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Comparing Methamphetamine and Cocaine

Methamphetamine and cocaine belong to the broad class of drugs called psychostimulants that also includes amphetamine and methylphenidate. The two drugs often are compared to each other because they produce similar mood-altering effects and both have a high potential for abuse and dependence. Methamphetamine and cocaine also share other similarities. However, the two drugs also exhibit significant differences. Here are some of these similarities and differences.

Sources

- Methamphetamine is man-made.
- Cocaine is plant-derived.

Common Methods of Use

- Both methamphetamine and cocaine are commonly smoked, injected intravenously, or snorted.
- Methamphetamine also is commonly ingested orally.

Geographic Patterns of Use

- Methamphetamine use is highest in Honolulu, Hawaii, and western areas of the continental United States, particularly urban areas of California, Washington, Oregon, Colorado, and Arizona. In recent years, methamphetamine use has increased in both rural and urban areas of the South and Midwest. (Source: Epidemiologic Trends in Drug Abuse: Advance Report, 1997, NIDA.)

- Cocaine use shows no clear geographic pattern; regional rates of use vary from year to year. Cocaine use also is significantly higher in large metropolitan areas than in nonmetropolitan areas. (Source: Preliminary Results from the 1996 National Household Survey on Drug Abuse, Substance Abuse and Mental Health Services Administration.)

Euphoric Effects

- When they are smoked or injected intravenously, both methamphetamine and cocaine produce an intense, extremely pleasurable "rush" almost immediately, followed by euphoria, referred to as a "high."
- When snorted, both methamphetamine and cocaine produce no intense rush and take longer to produce a high; orally ingested methamphetamine produces a similar effect.
- Methamphetamine's high lasts anywhere from 8 to 24 hours, and 50 percent of the drug is removed from the body in 12 hours.
- Cocaine's high lasts anywhere from 20 to 30 minutes, and 50 percent of the drug is removed from the body in 1 hour.

Physical and Mental Effects

- The immediate effects of both methamphetamine and cocaine can include irritability and anxiety; increased body temperature, heart rate, and blood pressure; and possible death.
- Methamphetamine's and cocaine's short-term effects also can include increased activity, respiration, and wakefulness, and decreased appetite.
- Effects of chronic abuse of either methamphetamine or cocaine can include dependence and possible stroke.
- Chronic abuse of either methamphetamine or cocaine also can lead to psychotic behavior characterized by paranoia, hallucinations, mood disturbances, and violence. Anecdotal evidence suggests that violent behavior may be more common among chronic methamphetamine users than it is among chronic cocaine users.
- Drug craving, paranoia, and depression can occur in addicted individuals who try to stop using either methamphetamine or cocaine.

Neurotoxic Effects

- Methamphetamine is neurotoxic in animal species ranging from mice to monkeys; the drug damages the neurons that produce the neurotransmitters dopamine and serotonin. The usual doses taken by human methamphetamine abusers are comparable to the doses that produce neurotoxicity in animals.
- Cocaine is not neurotoxic to dopamine and serotonin neurons.

Transmission of HIV/AIDS

- Both methamphetamine and cocaine use contributes to transmission of HIV/AIDS through intravenous injection.
- Methamphetamine use in conjunction with high-risk sexual behaviors and cocaine use in "sex-for-crack" exchanges also contribute to transmission of HIV/AIDS.

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