SAN FRANCISCO

Opioids and Stimulants

A GUIDE FOR HEALTHCARE PROVIDERS

Substance use and use disorders

Substance use refers to use of any drugs, including prescribed medications, alcohol, and tobacco.

Substance use disorder (SUD) refers to a pattern of use that is harmful or out of a patient's control. **Not everyone who uses substances has a use disorder.**

DSM-5 criteria for substance use disorders[1]

Use patterns

- **More/longer** use than intended
- **Unable** to stop or cut down
- **Excessive time** dealing with substance use
- **Craving**

Continued use even when

- **Responsibilities** not fulfilled
- **Social** and interpersonal problems
- **Activities** reduced

- **Physical** hazards from use
- **Health problems** patient knows are caused by substance use

Drug effects (only if not prescribed)

- **Increased tolerance,** requiring more to achieve effect
- **Withdrawal** symptoms if the substance is stopped

SCORING

Give 1 point *for each domain endorsed by the patient or observed by the clinician.*

Mild SUD = 2-3

Moderate SUD = 4-5

Severe SUD = 6 or more

Diagnosis made when criteria are met for ≥ 6 months.

Explore these criteria with your patient in an open dialogue.

Example questions

- Have you ever tried to cut back but couldn't?
- Do you ever miss important events with family and friends because of your use?
- Have you had any problems at work because of your use?

Working with patients who use drugs

Harm reduction

- Many drug-related harms—like opioid overdose and HIV infection—are preventable
- Harms can be reduced even if use continues
- Abstinence is not every patient's goal
- Use strategies that work for each patient's situation

Motivational interviewing

- Explore patient's relationship to substances using open-ended questions
- Ask patient to describe perceived risks/benefits of use or stopping
- Assess readiness for change
- Accept ambivalence about change
- Create a plan together

Trauma-informed care

- All patients may have experienced trauma, even if not disclosed
- Challenging behaviors may be related to trauma history
- Avoid coercion and threats; ask for permission before touching patients
- Empower patients in decision-making

Unconditional positive regard

- Assume people are inherently good
- Treat each patient as a whole, unique person
- Respect each patient's own goals, which may not match your goals for them
- Believe that all patients can make positive changes

Rethinking our language

Substance use carries stigma. Many patients have had negative experiences seeking medical care, including being labeled with stigmatizing terms like “addict” or “drug abuser.” The language we use when discussing substance use can impact a patient’s experience.[2]

	✗ Avoid this language	✔ Say this instead
Person-first language	Drug user, drug abuser	Person who uses drugs
	Addict	Person with a substance use disorder
	Drug addicted baby	Infant born with neonatal opioid withdrawal syndrome, infant with perinatal drug exposure
Medically-accurate terminology	Your urine test was dirty/clean	Your urine test was positive/negative for __ substance
	The patient got clean	The patient is not currently using non-prescribed substances
Shared decision-making	You need to stop using drugs	How do you feel about your relationship with drugs?
	You relapsed, you need to see an addiction specialist	Return to use is very common and I am here to support you
Strengths-based language: Set realistic expectations and focus on strengths rather than deficits	This treatment isn’t working for you, you’re still using fentanyl	It’s amazing that you’ve reduced your fentanyl use from 10 times a day to once a day
	The patient is rude and demanding	The patient is worried about their needs not being met
	The patient is noncompliant	The patient is facing barriers to adherence

Substance use and pregnancy

- **Drug use in pregnancy is severely stigmatized.** Stigma, criminalization, and the fear of losing parental rights may deter people who use drugs from seeking prenatal care.
- **Services for pregnant people who use drugs should be non-judgmental,** non-coercive, and trauma-informed.
- **Miscarriage can occur in any pregnancy.** It is important not to blame the patient.
- **Not all non-prescribed drugs cause fetal harm or are secreted in human milk.** For more information and suggestions on risk reduction, see the Academy of Perinatal Harm Reduction: **www.perinatalharmreduction.org**.

Urine drug screening, pregnancy, and mandated reporting in California

Testing cannot be done without informed consent.	There are no laws requiring urine drug screening.	Miscarriage and stillbirth are not crimes.
A positive urine drug screen for a non-prescribed substance is not child abuse.	Clinicians are not required to notify child protective services because of a positive urine drug screen in the parent.[3]	Treatment for substance use disorder cannot be mandated during pregnancy.

Use multidisciplinary timeout huddles before contacting child protective services.

Basic primary care for people who use drugs

STI, HIV, HBV, and HCV screening, at least annually: Offer all patients rectal and throat swabs; offer more frequent screening to patients with ongoing exposure

HIV and STI prevention: Pre- and post-exposure prophylaxis for HIV (PEP, PrEP) and STIs (Doxy-PEP); consider long-acting injectable PrEP if adherence challenges

Tuberculosis screening: Annual for most patients; offer treatment for latent TB

Vaccines: Hepatitis A and B, human papillomavirus, tetanus-diphtheria-pertussis, influenza, COVID-19, meningococcus, pneumococcus, and mpox

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Safer use supplies: Educate patients and provide safer use supplies

Overdose prevention, including a naloxone prescription: Important for all people who use drugs, including those who don't use opioids intentionally

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Management of cardiac risks: Smoking cessation, blood pressure and lipid control, standard treatment for hypertension and heart failure

Treatment of comorbid substance use and psychiatric disorders

Family planning: Offer birth control and pregnancy testing to all patients who can become pregnant

Routine dental care

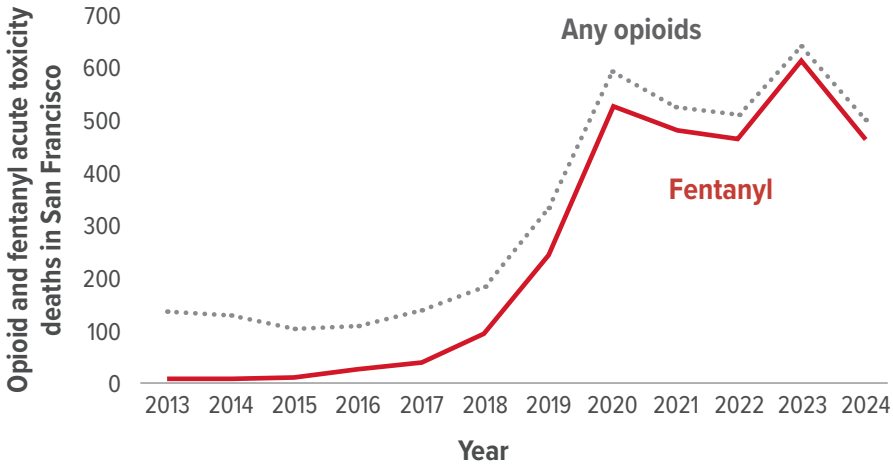
Wraparound services: Connect to ancillary services for addressing food insecurity, unstable housing, etc.

Opioid use in San Francisco

San Francisco has a long history of taking care of people who use opioids.

