

# Symptoms & Causes of Addiction

---

## DSM V Symptoms

A problematic pattern of use of an intoxicating substance leading to clinically significant impairment or distress, as manifested by at least two of the following, occurring within a 12-month period:

1. The substance is often taken in larger amounts or over a longer period than was intended.
2. There is a persistent desire or unsuccessful efforts to cut down or control use of the substance.
3. A great deal of time is spent in activities necessary to obtain the substance, use the substance, or recover from its effects.
4. Craving, or a strong desire or urge to use the substance.
5. Recurrent use of the substance resulting in a failure to fulfill major role obligations at work, school, or home.
6. Continued use of the substance despite having persistent or recurrent social or interpersonal problems caused or exacerbated by the effects of its use.
7. Important social, occupational, or recreational activities are given up or reduced because of use of the substance.
8. Recurrent use of the substance in situations in which it is physically hazardous.
9. Use of the substance is continued despite knowledge of having a persistent or recurrent physical or psychological problem that is likely to have been caused or exacerbated by the substance.
10. Tolerance, as defined by either of the following:
  - a. A need for markedly increased amounts of the substance to achieve intoxication or desired effect.
  - b. A markedly diminished effect with continued use of the same amount of the substance.
11. Withdrawal: The substance (or a closely related substance) is taken to relieve or avoid withdrawal symptoms.

## Causes of Addiction

**1. Neurochemistry of Addiction:** The pleasure pathway is the **mesocorticolimbic dopamine pathway**. It's in the middle portion of the brain known as the ventral tegmental area and connects to the nucleus accumbens and the frontal cortex. It's involved with emotion, memory and gratification and alcohol stimulates this area making the alcohol reinforcing.

- Substances trigger the reward pathway in the brain to release abnormally high levels of dopamine without the user having to do any work for it. As dopamine goes through the brain it creates new pathways that lead the user back to the behavior that caused the pleasure chemical overload.
- Over time, the constant overload of chemicals causes tolerance as the brain adapts to the high levels of dopamine that substances release. The brain adapts by getting rid of some of the dopamine receptors and with fewer receptors the brain thinks there is less dopamine and the user doesn't feel as strong a reaction.

2. **Genetic Vulnerability**-having one parent with alcoholism increases the rate of alcoholism and two parents with alcoholism results in a much higher chance. It tends to run in families. Adopted away twins confirms genetic role.

3. **Alcoholic risk personality** is one with inherited predisposition and is impulsive, likes high risks and is emotionally unstable. They are more prone to develop tolerance. However most kids of alcoholics do not go on to become alcoholics.

4. **Psychosocial factors**: people become dependent on drugs for social interactions.

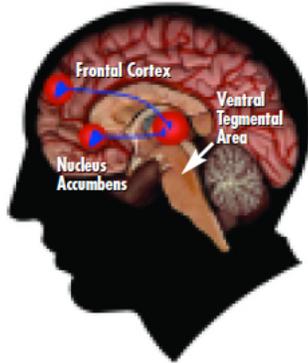
- A. Poor parenting that encourages alcohol and lacks monitoring can also lead to dependence.
- B. Child abuse might also lead to substance abuse.
- C. High risk personalities are those who are immature, expect a lot, need a lot of praise and react to failure with marked feelings of hurt, have low frustration tolerance and feel inadequate.
- D. Anti-Social Personality Disorder is related as is aggression and depression.
- E. Alcohol reinforces stress relief and can make one more popular.

5. **Sociocultural factors**: it's a social lubricant, some religions don't encourage it but Europeans are by far the biggest abusers.

- Low social support is related to substance abuse as well.

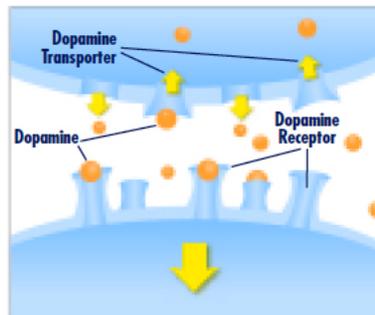
## DRUGS OF ABUSE TARGET THE BRAIN'S PLEASURE CENTER

### Brain reward (dopamine) pathways



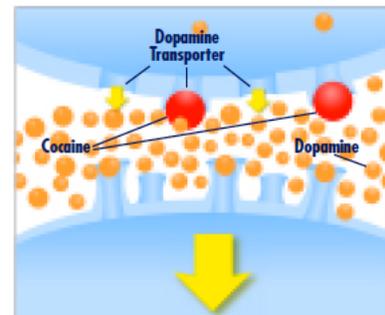
These brain circuits are important for natural rewards such as food, music, and sex.

### Drugs of abuse increase dopamine



FOOD

Typically, dopamine increases in response to natural rewards such as food. When cocaine is taken, dopamine increases are exaggerated, and communication is altered.



COCAINE