

LETTER TO THE EDITOR

## Prevalence of MDMA (ecstasy) use and neurotoxicity

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For more than 10 years now, the dance culture all over the world has involved the consumption of large amounts of hallucinogenic drugs such as MDMA (ecstasy). From a recent survey of a popular magazine in the UK [1], it becomes clear that the use of MDMA is standard among persons who visit dance parties (clubbers). Eighty-five percent of these respondents used MDMA in the last month, with an average of 3.9 pills a month. Furthermore, three-quarters of the respondents always take, or nearly always, MDMA (75–100% of the time), and the average frequency of ‘clubbing’ is 4.1 times a month. Although these numbers cannot be extrapolated towards the rest of Europe, there is little reason to assume that these numbers are very different in other Western countries.

From recent studies there are indications that MDMA causes serotonergic neurodegeneration in humans which may consequently result in sleep disorders, depression, and memory impairments [3]. When the high prevalence is linked to these possible neurotoxic effects, one must conclude that this population, mainly well-educated adults and teenagers, are at an unknown risk. From a vast amount of detailed Internet sources [2] on the pharmacology and neurotoxicity of MDMA (see e.g., <http://dancesafe.org>) it can be concluded that the information needs on risks of MDMA use are high. However, there is a gap between this need for knowl-

edge among this population and the actual available scientific knowledge on the risks of this drug. Whereas in animal studies the neurotoxicity of high doses of MDMA is widely studied, human studies are very scarce and still subjects of debate [4]. When scientific results are not currently available, this population can only fulfill their information needs by consulting this, not exclusively accurate, information on the web<sup>1</sup>. Furthermore, it is striking that studies on the health risks of frequently taken drugs such as MDMA are studied to a much lesser extent than less frequently taken drugs as cocaine and heroin. An approximate Medline (restricted to human literature) search on the words MDMA or ecstasy resulted in 524 hits, while heroin or cocaine resulted in 7839 and 9156 hits, respectively. Taking into account the high prevalence of MDMA use, more human studies on the neurotoxicity of MDMA are warranted. As the authors of the aforementioned survey state, ‘Hopefully...this will open up debate, making clubbing safer and clubbers more informed.’

### REFERENCES

- 1 Craske V, Stevenson N, Halfin M, French P. The Mixmag drugs survey 2000. *Mixmag* 2001 ; Feb : 55-62.
- 2 Halpern JH, Pope HG Jr. Hallucinogens on the internet: a vast new source of underground drug information. *Am J Psychiatry* 2001 ; 158 : 481-3.

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<sup>1</sup> It must be added however, that much of the information on these Internet sites is based on recent scientific knowledge. For example, [dancesafe.org](http://dancesafe.org) provides detailed information on the pharmacology of MDMA, the risks (neurotoxicity), and possible neuro-protective roles of other pharmacological agents.

3 Morgan MJ. Ecstasy (MDMA): a review of its possible persistent psychological effects. *Psychopharmacology* 2000 ; 152 : 230-48.

4 Vollenweider FX, Gamma A, Liechti M, Huber T. Is a single dose of MDMA harmless? *Neuropsychopharmacology* 1999 ; 21 : 598-600.