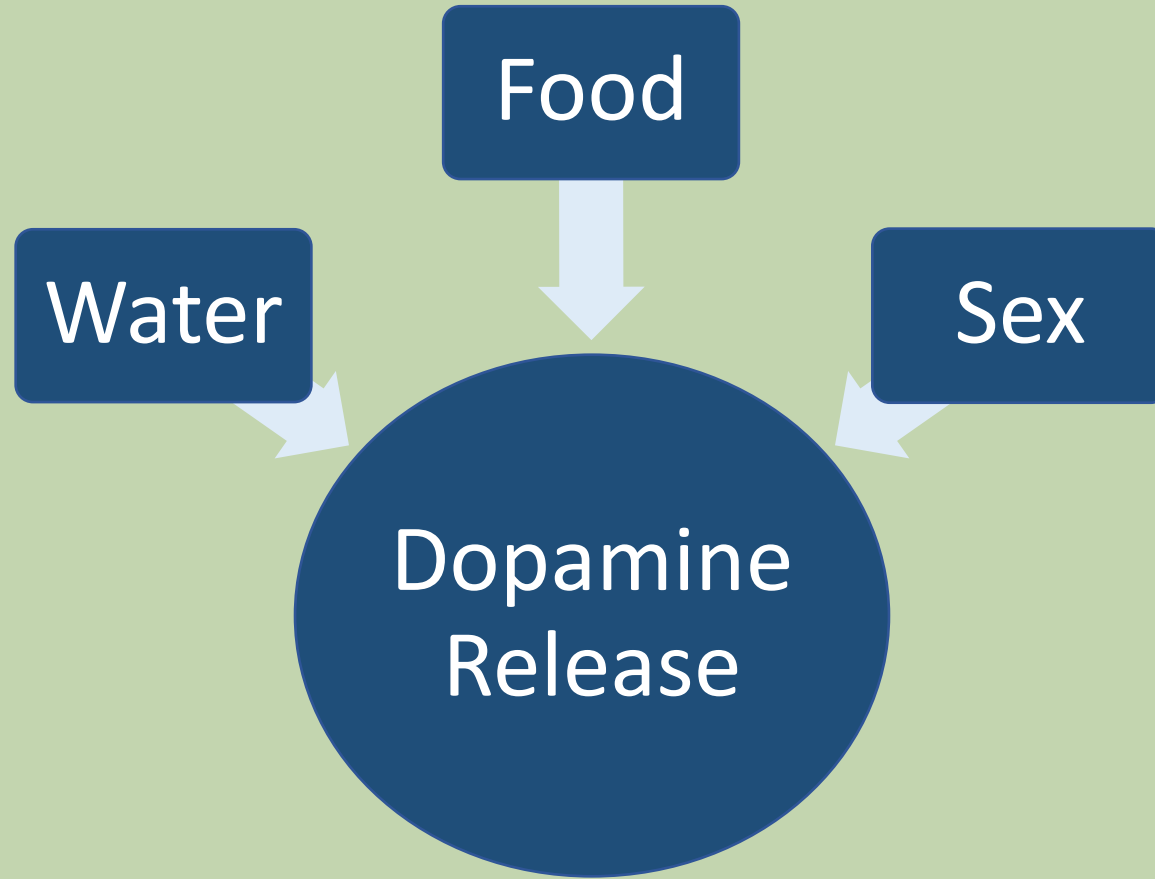
Medication Assisted Treatment (MAT) 101: Background & Current Issues

PRESENTED BY:
Shannon Robinson, MD

SUBSTANCE USE DISORDERS: CHRONIC BRAIN DISEASES



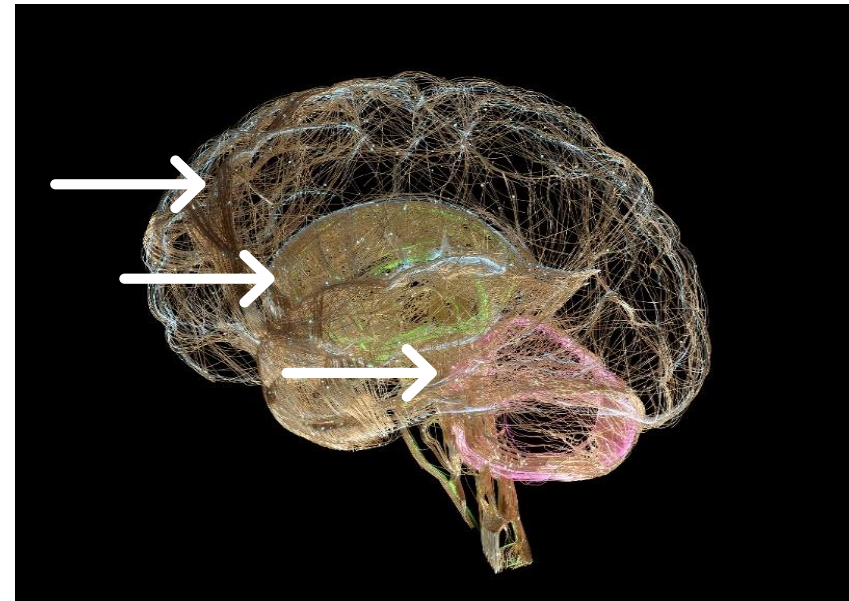
NATURAL REWARDS RELEASE DOPAMINE



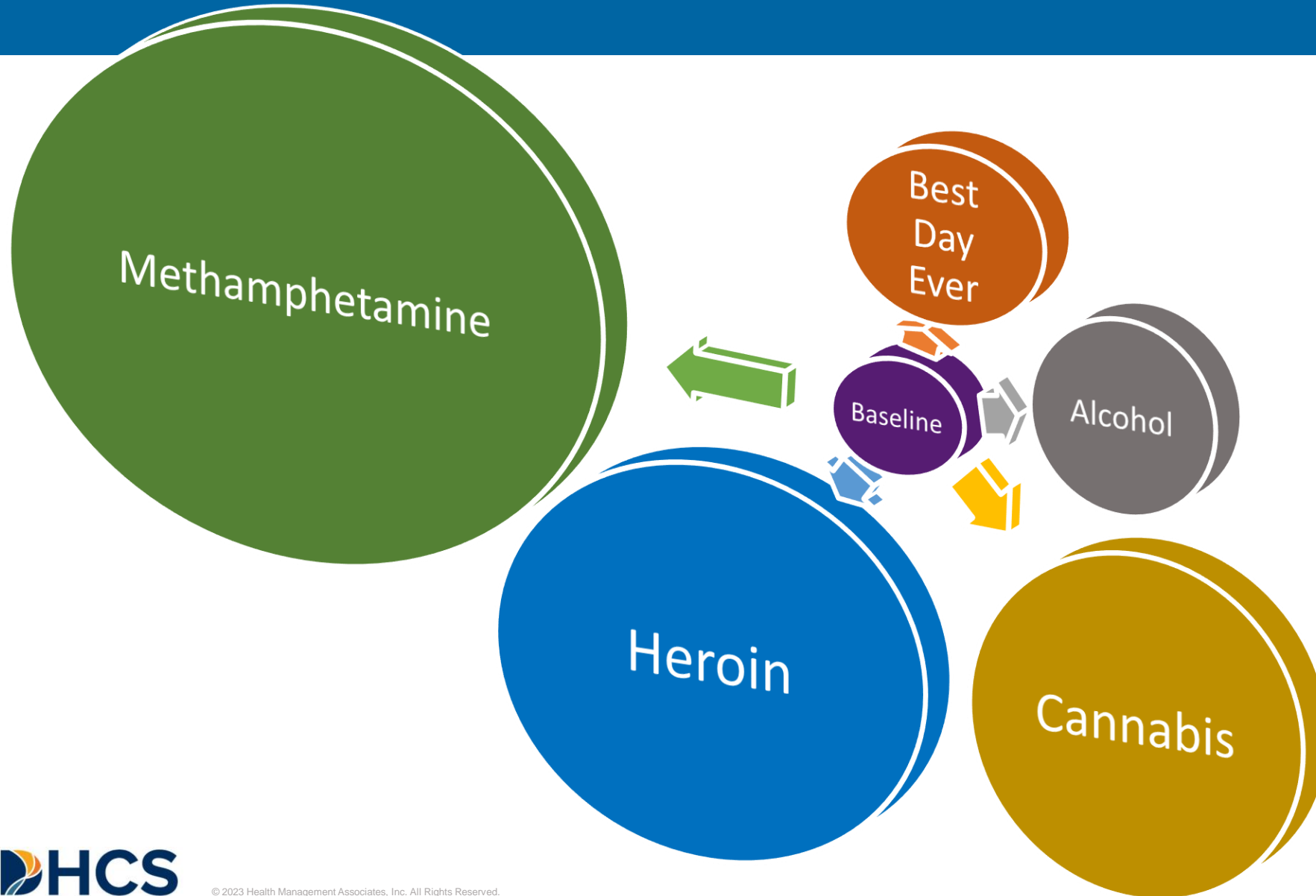
HOW SUBSTANCES OF ABUSE AFFECT THE BRAIN

