The background is a complex digital landscape with a dark blue and black color palette. It features a grid of glowing lines, various data points, and abstract shapes. In the center, there is a glowing, semi-transparent brain graphic. The overall aesthetic is high-tech and futuristic.

**ATTENTION-DEFICIT/  
HYPERACTIVITY DISORDER (ADHD)**

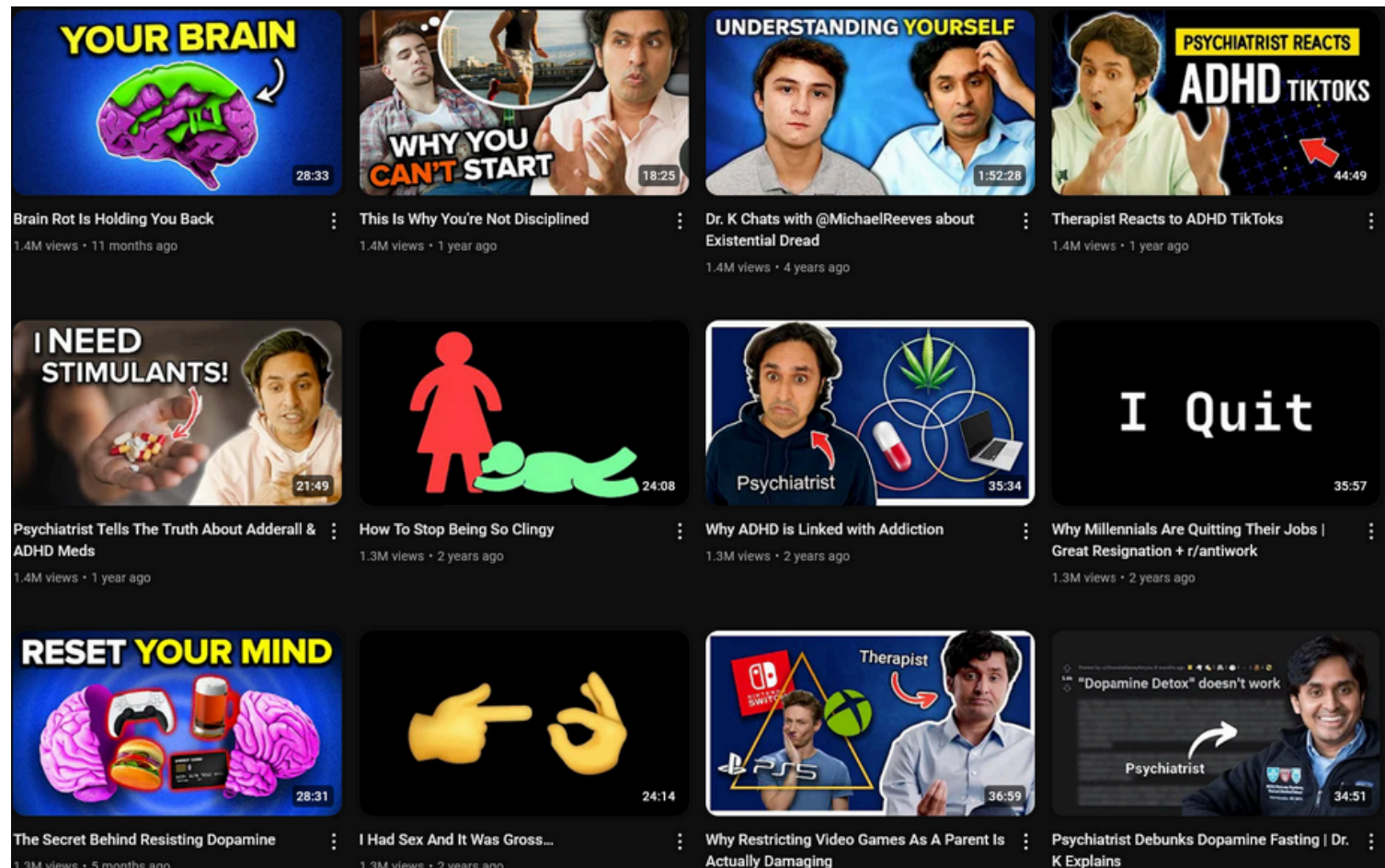
**&**

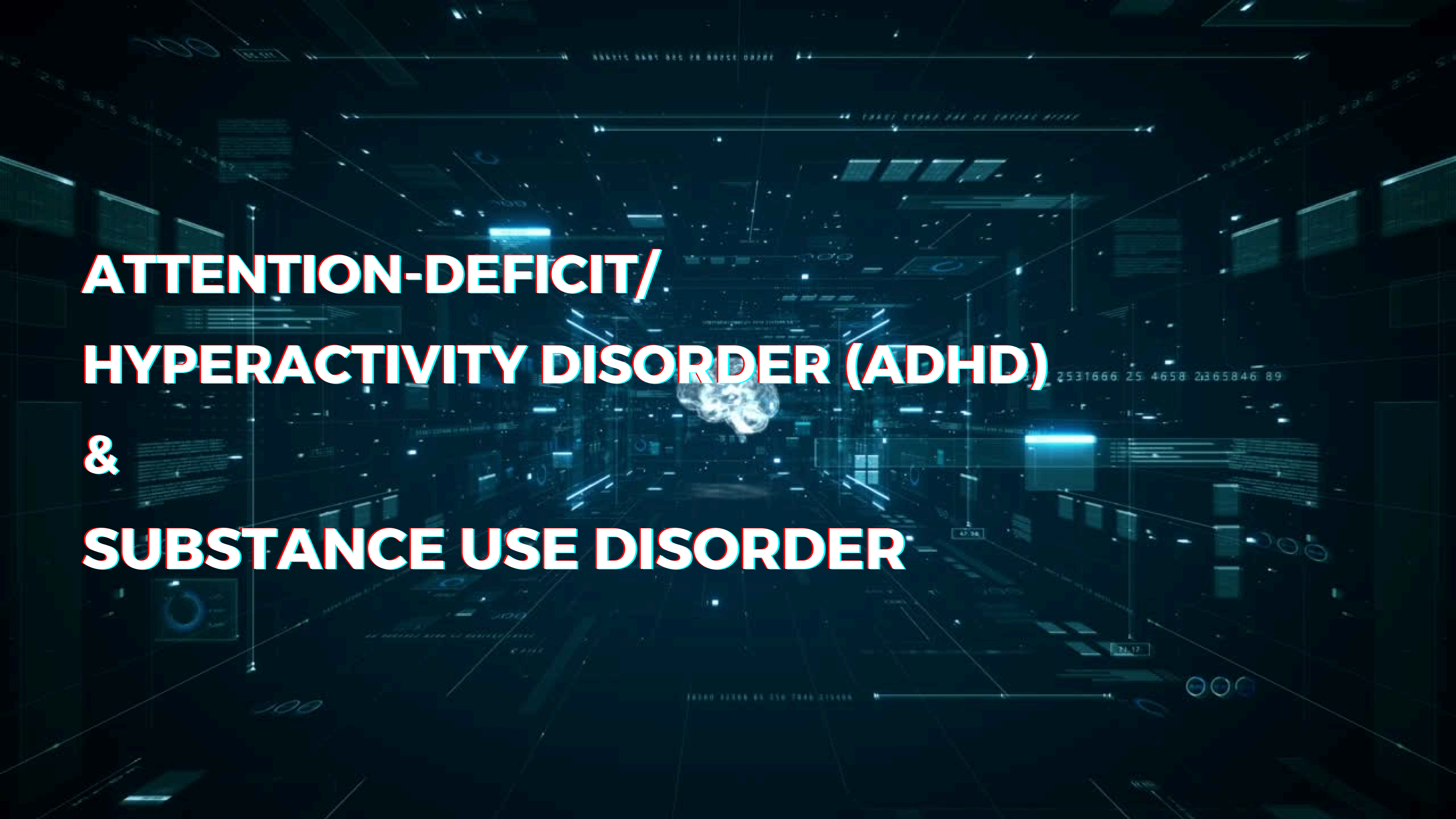
**SUBSTANCE USE DISORDER**

# DR. ALOK KANOJIA



- Alok Kanojia, also known as Dr. K., is a psychiatrist and co-founder of the mental health coaching company Healthy Gamer.
- He streams interviews on Twitch, where he and participants discuss mental health topics.





**ATTENTION-DEFICIT/  
HYPERACTIVITY DISORDER (ADHD)  
&  
SUBSTANCE USE DISORDER**



# WHAT IS ADHD

- ADHD is disease of executive dysfunction.
- Executive Dysfunction: The brain's capacity to plan and execute tasks effectively is impaired.
- Key components of executive dysfunction in ADHD:
  - Behavioral Inhibition: Difficulty in stopping oneself from engaging in distracting activities.
  - Altered Sensitivity to Reinforcement: Higher enjoyment derived from immediately enjoyable activities.
  - High Impulsivity: A tendency to act on impulses more readily than those without ADHD.



