

ENVIRONMENTAL MODULATION OF COCAINE AND AMPHETAMINE SELF ADMINISTRATION

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Rationale: We have previously shown (1) that psychomotor sensitization to cocaine and amphetamine is much greater in rats that were transferred to the test cages immediately before treatment (novelty group) than in rats that were kept in the test cages at all times (home group). The goal of the present study was to determine whether this environmental manipulation could also affect the reinforcing properties of cocaine and amphetamine. **Methods:** One hundred-fifty-seven rats received an intrajugular catheter using standard surgical procedures and were then assigned to one of two environmental conditions. The rats in the home condition were housed and tested in standard two-lever operant cages. The rats in the novelty condition were transferred to the operant cages only for the self-administration sessions (novelty groups). The rats were then trained to self-administer vehicle (0.04 ml of saline per infusion), cocaine (0.2, 0.4, or 0.8 mg/kg per infusion), or amphetamine (0.0125, 0.025, or 0.05 mg/kg per infusion). On sessions 1-7, the schedule requirement was gradually increased from fixed ratio (FR) 1 to FR5. On sessions 8-10, the rats were given the possibility to self-administer three additional doses of cocaine or amphetamine. On session 12, the rats underwent a break-point session during which the number of responses required to obtain a single infusion was progressively increased according to the following progression: 5, 10, 20, 30, 50, 70, 100, 150, 200, 300, 500 and so on. The break-point (the highest ratio completed) was used as an index of the motivation for drug taking. **Results:** The rats in the novelty group self administered more cocaine and amphetamine and exhibited a higher break-point than the rats in the home group. **Conclusions:** The present findings demonstrate that the environment surrounding drug taking can alter both the intake of and motivation for cocaine and amphetamine.

1) Badiani A. and Robinson T.E. (2004) *Behav. Pharmacol.* 15:327-39.