



# THE IMPORTANCE OF KNOWING ABOUT ADDICTION

Marin Mental Health Board Presentation

12 April 2022

6pm—Zoom

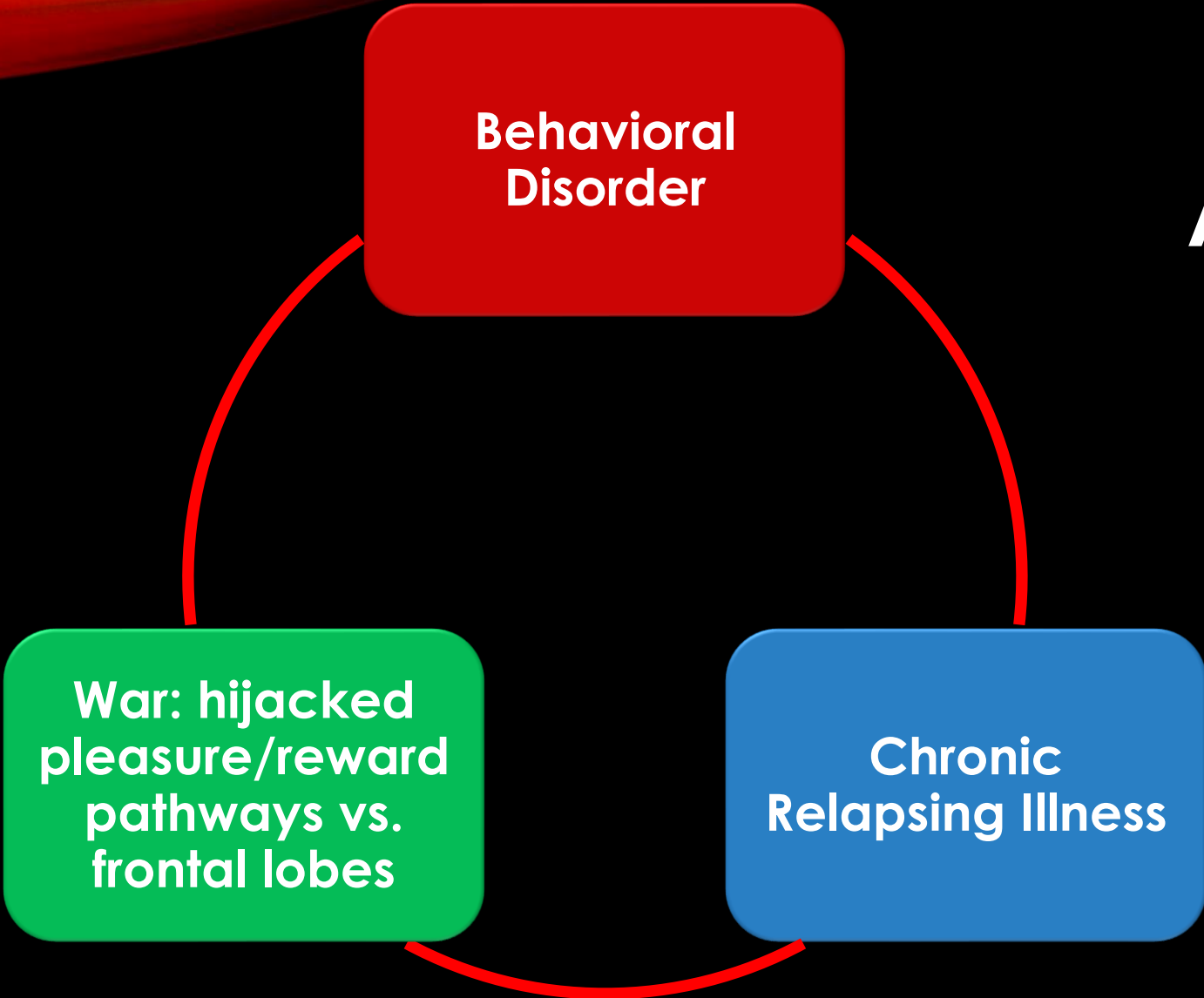
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  - Partnership HealthPlan of CA
- **Assistant Clinical Professor**
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# OBJECTIVES

- Addiction is both a disease, and a symptom of a social disease → and there is complex interaction and overlap
- Addiction is not just about the substance—it's about the relationship between the person and the substance
- Addiction involves substances that impact the brain—these substances mimic chemicals that your body already makes... just to a different degree
- In response to exposure to substances, the brain adapts and makes changes—it LEARNS
- Some people are more vulnerable to developing full fledged addiction than others... it isn't fair.

# ADDICTION AS A DISEASE...





# ADDICTION: CHRONIC RELAPSING ILLNESS

Diabetes

Asthma

Hypertension

# ADDICTION: CHRONIC RELAPSING ILLNESS

## Similar:

- Genetic contribution
- Compliance rates with treatment
- Response rates to treatment



- Medications
- Long term follow up
- Behavior change



# ADDICTION: BEHAVIORAL DISORDER



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What are drugs?