# DIAGNOSTIC CRITERIA

- To diagnose ADHD, a formal test is not always required.
  - Clinicians usually diagnose it by asking about past and present functioning in various settings like school, home, and work.
- Diagnosis involves three main categories:
  - Inattention
  - Impulsivity/Hyperactivity
  - Combined
- Need at least six symptoms from each category for more than six months.

# TREATMENT

- Types of treatment for ADHD include behavior therapy and medications.
  - Stimulants
    - Example: Adderall, Methamphetamine, Ritalin, Vyvanse
  - Non-stimulants
    - Examples: Wellbutrin, Strattera



# 1. INATTENTION

- **Carelessness:** Frequently losing or breaking items.
- **Difficulty Sustaining Attention:** Trouble focusing on tasks or activities.
- **Difficulty Listening:** Appears defiant or unresponsive during conversation.
- **Easily Sidetracked:** Easily distracted and moves from task to task.
- **Disorganization:** Messy environments and poor organizational skills.
- **Misplacing Objects:** Frequently losing personal items.
- **Forgetfulness:** Forgetting daily activities and tasks.
- **Easily Distracted:** Inability to maintain focus due to external stimuli.
- **Avoidance of Tasks that Require Sustained Attention:** Reluctance to engage in tasks needing prolonged concentration.