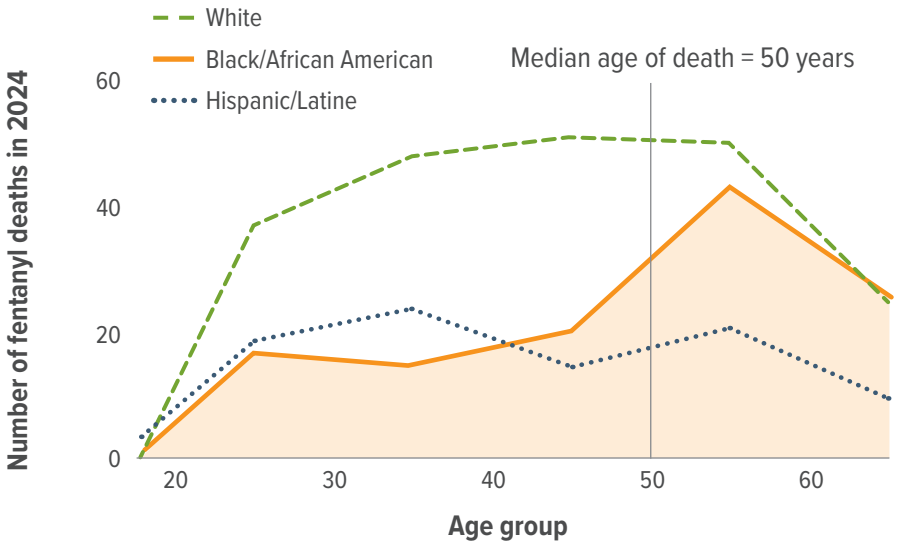
The Drug Overdose and Prevention Education (DOPE) Project, founded in 2003, is the largest single-city naloxone distribution program in the country.

The **Outpatient Buprenorphine Initiation Clinic (OBIC)** was the first buprenorphine clinic in the country.



Overdose deaths in San Francisco are driven by fentanyl.[4]

In 2023, 96% of opioid deaths involved fentanyl.



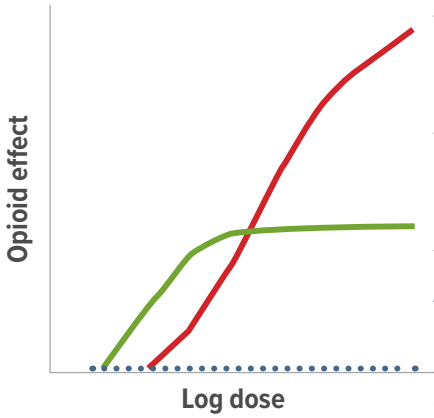
Fentanyl overdose affects all ages in San Francisco.[4]

While the largest number of deaths are among White people, **Black/African American people are over-represented ~5x.**

Management of opioid use disorder

Opioid use disorder (OUD) is a chronic, relapsing medical condition that requires treatment.

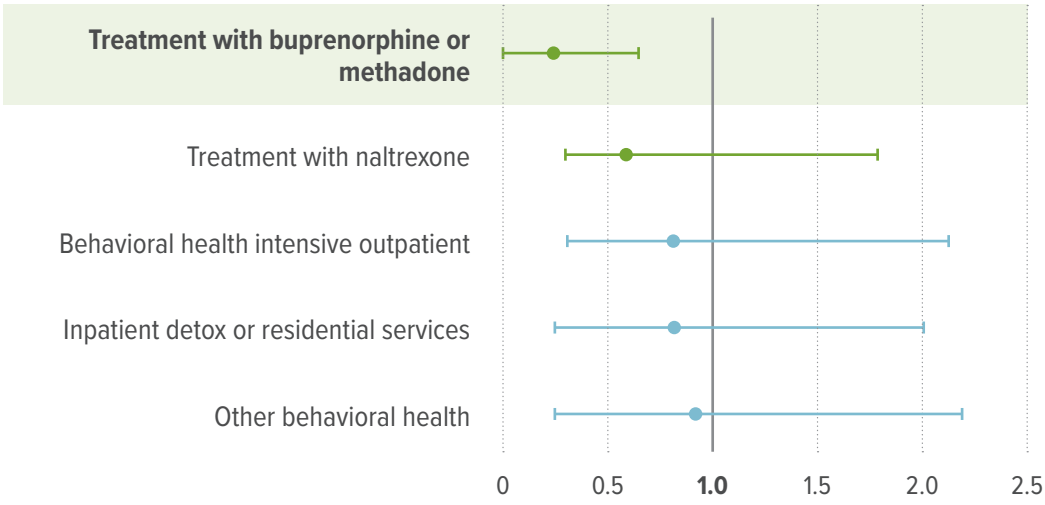
Medications are the most effective treatment for OUD and have multiple benefits.[5-14]



	Reduced mortality*	Treatment retention	Less illicit opioid use	Reduced cravings	Improved health
Full agonist (methadone)	✓	✓	✓	✓	✓
Partial agonist (buprenorphine)	✓	✓	✓	✓	✓
Antagonist (naltrexone)	?	✓	✓	✓	?

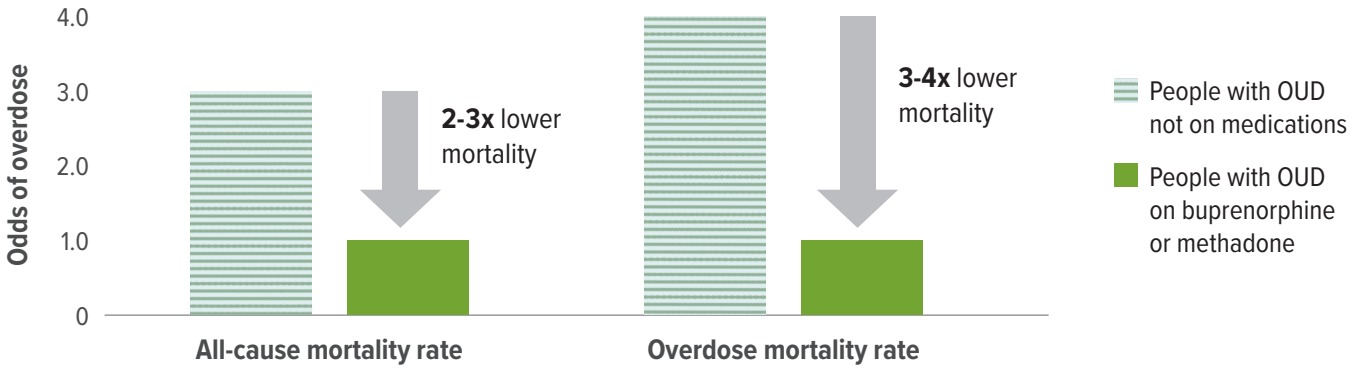
*Primarily by opioid overdose

Buprenorphine and methadone are the only interventions associated with reductions in overdose for people with OUD compared to no treatment.[15]

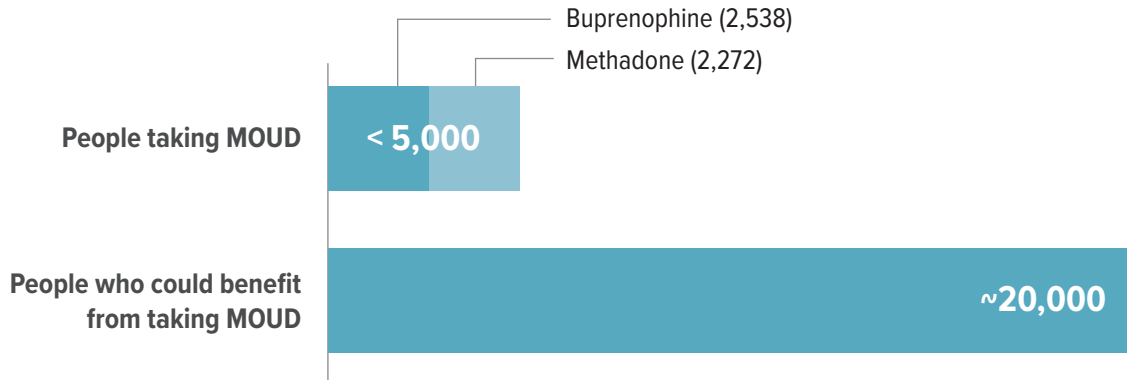


People with OUD are 13x more likely to die from suicide than those who do not have OUD.[16] Treating OUD can reduce the risk of suicide.