Chemicals



The issue is our relationship with  
certain chemicals = BEHAVIORS

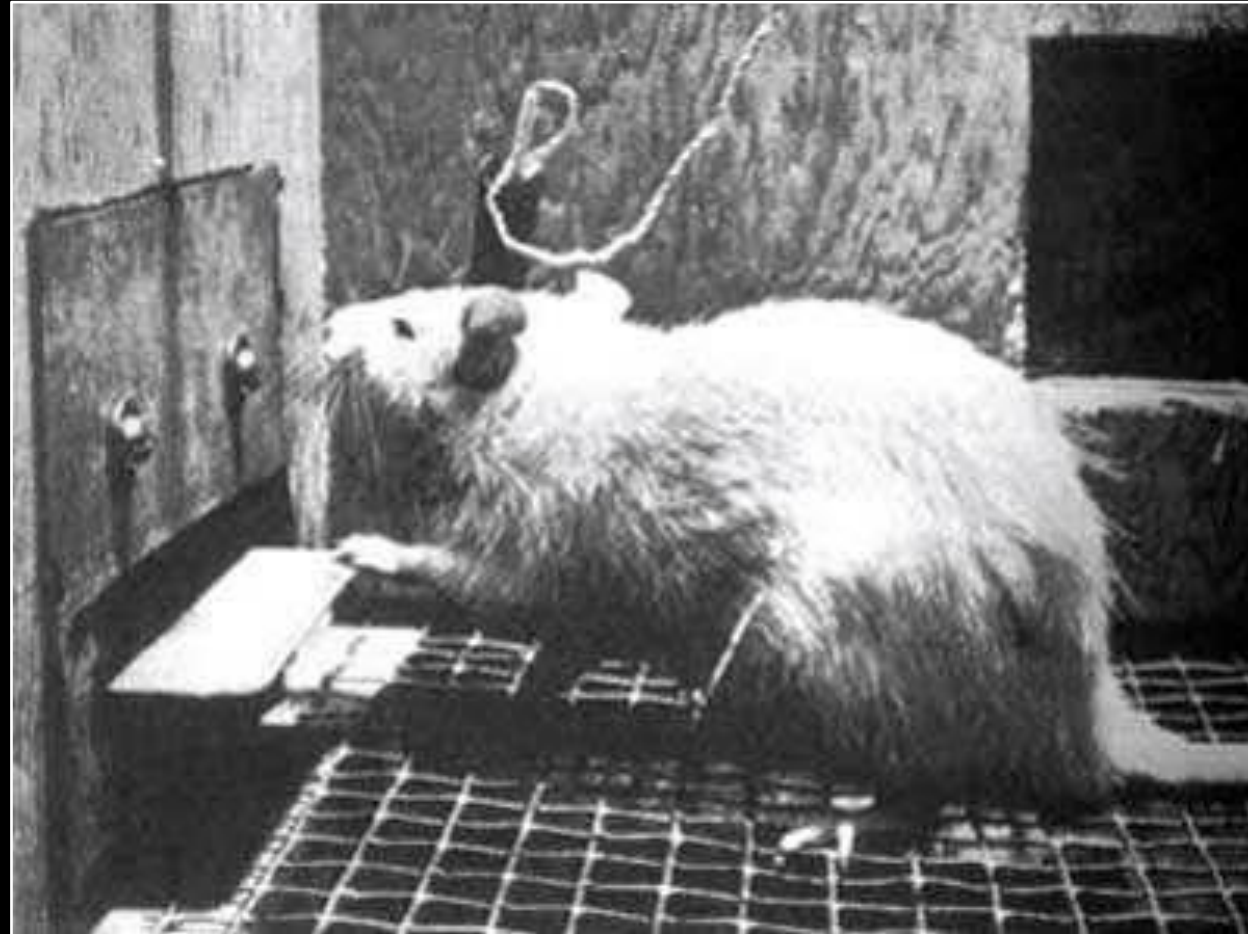
ADDICTION

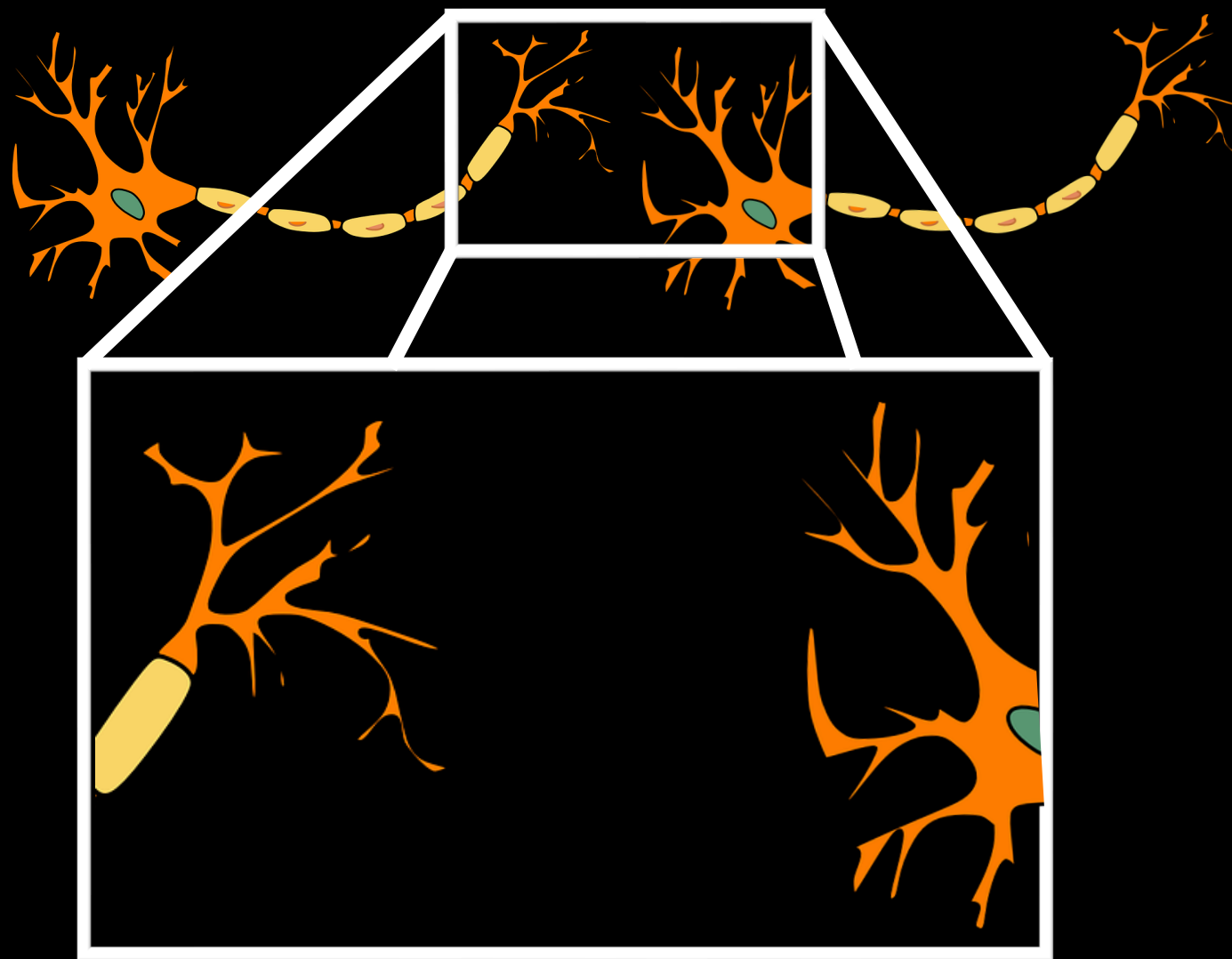


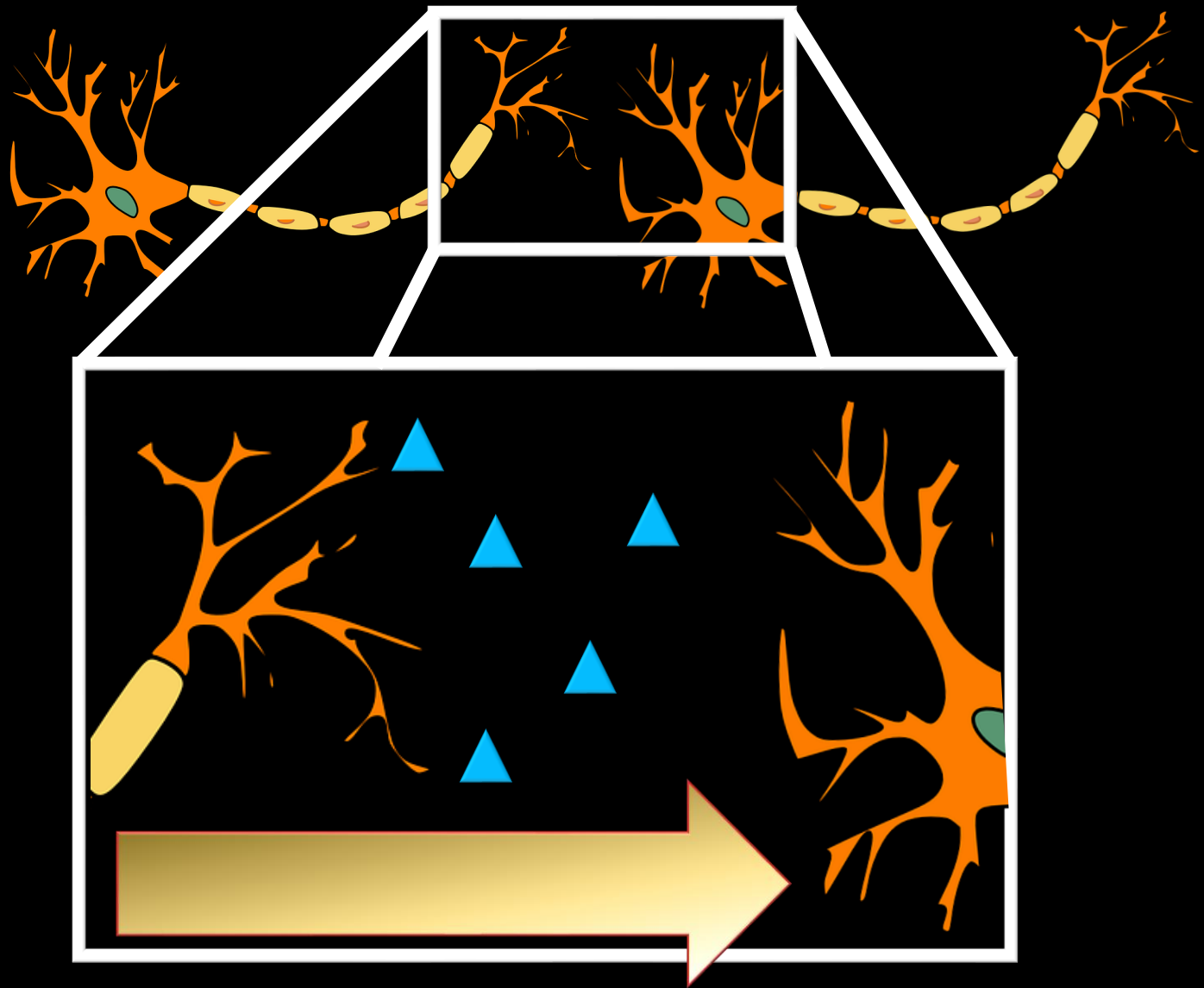
