



DRUG DEPENDENCE

The Science Behind Addiction

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WHAT IS DRUG DEPENDENCE?

Drug dependence occurs when a person becomes physically or psychologically reliant on a substance. While some drugs are used medically, misuse can lead to addiction, serious health risks, and even death.

Understanding how drug dependence develops helps us recognize its long-term impact on the brain and behavior.

Read carefully! There's a question waiting for you at the end.



PHYSICAL DEPENDENCE AND TOLERANCE

Some drugs cause physical dependence, where the body begins to rely on the drug to function normally. Over time, the person develops tolerance, meaning larger doses are needed to achieve the same effect.

When the drug is stopped, withdrawal symptoms such as nausea, pain, shaking, or discomfort may occur.

This cycle makes quitting difficult, reinforcing drug use through negative reinforcement, using the drug to avoid withdrawal symptoms.



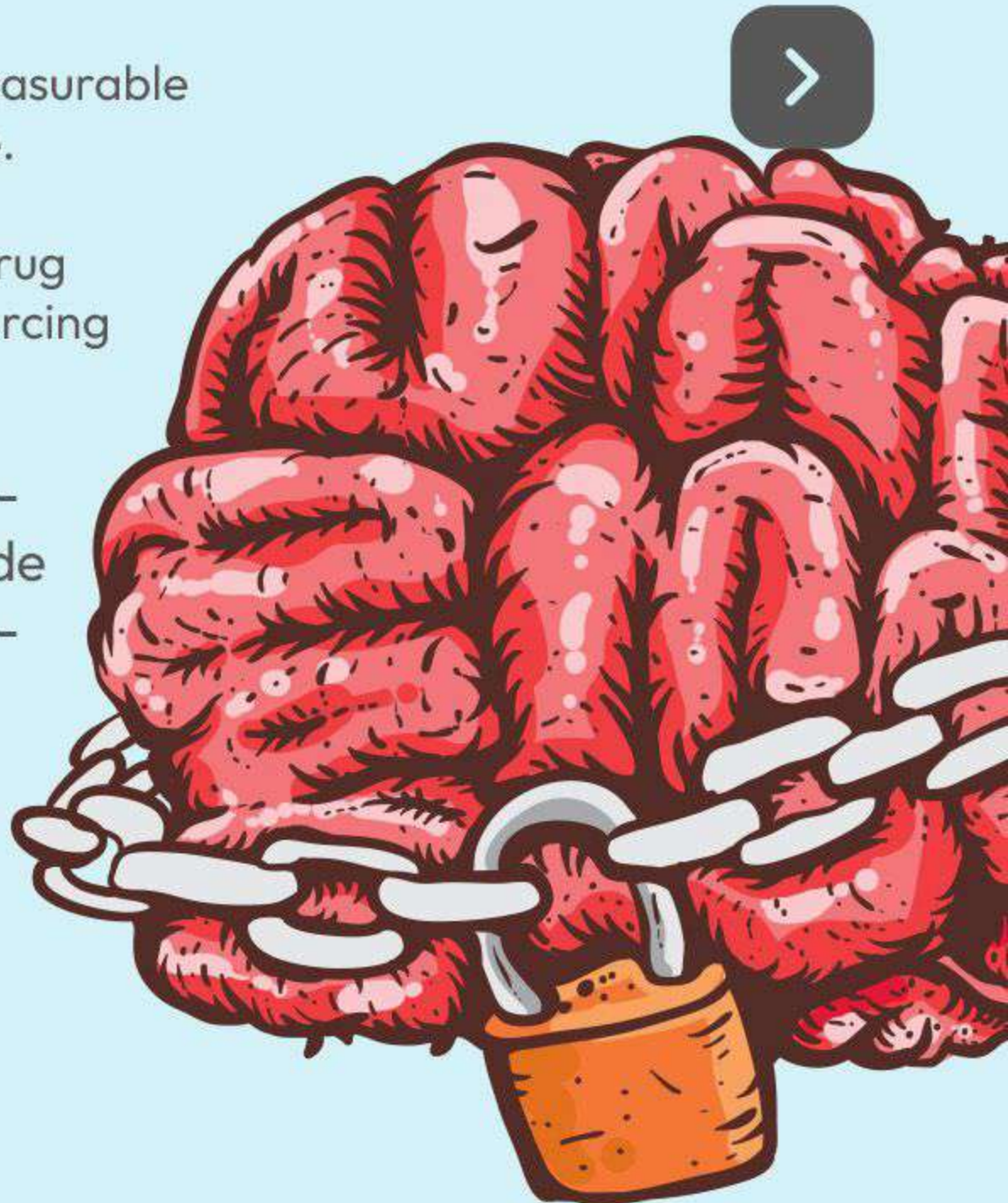
PSYCHOLOGICAL DEPENDENCE AND REINFORCEMENT

Drugs can also cause psychological dependence, where a person feels they need the drug to cope emotionally. Unlike physical dependence, this type can persist even without withdrawal symptoms.