A systematic review including 122,885 people on methadone and 15,831 people on buprenorphine showed 2-3x lower all-cause and 3-4x lower overdose mortality compared to those not in treatment.[5]



Unmet need for medications for OUD (MOUD) in San Francisco, 2022[4,17]



Treating OUD during pregnancy

✓ **Safe and effective:[18]**
- Buprenorphine
- Methadone

✗ **Not recommended:**
- Naltrexone

- Consider what's available, patient preference, retention, and neonatal abstinence syndrome (decreased severity with buprenorphine treatment).[19]
- Check out SAMHSA's guide comparing buprenorphine and methadone outcomes during the perinatal period: **bit.ly/OUD_pregnancy.**

Buprenorphine overview

Buprenorphine

- A partial opioid agonist
- Time to peak: 30 minutes to 3 days depending on formulation
- Very high affinity for opioid receptors, blocking effects of opioids, including fentanyl (although to a lesser extent)

> *The [buprenorphine] definitely boosts my mood... I've got money in my pocket all the time... We've got food in the fridge... I wake up feeling great... I have breakfast. I never used to have breakfast... The next step... is [to] get back into work.*
>
> —Male participant on buprenorphine[20]

Safety profile

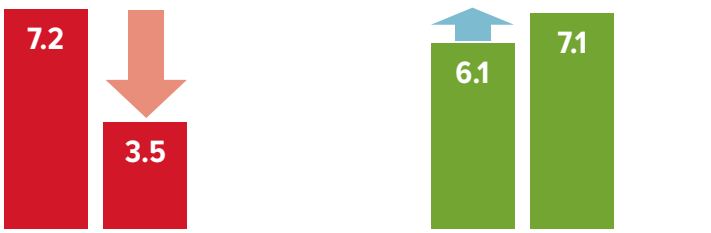
- Partial agonist with a ceiling effect for respiratory depression (i.e. low risk overdose)
- Low potential for problematic diversion
- Safe and effective during pregnancy (sublingual and injection-based formulations)[18]
- Best outcomes with long-term care

As with any treatment, patient goals may vary

- Recovery from OUD
- Reduced non-prescribed opioid use
- Overdose prevention
- Return to work
- Reunification with family

Studies support use of buprenorphine for chronic pain[21]

In a study of 35 patients on 200-1,370 morphine equivalent milligrams of opioids for chronic pain, after two months of sublingual buprenorphine:



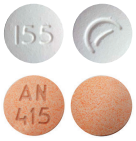
Pain scores reduced
from 7.2 to 3.5 (p<0.001)

Quality of life scores increased
from 6.1 to 7.1 (p=0.005)

Range = 0-10

Buprenorphine formulations[22,23]

- Formulations that include naloxone have minimal antagonist effect unless injected.
- If a patient doesn't like the taste or side effects of one formulation, try another formulation.
- The mono formulation of buprenorphine is safe, effective, and not concerning for misuse.

Generic name		Formulations and doses	When to use	Dosing	Tips
Buprenorphine mono product		SL tablet: 2 mg, 8 mg	• Easy to halve/quarter for microdosing • Prescribe if can't tolerate bup/nal • Best for pregnancy	Total daily dose can be split (2-4x daily) for pain management **Examples:** • 8/2 mg dissolve 3 tabs SL 1x daily in the morning • 8/2 mg dissolve 1 tab SL 3x daily	**Patient counseling:** • Be well hydrated • Try to avoid nicotine/food 20-30 min before • Can dissolve 2 tabs at a time at the same location under tongue, or place 1 film on each side under tongue* • Spit residual medication (swallowing can cause mild withdrawal due to naloxone)
Buprenorphine and naloxone		SL tablet: 2/0.5 mg, 8/2 mg	• Films are often cut (pharmacies cannot include this in instructions)		
		SL film: 2/0.5 mg, 4/1 mg, 8/2 mg, 12/3 mg			
Buprenorphine extended-release injection		**SC 1st gen (Sublocade®):** Monthly: 100, 300 mg **SC 2nd gen (Brixadi®):** • Weekly: 8 mg, 16 mg, 24 mg, 32 mg • Monthly: 64 mg, 96 mg, 128 mg	• When daily dosing is difficult or risky (e.g., pill fatigue, living outdoors and/or with children) • To maintain a stable therapeutic dose • Weekly formulation can be used to start buprenorphine	• Weekly: 7 days between doses • Monthly: > 26 days between dose • See prescribing information for dosing instructions: **bit.ly/SublocadePI** **bit.ly/Brixadi** • Can be started or continued during pregnancy	• Options for injection pain: ice, pre-treat with topical/SC lidocaine • May require prior authorization • Offer SL supplements for breakthrough cravings, switching between products, or withdrawal

***Sublingual buprenorphine effect depends on patient technique.** Review tips and administration at treatment initiation and follow-up visits. Patients may be in withdrawal and feel their medication isn't working when administering incorrectly.

Inheriting patients on buprenorphine

When a patient presents in clinic on buprenorphine, any prescriber with a DEA license can refill their prescription since the DATA 2000 waiver is no longer required.

Tailor follow-up visits to patient stability

Daily or weekly visits when starting or changing buprenorphine dose until therapeutic dose is reached

Monthly visits or longer when patient is on a stable dose

Review periodically

Buprenorphine adherence	Side effects	Use of non-prescribed substances	Engagement in primary care, healthcare maintenance
	• Constipation • Urinary retention • Sexual side effects		

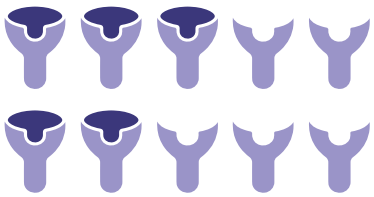
Urine drug screening (UDS) for buprenorphine

Many clinicians now offer opt-in UDS since results rarely change buprenorphine management. UDS should be used with patient consent and in a way that supports the patient's treatment goals.

If an unexpected result occurs, order confirmatory GC/MS lab testing and talk about the result with the patient.

