

becomes unrealistically suspicious.

3. Exhaustion syndrome, an intense feeling of fatigue and need to sleep following the stimulation phase.

4. Prolonged depression.

5. Prolonged hallucinosis, in which the individual continues to hallucinate after the drug has been metabolized.

The Amphetamine Withdrawal Syndrome

For many years the medical consensus was that amphetamines were not addicting because of the supposed absence of a withdrawal syndrome. Part of the difficulty lay in disagreement over the definition of addiction, but a greater part was the failure to recognize the withdrawal syndrome because of its qualitative difference from the narcotic or general depressant withdrawal syndrome. The amphetamine withdrawal syndrome is characterized by apathy, decreased activity, and sleep disturbances which can last for weeks or months. Another withdrawal sign was noted by Oswald and Thacore (1964). Following abrupt withdrawal of large doses of amphetamines, an increase in the percentage of rapid eye-movement sleep (REM) occurred. REM returned to normal when amphetamine was withheld. This phenomenon provides additional evidence for the existence of physical dependence. Since suicides have occurred during amphetamine withdrawal, doctors have been advised to bring about withdrawal slowly in a controlled environment.

Legal Status

Since its emergence in an over-the-counter inhaler in the 1930's, amphetamine has been placed under closely defined controls. The Comprehensive Drug Abuse Prevention and Control Act of 1970 established five schedules, or lists, of controlled substances, ranging downward in their potential for abuse. Amphetamines were first placed in Schedule III, but on July 7, 1971, were moved to Schedule II. According to the Act, this schedule is designed for drugs which have a high potential for abuse; which have a currently accepted medical use in treatment in the United States or a currently accepted medical use with severe restrictions; or which may lead to severe psychological or physical dependence. Other drugs in Schedule II include certain opiates, methadone, methamphetamine, and cocaine.

The Act also gives the Attorney General authority to regulate "the registration and control of the manufacture, distribution, and dispensing of controlled substances." Specifically, every manufacturer, distributor, or dispenser of amphetamines must register annually with the Attorney General. "Dispensers" include scientists who are conducting research, as well as doctors and pharmacists. In addition, certain requirements for labeling and packaging amphetamines

--such as securely sealing their containers--are in effect.

A third significant control is that the Attorney General determines annual production quotas for certain controlled substances. It had been estimated that before quotas, some 8 billion doses of amphetamines had been manufactured annually in the United States. During 1972, production quotas were established, reducing production approximately 80 percent below 1971 levels.

A problem now being considered in most of the capitals of the free world is whether the benefits derived from amphetamines outweigh their toxicity. It is the consensus of the world scientific literature that the amphetamines are of very little benefit to mankind. They are, however, quite toxic.

—John D. Griffith (1972)

The question of whether or not amphetamines are addictive or habituating is a matter of semantics. Habitual users develop a marked psychological dependence on the drug and evidence definite withdrawal symptoms, including tenseness, anxiety, tremor and nervousness, which may be of such degree as to incapacitate the user during his period of withdrawal.

—Edward R. Bloomquist (1970)

It is generally felt that the behavior of heavy amphetamine users is consistent with the stereotype of the "dope fiend." From all evidence, amphetamines tend to set up conditions in which violent behavior is more likely to occur than would be the case had an individual not used it. Suspiciousness and hyperactivity may combine to induce precipitous and unwarranted assaultive behavior.

—John C. Kramer (1967)

References

1. Bloomquist, Edward R. The use and abuse of stimulants. In: Clark, William C. T., and del Giudice, Joseph, eds. *Principles of Psychopharmacology*, New York: Academic Press, 1970, pp. 477-486.
2. Griffith, John D.; Cavanaugh, John; Heis, Juan, and Oates, John A. Dextroamphetamine—evaluation of psychometric properties in man. *Archives of General Psychiatry*, 26:97-100, February 1972.
3. Kramer, John C.; Lischman, Vitezslav S.; and Littlefield, Don C. Amphetamine abuse—pattern and effects of high doses taken intravenously. *Journal of the American Medical Association*, 201(5):89-93, July 31, 1967.
4. Oswald, Ian, and Thacore, V. R. Amphetamine and phenmetrazine addiction—physiological abnormalities in the abstinence syndrome. *British Medical Journal*, (5154):427-431, August 17, 1963.
5. Smith, David E., and Fisher, Charles M. An analysis of 310 cases of acute high-dose methamphetamine toxicity in Haight-Ashbury. *Clinical Toxicology*, 3(1):117-124, March 1970.
6. Smith, David E. The characteristics of dependence in high-dose methamphetamine abuse. *International Journal of the Addictions*, 4(3):453-459, September 1969.