

Amphetamines: A Dangerous Illusion

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Amphetamines are among the most dangerous of currently abused psychoactive drugs. They cause dependence, behavioral toxicity, and physical damage. Despite their extensive medical use, the evidence suggests they are ineffective or minimally effective in most of the conditions for which they are prescribed. Their widespread use in medical practice is more likely the result of the euphoria and the dependence they induce than of any significant clinical results. This paradox, presented by the legality of amphetamine use, compounds the difficulty of treating youthful drug abusers and educating potential abusers. The following recommendations are urged: prescription of these drugs should, with few exceptions, cease; and production should be sharply curtailed and probably be limited to one or two pharmaceutical companies.

THE RAPIDLY increasing abuse of amphetamines among the young makes it important to reevaluate the status of this group of agents in medical practice. Are they valuable drugs, and in what conditions? What results can be expected from their use? What is their mode of action? To what extent are they indispensable? What are their hazards? How often do these hazards occur? Does their medical use have any influence on their illegal use? This article briefly reviews evidence suggesting that the amphetamines are both ineffective and unsafe, offers speculations about why we continue to use them, and recommends changes in the way we use them.

History

Amphetamine, a close relative of epinephrine,

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ephedrine, and other sympathomimetic amines, was synthesized in 1927. Shortly thereafter, descriptions of its effects on blood pressure and nasal congestion began to appear. Within 5 years it was found to act as a bronchodilator and a respiratory stimulant and also to have remarkable effects on the central nervous system, specifically cerebral stimulation and reduction in appetite. Because of these central effects, several authors warned of the possibility of dependence and tolerance as early as 1937. These warnings are well reviewed by Connell (1).

Despite the warnings, the amphetamines and their uses have proliferated to an amazing degree. The list of "accepted" medical indications for their use now includes obesity, mild depressive reactions, epilepsy, parkinsonism, central nervous system depression caused by barbiturates and other sedative-hypnotics, narcolepsy, and hyperkinetic reactions of children. They have also been used widely to maintain alertness and to increase physical performance.

The 1970 edition of the *Physicians' Desk Reference* (2) lists 65 amphetamine and amphetamine-like preparations produced by 40 companies. These are available either as single-drug preparations or in combination with salicylates, barbiturates, tranquilizers, and other substances. One can obtain a choice of vitamins or hormones along with an amphetamine in 15 preparations from 14 companies. This listing does not, of course, exhaust the preparations available from pharmaceutical companies.

In four cases companies describe in the *Physicians' Desk Reference* the amphetamine they produce and only one other product. In four other cases the amphetamine is the company's sole listed product.

What amount of amphetamines is legally manufactured? No one knows exactly. Estimates range from 5 billion to 8 billion doses a year. The Food and