Optimal maintenance dose varies by patient[24]

Withdrawal suppression requires ≥ 50% mu opioid receptor occupancy (~ 4 mg)



Blockade of subjective opioid effects and cravings requires 80-90% mu opioid receptor occupancy (16-32 mg)

Because of fentanyl's potency, **a total daily dose of 32 mg or higher is now common in San Francisco** and is supported by clinical and pharmacologic data.[25,26]

- People who use fentanyl or inject drugs may need higher opioid receptor occupancy and plasma concentrations of buprenorphine since fentanyl and injection lead to higher tolerance and upregulation of opioid receptors.[27]
- At high doses of sublingual buprenorphine, consider changing formulation (i.e., to extended-release injection) or referring to methadone for ongoing cravings.

Addressing pain

Buprenorphine does not have a ceiling effect for analgesia.

- **Chronic pain management:**
  - Up-titrate and/or split dose to reduce pain and optimize function and enjoyment of life.
- **Acute pain/perioperative management:**
  - A multidisciplinary expert panel now agrees that buprenorphine should NOT be routinely discontinued during the perioperative period.[28]
  - A temporary dose increase may be needed or additional full agonists may be prescribed.

Assess short-term treatment success*

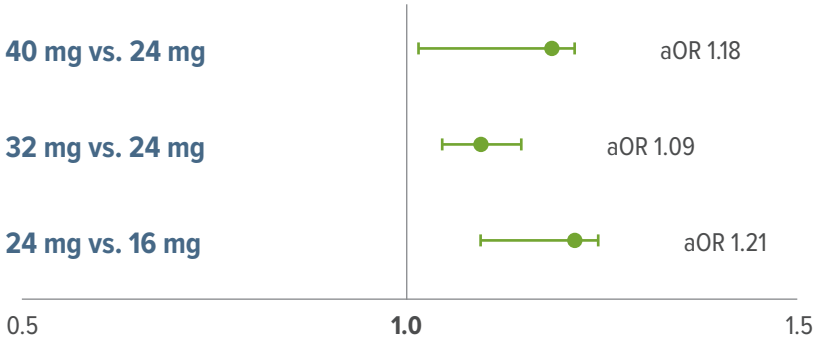
- Cravings?
- Withdrawal symptoms?
- Night sweats, or dreams of using?
- Use of non-prescribed opioids?
- Shared decision-making re: goals

**Buprenorphine can be continued indefinitely—tapering is not encouraged but can be done if the patient wants.*

Buprenorphine should NEVER be stopped for co-occurring non-prescribed substance use (even benzodiazepines) or substance use disorders. Patients may require a higher level of care or intensified treatment.

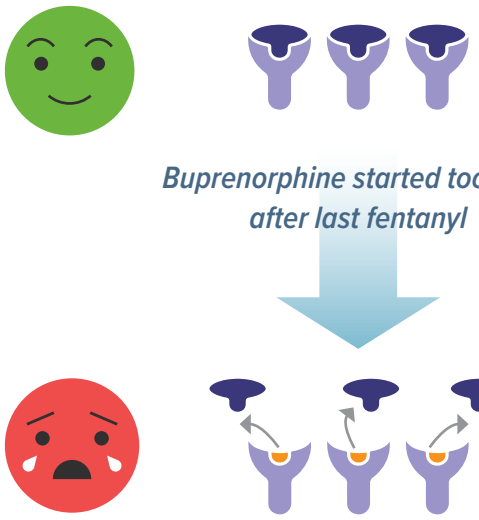
Impact of fentanyl and xylazine

Higher buprenorphine doses lead to better retention in care at 12 months[29]



Buprenorphine (32 mg) blocks fentanyl-induced respiratory depression.[30]

Patients may experience precipitated withdrawal if buprenorphine is started too soon



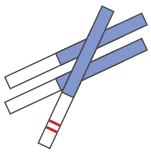
All opioid receptors filled with fentanyl

Buprenorphine started too soon after last fentanyl

Fentanyl

Buprenorphine

In precipitated withdrawal, buprenorphine abruptly replaces all fentanyl, causing severe withdrawal symptoms

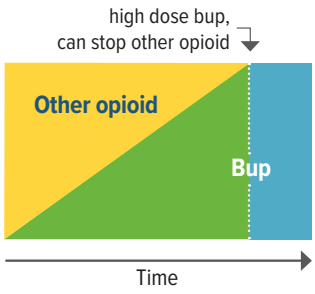
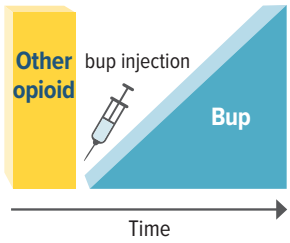
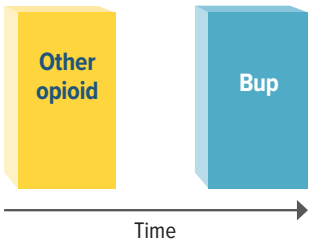


Educate patients on xylazine

Xylazine is a veterinary tranquilizer that is sometimes found in fentanyl.

- In San Francisco, xylazine was detected in 59 overdose deaths in 2024. All but one case involved fentanyl, which can be addressed with naloxone and MOUD.[31]
- It is increasingly present in overdose deaths and contributes to skin wounds.
- Patients can test their drugs with Fourier transform infrared spectroscopy at the SF AIDS Foundation (**bit.ly/SF_SCOPE**). Syringe services programs also carry xylazine test strips.

Starting buprenorphine

Start bup	Low dose tabs/films (microdosing)	Injection (direct to inject)	High dose tabs/films (traditional/macrodosing)	
	Difficulty tolerating withdrawal → Able to tolerate withdrawal Start bup slowly before quitting other opioid → Start bup quickly after quitting other opioid			
Example protocols	**7 day:** **D1:** 0.5 mg once **D2:** 0.5 mg BID **D3:** 1 mg QAM, 0.5 mg Q noon, 1 mg QHS **D4:** 2 mg BID **D5:** 3 mg BID **D6:** 4 mg BID **D7:** Option to do 4 or 8 mg tab or films Q 1-4 hrs NTE 32 mg/day **4 day:** **D1:** 0.5 mg QID **D2:** 1 mg QID **D3:** 2 mg QID **D4:** Option to do 4 or 8 mg tab or films Q 1-4 hrs NTE 32 mg/day	**Mild withdrawal** (COWS ≥ 4), 6-12 hrs since last use, no recent methadone • Inject bup LAI 16 or 24mg SC • Supplemental bup 2mg SL prn	**Traditional start:** In withdrawal with ≥ 2 signs, take 4mg SL then 4mg Q 1-2 hrs prn withdrawal, increasing to stable dose after 2-3 days	**Macrodosing start:** **Day 1:** 16 mg SL PRN withdrawal with ≥ 2 signs, then 8 mg Q 1-2 hours PRN withdrawal symptoms NTE 32 mg **Days 2-7:** 8mg QID (in some scenarios may be higher)
				
If withdrawal	If withdrawal during overlap period, use other opioid and ancillary meds.	Between 0-24 hrs after injection, consider ancillary meds or ≤ 2mg buprenorphine.	If worse withdrawal after 1st dose, take an additional 16 mg SL ASAP or other opioid.	
Notes	Bubble packing* can assist with adherence (SL tablets are easier to divide, but films can also work). Frequent check-ins may increase success.	Patient can stay on injections or switch to sublingual. OK to give next injection after 24 hrs. May result in better retention.	Moderate-to-severe withdrawal (12 to 72 hours) may be needed to avoid precipitated withdrawal. Use ancillary meds for comfort. Avoid other street drugs.	

