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## STATEMENT OF THE F.A.S. DRUG POLICY PROJECT TO THE U. S. SENTENCING COMMISSION

### Comment on the Proposed Changes to MDMA ("Ecstasy") Penalties

SUBMITTED 9 March 2001 to the U.S. Sentencing Commission by:

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**STATEMENT OF THE DRUG POLICY PROJECT  
OF THE  
FEDERATION OF AMERICAN SCIENTISTS  
TO THE  
U. S. SENTENCING COMMISSION**

**Comment on the Proposed Changes to MDMA (“Ecstasy”) Penalties**

**Summary**

Responding to a Congressional directive, the Sentencing Commission has published a proposal to set a sentencing weight equivalency for MDMA that is the same as the equivalency used for heroin: the proposal equates 1 gram of MDMA with 1 kilogram of marijuana. **Because the usual doses of MDMA and heroin differ, treating the substances alike on a weight-for-weight basis would implicitly treat one dose of MDMA as being equivalent to ten doses of heroin. There is no rational basis on which such an equivalency could be made.** While MDMA has risks, the damage done by heroin to its users, and the damage done by its users and dealers to others, vastly outweighs the damage done by MDMA. Whether we look at death, addiction, infectious disease transmission, crime by users, or violence among dealers, the damage from heroin is orders of magnitude greater.

**It would be more reasonable to treat ten doses of MDMA as equivalent, for sentencing purposes, to one dose of heroin. That would imply an equivalency of 1 gram of MDMA to 10 grams of marijuana.** Such an equivalency would mean that a single dose of MDMA would be treated as equivalent to approximately eight doses of marijuana, a comparison consistent with the data. The published proposal would treat a single dose of MDMA as equivalent to about eight hundred doses of marijuana, a quantity that would support daily smoking for more than two years. That comparison is not reasonable.

**If the Commission were to ratify the published proposal, the resulting change in sentencing would have the effect of diverting enforcement resources away from heroin, cocaine, and methamphetamine toward MDMA. The result of such a diversion would be to make the overall drug abuse problem worse.**

## Analysis

1. The Commission proposes to treat 1 gram of MDMA as equivalent, for sentencing purposes, to a kilogram of marijuana. This would accord MDMA the same punishment value, weight-for-weight, as heroin.
2. In comparing drugs for sentencing purposes, weight is not an appropriate basis, from either a medical or a policy-analytic standpoint. **Weight needs to be converted to dosage units to make comparisons meaningful.**
3. According to the Drug Enforcement Administration, a typical tablet sold as “Ecstasy” contains 75 to 125 mg of the pure drug and has a gross weight of about 300 mg. Thus, what is considered for sentencing purposes a gram of MDMA contains about 3.3 dosage units. A retail dose of heroin typically contains about 10 mg of pure heroin mixed with about 20 mg of diluent and adulterant. Thus a gram of retail heroin contains about 33 dosage units. While street purity varies for both drugs, if they were sold at equal purities, then the published proposal making MDMA and heroin equivalent on a weight-for-weight basis for sentencing purposes would treat a single dose of MDMA as equivalent to about ten doses of heroin.
4. MDMA, when taken in hot, unventilated dance club settings with strenuous physical activity and inadequate hydration, has been known to cause death.
5. There is growing laboratory evidence that MDMA is capable of causing lasting neurological changes in some of its users. How damaging those changes are, and how they depend on dosage, frequency, other conditions such as ambient temperature and hydration, and idiosyncratic characteristics of the user remain matters of scientific controversy.
6. There is also growing evidence that MDMA can generate and sustain patterns of heavy use (more than once a week, more than one dose per session) over periods of at least months in some of its users.
7. **This evidence contradicts earlier claims that MDMA is “harmless” or “non-addictive.”** Still, while rates of damage on a per-dose basis are difficult to compute, **the gross measured damages due to heroin and MDMA differ by orders of magnitude.**
8. According to the Drug Abuse Warning Network (DAWN) “heroin/morphine” accounted for 4,820 medical examiner mentions (**deaths** related to acute or chronic use) in 1999, while “MDM” [which we assume to mean MDMA] accounted for 42 mentions: **a ratio of more than 100:1.**
9. “Heroin/morphine” accounted for 84,409 **emergency department mentions** (emergency department visits related to acute or chronic use) in 1999, while “MDM” accounted for 2,850 mentions: **a ratio of nearly 30:1.**
10. Heroin addiction is a relatively common consequence of heroin experimentation, and for many, though not all, of its victims heroin addiction is a chronic, relapsing condition. The 1998 Treatment Episode Data Set (TEDS) reports heroin as accounting for approximately 14% of

the estimated 1,564,156 drug treatment “episodes” (each episode representing one patient entering a period of treatment). That is, about 218,000 people entered treatment in that year for heroin abuse or dependency.