**ADDICTION**

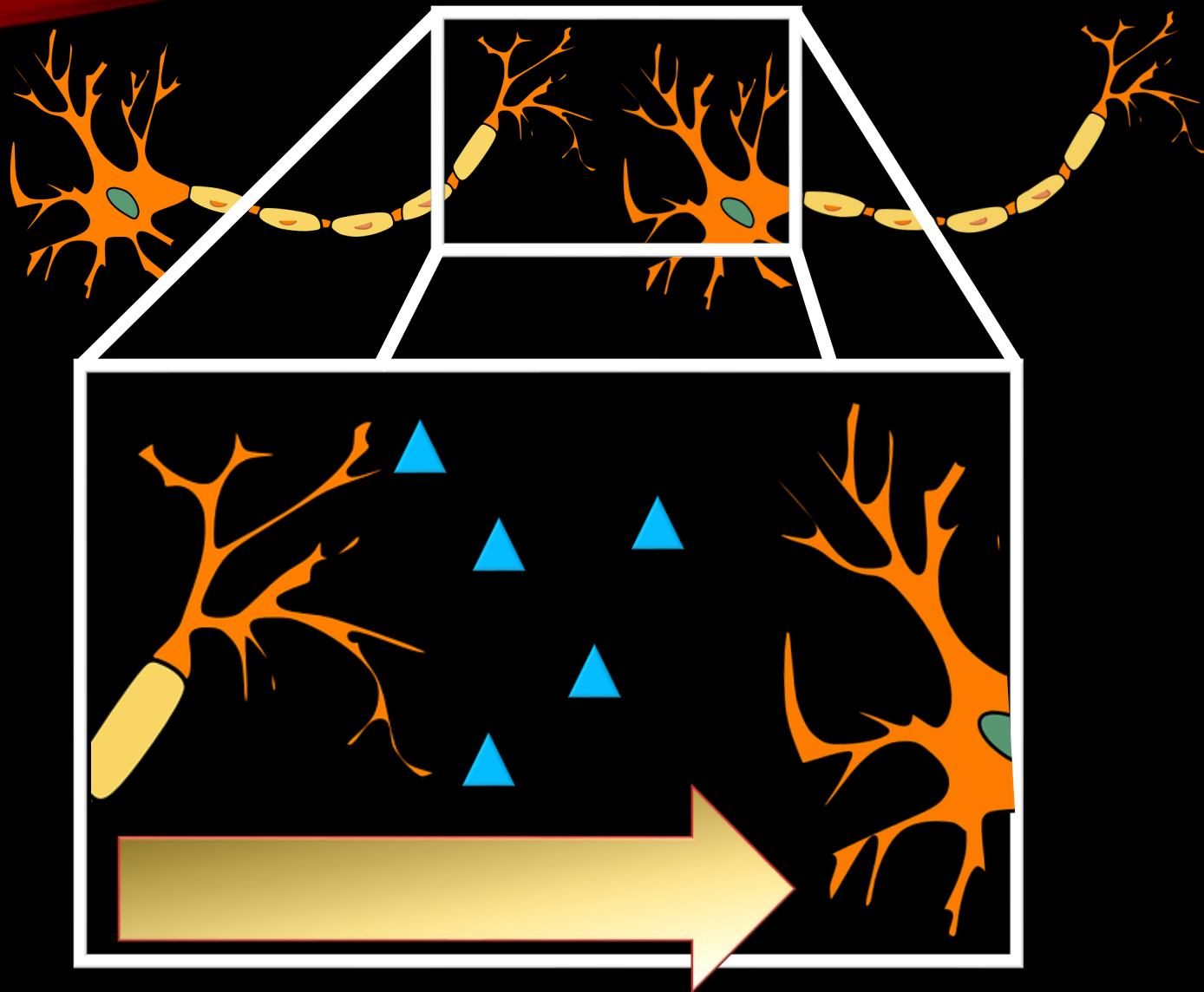
**WAR: HIJACKED PLEASURE/REWARD PATHWAYS  
VS.  
FRONTAL LOBES**

# Original Model of Addiction (1950s):









Serotonin

Norepinephrine

Glutamate

GABA

Endorphins

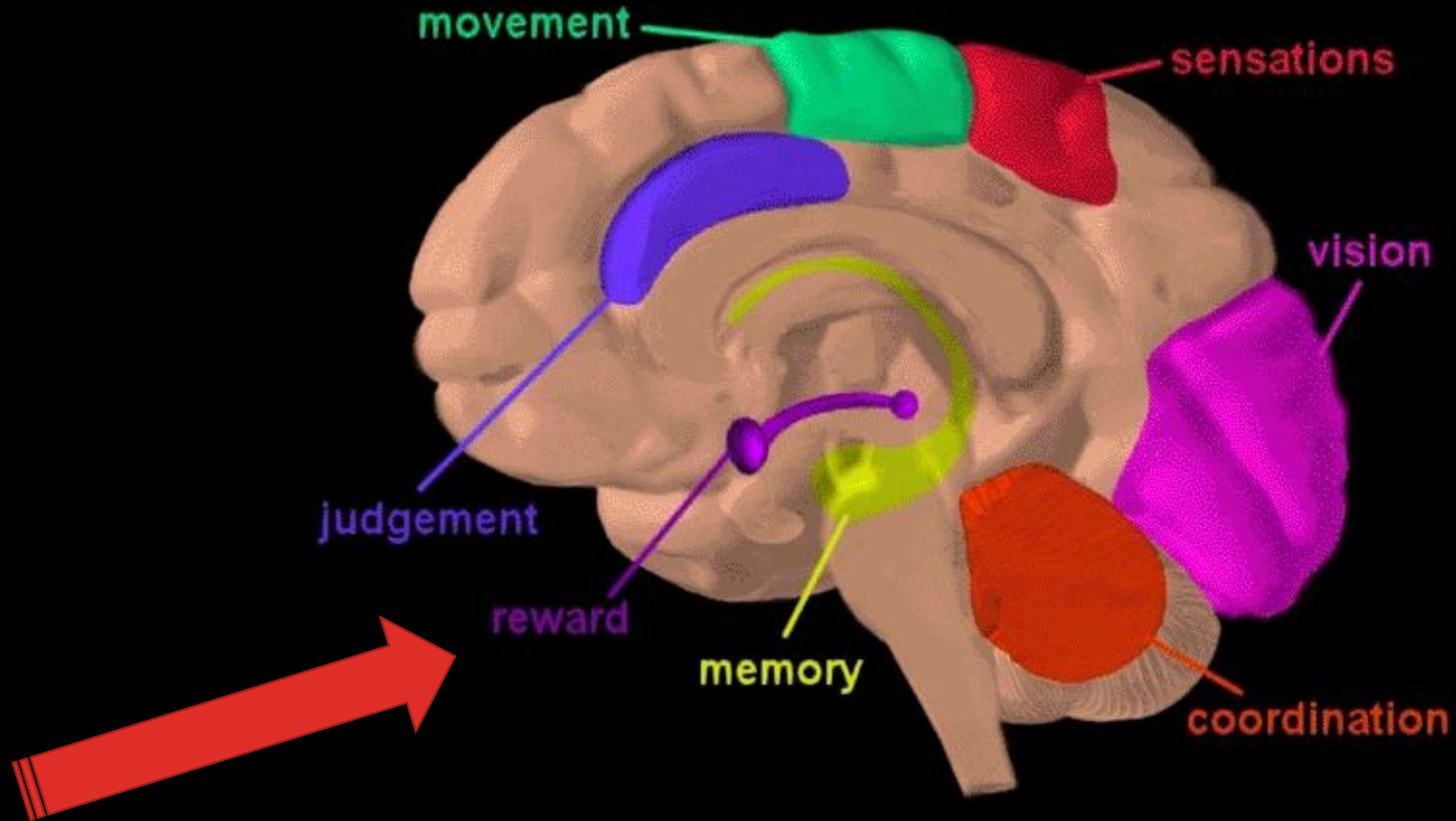
