



COCAINE

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

August 2011
DEA/OD/ODE

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 vasoconstrictor 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 U.S.

Chemistry/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 power cocaine. Smoking cocaine base produces a sudden and intense 'rush' with an equally intense 'high' or euphoria lasting from 2 to 20 minutes. Tolerance develops 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 an opiate, 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) reports that an estimated 422,896 emergency department visits were associated with cocaine in 2009. The American Association of Poison Control Centers (AAPCC) reports 5,293 exposures (1,707 single substance exposures) and 6 deaths related to cocaine in 2009.

User Population:

According to the 2009 National Survey on Drug Use and Health (NSDUH), 1.6 million Americans aged 12 and older used cocaine in the past month; a decrease from 1.9 million users in 2008. According to the 2010 Monitoring the Future (MTF) study, lifetime use of cocaine is 2.6%, 3.7% and 5.5%, for 8th, 10th and 12th graders, respectively. Cocaine abuse occurs in both genders and among various ethnic groups of the U.S.

Illicit Distribution:

Colombia produces about 90% of the cocaine powder reaching the U.S. According to the 2005 Colombia Threat Assessment, 90% of the cocaine shipped to the U.S. comes from the Central America - Mexico corridor. According to the National Forensic Laboratory Information System (NFLIS) and the System to Retrieve Information from Drug Evidence (STRIDE), federal, state, and local forensic laboratories reported a total of 304,187 items/exhibits identified as cocaine in 2010, a decrease from 354,317 items/exhibits in 2009. In the first quarter of 2011, 64,852 items/exhibits were identified as 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 202-353-1263, telephone 202-307-7183, or Email ODE@usdoj.gov.