



Fora Health[™]

TREATMENT & RECOVERY

Substance Use Disorders: habits, triggers, treatments

Objectives

1. Review terminology and definitions
2. Overview of the neurobiology of addiction
3. Preview effective, evidence-based interventions

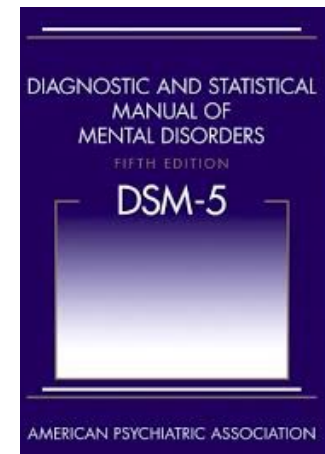


DSM 5

Diagnostic and Statistical Manual
of Mental Disorders

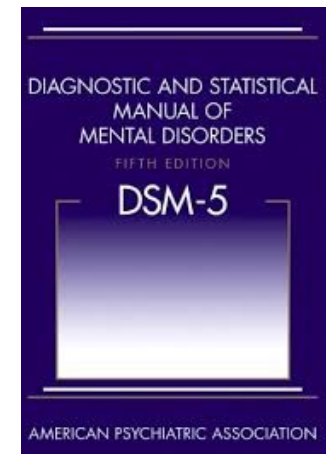
11 criteria

Craving/Compulsion/Consequences/Loss of
Control



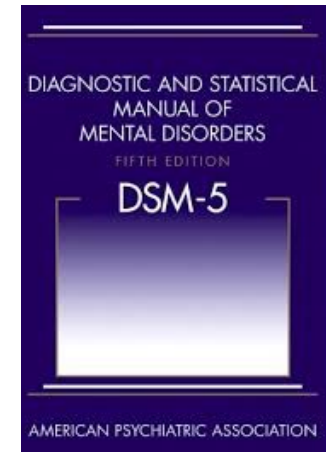
DSM 5: Substance Use Disorder

- Taking in larger amounts or for longer than intended
- Unsuccessful efforts to cut down
- Spending a lot of time obtaining the substance
- Craving or a strong desire to use the substance



DSM 5: Substance Use Disorder

- Continued use despite recurring social or interpersonal problems due to use
- Important activities given up or reduced
- Recurrent use in physically hazardous situations
- Persistent / Recurrent physical or psychological difficulties from use
- Recurrent use resulting in a failure to fulfill major role obligations



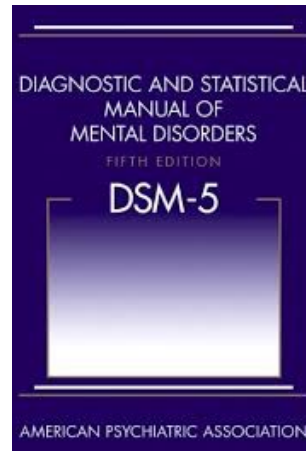
DSM 5: Substance Use Disorder



Tolerance*



Withdrawal*



Substance Use Disorder

2—3

mild disorder

4—5

moderate disorder

6+

severe disorder



Substance Use Disorder



Substance Use
Disorder

Diagnosis



Addict

Label/Accusation

The words we use to describe our patients affects the care they receive



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TREATMENT & RECOVERY

Substance Use Disorder

Recovery Dialects
The words we use matter.

Positive	Negative
Person who uses substances	Substance Abuser
Recurrence of Use	Relapse
Pharmacotherapy	Medication-Assisted Treatment
Accidental Drug Poisoning	Overdose
Person with a Substance Use Disorder	Addict
	Alcoholic
	Opioid Addict

While some negative language is okay to use in mutual aid meetings, its use should be avoided in public, when advocating and in journalism.