- » All substances of abuse result in activation of the reward pathway
- » The same pathway activated by naturally rewarding substances and events

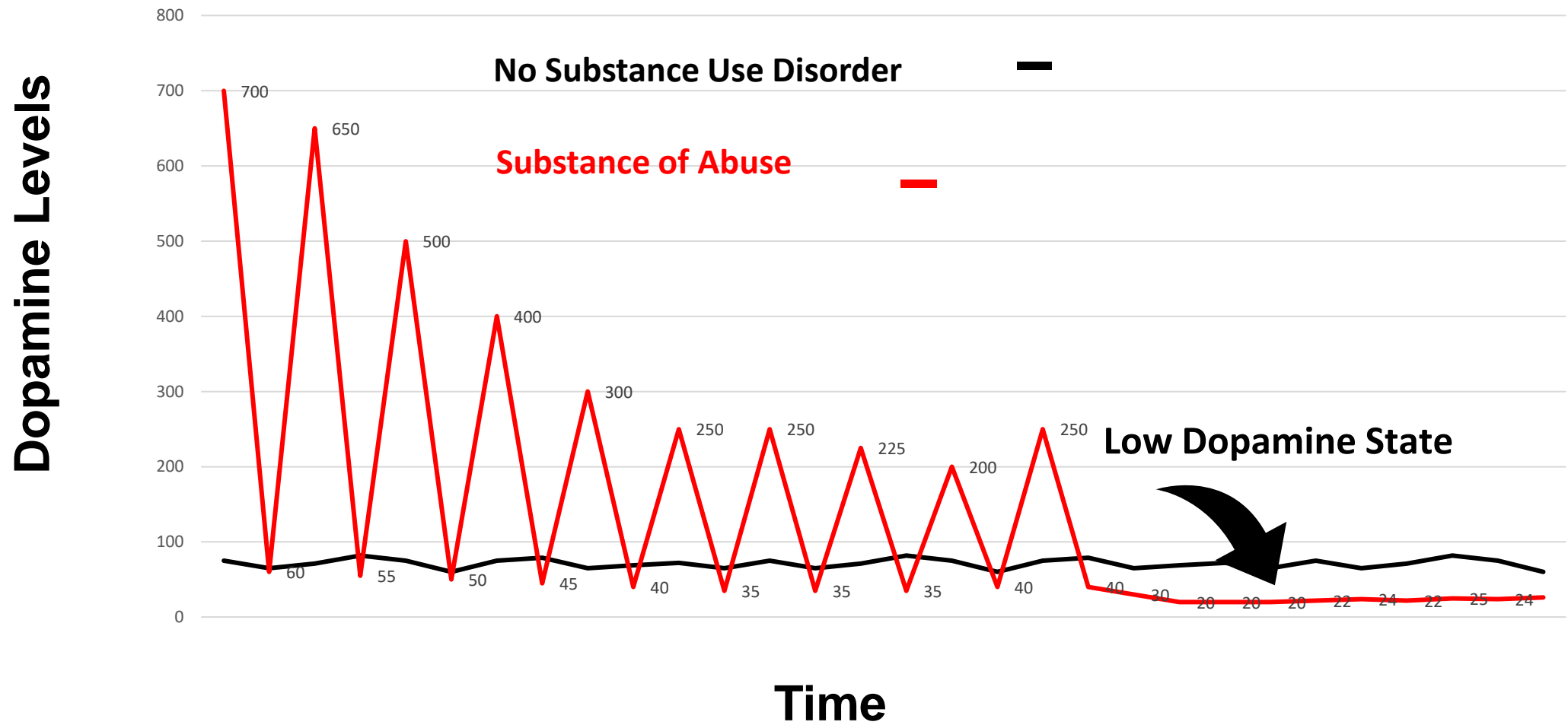
Frontal Lobe
Nucleus Accumbens
Ventral Tegmental Area



DOPAMINE RESPONSE



BRAIN CHANGES WITH EPISODES OF SUBSTANCE USE



INTENSITY OF CRAVINGS

A direct, or indirect,
force pulling
someone towards a
substance or
behavior

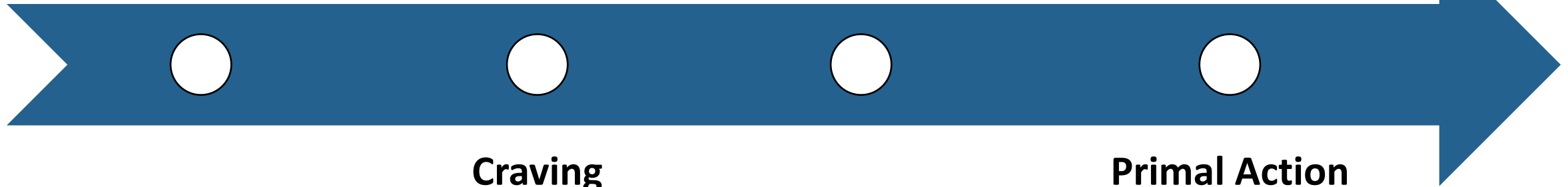


BEHAVIOR



Lack of Dopamine

Survival Mode



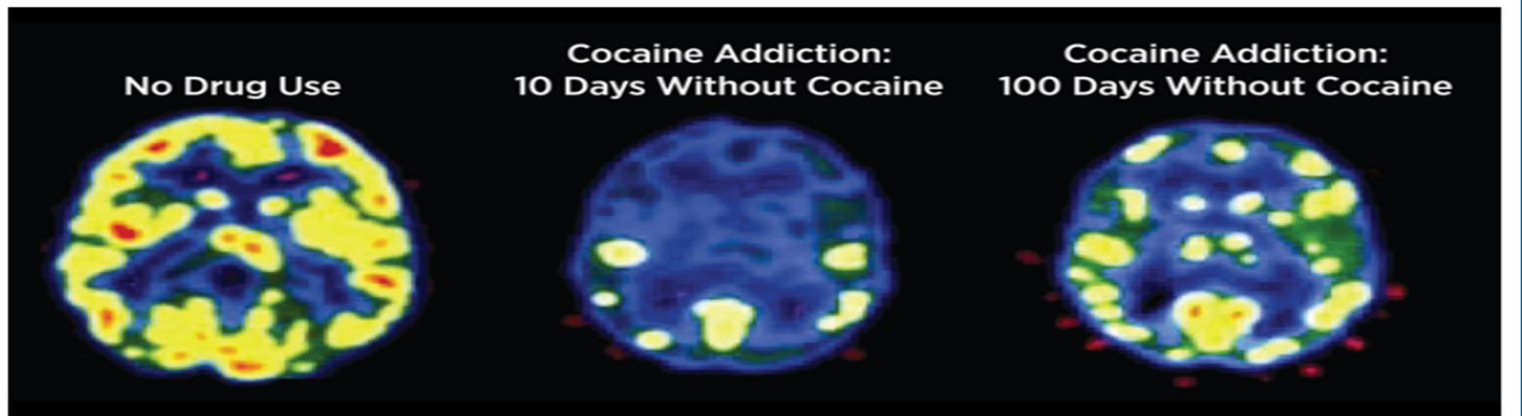
Craving

Primal Action

IT TAKES TIME FOR YOUR BRAIN TO RECOVER

- » Prolonged drug use changes the brain in long lasting ways
 - » Structure and function of the brain
- » Return to the brain function you had before substances of abuse, takes over 1 year
- » If you stop medication before a year, you may lose the desired benefits

