## **Understanding Addiction:** What, Why and When?

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# Objectives

- What is addiction? Review and discuss epidemiology & definitions of substance misuse.
- development of addiction.
- Review potential interventions (high level).

### Why (how) and when do people get addicted? Illustrate the







46.3 Million People Aged 12 or Older with Past Year SUD

## Epidemiology

24.0 Million People with Drug Use Disorder (51.9% of People with SUD)

> People with Drug Use Disorder Only (36.1% of People with SUD)

61.2 million / 21.9 % US population

Marijuana - 52.5 million

9.2 million 12+ misused opioids

46.3 million 12+ DSM-5 for SUD

29.5 million alcohol use disorder

24 million drug use disorder.

Highest % young adults 18-25

94% with SUD – NO TREATMENT





### State of Delaware

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### HEALTH

### For the first time in 10 years, **Delaware sees a drop in fatal** overdoses. Six reasons why



**Hannah Edelman Delaware News Journal** 

Published 11:00 a.m. ET April 4, 2024 | Updated 5:38 p.m. ET April 4, 2024





Obituaries (~) eNewspaper Legals





## Historic context

- Freud hedonism
- Frequently stigmatized
- Considered choice
- Lie / manipulation

### Neglects the complexity of the disease.

Flores Mosri D. Affective Neuroscience Contributions to the Treatment of Addiction: The Role of Social Instincts, Pleasure and SEEKING. Front Psychiatry. 2021 Nov 23;12:761744. doi: 10.3389/fpsyt.2021.761744. PMID: 34887789; PMCID: PMC8649919.

**Hedonism**, in <u>ethics</u>, a general term for all theories of conduct in which the criterion is pleasure of one kind or another. The word is derived from the Greek *hedone* ("pleasure"), from *hedys* ("sweet" or "pleasant").





## Is there a problem?

Criteria Type	Description		
Impaired control	$\uparrow \textbf{ Dose and Duration } Persistent desire to \downarrow Time spent Craving$		
Social Impairment	Obligations Continued use ↓ Recreational / Social		
Risky Use	Unsafe environments Use despite medical sequalae		
Pharmacologic	Tolerance Withdrawal		

McNeely J, Adam A. Substance Use Screening and Risk Assessment in Adults [Internet]. Baltimore (MD): Johns Hopkins University; 2020 Oct. Table 3, DSM-5 Diagnostic Criteria for Diagnosing and Classifying Substance Use Disorders







## **Addiction – Brain disease?**

control

### on cocaine





www.drugabuse.gov









NIDA - <a href="https://www.drugabuse.gov/publications/teaching-packets/understanding-drug-abuse-addiction/section-i/4-reward-pathway">https://www.drugabuse.gov/publications/teaching-packets/understanding-drug-abuse-addiction/section-i/4-reward-pathway</a>

# **Reward Pathway**

Normal	VS	Disrupted
Stimuli $\rightarrow$ Food, water, sex, nurturing		Stimuli → Supraphysiologi reward
<b>Dopamine</b> $\rightarrow$ <b>Pleasure</b>		Pathway hijacked → Use Disorder
Motivation $\rightarrow$ Engagement $\rightarrow$ Survival		Impulsivity / Reinforcement
Stress $\rightarrow$ Amygdala $\rightarrow$ Fight / flight $\rightarrow$ Survival		Compulsivity / Reinforceme









## Stages of Addiction

### **Reward sensitivity**

### **Executive function**

**Tolerance + Withdrawal Compromised recreational /** social life





# **Bio-psycho-social model**











### Community

- Education
- Stigma reduction
  - Prevention / Early detection
  - Effective and timely treatment

# What can we do?

### Legislation

- Increase funding / parity
- Remove barriers
- Harm reduction / saving lives

Address illicit drug trafficking











## **Questions – after next talk**