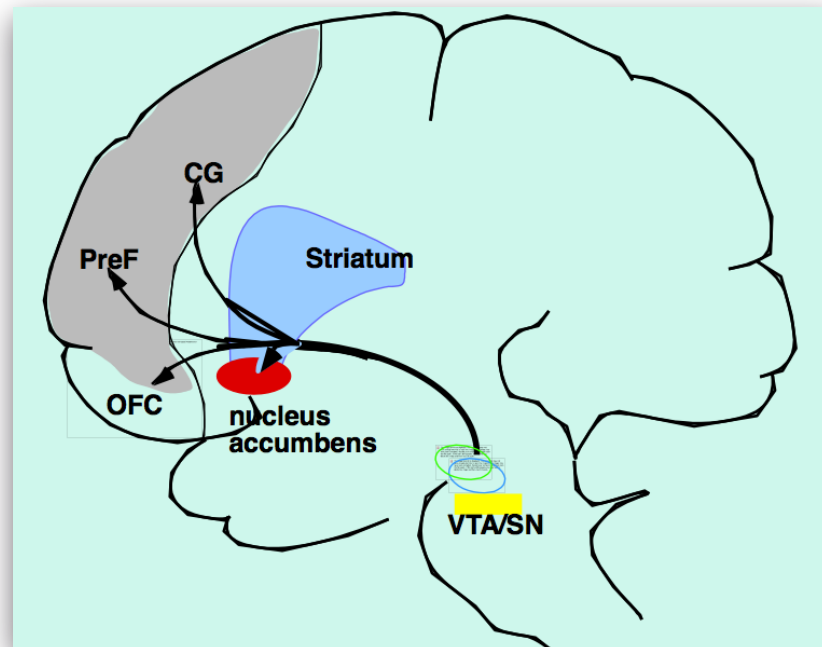
SOURCE: Ashford, R. D., Brown, A. M., & Curtis, B. (2018). Substance use, recovery, and linguistics: The impact of word choice on explicit and implicit bias. Drug and Alcohol Dependence, 189, 131–138.

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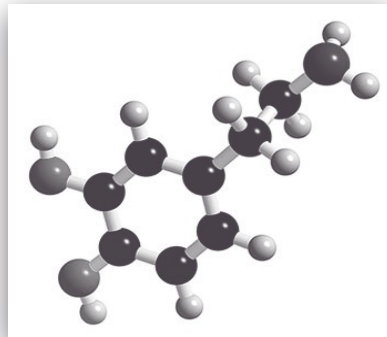
Mesolimbic Dopamine System



1950s : electrodes



1970s: Dopamine



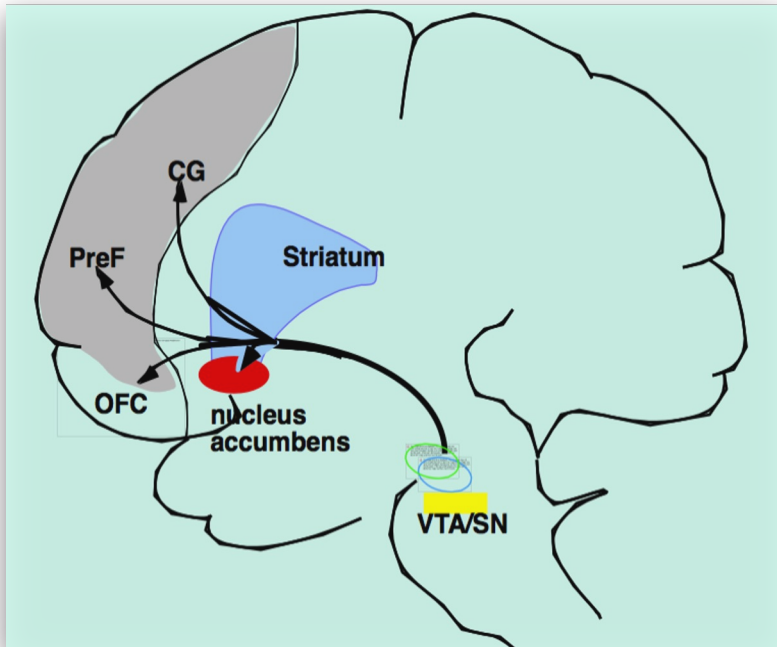
Desire and Drives



The use of dopamine neurons to shape responses to rewards is seen in simple organisms like worms and flies.

It evolved millions of years ago.