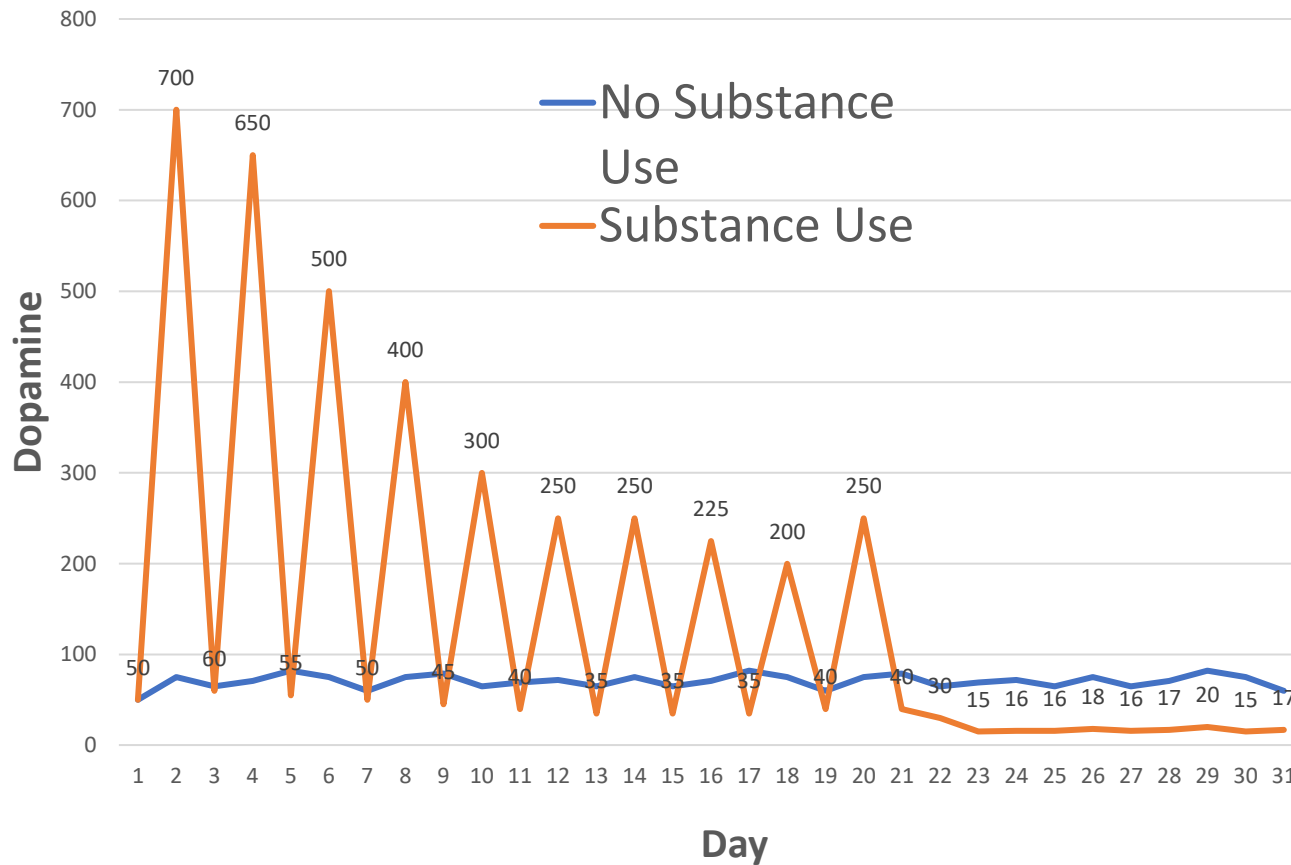
How the Brain Changes and Recovers From Drug Use



Source: <https://nida.nih.gov/publications/teaching-addiction-science/bringing-power-science-to-bear-drug-abuse-addiction>

DOPAMINE DEPLETION AFFECTS RECOVERY

Relative Dopamine Levels in Brain



Addressing Dopamine Depletion

- Medication for OUD
- Contingency Management

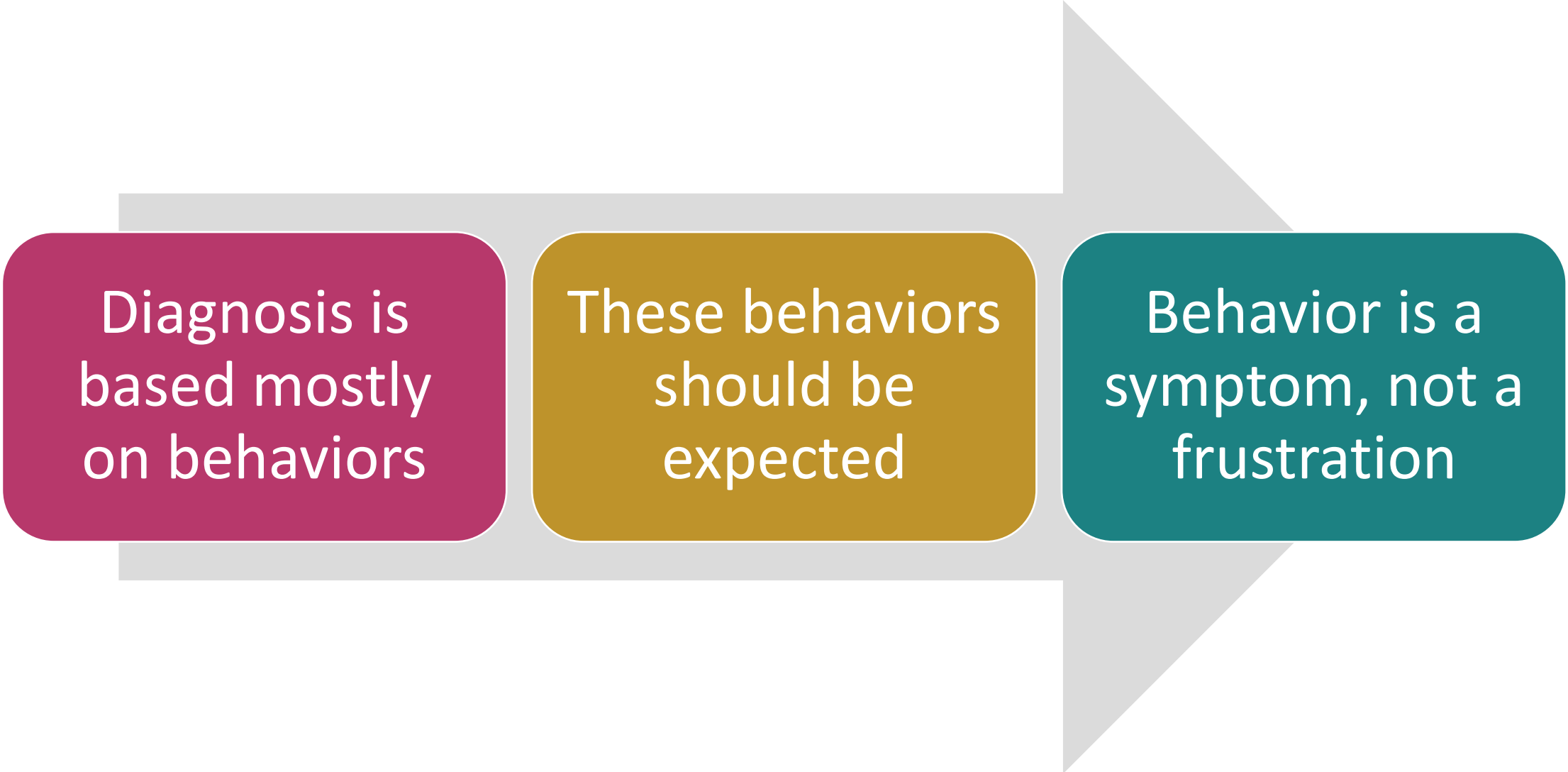
ADDICTION 101: TREATMENT

Lack of dopamine →
cravings

Aberrant behaviors
(symptoms) are
expected outcome
of cravings

MAT safely increases
dopamine and
stabilizes craving

Allowing for
behavioral therapy
and other
interventions to be
effective



Diagnosis is based mostly on behaviors

These behaviors should be expected

Behavior is a symptom, not a frustration

DSM-5: DIAGNOSIS OF OUD

1. Taken in larger amounts or over a longer period than was intended
2. Persistent desire or unsuccessful efforts to cut down or control use
3. A great deal of time is spent in activities necessary to obtain, use, or recover from its effects
4. Recurrent use resulting in a failure to fulfill major role obligations at work, school, or home
5. Continued use despite having persistent or recurrent social or interpersonal problems caused or exacerbated by the effects of substance
6. Important social, occupational, or recreational activities are given up or reduced because of use
7. Recurrent use in situations in which it is physically hazardous
8. Continued use despite knowledge of having a persistent or recurrent physical or psychological problem that is likely to have been caused or exacerbated by the substance
9. Craving, or a strong desire or urge to use
10. Tolerance
11. Withdrawal

ACUTE AND CHRONIC DISEASE MANAGEMENT

UNDERSTANDING ADDICTION TO INFORM TREATMENT

Diabetes and Addiction: You make a mistake...what could you lose?