## 2. IMPULSIVITY/HYPERACTIVITY

- **Fidgeting:** Consistent movement, tapping, or wiggling.
- **Leaving Seat Frequently:** Getting up when expected to stay seated.
- **Restlessness:** Engaging in unsafe or excessive movement.
- **Always on the Go:** Continual movement and activity.
- **Excessive Talking:** Speaking without awareness or consideration of social cues.
- **Blurting Out Answers:** Interrupting conversations and answering out of turn.
- **Difficulty Waiting:** Struggling with patience in lines or turns.
- **Interrupting:** Frequently disrupting conversations or activities



NEWS RELEASE 25-AUG-2021

## Half of adults with ADHD have had a substance use disorder

Alcohol use disorder is most common among adults aged 20-39 with ADHD, followed by cannabis use disorder and other drug use disorders. More than one quarter of those with ADHD had major depression.

Peer-Reviewed Publication

UNIVERSITY OF TORONTO

UNIVERSITY OF TORONTO

Half of adults aged 20-39 with attention deficit hyperactivity disorder (ADHD) have had a substance use disorder (SUD) in their lifetime according to new research published online ahead of print this month in *Alcohol and Alcoholism*. This is markedly higher than the 23.6% of young adults without ADHD who have had a substance use disorder in their lifetime.