Dopaminergic impulses tell organisms to move toward reward (warmth, food, moisture)



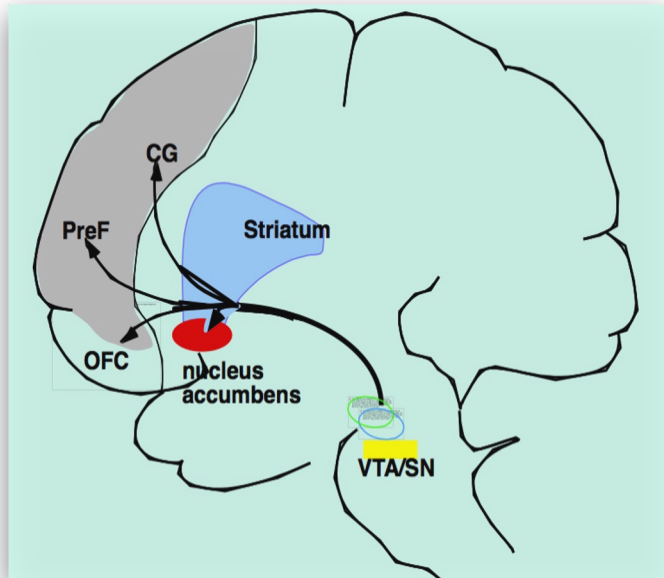
- In humans, those dopaminergic impulses travel through the NAC
- Mediates responses to food, sex, social interactions
- DA projections from VTA to NA release DA and tell the NA to go for it!
- Connects with memory and emotional centers so it can be repeated in the future



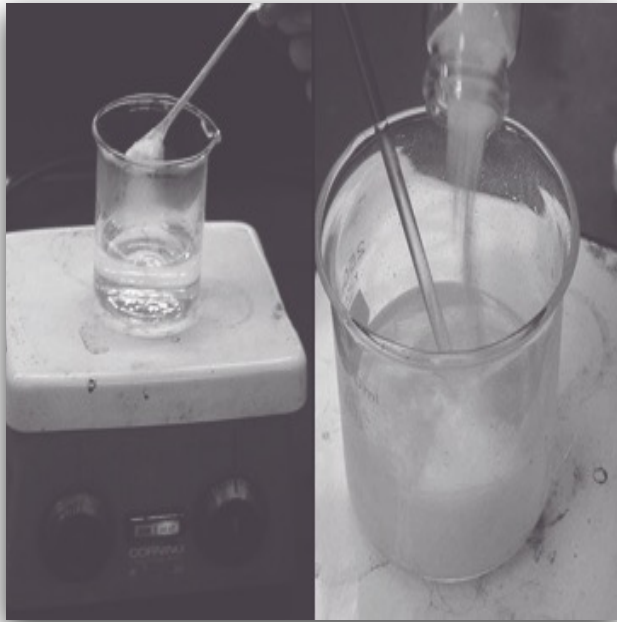


1. Hungry cavewoman eats berry. It is sweet and pleasurable
2. Brain pays very close attention to what she had to do to get that berry
3. Sees the berry bush again, more likely to remember the berry, even craves the berry. Eats the berry.
4. Lives





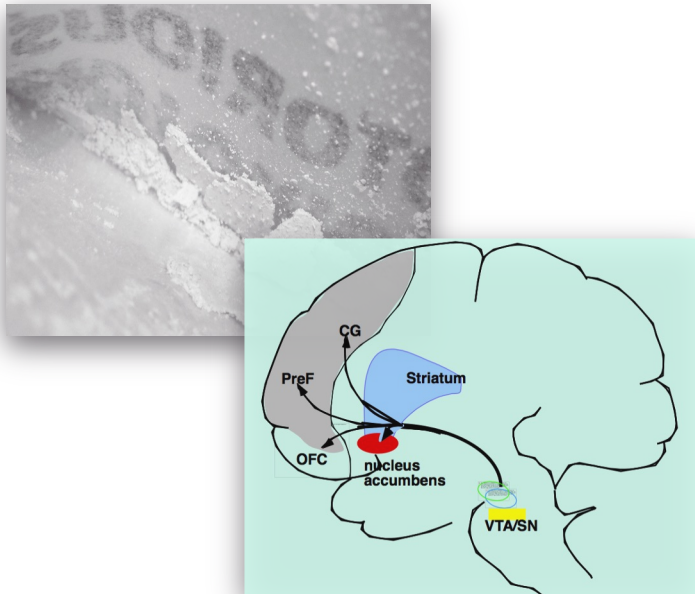
- Addiction taps into this normal brain process
- All addictive drugs activate this pathway
- Drug experience is deeply linked to memory and emotion