11. **MDMA, while more widely used than heroin according to surveys, is much less likely to lead to patterns of abuse or dependency requiring clinical treatment.** TEDS reports *no* MDMA treatment episodes for 1998, but the number (if one includes private physician visits) is probably in the hundreds or thousands at most, rather than the hundreds of thousands documented for heroin.
12. **Heroin is often taken by injection, and thereby linked to the transmission of infectious disease, including HIV/AIDS and hepatitis B and C. MDMA is usually taken orally; injection is rare.**
13. Heroin addiction is commonly accompanied by large volumes of income-producing crime; studies in some heroin-using subpopulations show hundreds of criminal acts per addict per year. **MDMA use has not been linked to non-drug crime.**
14. Heroin dealing, both wholesale and retail, is frequently characterized by violence. Retail heroin dealers routinely carry guns. **MDMA markets have not been reported to produce any substantial violence.**
15. Thus we can find no justification, either pharmacologically or in policy terms, for treating MDMA as even close to equivalent to heroin on a dose-for-dose basis. **The proposal to treat MDMA and heroin as equivalent on a weight-for-weight basis, thus treating each dose of MDMA as equivalent in danger to about ten doses of heroin, cannot withstand even casual scrutiny.**
16. Both in its pharmacology and its risk profile, MDMA more closely resembles the hallucinogens than it does heroin. MDMA is far less likely than PCP or LSD to generate acute psychological crises (“bad trips”) or extreme acting-out behavior. However, MDMA has some level of toxic risk and has some non-trivial risk of generating addictive-like behavior. Moreover, unlike the true hallucinogens, MDMA is highly reinforcing, which suggests that the transition from initiation to regular use may be more common among MDMA users than among users of LSD or mescaline. Thus any overall comparison of MDMA with the other hallucinogens would depend on the relative weighting of the risk of acute psychological crisis and related behaviors against addictive and toxic risks.
17. Comparing MDMA directly with marijuana, **the proposal that 1 gram of MDMA be treated as equivalent to 1 kilogram of marijuana is also grossly disproportionate.** A marijuana cigarette typically contains somewhat more than one-third of a gram. Thus a kilogram of marijuana (assuming that it consists entirely of usable material) represents more than 2,500 doses, while a gram of MDMA sold at retail (including filler) represents between three and four tablets. **The proposed amendment thus equates a single dose of MDMA with approximately eight hundred marijuana cigarettes, enough to support daily marijuana smoking for more than two years.** The evidence does not support the assertion that the two activities create equivalent levels of risk. Treating one gram of MDMA as equivalent to ten

grams of marijuana would equate a single dose of MDMA to about eight doses of marijuana, a more reasonable figure.

18. Changing the weight equivalency for the sentencing of MDMA offenses affects more than the amount of time MDMA dealers will spend in prison. Within any finite budget, drugs compete for enforcement attention. Sentencing patterns help determine enforcement patterns, both by influencing investigative and prosecutorial evaluations of which cases are “major” and by making successful investigations easier by increasing the leverage that can be applied to some suspects to provide information about others. **The Commission should consider whether, in the face of accumulating evidence that heroin is making a resurgence, it wants to encourage the Drug Enforcement Administration to move resources out of heroin enforcement into MDMA enforcement.** We do not think that such a shift of resources would serve the public interest.
  
19. We recognize that the Commission is acting under Congressional mandate to increase the penalties for MDMA distribution, while our recommendation would reduce the current marijuana-equivalency assigned to MDMA. Precision on these matters is impossible; no single figure can precisely reflect the full complexity of the comparisons across drugs on the multiple categories of risk and damage to users and others. However, the current equivalency (1 gram of MDMA to 35 grams of marijuana) is at or above the top of the range of values that can be supported by the data, whether MDMA is compared to heroin or to marijuana. **No increase in the relative penalty valuation of MDMA can be rationally justified.**

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**Summary: Comparisons of Heroin and MDMA**

Measurement	Heroin	MDMA	Ratio
Potency (doses per gram), pure form	100 doses/gm	10 doses/gm	10:1
Potency (doses per gram), typical retail mixture *	33 doses/gm	3.3 doses/gm	10:1
Medical examiner mentions (deaths) in 1999 (source: DAWN)	4,820	42	100:1
Emergency department mentions in 1999 (source: DAWN)	84,409	2,850	30:1
Addiction treatment episodes in 1998 (source: TEDS)	216,834	None reported; actual number unknown	Greater than 100:1
Infectious disease transmission via injection use	Very high	None reported; actual number unknown	Greater than 1000:1
Violence in distribution	Very high	Low	Greater than 1000:1
Linkage to non-drug crime by users	Very strong	None reported	Greater than 1000:1

\* based on a typical retail mixture gross weight of 30 mg per dose of heroin and 300 mg per dose of MDMA

**About FAS:** Founded by World War II atomic scientists in 1945, the Federation of American Scientists is a civic organization devoted to issues of science and society. The FAS Drug Policy Project works to bring insights from pharmacology, social science, and policy analysis to the problems of substance abuse control.