***Pharmacies that bubble pack for microdosing:**

- CBHS Pharmacy: (415) 255-3659
- Daniel's Pharmacy: (415) 584-2210
- ScriptSite Specialty Pharmacy: (855) 328-8734
- Solano Pharmacy: (415) 874-9999
- ZSFG outpatient pharmacy:(628) 206-8107

OBIC (628-754-9200) and **Bridge Clinic** (415-205-4665) can support complicated starts.

The Substance Use Warmline (855-300-3595) can provide peer-to-peer support on cases or general questions about treatment.

The table above includes protocols developed by OBIC and CBHS pharmacy.

Additional considerations

What if buprenorphine causes withdrawal in my patient?

- **Undertreated**
  - Ensure patient is taking sublingual dose correctly.
  - Dose may not yet be therapeutic, a normal part of starting buprenorphine.
  - Up-titrate to treat craving and withdrawal symptoms.
- **Precipitated**
  - Patient can either take drug of choice (e.g., fentanyl) or 16 mg of buprenorphine ASAP.
  - Present to care as needed.

Buprenorphine is most effective when used longterm and lifelong treatment is safe.

If a patient desires to taper, reduce dose by no more than 5-10% every 4-8 weeks as tolerated. Effective tapers can take years.

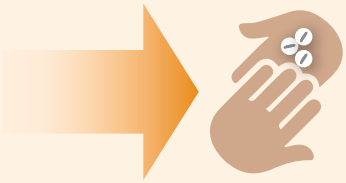
Ancillary medications for withdrawal

Withdrawal symptom	Ancillary medications for treatment
Anxiety, mood swings, insomnia	Hydroxyzine 50 mg PO max daily dose of 200 mg;[c] Gabapentin 300mg PO max daily dose of 900mg*[c]
Restlessness, diaphoresis	Clonidine 0.1-0.2 mg PO max daily dose of 1 mg[c]
Myalgias, flu-like symptoms	Ibuprofen[c] or acetaminophen[b]
Nausea, vomiting	Ondansetron[c], promethazine[c], or other anti-emetic
Diarrhea	Loperamide[b]
Rhinorrhea, piloerection, yawning, fatigue	None

*Benzodiazepines may be helpful in cases of severe anxiety.
[b,c] Ibuprofen is avoided in pregnancy. Other Category C withdrawal medications are generally considered acceptable during pregnancy based on a risk/benefit assessment.

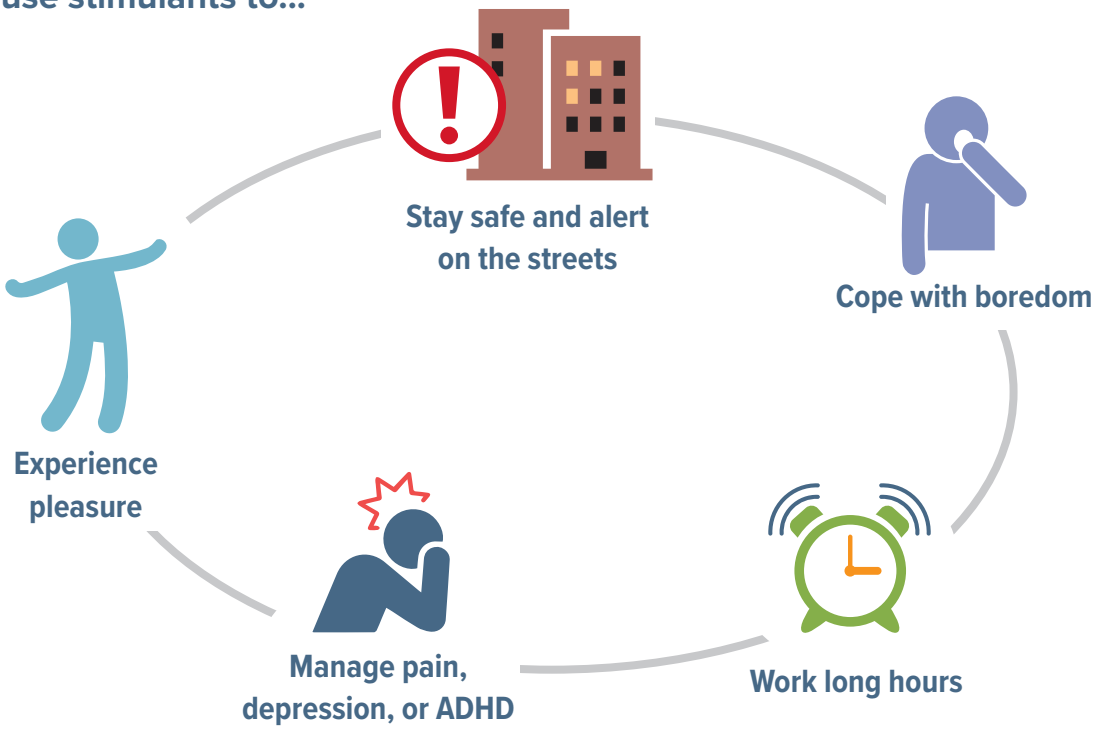
Buprenorphine diversion

Most diverted buprenorphine is used to self-treat cravings and withdrawal. It is common for patients to seek buprenorphine after trying it without a prescription.

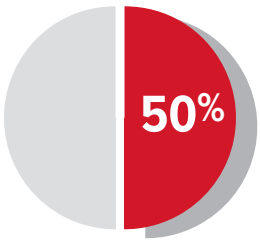


Stimulant use

People use stimulants to...



1 in 5 people who use cocaine regularly have a cocaine use disorder.[32]