Endocannabinoids

.....

**DOPAMINE**



# PRIMITIVE VS. EVOLVED



# WHAT DO WE NEED FOR SURVIVAL?

Food

Water

***Dopamine***



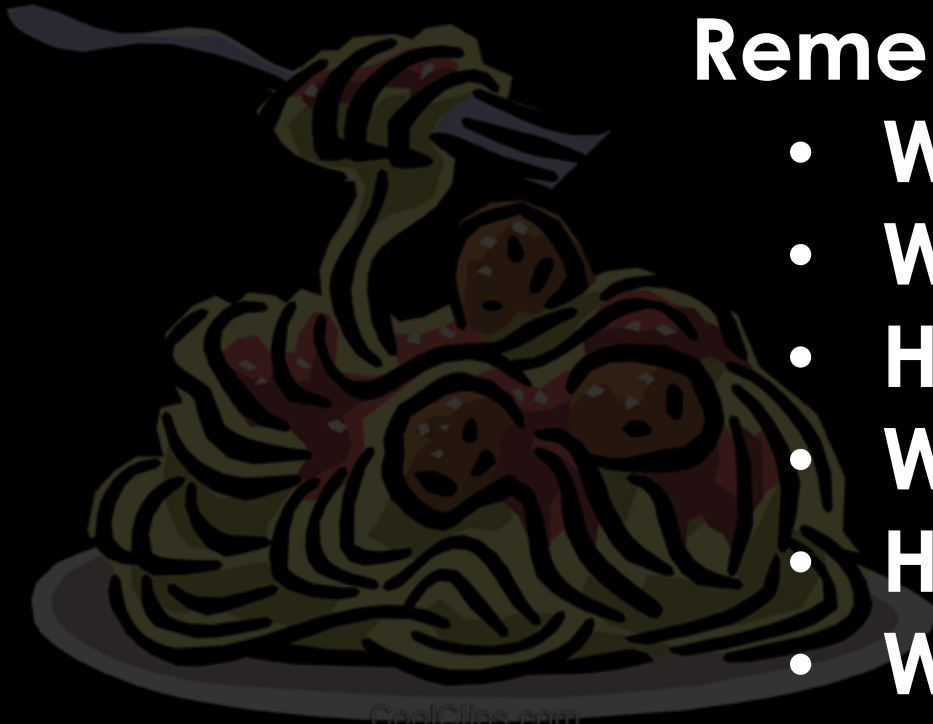
Think about eating a bowl of spaghetti  
when you're hungry...