	Diabetes	Addiction
Treatment	No	Yes
Custody of Children	No	Yes
Freedom (Probation, Incarceration)	No	Yes
Housing	No	Yes
Family	No	Yes
Work Identity	No	Yes

ACUTE DIAGNOSIS OR EXACERBATION

Presents for treatment of	Diabetes	Opioid Use Disorder
Results from	Excess glucose	Excess opioid use
Immediate treatment	Stabilize glucose	Stabilize dopamine in brain
Short-term treatment	Adjust or start medication	Adjust or start medication
	Address lifestyle issues	Address lifestyle issues
	Refer for follow up	Refer for follow up



UNDERSTANDING ADDICTION TO INFORM TREATMENT

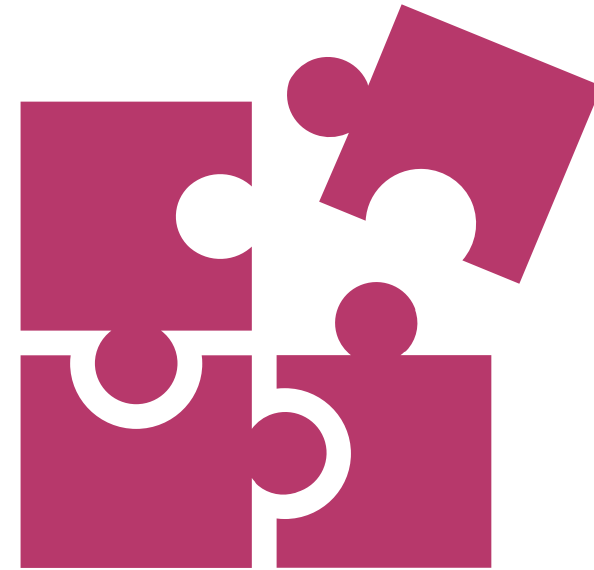
Chronic Diseases: Addiction and Diabetes

Cause? Genes, Environment and Behavior

Prevention? Environmental and Behavior Change

Treatment? Long Term Biochemical Replacement and Lifestyle Changes

What is Different?



CHRONIC DISEASE MODEL

Multidisciplinary health care team

- Prescriber Medications
- Nutrition & lifestyle changes (psychosocial interventions/therapy)
- Regular follow-up healthcare appointments for life
- Minimize risks from co-occurring illnesses

Goal- put illness into remission, when possible

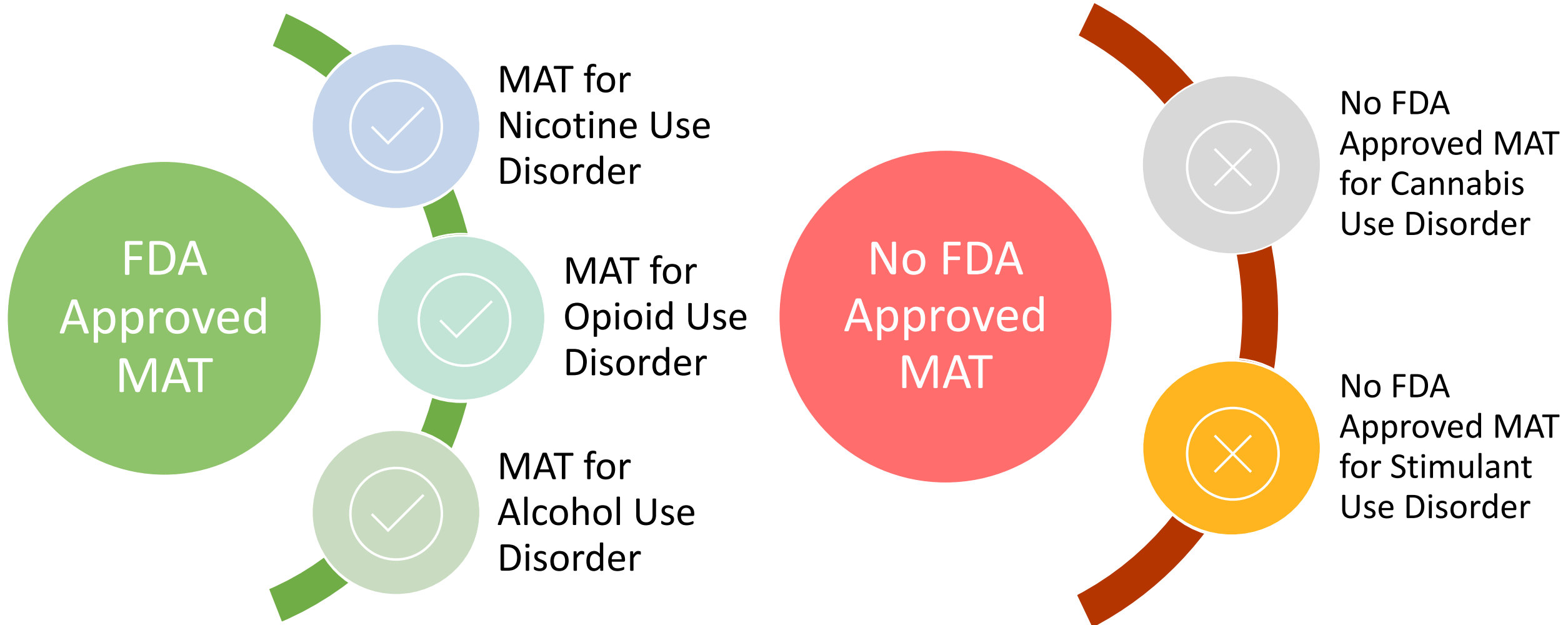
- Perspective is over the lifetime
- Assessment & treatment over lifetime
- Relapses may occur

CHRONIC DISEASES OVER TIME

- » Remission (no symptoms)
 - » Can medication be discontinued?
Or will recurrence occur?
- » Better but not remission
 - » Continue treatment
 - » Adjust treatment to strive for remission
- » Not responding to treatment or worse
 - » Treatment is altered
 - » Medications
 - » Psychosocial treatment
 - » Self-help program



FDA APPROVED MEDICATIONS FOR SUD



MEDICATION FOR OPIOID USE DISORDER (MOUD)



- » Legal Issues
- » Benefits
- » How meds work
- » When to/ for whom to use each agent

DEPARTMENT OF JUSTICE (DOJ) MOUD GUIDANCE

- »» “This guidance document provides information about how the ADA can protect individuals with OUD from discrimination—”
- »» “A jail does not allow incoming inmates to continue taking MOUD prescribed before their detention. The jail’s blanket policy prohibiting the use of MOUD would violate the ADA.”



U.S. Department of Justice
Civil Rights Division

The Americans with Disabilities Act and the Opioid Crisis: Combating Discrimination Against People in Treatment or Recovery

The opioid crisis poses an extraordinary challenge to communities throughout our country. The Department of Justice (the Department) has responded with a comprehensive approach prioritizing prevention, enforcement, and treatment. This includes enforcing the Americans with Disabilities Act (ADA), which prohibits discrimination against people in recovery from opioid use disorder (OUD) who are not engaging in illegal drug use, including those who are taking legally-prescribed medication to treat their OUD. This guidance document provides information about how the ADA can protect individuals with OUD from discrimination—an important part of combating the opioid epidemic across American communities. While this document focuses on individuals with OUD, the legal principles discussed also apply to individuals with other types of substance use disorders.

1) What is the ADA?

The ADA is a federal law that gives civil rights protections to individuals with disabilities in many areas of life. The ADA guarantees that people with disabilities have the same opportunities as everyone else to enjoy employment opportunities,¹ participate in state and local government programs,² and purchase goods and services.³ For example, the ADA protects people with disabilities from discrimination by social services agencies; child welfare agencies; courts; prisons and jails; medical facilities, including hospitals, doctors’ offices, and skilled nursing facilities; homeless shelters; and schools, colleges, and universities.

2) Does an individual in treatment or recovery from opioid use disorder have a disability under the ADA?

Typically, yes, unless the individual is currently engaged in illegal drug use. See Question 5.

The ADA prohibits discrimination on the basis of disability.⁴ The ADA defines disability as (1) a physical or mental impairment that substantially limits one or more major life activities,

https://archive.ada.gov/opioid_guidance.pdf

MOUD AND THE LAW: CASE LAW

- » There have been decisions: denying access to MOUD in jails violates the ADA and the 8th Amendment (pretrial and convicted persons)
- » Additional decisions against primary care, hospitals & nursing homes for denying access
- » Expect litigation to continue

Pesce v. Coppinger (D. Mass 2018)

Smith v. Aroostook County (D. Maine, 1st Cir. 2019)

PG v. Jefferson County (N.D.N.Y. 2021)

M.C. v. Jefferson County (N.D.N.Y. 2022) – First class action decision, requires provision of MOUD to all people who are or will be in the jail

BENEFITS OF MOUD FOR OUD

Treats withdrawal symptoms

Replaces dopamine

Helps people feel normal

Increased retention in treatment

Decreased cravings

Decreased opioid use

Decreased intravenous drug use (IVDU) and complications

Decreased overdose

Improves functioning

Decreased mortality

Decreased criminal behavior

Sources:

The ASAM National Practice Guideline for the Treatment of Opioid Use Disorder: 2020

