

## Cocaine

Generic name: cocaine

Brand name: none

Street name(s): coke, blow, snow, nose candy, rock/crack (smokeable/inhalation form)<sup>1-2</sup>

### **Miscellaneous:**

- Derived from the leaves of the coca plant, *Erythroxylan coca*.
- Schedule II due to its use as a local anesthetic.

### **Pharmaceutical Properties:**

Most commonly found as a white, crystalline powder, though “crack” (usually administered via smoking/inhalation) is found in a form that resembles rock salt.

### **Uses:**

CNS stimulation and short-term psychoactive effects.

### **Administration:**

Insufflation, inhalation, local injection, topical solution (injection and solution usually reserved for use as anesthetic). The smokeable dosage form, crack, is currently the cocaine dosage form of choice due to its rapid (seconds) onset. Smoking crack results in the fastest onset of action, even being noticeably faster than injection.<sup>1-2,4</sup>

### **Mechanism/Pharmacology:**

Cocaine’s effects are largely due to its blockage of dopamine reuptake receptors. Dopamine build-up in the synapse, thus, is thought to be responsible for the positive psychological response felt by abusers.<sup>1-4</sup>

### **Side effects:**

Short-term: Tachycardia, hypertension, pyresis, mydriasis, seizures and euphoria.<sup>1-4</sup>

Long-term: Mood-swings, anorexia with consequent weight loss and auditory hallucinations.<sup>1-4</sup>

\*Complications that are often seen in coordination with cocaine’s use both short- and long-term include arrhythmias, respiratory failure, stroke, and seizures.

\*With concern to those addicts who use snorting as the method of administration, the nasal septum can be irritated, and in some cases, eroded.

\*Often reported in relation to its use during pregnancy, the CDC states that “mothers who use cocaine early in pregnancy are five times more likely to have a baby with a malformation of the urinary tract than mothers who do not use the drug.” Specifically

when addressing cocaine-abusing mothers, healthcare professionals must also be aware of the drugs that often accompany cocaine use (alcohol, marijuana, heroin, etc.).

### **Testing:**

Current testing is normally performed via a urine test. Though a blood test is possible, a urine test has obvious cost and time benefits. Cocaine is detectable in the urine in the form of benzoylecgonine (metabolite) for 12-72 hours.<sup>3</sup>

### **Treatment:**

There is currently no specific drug utilized in the treatment of cocaine abuse. Regimens, however, often include a combination of antidepressants, cognitive-behavioral therapy and various alternative treatments. Diazepam may be used to treat cocaine-induced seizures, while propranolol may be utilized in treating potentially fatal arrhythmias and hypertension.<sup>3</sup> It should be acknowledged that clinical studies have shown disulfiram (aldehyde dehydrogenase inhibitor) to be effective in treating cocaine addicts.<sup>4</sup>

### **Synthesis:**

On the streets, if cocaine is not imported in an administration-ready form, the product must be synthesized. The synthesis of cocaine is accomplished by mixing coca leaves with sulfuric acid and acetone.<sup>4</sup> Sulfuric acid can be found in numerous cleaning agents and research laboratories, while acetone is a common ingredient of paint thinners and nail polish removers.

### **User Identification:**

Physical: Mydriasis, red/inflamed eyes, anxious/nervous, repetitive touching of the nostrils/nose and the continuous sniffing and/or blowing of the nose with the absence of a cold or allergies.<sup>1-2,4</sup>

Attention should be paid to the consistent/excessive purchase of the aforementioned products used in the synthesis of cocaine, as they are potential precursors to the illegal production of the drug and may aid in identification of suspected users or distributors.

### **Citation References:**

1. Office of National Drug Control Policy. Drug facts: cocaine. (Updated 10/9/2002). Retrieved November 4, 2002, from [http://www.whitehousedrugpolicy.gov/drugfact/cocaine/cocaine\\_b.html](http://www.whitehousedrugpolicy.gov/drugfact/cocaine/cocaine_b.html)
2. DEA briefs & background. Drug descriptions: cocaine. (1999). Retrieved November 4, 2002, from <http://dea.gov/concern/cocaine.html>
3. Lacy CF, Armstrong LL, Goldman MP, Lance LL. Lexi-Comp Drug Information Handbook. 9<sup>th</sup> ed. Hudson (OH): Lexi-Comp, Inc;2001. p.293-94, 1556.
4. Olendorf D, Jeryan C, Boyden K. The Gale Encyclopedia of Medicine. 2<sup>nd</sup> Edition. Detroit (MI): Gale Research;2002. p. 831-34.

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1. Office of National Drug Control Policy. Drug facts: cocaine. (Updated 10/9/2002). Retrieved November 4, 2002, from [http://www.whitehousedrugpolicy.gov/drugfact/cocaine/cocaine\\_b.html](http://www.whitehousedrugpolicy.gov/drugfact/cocaine/cocaine_b.html)
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5. Kalivas A, Duffy P. Effect of acute and daily cocaine treatment on extracellular dopamine in the nucleus accumbens. *Synapse* 1990;5:48-58.
6. Marzuk PM, Tardiff K, Leon AC, Hirsch CS, Stajic M, Portera L, Hartwell N, Iqbal MI. Fatal injuries after cocaine use as a leading cause of death among young adults in New York City. *N Engl J Med* 1995;332:1753-57.