

# Residual neurocognitive features of long-term ecstasy users with minimal exposure to other drugs

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## **Abstract**

**Aims** In field studies assessing cognitive function in illicit ecstasy users, there are several frequent confounding factors that might plausibly bias the findings toward an overestimate of ecstasy-induced neurocognitive toxicity. We designed an investigation seeking to minimize these possible sources of bias.

**Design** We compared illicit ecstasy users and non-users while (1) excluding individuals with significant life-time exposure to other illicit drugs or alcohol; (2) requiring that all participants be members of the rave subculture; and (3) testing all participants with breath, urine and hair samples at the time of evaluation to exclude possible surreptitious substance use. We compared groups with adjustment for age, gender, race/ethnicity, family-of-origin variables and childhood history of conduct disorder and attention deficit hyperactivity disorder. We provide significance levels without correction for multiple comparisons.

**Setting** Field study.

**Participants** Fifty-two illicit ecstasy users and 59 non-users, aged 18-45 years.

**Measurements** Battery of 15 neuropsychological tests tapping a range of cognitive functions.

**Findings** We found little evidence of decreased cognitive performance in ecstasy users, save for poorer strategic self-regulation, possibly

reflecting increased impulsivity. However, this finding might have reflected a pre-morbid attribute of ecstasy users, rather than a residual neurotoxic effect of the drug.

**Conclusions** In a study designed to minimize limitations found in many prior investigations, we failed to demonstrate marked residual cognitive effects in ecstasy users. This finding contrasts with many previous findings - including our own - and emphasizes the need for continued caution in interpreting field studies of cognitive function in illicit ecstasy users.

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