Tsui JI et al., 2014

Metzger DS et al., 1993

Mattick, RP, et al. 2009

Mattick, RP, et al. 2014

Lobmaier, P et al. 2008

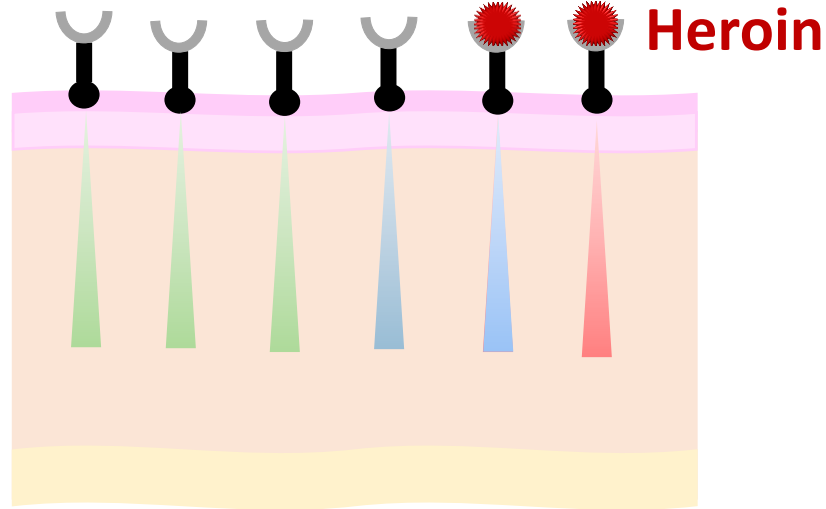
Lutgen-Nieves, L. et. al. 2021

Santo, T 2021

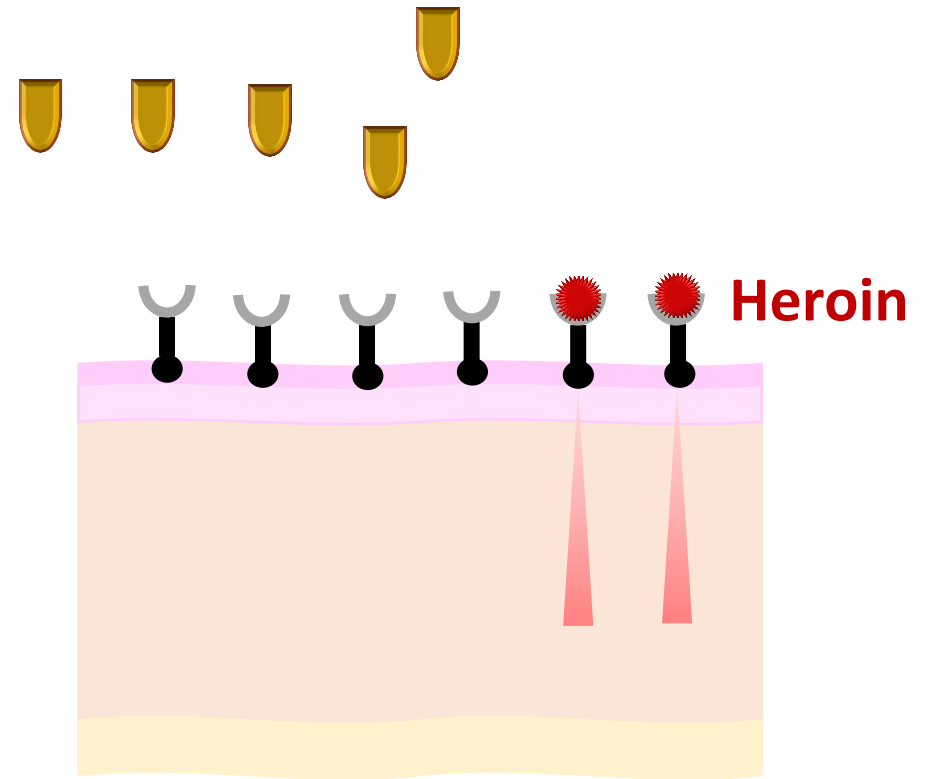
Methadone Buprenorphine

Naltrexone/Naloxone

Agonist turns on the receptor; Antagonist blocks receptor from turning on



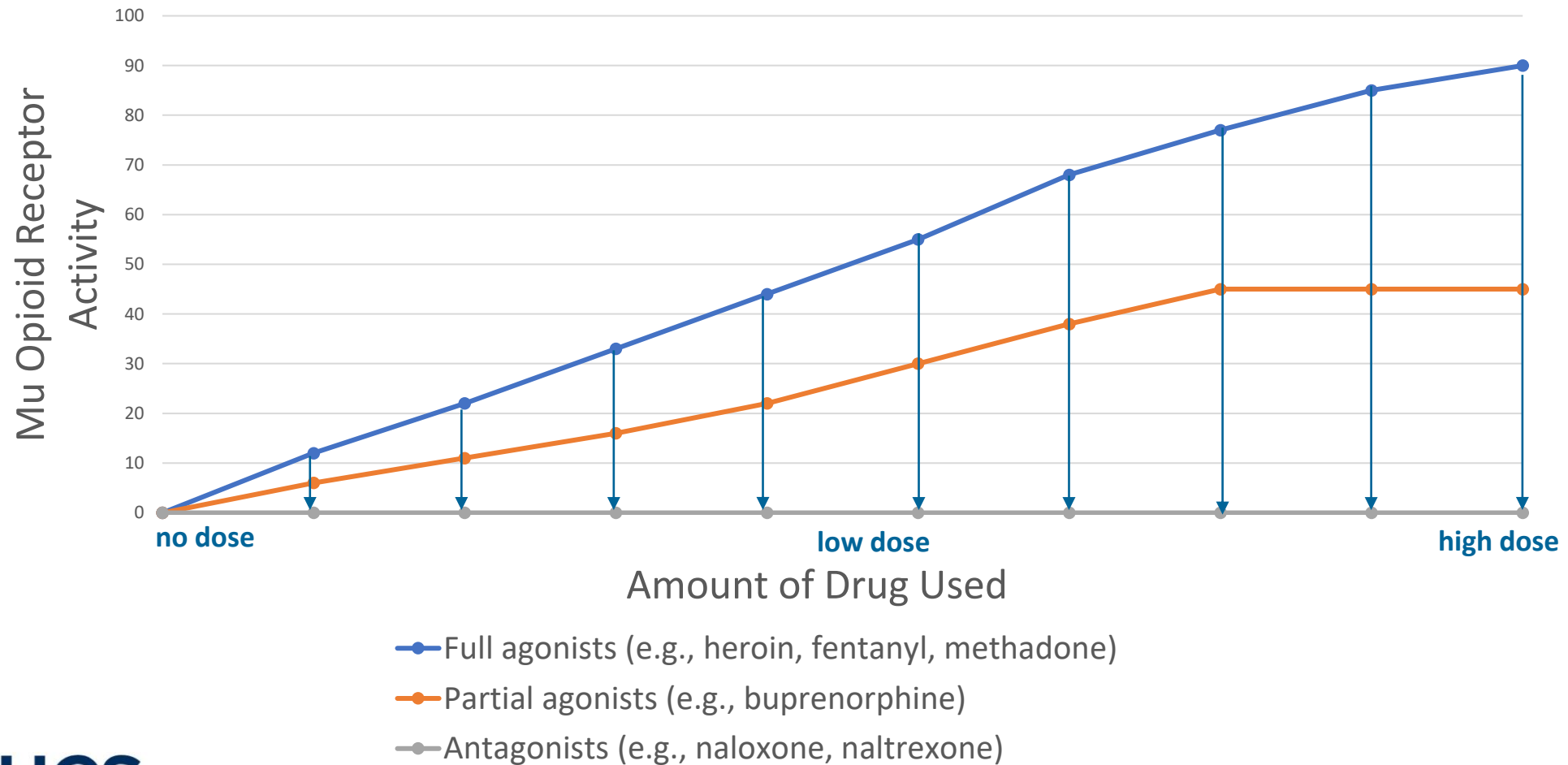
Agonist Treatment



Antagonist Treatment

FULL, PARTIAL, OR NO EFFECT

- Buprenorphine, Naloxone, and Naltrexone can all cause precipitated withdrawal.



METHADONE



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METHADONE: WHAT IS IT AND FOR WHOM?

- » Mu opioid agonist without a “ceiling effect”
- » Can only be given at opioid treatment program or hospital
 - » Starts with daily observed dosing
 - » Additional services required
- » Reaching a therapeutic dose
 - » 60-120mg takes time
- » Extensive metabolism
 - » >200 drug-drug interactions
- » Use in minors requires parental consent and two prior detox failures*

Patients with a more severe OUD (> 1 year or persons who inject drugs) **

Patients who would benefit from the services available

Patients who were not successful with other MAT for OUD

* Two prior detox attempts is proposed to be eliminated in Medications for the Treatment of OUD Proposed Rule: <https://public-inspection.federalregister.gov/2022-27193.pdf>

**Omnibus Bill 2022 signed into law on 12.29.22 eliminates this
HHS, SAMHSA, DEA will finalize guidance for these changes 2023 and 2024

BUPRENORPHINE BARRIERS BEING ELIMINATED



BUPRENORPHINE: WHAT AND FOR WHOM?

