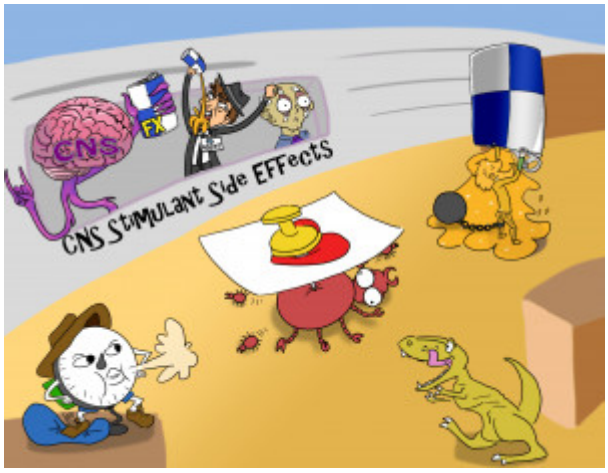
# CNS Stimulant Side Effects

CNS stimulants such as amphetamines, cocaine and other stimulants promote neurotransmitter release and enhance neuronal excitation. This classification of drugs bind to adrenergic receptors that normally receive neurotransmitters, such as norepinephrine, epinephrine, and dopamine. Stimulants can be prescribed for various conditions, such as using methylphenidate or dextroamphetamine to manage ADHD. Stimulants can also be abused, as seen in illicit use of drugs like cocaine. There are a number of side effects associated with CNS stimulant use including agitation, insomnia, hypertension, tachycardia, anorexia and tics. They have a high risk of tolerance as well as abuse and dependence.




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## Side Effects

### Agitation

Agitated-agent

Increased levels of neurotransmitters such as norepinephrine, serotonin and dopamine can lead to psychomotor agitation which can manifest as a variety of symptoms. Symptoms include talkativeness and nervousness, which can progress to significant anxiety and aggression.

### Insomnia

Taped-awake-insomniac

CNS stimulants speed up mental processes and cause increased feelings of wakefulness and alertness. The patient may develop insomnia based on an increase in energy levels and decreased need for sleep. By decreasing the patient's afternoon dose and avoiding medication administration after 4:00PM, the patient may minimize the effect of insomnia.

### Hypertension

Hiker-BP

CNS stimulants mimic the effects of norepinephrine in the blood vessels and cause excessive vasoconstriction that may develop hypertension.

### Tachycardia

Tac-heart-card

CNS stimulants may overstimulate the heart muscle and cause tachycardia and dysrhythmias. By mimicking the effects of norepinephrine, these medications increase heart rate, AV conduction, and force of contraction.

### Tics

Ticks

CNS stimulation may result in new tics or worsening of pre-existing tics. Types of tics include both motor and verbal tics.

### Anorexia

Anorexic-rex

CNS stimulants act upon the hypothalamus and cause appetite suppression. Loss of appetite or anorexia will cause weight loss. Weight loss may be desirable in obese patients but is considered an adverse effect in leaner patients. Administering the medication during or after meals will prevent the weight loss effects of anorexia.

## Considerations

### Tolerance Develops

Tolerance Developing

Physiological tolerance develops with chronic use of CNS stimulants. As the body adapts to the effects of CNS stimulants, the patient may increase the dosage and frequency of these drugs to yield the desired euphoric effect.

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**High Risk of Abuse and Dependence**

High Risk Abuser with Dependence-ball-and-chain

CNS stimulants create feelings of euphoria and increases the risk of abuse and psychological dependence. Regular use of CNS stimulants develops into physical dependence. The patient will experience abstinence syndrome, if the use of CNS stimulants is abruptly stopped. Symptoms of abstinence syndrome include exhaustion, depression, excessive sleeping and eating, and craving the drug.

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