Even after considering factors such as age, race, income, education, childhood adversities and other mental illness, young adults with ADHD were still 69% more likely to have had a substance use disorder when compared to their peers without ADHD.

Controlling for lifetime history of mental illness and childhood adversities caused the largest attenuation of the ADHD-SUD relationship. More than one-quarter (27%) of those with ADHD had a history of depression, which was much higher than the prevalence among those without ADHD (11%).

“These results emphasize the importance of addressing depression and anxiety when providing care to those with co-occurring ADHD and SUD,” reported lead author Esme Fuller-Thomson, Professor at University of Toronto’s Factor-Inwentash Faculty of Social Work and Director of the Institute for Life Course and Aging. “Individuals with untreated depression and anxiety may self-medicate to manage the symptoms of an untreated psychiatric disorder, which can result in greater substance use.”

Those with ADHD also experienced high levels of adverse childhood experiences, with more than a third of young adults (35%) reporting that they had been physically abused and one in nine reporting that they were a victim of sexual abuse (11%) before the age of 16.

### Media Contact

Kristian Foster  
University of Toronto  
[media.relations@utoronto.ca](mailto:media.relations@utoronto.ca)  
Office: 416-946-5240

### Expert Contact

Esme Fuller-Thomson  
University of Toronto  
[esme.fuller.thomson@utoronto.ca](mailto:esme.fuller.thomson@utoronto.ca)  
Office: 416-209-3231  
[@UofT](#)

### More on this News Release

#### Half of adults with ADHD have had a substance use disorder

UNIVERSITY OF TORONTO

JOURNAL  
*Alcohol and Alcoholism*

DOI  
[10.1093/alcalc/agab048/6336025](https://doi.org/10.1093/alcalc/agab048/6336025)