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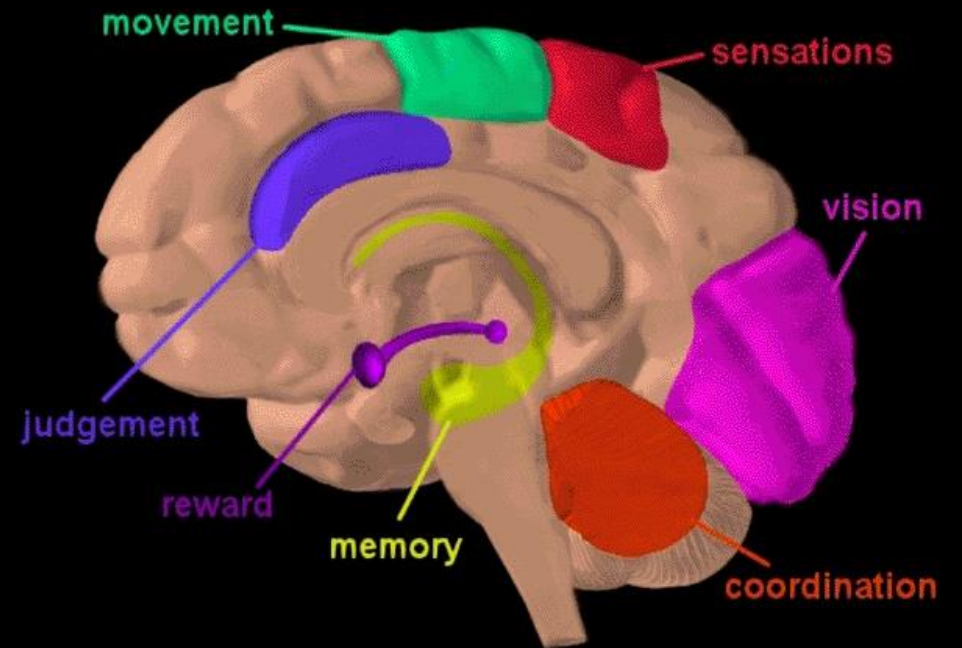
### **Remember:**

- **Where was I**
- **Who was I around**
- **How did I get there**
- **What did I need to do to get it**
- **How can I get back**
- **When I get there, get ready to eat!**



# ALL DRUGS CAUSE THE RELEASE OF DOPAMINE IN THE REWARD PARTS OF THE BRAIN

Magnitude of reward depends on amount of dopamine released and how fast it spikes



