



## COCAINE

### (Street Names: Coke, Snow, Crack, Rock)

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#### Introduction:

Cocaine abuse has a long, deeply rooted history in U. S. drug culture, both urban and rural. It is an intense and euphorogenic drug with strong addictive potential. With the advent of the free-base form of cocaine ("crack"), and its easy availability on the street, cocaine continues to burden both law enforcement and health care systems in the U.S.

#### Licit Uses:

Cocaine hydrochloride (4% and 10%) solution is used primarily as a topical local anesthetic for the upper respiratory tract. The vaso-constrictor and local anesthetic properties of cocaine cause anesthesia and mucosal shrinkage. It constricts blood vessels and reduces blood flow, and is used to reduce bleeding of the mucous membranes in the mouth, throat, and nasal cavities. However, better products have been developed for these purposes and cocaine is rarely used medically in the United States.

#### Chemistry and Pharmacology:

Cocaine is the principal alkaloid in the leaves of *Erythroxylon coca*, a shrub indigenous to the Andean region of South America. Cocaine is an ester of benzoic acid and methylecgonine. Ecgonine, an amino alcohol, is structurally similar to atropine and some local anesthetics. Cocaine is a local anesthetic and a strong central nervous system stimulant which produces intense euphoria. Inhalation of the vapors of cocaine base (crack), known as "basing" or "free basing," became a popular practice in the 1980s because of its rapid onset of action (7-10 seconds), ease of repeat administration, and an unwarranted belief by users that smoking cocaine was less harmful and less likely to produce addiction than injecting powder cocaine. Smoking cocaine base produces an immediate and intense 'rush' with an equally intense 'high' or euphoria lasting from 2 to 20 minutes. Tolerance develops due to the euphoric effects of cocaine. Physiological effects of cocaine include constricted peripheral blood vessels, dilated pupils, and increased blood pressure and heart rate. Cocaine also produces restlessness, irritability, and anxiety in some users. High doses of cocaine or prolonged use can cause paranoia.

#### Illicit Uses:

Cocaine can be packaged as a white crystalline powder (snow), or in paste, free-base, or rock form (crack). Crack can be sprinkled on marijuana or tobacco and smoked. It is also taken in combination with opioids, like heroin; a practice commonly referred to as "speedballing." Intravenous and intramuscular injections, snorting, and smoking are the common routes of administration. All mucous membranes readily absorb cocaine. Cocaine smugglers who transport the drug by ingestion have died from the rapid absorption of cocaine through the bowel mucosa after swallowed cocaine-packed balloons inadvertently rupture in transit.

The widespread abuse of street cocaine of high purity has led to many adverse health consequences such as cardiac arrhythmias, ischemic heart conditions, sudden cardiac arrest, convulsions, strokes, and death. The availability of "crack" cocaine led to an increase in inhalation as the preferred route of administration for many abusers. In order to avoid the discomfort associated with post-euphoric 'crash,' crack or free-base smokers continue to smoke often in marathon binges, until they become exhausted or run out of cocaine supply. The long-term use of inhaled cocaine has led to a unique respiratory syndrome in some abusers, and the chronic snorting of cocaine has led to the erosion of the upper nasal cavity.

The Drug Abuse Warning Network (DAWN) reported that an estimated 505,224 emergency department visits were associated with cocaine in 2011. The American Association of Poison Control Centers (AAPCC) reports 6,008 exposures (1,427 single substance

exposures) and 30 deaths related to cocaine in 2017. And, for 2018, there were 5,778 exposures, 1,358 single substance exposures, and 28 deaths.

#### User Population:

Recent findings indicate that cocaine use may be re-emerging as a public health concern in the United States. According to the National Survey on Drug Use and Health (NSDUH), survey estimates indicate that in 2015, 968,000 people aged 12 or older initiated cocaine use in the past year (0.4 percent of the population), which was higher than in each of the years from 2008 to 2014. The 2015 estimate represents a 26 percent increase compared with 2014, with 766,000 new cocaine users in the past year (0.3 percent of the population), and a 61 percent increase compared with 2013, with 601,000 new cocaine users in the past year (0.2 percent of the population). More recently, the past year use estimates for cocaine, among persons aged 12 years and older, were 5.1 million, 5.9 million, and 5.5 million for 2016, 2017, and 2018, respectively. For the 2017 Monitoring the Future (MTF) study, there was not a significant increase in the past year use of cocaine (including crack) in 2016 among 10<sup>th</sup> and 12<sup>th</sup> graders; with past year use prevalence remaining the same for 8<sup>th</sup> graders (i.e., 0.8%, 1.4%, and 2.7%, for 8<sup>th</sup>, 10<sup>th</sup>, and 12<sup>th</sup> graders, respectively). For the 2018 MTF survey administration, there also were no significant increases or decreases among study participants. Cocaine abuse occurs in both genders and among various ethnic groups of the United States.

#### Illicit Distribution:

Cocaine's availability and use in the United States increased between 2015 and 2016. This increase was due to elevated levels of coca cultivation and potential pure cocaine production in Colombia, the primary source for cocaine seized in the United States. Colombia produces about 90% of the cocaine powder reaching the United States.

The Southwest Border (SWB) remains the key entry point for the majority of the cocaine entering the United States, according to the United States Customs and Border Protection data. Cocaine seizures along the SWB increased 20 percent from 2015 to 2016 — from 9,018 kilograms to 10,839 kilograms — the most cocaine seized along the SWB since 2011. This marks the second consecutive year cocaine seizures along the SWB have increased, following a decrease in seizures between 2013 and 2014. According to the National Forensic Laboratory Information System (NFLIS), federal, state, and local forensic laboratories reported a total of 214,824 items/exhibits identified as cocaine in 2016, an increase from the 207,576 items/exhibits reported in 2015 and 212,307 items/exhibits in 2014. For 2017, approximately 233,393 items/exhibits were identified as cocaine. And, for 2018, preliminary findings indicate there were 226,266 exhibits/items of cocaine.

#### Control Status:

Cocaine is a schedule II substance under the Controlled Substances Act.

Comments and additional information are welcomed by the Drug and Chemical Evaluation Section, Fax 571-362-4250, Telephone 571-362-3249, or Email [DPE@usdoj.gov](mailto:DPE@usdoj.gov).