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Poster Presentation P26

ECSTASY BEFORE, DURING, AND AFTER STRESS

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MDMA or ecstasy has been shown to have adverse short- and long-term effects in humans, that include: anxiety, depression, panic disorder, cognitive dysfunction, and in some rare cases death (Peroutka et al., 1988; Kosten and Price, 1992; McCann et al., 1994). Given the growing prevalence of MDMA use in young adults, including women of child-bearing age, understanding the effects of MDMA exposure on the fetus is important. Little is known about the developmental effects of MDMA in humans, therefore neonatal animal models have been used to model MDMA exposure that is comparable to human second and third trimester brain development (Rodier, 1980; Morgane et al., 1992; Bayer et al., 1993; Rodier, 1994). Rats exposed to MDMA from postnatal day (P) 11 to 20, but not from P1 to P10 show dose-dependent deficiencies in spatial and path integration learning and memory in adulthood (Broening et al., 2001; Williams et al., 2004). Corticosterone is a steroid hormone secreted from the adrenal cortex often used to help regulate metabolism and stress responses. Corticosterone may induce the learning and memory deficits seen in rats exposed to MDMA, because MDMA exposure during this period increases corticosterone during a period of development when levels of corticosterone typically remain low. This is a developmental stage termed the stress hyporesponsive period (SHRP). The purpose of this study was to determine if MDMA given prior to or after the SHRP is ineffective at producing changes in cognitive function. In addition, the dose-dependent effects of the drug on cognitive impairments were investigated.