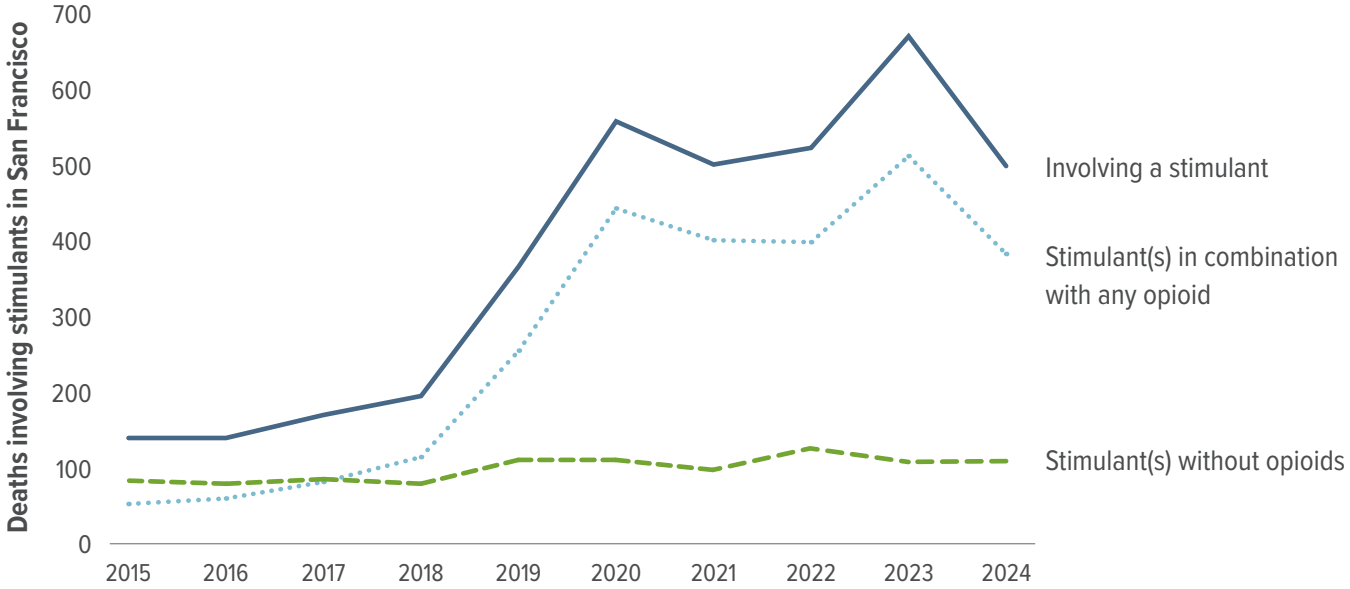


Half of people who use methamphetamine regularly have a methamphetamine use disorder.[33]

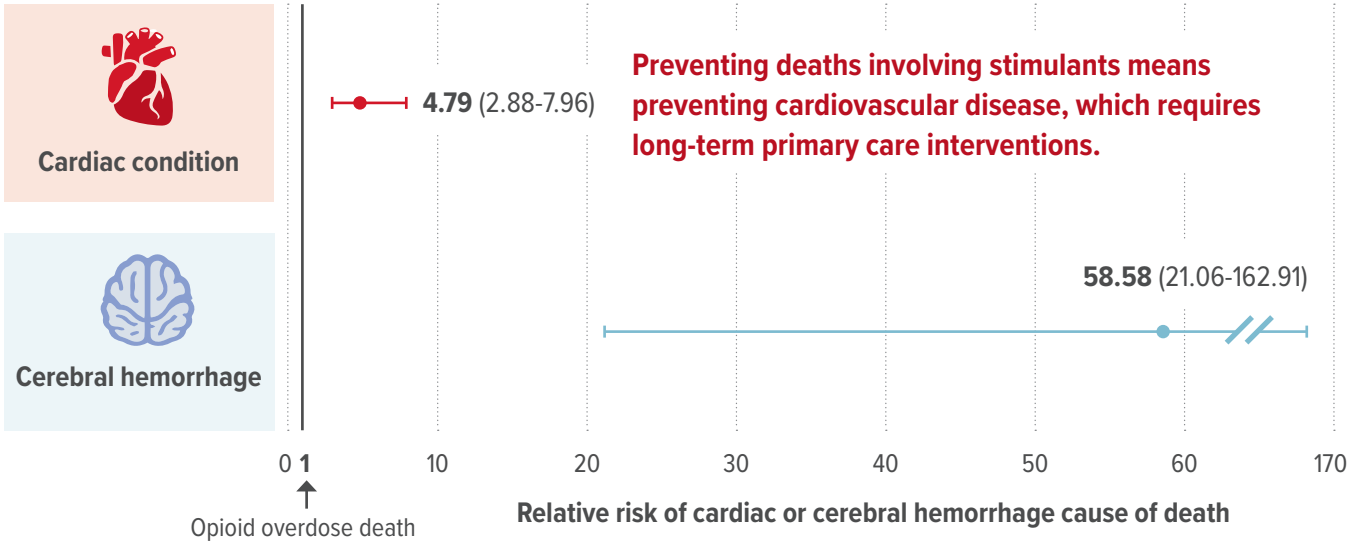
Whether or not a patient has a use disorder, **all patients who use stimulants should receive counseling on toxicities** and targeted preventive interventions.

Stimulant-related mortality in San Francisco

Most deaths involving stimulants also involve fentanyl. Stimulant-only deaths are strongly associated with chronic cardiovascular disease.[34]



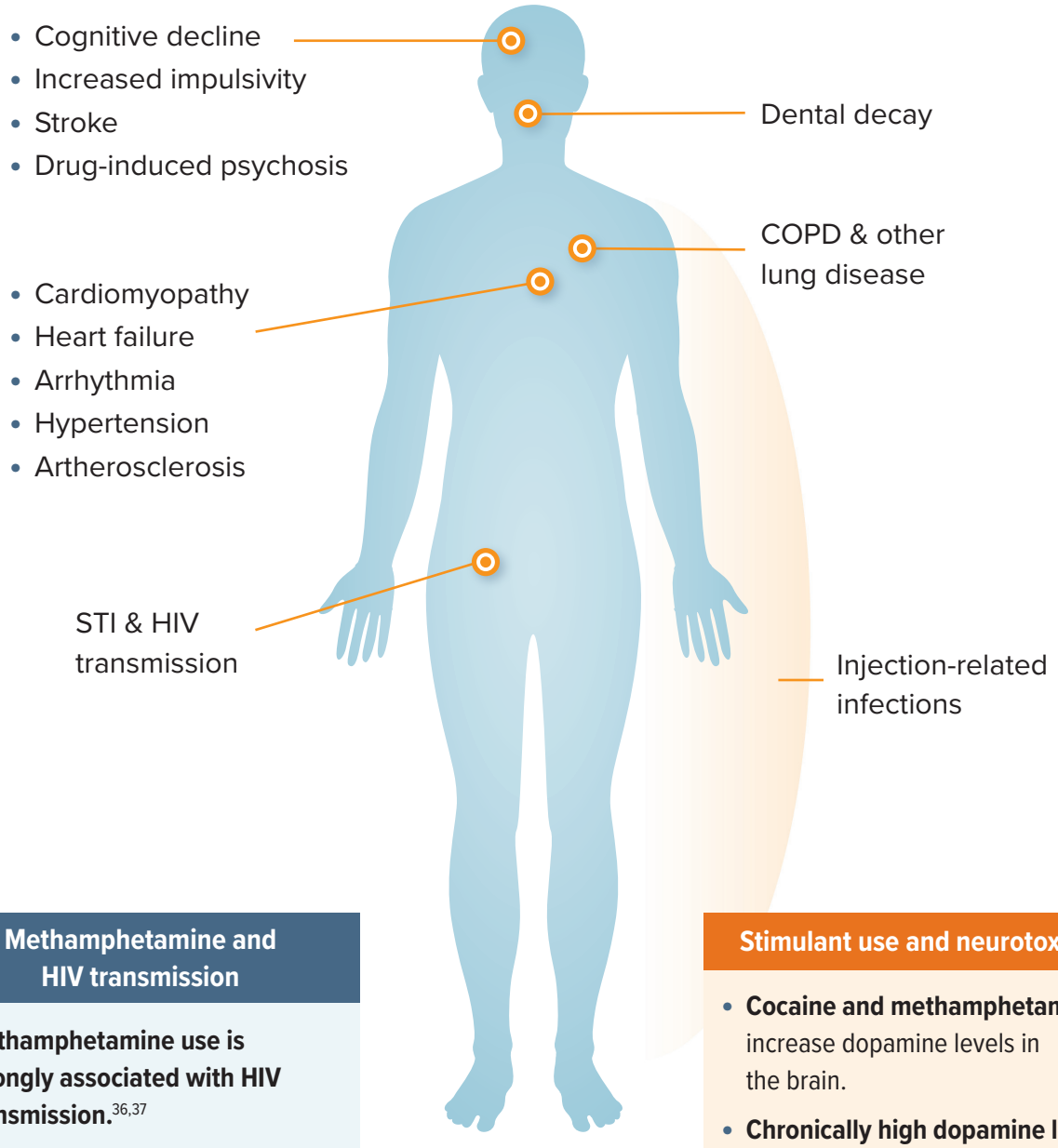
Compared to deaths involving opioids, deaths involving stimulants were more likely to be attributed to cardiovascular causes.[35]



