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PERSONAL & CONFIDENTIAL

Subject: . Self-Administration - Reinforcement - "Addiction"

Within the general public a considerable amount of misunderstanding has arisen about the technique called self-administration. The layman tends to think of the term self-administration of drugs as "addiction to drugs." Over the past fifteen years behavioral pharmacologists have used the self-administration technique to demonstrate the reinforcing properties of a compound, not their "addiction" properties. When (1) an organism works to make available an event and (2) that event occasions additional work, then (3) that event is a reinforcer. Many chemical compounds and physical stimuli including water, saccharin, food, heat, etc. can be self-administered, and are therefore reinforcers. At present there is considerable evidence that nicotine is a reinforcing agent. The word "addictive" is very poorly defined, and we use it here for convenience and contrast. "Addictive" chemicals are self-administered, but because self-administration merely defines reinforcing qualities, there are other criteria set by the scientific community to establish the definition of "addictive." There are:

1. "Addictive" drugs produce disruptions in ongoing behavior when they are self-administered.
2. Upon termination of drug access there is a disruption in ongoing behavioral patterns.
3. "Addictive" drugs are preferred to more conventional reinforcers (e.g. food, water, heat, saccharin, etc.).

An example of an intravenous reinforcer that satisfied all these criteria is amphetamine. An example of an intravenous reinforcer that does not satisfy the criteria is saccharin. Preliminary experimentation with nicotine suggests that:

1. Nicotine when self-administered and functioning as a reinforcer does not produce changes in ongoing behavior.
2. Termination of nicotine access does not produce behavioral impairments (withdrawal effects).
3. Nicotine self-administration does not alter the self-administration of other reinforcers (e.g. food, water, saccharin, etc.).

The tentative conclusion seems clear: Nicotine is a reinforcer in the class of "nonaddictive" chemical compounds such as saccharin, or water. The establishment of nicotine's position among reinforcers, coupled with clear evidence that nicotine self-administration does not meet the established criteria for "addiction" would be most helpful in clarifying smoking behavior.

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