- People, places, things associated with drug use can trigger cravings
- Even when images associated with drug use are shown too rapidly to be “seen” they still trigger cravings

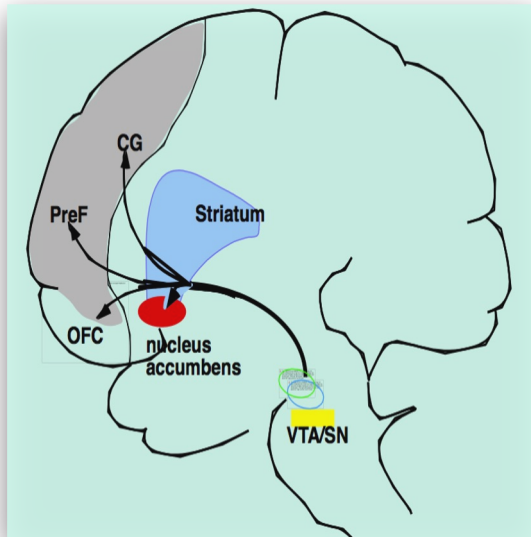


So, part of addiction is craving. Another part is liking

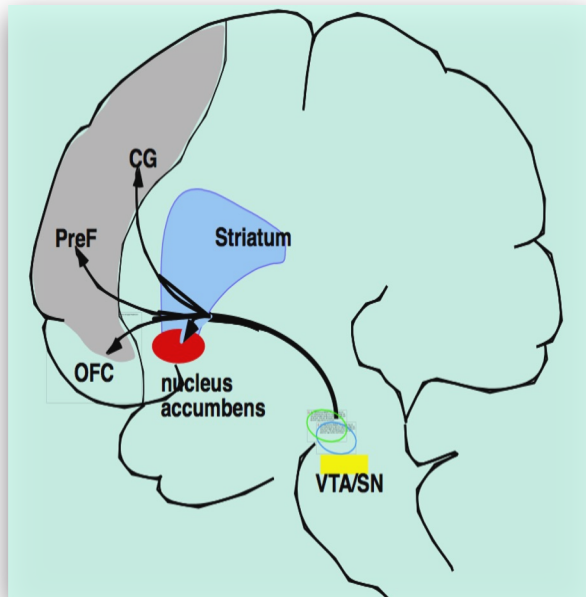


- Opioids: activate DA receptors
- Also activate opioid receptors in NA and produce feeling of satiety, soothing, comfort.

Dysregulation



- Dysregulation: impaired ability of the front of the brain to regulate what is going on in the older regions of the brain.
- Prefrontal cortex helps determine the risks and benefits of behaviors and make rational choices.



- Prefrontal cortex is newer and more complicated. It needs a little time to weigh in.
- Repeated activation of the VTA to NAC track slowly strengthens those connections. Habits get hard wired, fast and automatic



1. Hungry cavewoman eats berry. It is sweet and pleasurable, and she doesn't starve.
2. The berry gives her a headache the next day so she can't hunt well.
3. She has to weigh the benefits and drawbacks of the berries each time she thinks about eating them.
4. If her berry eating habit has become "hard-wired", she may eat them even on days when it is a really, really bad idea



Another complicating factor:



D1: Activate the nucleus accumbens, cause us to act & are responsive to big pleasure surges.



D2: Slow down decision making, allow the frontal cortex to step in. Responsive to smaller pleasures.





Big dopamine surges activate the D1 receptors and cause the D2 receptors to be reabsorbed.

Repeated drug use speeds up the Go! in the nucleus accumbens and inhibits the stop.

Like stepping on brakes of car barreling down a hill only to discover that brakes have been disconnected.



Little pleasures like family, friends, jobs well done, tasks accomplished, provide just enough dopamine to activate the D2 receptors and strengthen the impulses that slow things down.

Medications to decrease craving, attenuate withdrawal symptoms, and decrease deaths

Behavioral interventions that entrain different habits



Conclusion

- ▶ Addiction taps into normal brain processes
- ▶ It is entrained through habit
- ▶ It can be effectively treated