**NORMAL DAY → 50NG/DL**

***GREAT DAY* → 100NG/DL**

**SEX → ~90NG/DL**

**METHAMPHETAMINE → 1100ng/dL**

# ADDICTION AS LEARNING

The Reward Pathways prime the brain for learning

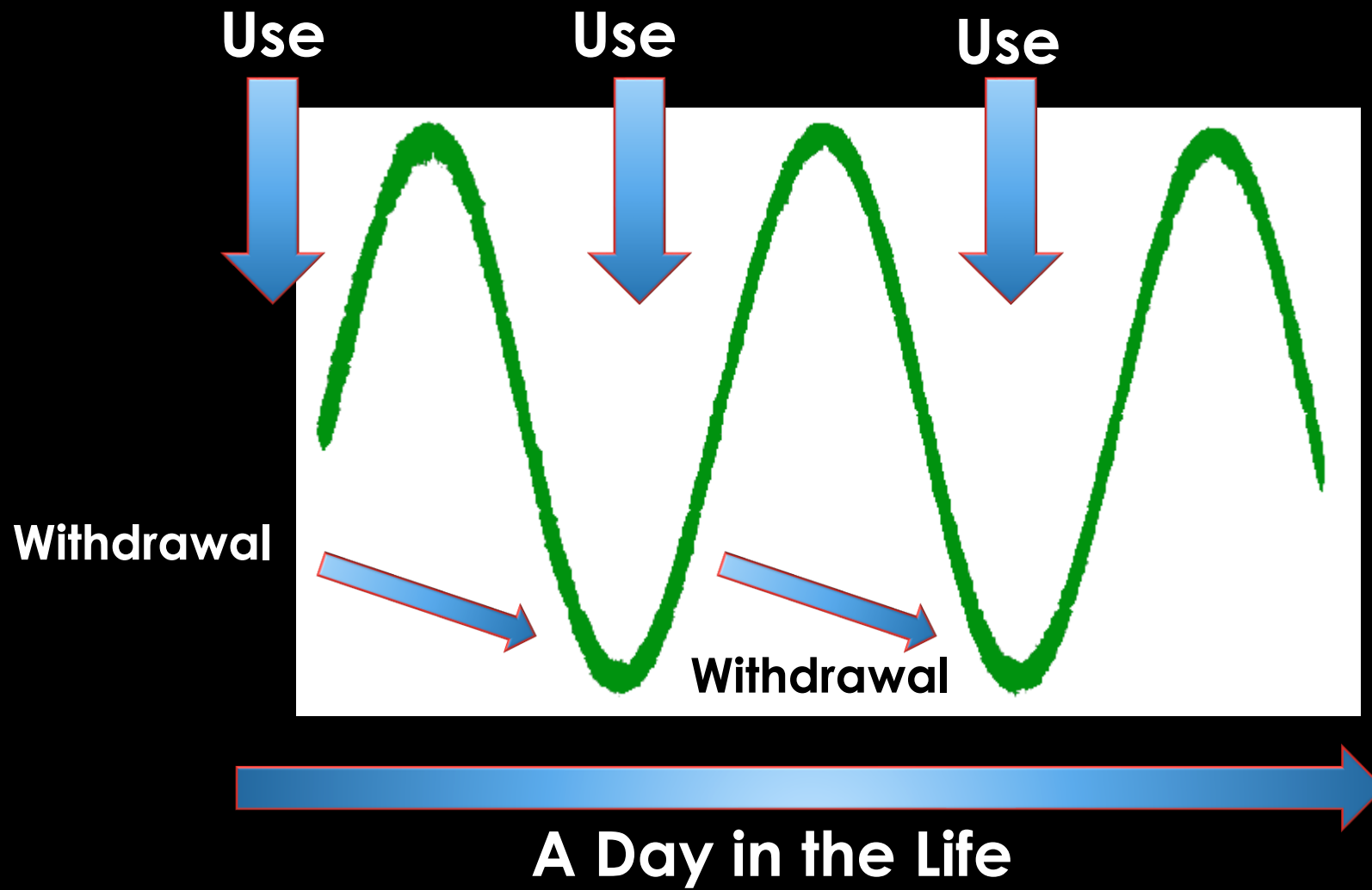


**Neuroadaptation**



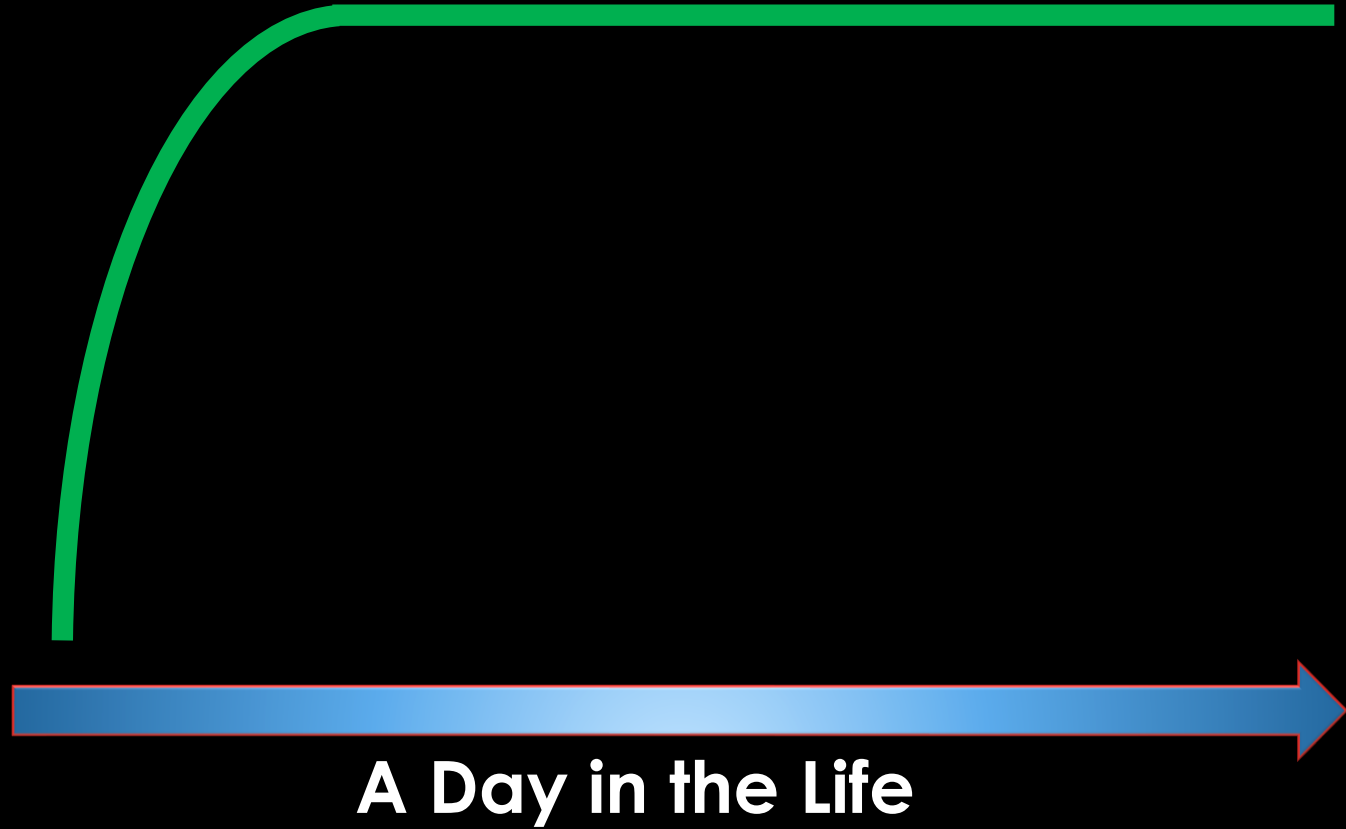
**TREATMENT, THEREFORE, IS AN UN-LEARNING  
OF ADDICTION**

**WHAT GETS IN THE WAY OF LEARNING?**





# BUPRENORPHINE/METHADONE FOR OPIOID ADDICTION



# OTHER MEDICATION APPROACHES

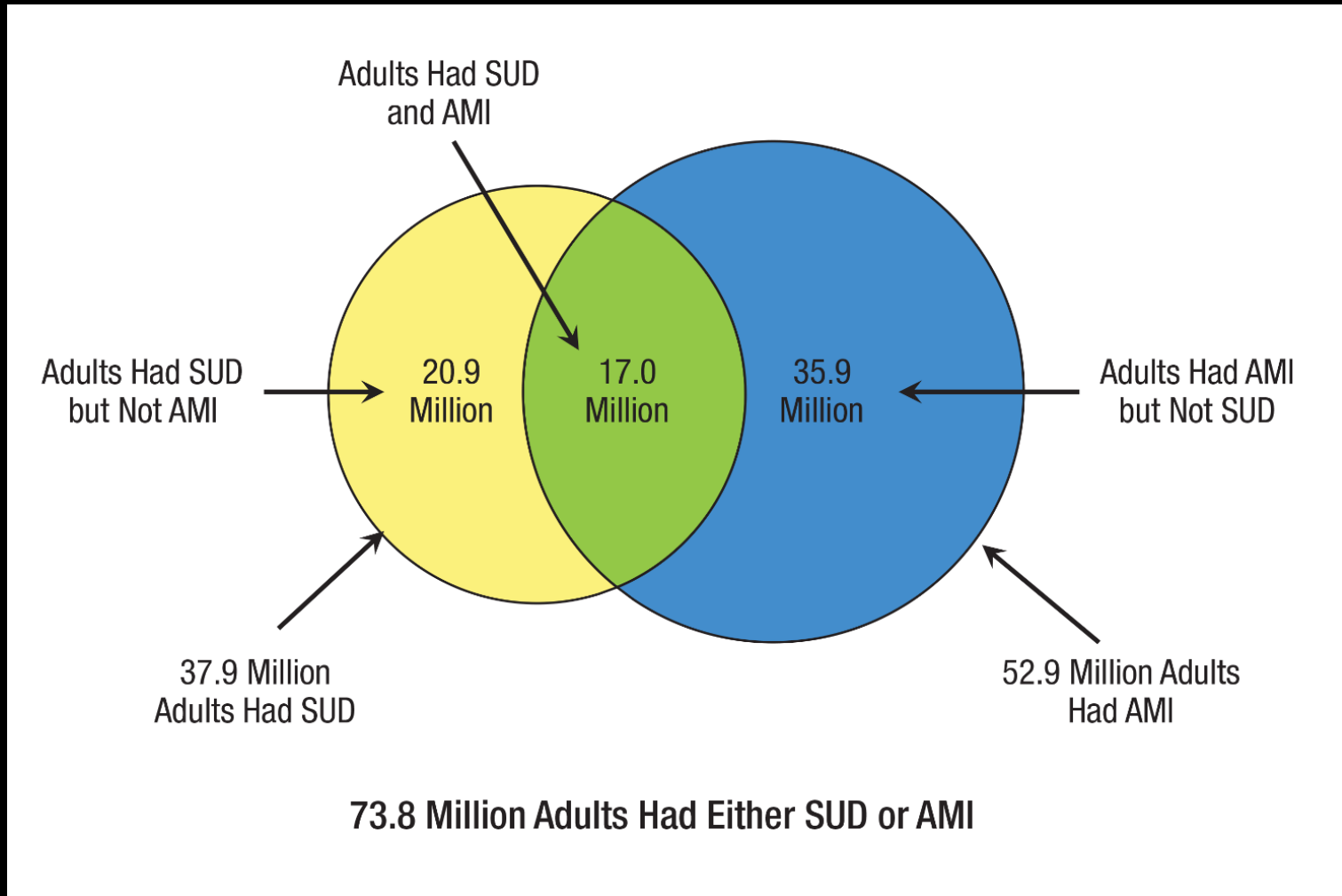
- Block the receptors:
  - Opioids → naltrexone, naloxone
- Make you sick if you consume the chemical
  - Alcohol → Antabuse
- Vaccines???