Positive reinforcement: The pleasurable effects encourage repeated use.

Negative reinforcement: The drug reduces stress or anxiety, reinforcing the behavior.

Even without physical withdrawal, psychological dependence can make quitting extremely difficult.



HOW THE BRAIN GETS ADDICTED

Many drugs affect the brain's reward pathway, triggering a surge of dopamine, a neurotransmitter linked to pleasure and motivation.

Over time, the brain adapts by becoming less responsive to dopamine, meaning the person may need higher doses to experience the same pleasurable effects.

This process can lead to compulsive drug use and addiction, explaining why breaking free from addiction can be so challenging.



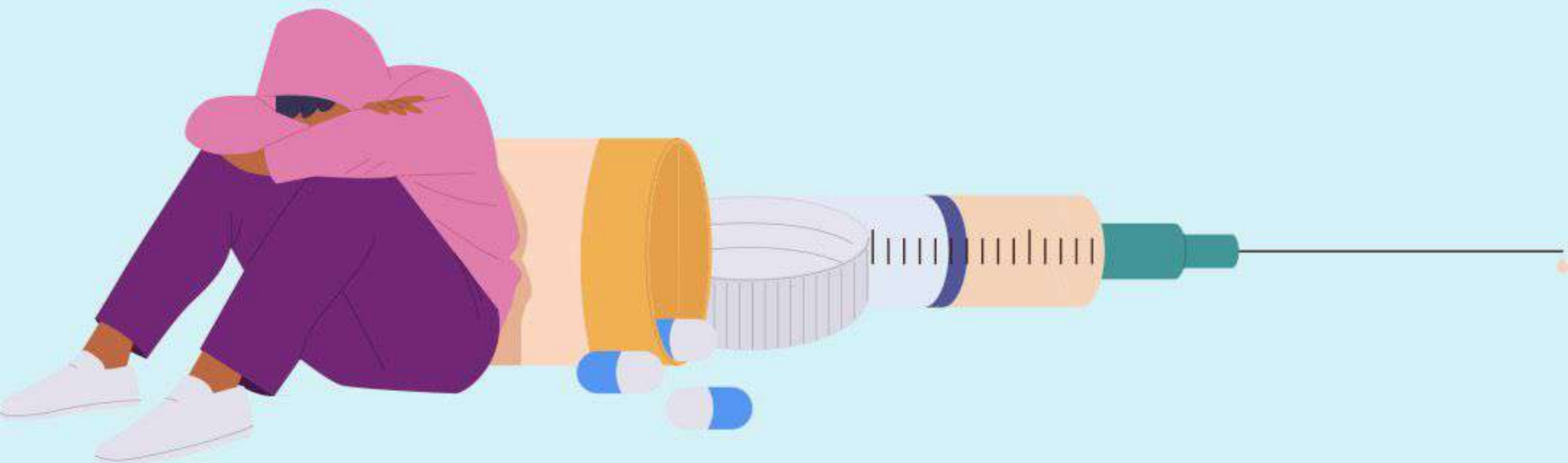
THE ROLE OF CONDITIONING IN ADDICTION

Drug use often becomes associated with specific places, people, or objects. These cues can trigger cravings through classical conditioning.

Seeing these cues can make resisting drugs more difficult.



Behavioral therapies such as contingency management help by rewarding individuals for remaining drug-free. Addressing these conditioned cues is an important part of addiction recovery.



CONSCIOUSNESS-ALTERING DRUGS AND THEIR EFFECTS

Some drugs alter perception, mood, and awareness, which can contribute to dependence. Three major categories include:

Stimulants: Increase brain activity (e.g., cocaine, amphetamines)

Depressants: Slow down brain function (e.g., alcohol, sedatives)

Hallucinogens: Distort perception and sensory experience (e.g., LSD, psilocybin)

We previously covered **Five types of consciousness-altering drugs.**

Scan the **QR** code to check that post.



CONCLUSION

Understanding drug dependence is essential for preventing addiction. Both physical and psychological dependence make quitting difficult, but awareness, therapy, and healthier coping strategies can support recovery.

If you or someone you know is struggling with substance use, seeking professional help can make recovery possible.



THINK & ANSWER!



Q

What is the key difference between physical and psychological dependence?

- A) Physical dependence causes withdrawal
- B) Psychological dependence is temporary
- C) Only physical dependence changes brain chemistry
- D) Physical dependence is based on habit

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