Non-fatal stimulant use emergencies are often called overamping

- Refers to the experience of using too much of a stimulant.
- Includes symptoms like chest pain, palpitations, agitation, anxiety, and psychosis.
- Unlike opioid overdoses, **overamping does not *always* refer to a life-threatening toxic event.**

Health effects of long-term stimulant use



Methamphetamine and HIV transmission

- **Methamphetamine use is strongly associated with HIV transmission.**[36,37]
- **HIV prevention is critical with methamphetamine use,** especially for those who inject drugs or have condomless anal sex.[38,39]

Stimulant use and neurotoxicity

- **Cocaine and methamphetamine** increase dopamine levels in the brain.
- **Chronically high dopamine levels lead to neuroinflammation and cell death,** contributing to the development of drug-induced psychosis and neurodegeneration.

Caring for patients who use stimulants

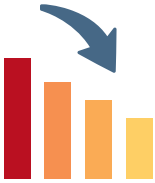
Assessment

- Be non-judgmental and trauma-informed.
- Learn why the patient uses stimulants and their perception of risks and benefits.
- Use the DSM-5 to diagnose use disorders.

Routine prevention

- Ensure the patient is up-to-date on vaccines and infection screening and has access to overdose prevention and safer drug use supplies.

Use reduction



- Offer evidence-based strategies to stop or reduce stimulant use.
- Consider both behavioral and pharmacologic interventions.

Toxicity prevention

- Consider strategies for reducing the cardiovascular and neuropsychiatric harms of continued stimulant use.

Assessment

To address a patient's stimulant use, it is important to understand their reasons for and attitudes towards their drug use. Motivational interviewing is an excellent tool and can help identify DSM-5 criteria for a use disorder.

1. Use open-ended questions

"How do you feel about your stimulant use?"

2. Ask about perceived benefits and harms

"What do you get out of using stimulants?"

"What are the downsides of using stimulants for you?"

3. Reflect and validate the patient's experiences

"Using cocaine helps you stay awake at night and feel safe. I'm so sorry you don't have a safe place to sleep at night—that sounds really stressful."

4. Develop contradictions

"I hear you aren't worried about your meth use, but that your diagnosis of heart failure concerned you. Can I share more about how meth affects the heart?"

5. Explore the patient's attitudes towards change

"Have you ever tried reducing your use? How did it go?"

"It sounds like you've wanted to cut down on meth before but felt depressed without it. How are you feeling about reducing your meth use now?"

6. Assess the whole patient

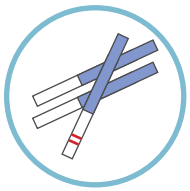
Consider factors like housing status, social support network, and comorbid medical conditions that may make behavior change more or less difficult for the patient.

Stimulant withdrawal

- Depression, fatigue, sleep disruption, increased appetite, psychomotor agitation
- Lasts days to weeks (post-acute symptoms may last for months)
- Can severely impact quality of life and lead patients to return to use

Routine prevention

Routine prevention strategies for all people who use drugs can be found on page 6.



Fentanyl test strips can detect fentanyl in stimulants when used correctly. Correct use varies with brand, and methamphetamine may cause a false positive if the sample is not correctly diluted. Xylazine is not a known contaminant in stimulants.

Provide naloxone to people who use stimulants, even if they don't intend to use opioids—fentanyl can be found in stimulants.

Smoking carries lower risk for infection than injection. Glass pipes should be paired with rubber pipe covers to prevent burns.

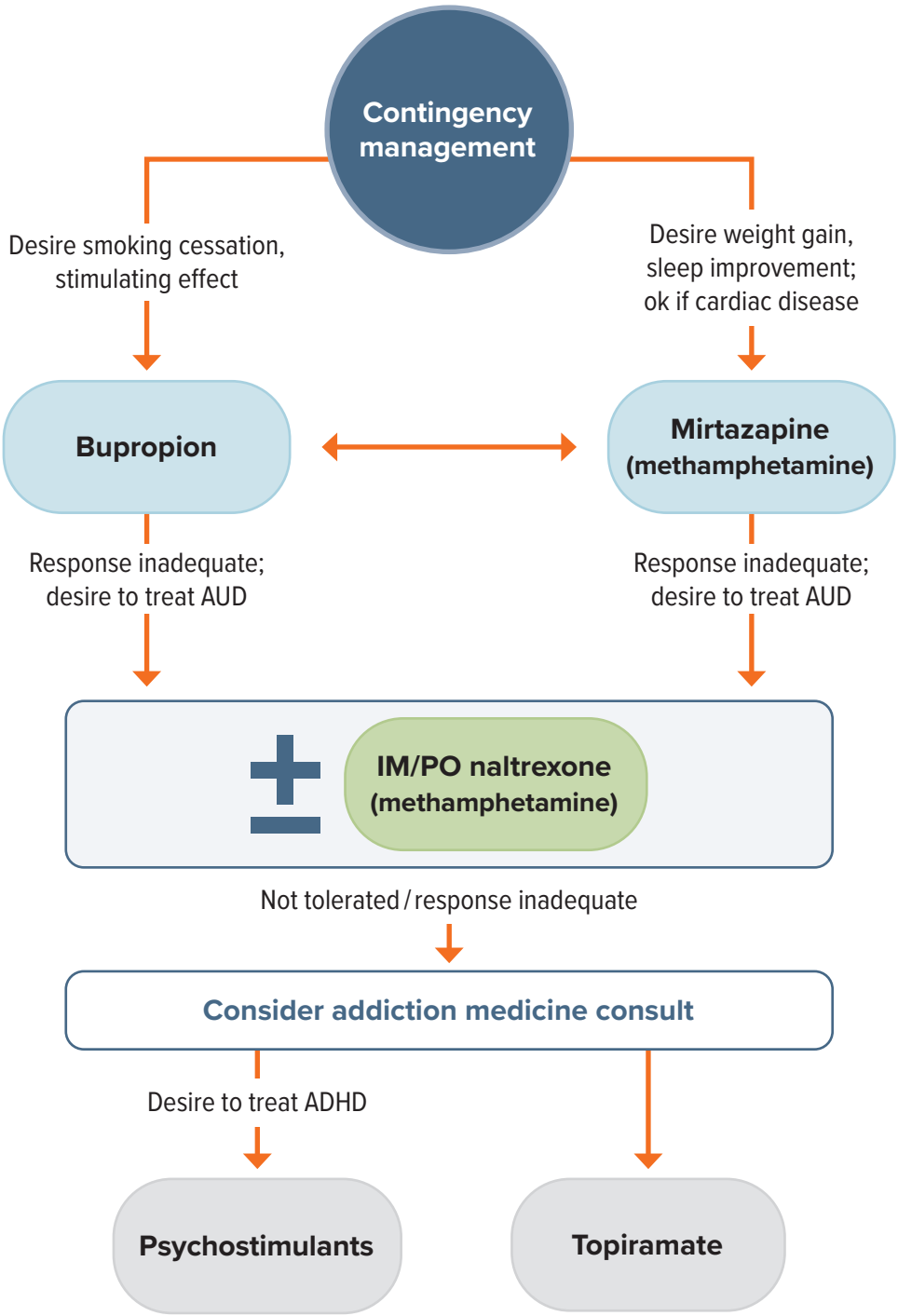
Offer frequent HIV/STI screening and PrEP/Doxy-PEP along with comprehensive STI prevention. Consider long-acting injectable PrEP or HIV treatment for patients facing adherence challenges.

