

## Crack and Cocaine

Cocaine is a powerfully addictive stimulant drug. The powdered, hydrochloride salt form of cocaine can be snorted or dissolved in water and injected. Crack is cocaine that has not been neutralized by an acid to make the hydrochloride salt. This form of cocaine comes in a rock crystal that can be heated and its vapors smoked. The term "crack" refers to the crackling sound heard when it is heated.

Regardless of how cocaine is used or how frequently, a user can experience acute cardiovascular or cerebrovascular emergencies, such as a heart attack or stroke, which could result in sudden death. Cocaine-related deaths are often a result of cardiac arrest or seizure followed by respiratory arrest.

## Health Hazards

Cocaine is a strong central nervous system stimulant that interferes with the reabsorption process of dopamine, a chemical messenger associated with pleasure and movement. The buildup of dopamine causes continuous stimulation of receiving neurons, which is associated with the euphoria commonly reported by cocaine users.

Physical effects of cocaine use include constricted blood vessels, dilated pupils, and increased temperature, heart rate, and blood pressure. The duration of cocaine's immediate euphoric effects, which include hyperstimulation, reduced fatigue, and mental alertness, depends on the route of administration. The faster the absorption, the more intense the high. On the other hand, the faster the absorption, the shorter the duration of action. The high from snorting may last 15 to 30 minutes, while that from smoking may last 5 to 10 minutes. Increased use can reduce the period of time a user feels high and increases the risk of addiction.

Some users of cocaine report feelings of restlessness, irritability, and anxiety. A tolerance to the "high" may develop-many addicts report that they seek but fail to achieve as much pleasure as they did from their first exposure. Some users will increase their doses to intensify and prolong the euphoric effects. While tolerance to the high can occur, users can also become more sensitive to cocaine's anesthetic and convulsant effects without increasing the dose taken. This increased sensitivity may explain some deaths occurring after apparently low doses of cocaine.

Use of cocaine in a binge, during which the drug is taken repeatedly and at increasingly high doses, may lead to a state of increasing irritability, restlessness, and paranoia. This can result in a period of full-blown paranoid psychosis, in which the user loses touch with reality and experiences auditory hallucinations.

Other complications associated with cocaine use include disturbances in heart rhythm and heart attacks, chest pain and respiratory failure, strokes, seizures and headaches, and gastrointestinal complications such as abdominal pain and nausea. Because cocaine has a tendency to decrease appetite, many chronic users can become malnourished.

Different means of taking cocaine can produce different adverse effects. Regularly snorting cocaine, for example, can lead to loss of the sense of smell, nosebleeds, problems with swallowing, hoarseness, and a chronically runny nose. Ingesting cocaine can cause severe bowel gangrene due to reduced blood flow. People who inject cocaine can experience severe allergic reactions and, as with all injecting drug users, are at increased risk for contracting HIV and other blood-borne diseases.

## Added Danger: Cocaethylene

When people mix cocaine and alcohol consumption, they are compounding the danger each drug poses and unknowingly forming a complex chemical experiment within their bodies. NIDA-funded researchers have found that the human liver combines cocaine and alcohol and manufactures a third substance, cocaethylene, that intensifies cocaine's euphoric effects, while potentially increasing the risk of sudden death.

Adapted from the [National Institute on Drug Abuse \(NIDA\)](http://www.drugscreening.org/cocaine.aspx)  
<http://www.drugscreening.org/cocaine.aspx>  
U.S. Department of Health and Human Service