- » Partial Mu opioid agonist with ceiling effect
 - » Different formulations
- » Greater binding affinity than full agonists
 - » Start buprenorphine when client in moderate withdrawal
 - » >16 mg/d needed to be effective
- » Fewer drug-drug interactions than methadone

Patient wants agonist treatment

Positive DSM-5 diagnosis of opioid use disorder or withdrawal

NALTREXONE



NALTREXONE: WHAT AND FOR WHOM?

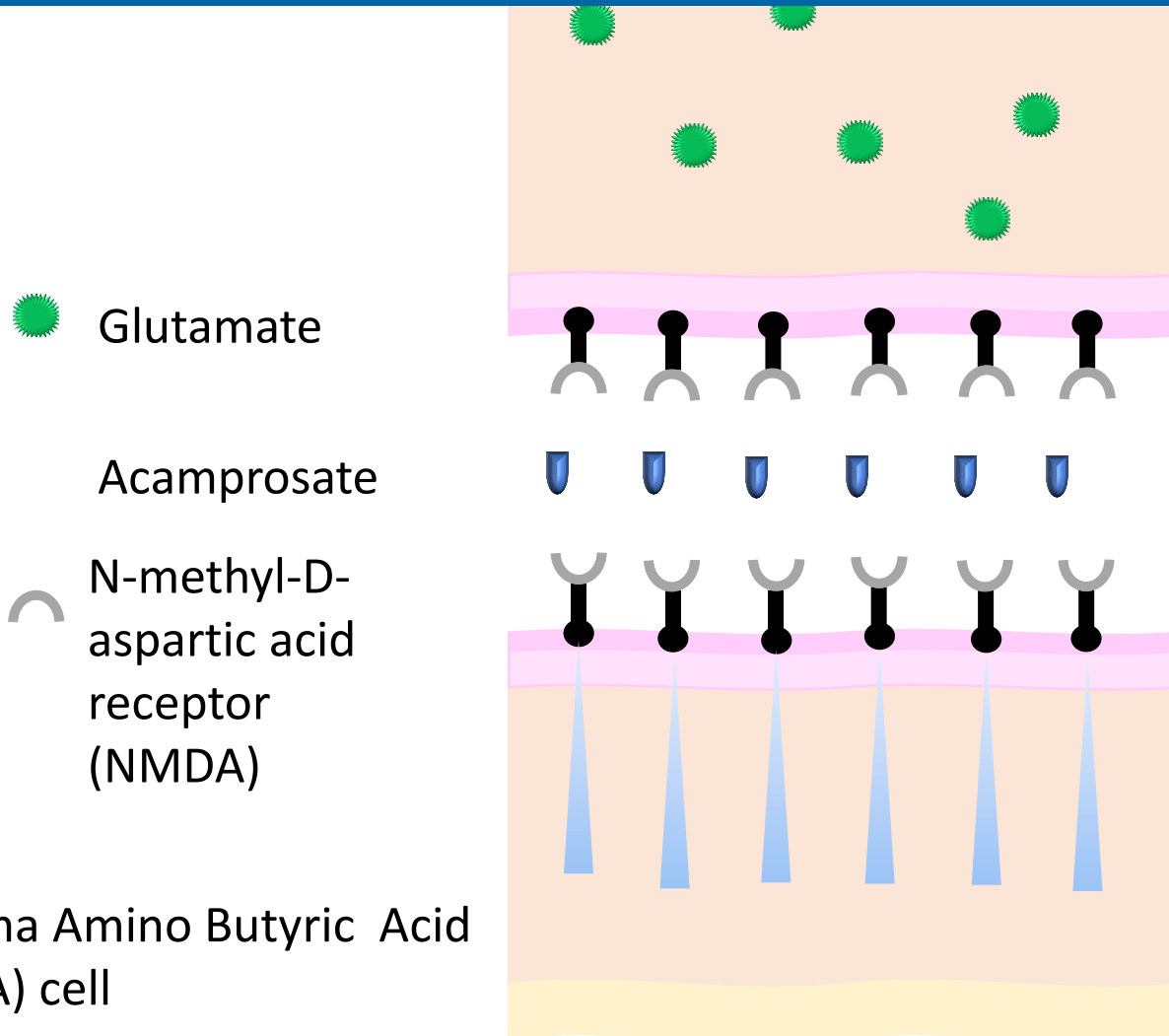
- » Mu opioid antagonist with high, competitive binding affinity
- » Does NOT treat withdrawal or underlying dopamine depletion
- » Client must be opioid free 7 days before starting
- » Evidence of decreased mortality is limited
- » In CA there is not a requirement for parental consent for naltrexone in CA

Patients with a high degree of motivation (dopamine)

Patients who did not reach treatment goals with other treatment

Can be useful as “back-up” after discontinuation of methadone or buprenorphine, or in high-risk situations

ACAMPROSATE: HOW IT WORKS



In someone with an active alcohol use disorder, acamprostate decreases glutamate release and GABA transmission.

ACAMPROSATE FOR AUD

- » Three times per day dosing
- » No metabolism
- » No drug Interactions
- » Few side effects
- » Increases
 - » Abstinence
- » Reduces
 - » Cravings
 - » Heavy drinking



Photo from Unsplash

HOW LONG TO TREAT SUBSTANCE USE DISORDERS

Evidence is clear that long-term or indefinite treatment with medications for OUDs is often required for effective and sustained outcomes

In practice, successful tapers from methadone or buprenorphine typically occur in only about 15 percent of cases

According to the U.S. Surgeon General, successful tapers typically occur, if at all, when individuals have been treated with MAR for at least 3 years

Sources:

National Academies of Sciences, Engineering, and Medicine. (2019).

Nosyk, B. et al. (2012).

SAMHSA & the Office of the Surgeon General (2018).

TREAT AS LONG AS IS NEEDED

- » It takes over a year for brain healing to occur
- » Studies of all FDA approved meds for Opioid Use Disorder indicate a risk of relapse upon discontinuation of medications
- » Years post sobriety, if making appropriate changes to decrease likelihood of future substance use, stable in recovery and life and wants to discontinue
 - » Social Support that supports recovery
 - » Active in 12 step meetings
 - » Active in Self-Management and Recovery Training (SMART) meetings
 - » Active in church
 - » Not living with people who are using
 - » Avoid discontinuing medication during big life transitions such as leaving incarceration, pregnancy or delivery, moving across the country, changing jobs
 - » Able to handle interpersonal conflicts without relapsing...

POLY-SUBSTANCE USE

POLYSUBSTANCE USE IS THE NORM

- Individuals with justice involvement have higher rates of polysubstance use than the general public.
- More than half (56%) of overdose deaths among individuals who were formerly incarcerated involved polysubstance use.
- The harm caused by untreated alcohol or opioid withdrawal and use disorders outweighs the risk for respiratory depression associated with combining treatment for both simultaneously.

FENTANYL AND XYLAZINE

FENTANYL



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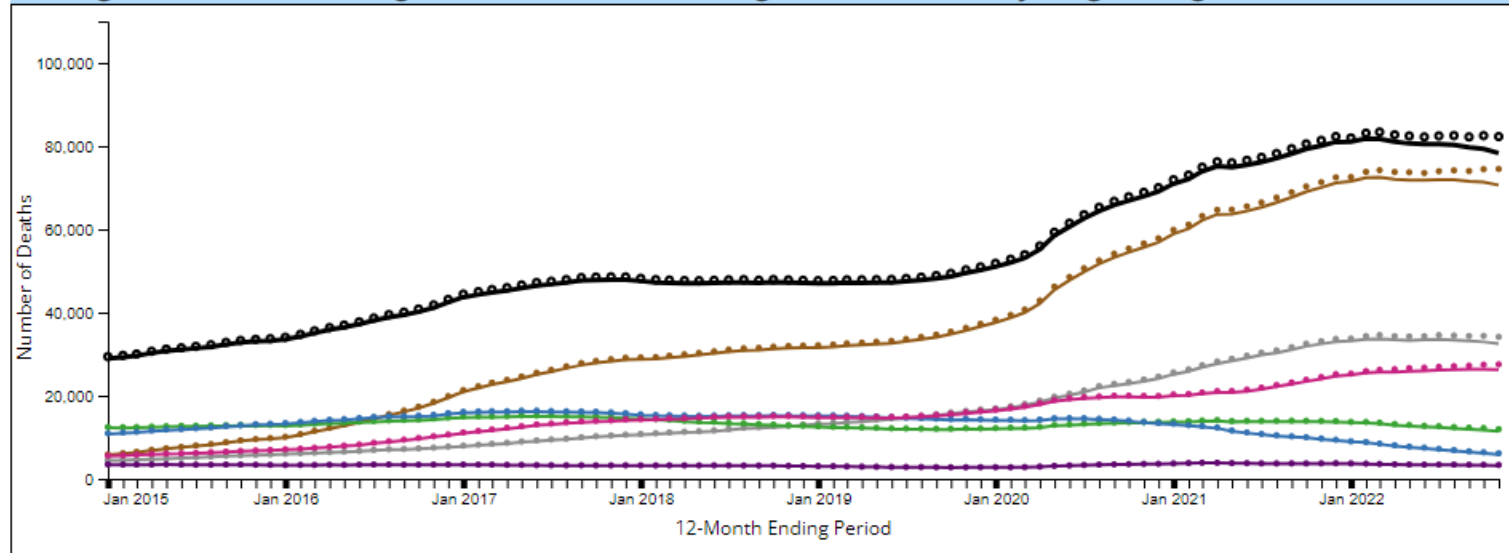
US OPIOID & SYNTHETIC OPIOID OVERDOSES

Based on data available for analysis on: April 2, 2023

After opening the **drug class dropdown**, click the top of the dropdown menu again to make the checkboxes disappear.