Stimulant use, pregnancy, and lactation

- **Stimulant use in pregnancy is severely stigmatized** due to misinformation about cocaine use in pregnancy in the 1980s.
- **Stimulants are not associated with birth defects or neonatal withdrawal.**[40] Though stimulants are associated with low birthweight, *most harms previously attributed to stimulant use in pregnancy are explained by social determinants.*[41,42]
- **Methamphetamine and cocaine are secreted in human milk.** If stimulant use is ongoing during lactation, formula feeding is recommended.[43,44] For intermittent use, the Academy of Perinatal Harm Reduction recommends to "pump and dump" for 24 hours after using cocaine or 48 hours after using methamphetamine.
- Learn more at **perinatalharmreduction.org**

Use reduction: approach

Treatment supporting cocaine and methamphetamine use reduction



Use reduction: behavioral interventions

Contingency management

Contingency management (CM) is currently the most effective intervention for stimulant use disorders.

1 in 4 people achieve abstinence with CM (NNT= 3-5)

CM involves cash or prize incentives for positive behavior change (e.g., meeting personal goals, negative urine screen) and is supported by robust data, particularly for methamphetamine.[45,46] Some CM programs reinforce treatment adherence for comorbid conditions (e.g., heart failure, HIV).

San Francisco has many CM programs. Medi-Cal-funded pilots showed 75-95% abstinence.[47]

Mutual help groups (e.g., 12 Steps) are peer-based support groups that generally focus on recovery. While not a substitute for treatment, these groups can be helpful for patients whose goal is sustained abstinence.

LifeRing and SMART Recovery are secular alternatives to 12 Steps.

Other evidence-based behavioral interventions include:

Cognitive behavioral therapy

CBT helps patients develop insight into negative thought patterns and the impacts of these thoughts on behavior, and can be delivered individually or in groups by clinicians or licensed therapists.

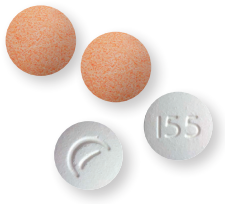
Matrix Model

An intensive 16-week multimodal therapy that combines individual and group counseling, CBT, family psychoeducation, and a mutual help group, the Matrix Model is available at residential and intensive outpatient SUD treatment programs.

Residential programs

These vary widely in approach. If a patient is interested in a residential program, consider calling ahead to ask which therapeutic modalities are offered.

Use reduction: medications[34]



There are no FDA-approved medications to treat stimulant use disorder. Several medications show promise; adherence may be improved with incentives.

Medication	Dosage	Indications	Contra-indications	Pregnancy category	Clinical pearls
Bupropion XL	150 mg daily, increase every 3 days by 150 mg to 450 mg daily	Cocaine and methamph-etamine	MAOIs, cardiovascular disease, seizure disorders, eating disorders	B	Can treat comorbid tobacco use or depression and is activating
Bupropion XL/ Naltrexone XR	150 mg daily, increase every 3 days by 150 mg to 450 mg daily; 380 mg naltrexone IM every 3 weeks	Methamph-etamine	See contraindications for each medication	C	Can also try with oral naltrexone
Mirtazapine	15 mg PO daily at bedtime for first week, increase to 30 mg daily	Methamph-etamine	MAOIs, caution in cases of declined hepatic/ renal function	C	Can treat comorbid depression or anxiety
Naltrexone	25 mg PO daily for 3-5 days, increase to 50 mg daily	Methamph-etamine	Opioid use, hepatic failure, acute hepatitis	C	• Can treat comorbid alcohol use disorder • Can combine with other medications
Psycho-stimulants	Methylphenidate 15 mg, increase weekly by 15 mg up to 60 mg daily; modafinil 200 mg daily in morning	Cocaine (modafinil), methamph-etamine (methyl-phenidate)	MAOIs, cardiovascular disease, anxiety, glaucoma	D	Psychostimulants to treat ADHD may reduce stimulant use (legality of these medications to treat addiction in CA is unclear)
Topiramate	50 mg PO daily, increase weekly by 50 mg to 200 mg daily	Cocaine and methamph-etamine	Eating disorders, hypersensitivity to topiramate	D	• Greatest efficacy when combined with amphetamine-type stimulants • Can treat comorbid AUD • Significant side effects, may be poorly tolerated

Adapted from ASAM guidelines: bit.ly/ASAMguides

Toxicity prevention

There are no proven strategies besides use reduction to prevent long-term toxicity from stimulants. Several strategies may be effective and may motivate patients to consider reducing use.

	Preventive interventions	Treatments
Cardiovascular toxicity	Smoking cessation Statins Low-dose aspirin if indicated	Standard hypertension treatment and guideline-directed medical therapy for heart failure
Neuropsychiatric toxicity	Statins Improved sleep N-acetylcysteine (supplement with theoretical neuroprotective benefit)	Low-dose (5 mg) olanzapine packs for self-treatment of acute agitation Atypical antipsychotics for chronic psychiatric symptoms

Statins for preventing cardiac and neurological toxicity

Statins have reduced cardiovascular events in patients without indications, neurocognitive decline in older adults, and methamphetamine-associated toxicities in animal models.[48] Use of agents like atorvastatin, which penetrates the CNS, might benefit people who use stimulants even if they don't meet other criteria—and might inspire patients to address their drug use directly.

Beta-blockers

Many patients who use stimulants are denied beta blockers based on a 15-person 1990 study in which intranasal cocaine followed by intracoronary propranolol caused coronary artery constriction.[49-52] This finding was not repeatable, and large meta-analyses failed to find any real-world risks.

Stimulant use and dentition

Poor dentition with stimulant use involves dry mouth, sugar consumption, poor oral hygiene, and lack of dental care.[53] Sugar-free gum may help stimulate saliva. Medi-Cal covers dentistry, including dentures.

Biomarker measurement

Methamphetamine raises C-reactive protein[54]

Patients reducing but not stopping stimulant use might be encouraged by seeing reduced markers of inflammation.

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