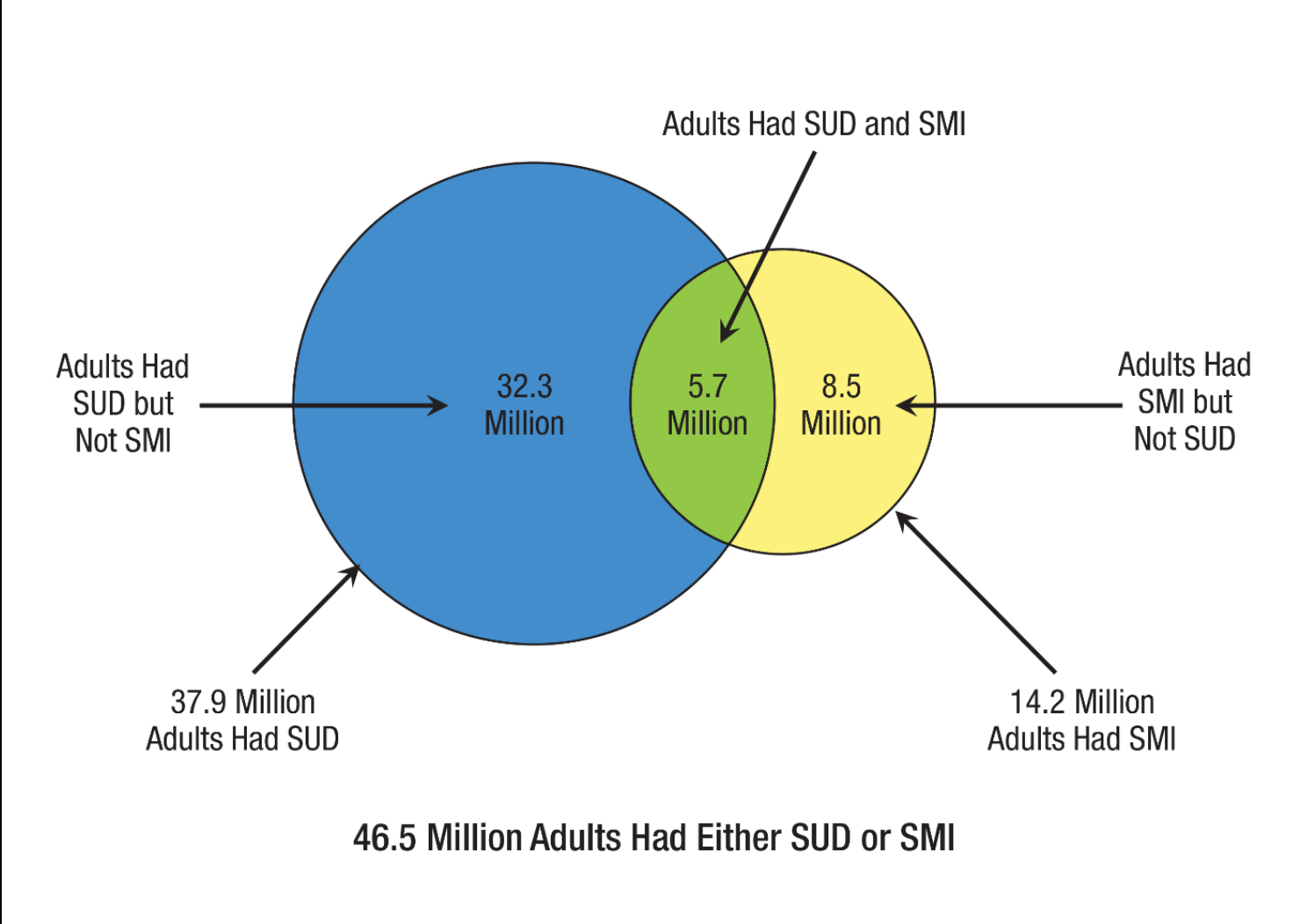
# VULNERABILITIES

- Genetics
- Youth
- Trauma
- Repeated exposures
- Disconnection/isolation/social instability
- Co-occurring Disorders

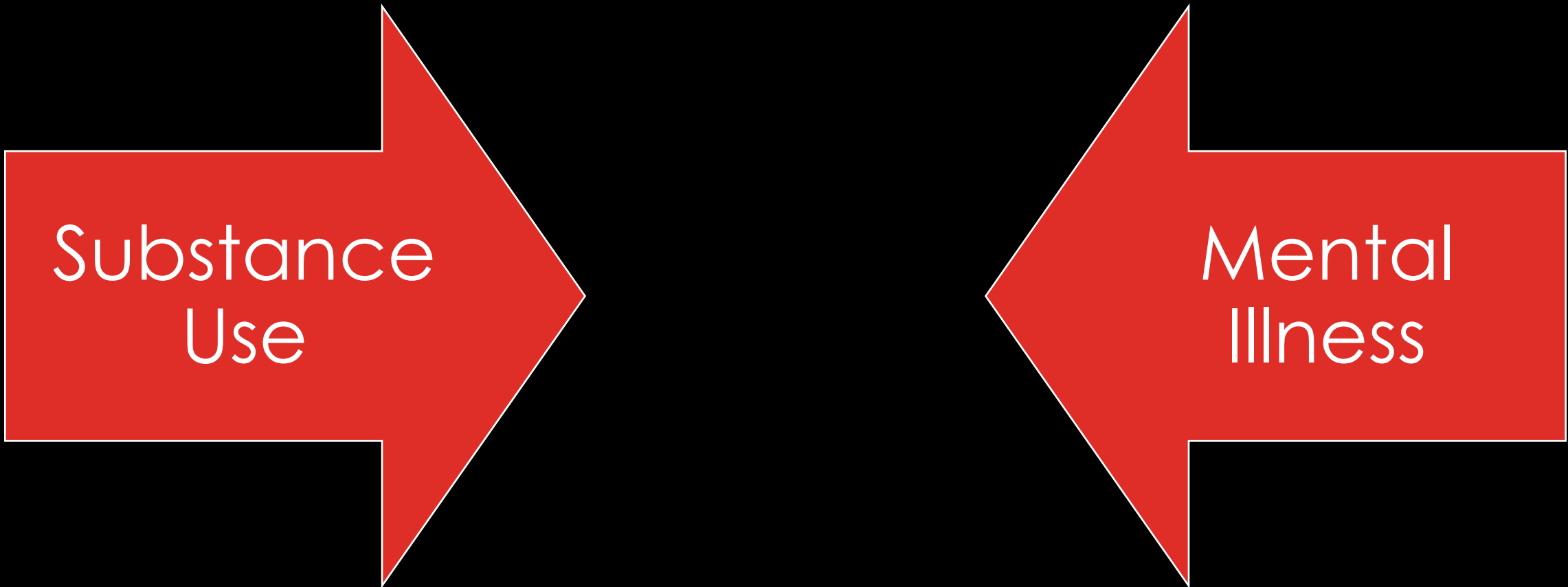
# PAST YEAR SUBSTANCE USE DISORDER (SUD) AND ANY MENTAL ILLNESS (AMI): AMONG ADULTS AGED 18 OR OLDER; 2020