### KEYWORDS

SOCIOLOGY

ATTENTION DEFICIT HYPERACTIVITY DISORDER

ADULTS CHILDREN MENTAL HEALTH

DEPRESSION SOCIAL WORK

MEDICAL HISTORIES ANXIETY

SEXUAL ABUSE SUBSTANCE ABUSE

SOCIAL DEVELOPMENT CANNABIS

ALCOHOLISM CHILD ABUSE

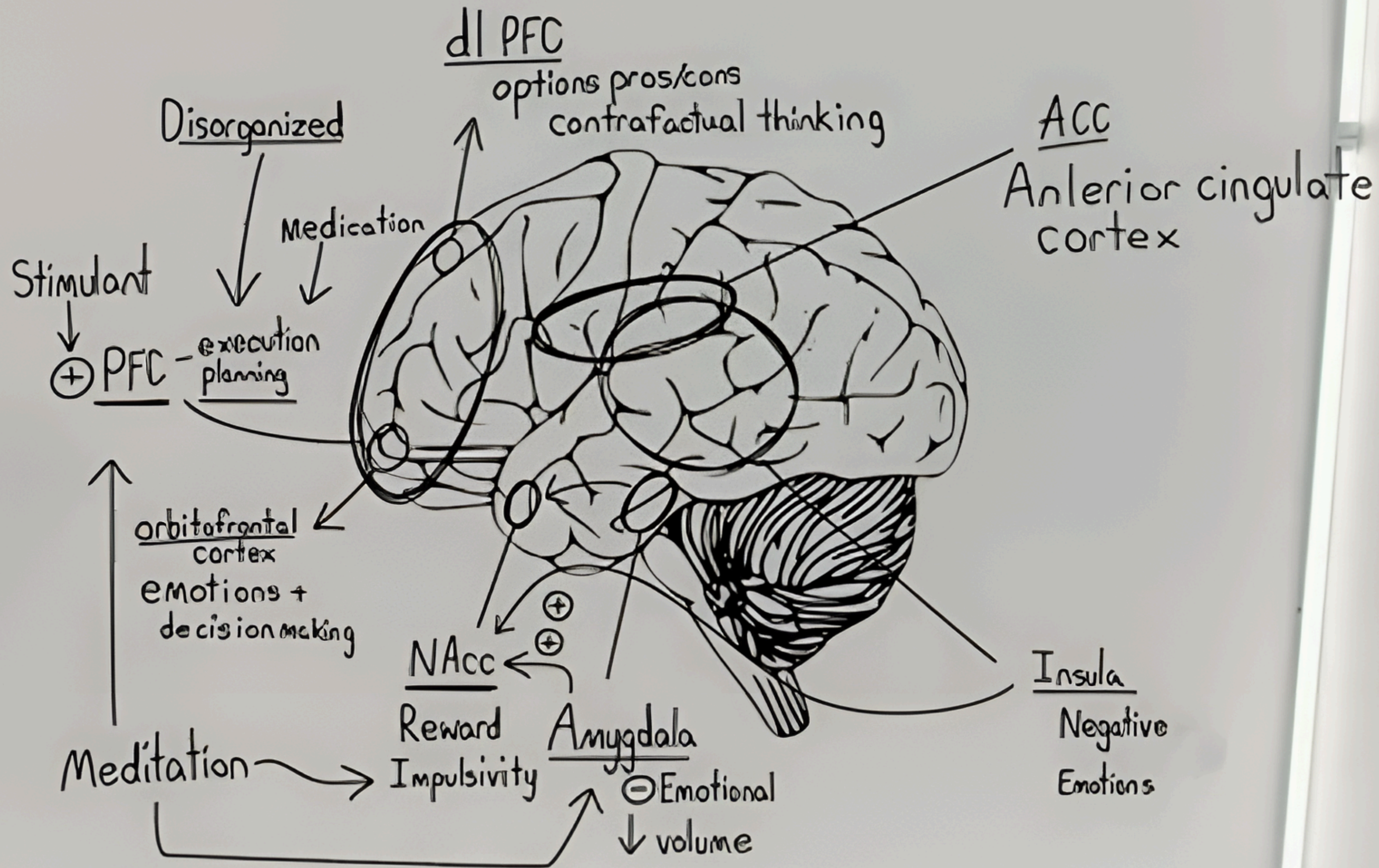


# ADHD NEUROSCIENCE

- Executive Dysfunction: The brain's capacity to plan and execute tasks effectively is impaired.
- Key components of executive dysfunction in ADHD:
  - Deficient Behavioral Inhibition
  - Altered Sensitivity to Reinforcement
  - High Impulsivity









# PRONE TO SUBSTANCE ABUSE

## 1. Self-Medication

- **Dopamine Deficiency:** People with ADHD have low dopamine levels, leading to impulsivity and inattention.
- **Sensitivity to Rewards:** ADHD individuals may be more sensitive to rewards.
- **Temporary Improvement:** Substance use momentarily boosts dopamine, which can alleviate ADHD symptoms.
- **Stimulant Medications:** Used to treat ADHD, but can themselves be substances of abuse.

## 2. Psychological

- Despite intelligence, they struggle with everyday tasks, leading to feelings of inadequacy and shame.
- **Need for Coping Mechanisms:** Increased shame drives the need for coping mechanisms.
- **Maladaptive Coping:** The brain's reward sensitivity makes them turn to drugs, video games, and social media.

## 3. Neuro-vulnerability

- **Reward Sensitivity and Impulse Inhibition:** Heightened sensitivity to rewards and poor impulse control.
- **Intrinsic Vulnerability:** ADHD brains have an inherent vulnerability to substance use disorders.



# PRONE TO SUBSTANCE ABUSE

## Summary and Key Takeaways

- **Self-Medication:** ADHD individuals use substances to increase dopamine and temporarily improve symptoms.
- **Shame and Coping:** Psychological impacts of ADHD lead to maladaptive coping mechanisms such as substance use.
- **Neuro Vulnerability:** Intrinsic brain differences in ADHD make individuals more prone to addiction.