Select Jurisdiction: Select specific drugs or drug classes:

Figure 2. 12 Month-ending Provisional Number of Drug Overdose Deaths by Drug or Drug Class: United States




Legend for Drug or Drug Class


Cocaine (T40.5)	Psychostimulants with abuse potential (T43.6)	--- Reported Value
Heroin (T40.1)	Synthetic opioids, excl. methadone (T40.4)	○ Predicted Value
Methadone (T40.3)		
Natural & semi-synthetic opioids (T40.2)		
Opioids (T40.0-T40.4, T40.6)		

FENTANYL BACKGROUND

- » Fentanyl is found in
 - Illicit opioids, stimulants, benzodiazepines powdered and pills, cannabis vape products
 - 99% of oxycodone pills submitted to crime lab contain fentanyl
 - 60% contain lethal amounts of fentanyl
- » Inadvertent skin contact does not result in overdose
- » Rapid onset of action and rapid redistribution to fat cells
 - Able to detect in toxicology for longer
 - Takes longer to enter moderate withdrawal

Prior Webinars

 [Current Issues in OUD: Focus on Fentanyl \(2-24-2022\)](#)

 [Updates on Opioids - Fentanyl and Xylazine \(6-3-2022\)](#)

Sources:

- <https://www.dea.gov/alert/dea-laboratory-testing-reveals-6-out-10-fentanyl-laced-fake-prescription-pills-now-contain>
- https://www.fentanylawarenessday.org/files/ugd/89faea_e40da0d83dd745a1bf1139db47af8bba.pdf
- https://www.dea.gov/sites/default/files/2020-01/2019-NDTA-final-01-14-2020_Low_Web-DIR-007-20_2019.pdf
- <https://drugabusestatistics.org/drug-overdose-deaths/>
- <https://www.cdc.gov/drugoverdose/featured-topics/VS-overdose-deaths-illicit-drugs.html>
- <https://www.cdc.gov/stopoverdose/fentanyl/>
- https://www.dea.gov/sites/default/files/2021-12/DEA-OPCK_FactSheet_December%202021.pdf
- https://www.dea.gov/sites/default/files/2020-09/Fentanyl%20Used%20in%20Vape%20Pens_PRB%20FINAL.pdf

TREATMENT FOR FENTANYL


» Overdose


- » Treatment is the same as with other opioids
- » Might take more naloxone
 - » Naloxone, oxygen, naloxone, oxygen...until someone is breathing, or help arrives

» Use disorder

- » Treatment is the same as with other opioids
- » Start buprenorphine when someone is in moderate withdrawal
- » Outcomes are similar to other opioids
 - » Retention in treatment
 - » Abstinence rates

Articles

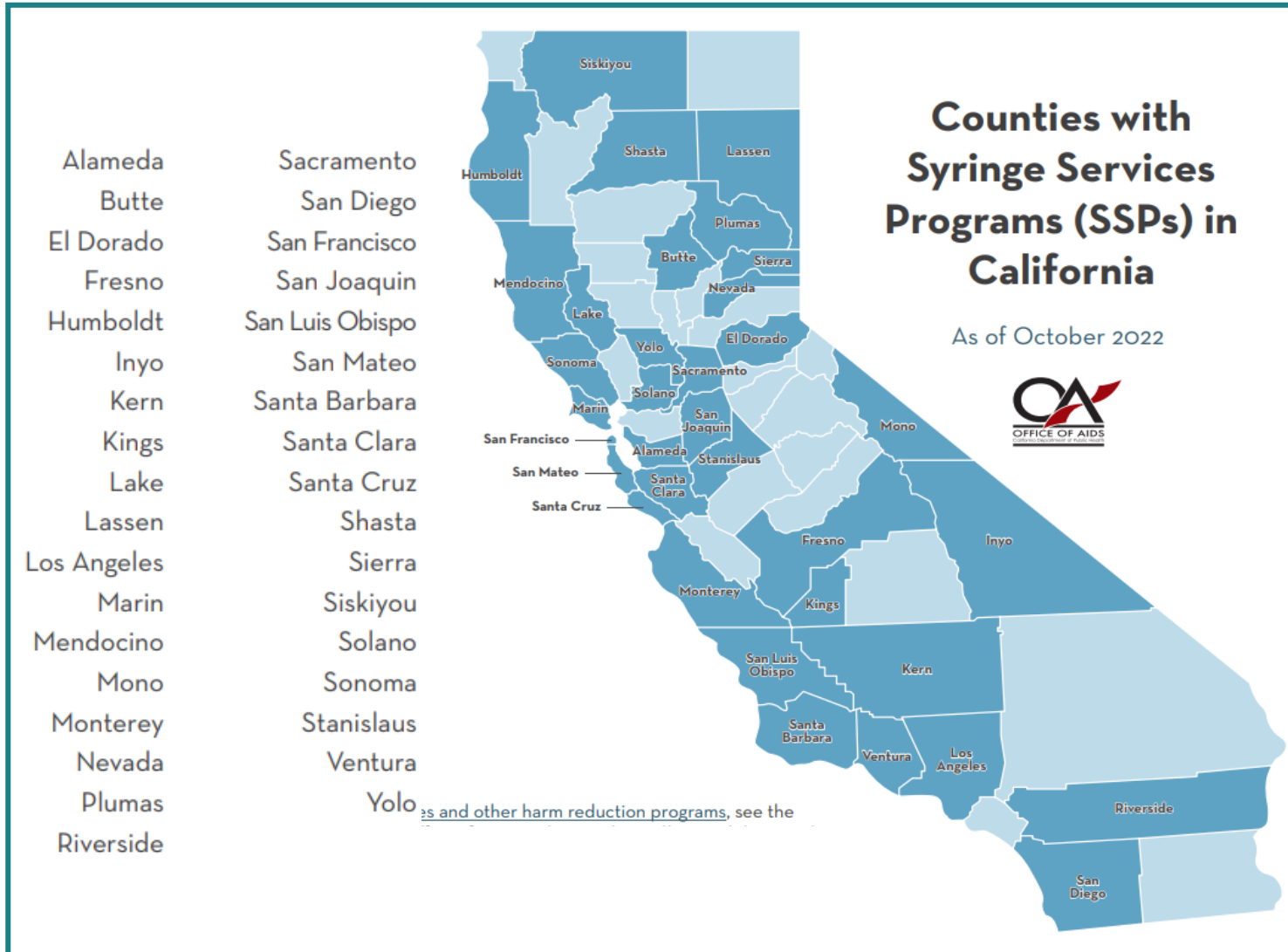
 [Incidence of Precipitated Withdrawal During a Multisite Emergency Department–Initiated Buprenorphine Clinical Trial in the Era of Fentanyl](#)

 [High-Dose Buprenorphine Initiation in the Emergency Department Among Patients Using Fentanyl and Other Opioids](#)

WHAT CAN WE DO ABOUT FENTANYL

- » Test
 - » Fentanyl is not detected in routine tests
- » Education
 - » Overdose prevention
 - » Naloxone
 - » Rescue breathing/oxygen
- » Treat

 [Fentanyl Test Strips Resources available on CA Bridge's website](#)



XYLAZINE

TRANQ DOPE
ZOMBIE DRUG



Stock photo. Posed by model.

XYLAZINE EMERGING THREAT

»» DEA Report Oct 2022

- »» 2020 to 2021 forensic lab identification of xylazine rose 112% in the west
- »» Mixed with opioids and stimulants
- »» Xylazine positive overdose deaths increased by 750% in the west, compared to 100% in the northeast where it is highest overall

»» Office of National Drug Control Policy

- »» 4-12-23 Press Release Emerging Threat

Sources: [DEA.gov](https://www.dea.gov); [WhiteHouse.gov](https://www.whitehouse.gov); <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC9128597/>; <https://www.fda.gov/drugs/drug-safety-and-availability/fda-alerts-health-care-professionals-risks-patients-exposed-xylazine-illicit-drugs>

GRAPHIC WARNING



>> Please note: the following slide has a graphic image. Please look away if you do not want to see and the presenter will let you know when we have moved to the next slide.