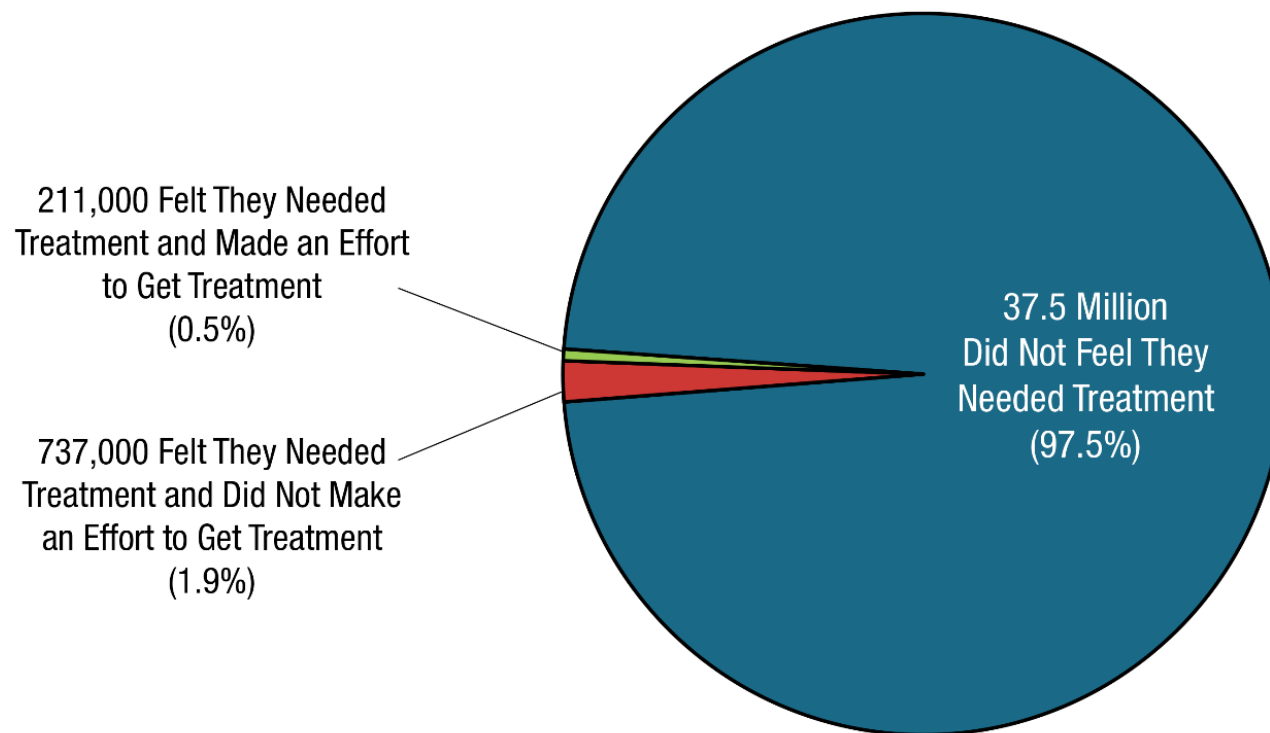
# PAST YEAR SUBSTANCE USE DISORDER (SUD) AND SERIOUS MENTAL ILLNESS (SMI): AMONG ADULTS AGED 18 OR OLDER; 2020



# WHICH CAME FIRST?



# PERCEIVED NEED FOR SUBSTANCE USE TREATMENT: 2020



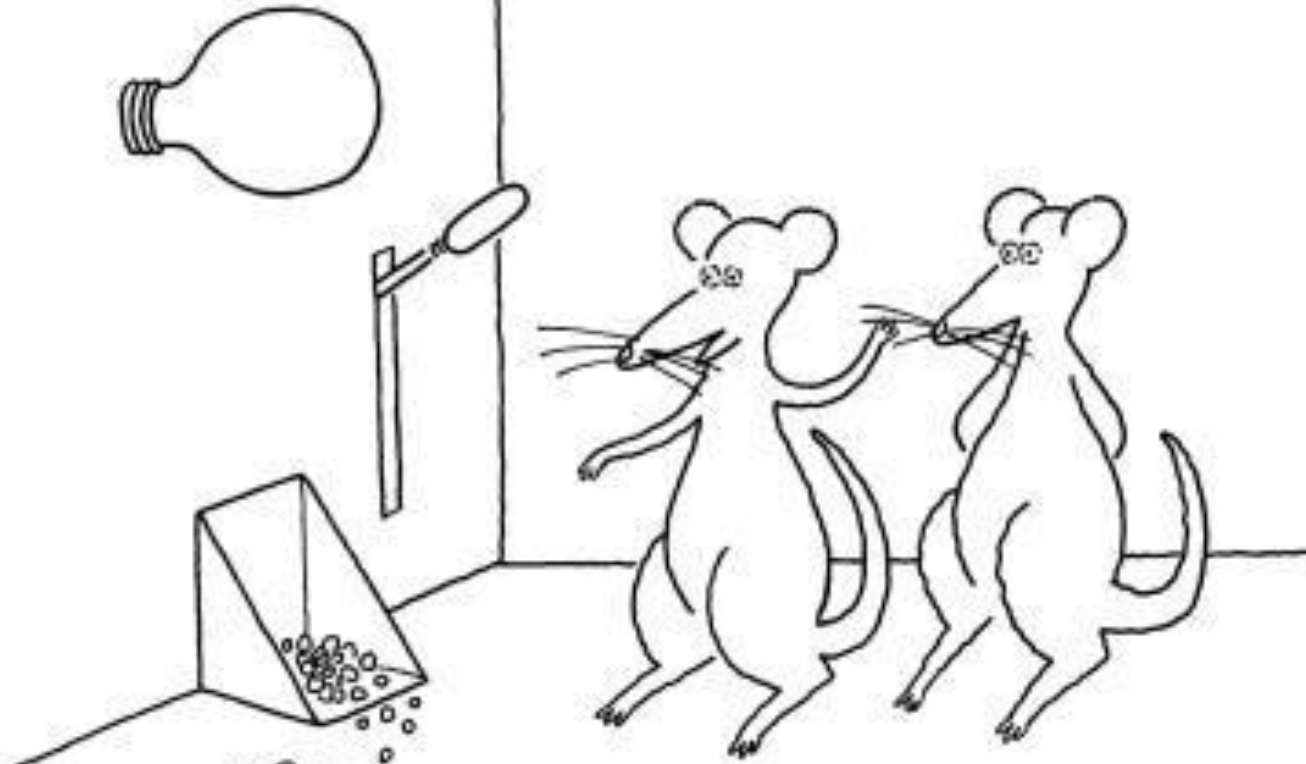
**38.4 Million People with an SUD Who Did Not Receive Substance Use Treatment at a Specialty Facility**

Note: People who had an SUD were classified as needing substance use treatment.

Note: The percentages do not add to 100 percent due to rounding.



© Original Artist



*J. di Chiarro*

**"The light goes on. I pull the lever. The food comes.  
It's a full life."**



# **CONTEXT AND RECONNECTION** **MATTER**

**RAT PARK EXPERIMENTS**

**VIETNAM WAR EXPERIENCE**

# GET INVOLVED!!