XYLAZINE BACKGROUND

»» What is it?

- Alpha 2 adrenergic receptor agonist (like clonidine)
- Approved by FDA as a veterinary anesthetic (sedating and muscle relaxing)

»» Why add this to other drugs?

- Longer acting and less respiratory depression than fentanyl

»» What are the dangers associated with use?

- Slow breathing, low blood pressure, slow heart rate
- Sedation, coma
- Body temperature changes
- Heart and kidney problems
- Skin necrosis
- Increased risk of overdose



FIGURE 1: Black and green necrotic and scaly lesions of the patient's forearms.

WHAT CAN WE DO ABOUT XYLAZINE

»» Test

»» Xylazine is not detected in routine tests

»» Education

»» Overdose prevention

»» Rescue breathing/ oxygen

»» More details on next slide

»» Treat

Xylazine Test Strips

»» The Center for Forensic Science Research & Education. Evaluation of Xylazine Test Strips (BTNX) for Drug Checking Purposes. March 22, 2023. Accessed April 6, 2023.

<https://www.cfsre.org/nps-discovery/drug-checking/evaluation-of-xylazine-test-strips-btnx-for-drug-checking-purposes>

»» <https://www.lochnessmedical.com/hr-product?id=2025>

HARM REDUCTION AND XYLAZINE USE

- » Rapid onset of severe sedation – don't use:
 - In dangerous situations
 - Near railroad tracks
 - Where you might end up getting taken advantage of
 - Standing up
 - Sitting
- » If using
 - Lie down on soft surface
 - Roll every 2 hours
 - Place padding under bony areas
 - Know the signs of rhabdomyolysis
 - Take turns using with others or call the Never Use Alone Hotline: 1-800-484-3731

Informational Fliers
Available at
AddictionFreeCA.com
MAT in Jails and Drug
Courts

English

Chinese

Spanish

Polish and Arabic flyers
available upon request



HARM REDUCTION AND XYLAZINE USE

Wounds

- Are not bacterial
- Are necrotic
- Can get secondarily infected

Basic Wound Care

- Do not use
 - Hydrogen peroxide
 - Alcohol
- Do use
 - Sterile water
 - Wound markers
 - Enzymatic agents
 - Cover wound with sterile & nonabsorbent dressing

Trigger Signs for Higher Level of Care

- Odor
- Black skin or chunks of skin falling off
- Red streaks radiating from wound or enlarging area

XYLAZINE TREATMENT

»» Overdose

- »» Xylazine will not respond to naloxone, but opioids were likely also involved in OD
 - Give naloxone
- »» Provide oxygen
- »» Call 911; transport to hospital
 - No approved intervention in humans

»» Withdrawal

- »» Characterized by anxiety, dysphoria, restlessness
- »» Increases severity of withdrawal compared to opioid withdrawal alone
- »» Does not respond to opioid agonists, but the opioid withdrawal will
- »» There is NO increased risk for starting MOUD in context of xylazine
- »» May cause difficulty in retaining patients



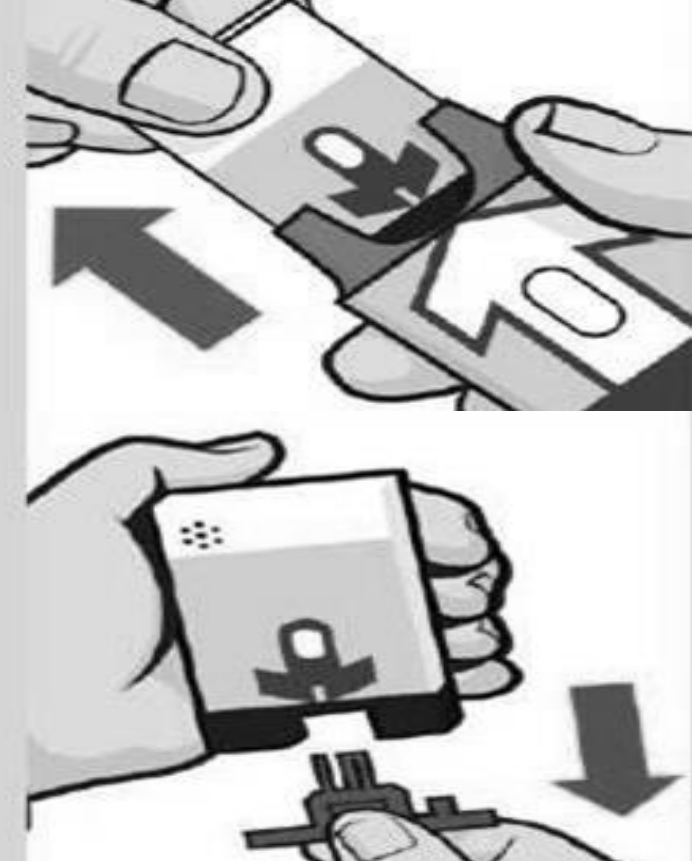
NALOXONE



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1 Pull the auto-injector from the outer case

2 Pull firmly to remove the red safety guard (do not touch the black base)



NALOXONE- OPIOID OVERDOSE REVERSAL AGENT

- » Mu opioid antagonist
- » Shorter half-life & more rapid onset of action than naltrexone
- » Intranasal or intramuscular by bystander
 - » Good Samaritan Law in CA
- » May require more than one dose
- » Opioids have longer half-life than naloxone
- » No evidence for increased drug use
- » < 1% in need have access



Colorado Campaign – Bring Naloxone Home

Sources: [Package Inserts for Narcan™ and Evzio are below](https://www.accessdata.fda.gov/drugsatfda_docs/label/2015/208411lbl.pdf)
https://www.accessdata.fda.gov/drugsatfda_docs/label/2015/208411lbl.pdf
https://www.accessdata.fda.gov/drugsatfda_docs/label/2016/209862lbl.pdf

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WRAP UP AND NEXT STEPS

FOR ANY QUESTIONS OR COMMENTS
MATINCOUNTYCJ@HEALTHMANAGEMENT.COM

INTERESTED IN JOINING THE LEARNING COLLABORATIVE UNDER THE DRUG COURT COMPONENT?

- » Applications open through July 15th
 - » If there is not a current Jail MAT team in your county ([list of current counties](#)), your county is eligible for implementation grant and technical assistance/coaching.
 - » If there is a Jail MAT team in your county, your county is still eligible for technical assistance/coaching.



Drug Court MAT Implementation Grant Application

Word version of application available by emailing MATinCountyCJ@healthmanagement.com.

CHATTERFALL



»» **Drop into the chat:**
What other topics related to MAT/OUN are you interested in learning more about?

POLLING QUESTIONS

1. Overall, today's webinar was:
 - A. Very useful
 - B. Somewhat useful
 - C. Not very useful
 - D. Not useful at all

2. The material presented today was:
 - A. At the right level
 - B. Too basic
 - C. Too detailed

RESOURCES & REFERENCES

RESOURCES/REFERENCES

- » Biden-Harris Administration Designates Fentanyl Combined with Xylazine as an Emerging Threat to the United States: <https://www.whitehouse.gov/ondcp/briefing-room/2023/04/12/biden-harris-administration-designates-fentanyl-combined-with-xylazine-as-an-emerging-threat-to-the-united-states/>
- » Bunting AM, Oser C, Staton M, Knudsen H. Polysubstance Use Patterns among Justice-Involved Individuals Who Use Opioids. *Subst Use Misuse*. 2020;55(13):2165-2174. doi: 10.1080/10826084.2020.1795683. Epub 2020 Jul 20. PMID: 32686551; PMCID: PMC7484418.
- » CDC: <https://www.cdc.gov/nchs/nvss/vsrr/drug-overdose-data.htm>
- » The Center for Forensic Science Research & Education. Evaluation of Xylazine Test Strips (BTNX) for Drug Checking Purposes. March 22, 2023. Accessed April 6, 2023. <https://www.cfsre.org/nps-discovery/drug-checking/evaluation-of-xylazine-test-strips-btnx-for-drug-checking-purposes>
- » Chicago DPH: [https://www.chicago.gov/content/dam/city/depts/cdph/statistics_and_reports/Overdose-Prevention-and-Harm-Reduction-Initiatives-\(Fall-2022\)-Budget23-OverdosePrevention-final.pdf](https://www.chicago.gov/content/dam/city/depts/cdph/statistics_and_reports/Overdose-Prevention-and-Harm-Reduction-Initiatives-(Fall-2022)-Budget23-OverdosePrevention-final.pdf)
- » Comprehensive information on xylazine: <https://oasas.ny.gov/system/files/documents/2023/04/xylazine-guidance.pdf>
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