ABSTRACT

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Title: THE EFFECT OF PATERNAL ETHANOL EXPOSURE ON ETHANOL INTAKE, ANXIETY AND MOTIVATION IN OFFSPRING OF MALE SPRAGUE DAWLEY RATS

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Paternal ethanol exposure prior to breeding is associated behavioral, cognitive and physiological abnormalities in offspring of Sprague Dawley rats. Past research on offspring of ethanol pre-treated fathers suggests that the failure to perform on a T-maze apparatus may result from the effect paternal ethanol exposure has on the offspring's anxiety and motivation. The present study assessed the ethanol intake, anxiety and motivation in male and female rats that were offspring of alcohol-exposed fathers. Adult male rats were exposed to alcohol or vehicle (16.8% v/v EtOH solution, volume of administrations: 0.015 ml/g; dose: 2.0 g/kg; twice daily for 2 days followed by a rest day, for a total of eight alcohol or water exposure days) or were left untreated and then mated with non-manipulated females. The offspring were assessed for alcohol intake, via intraoral infusion, followed by behavioral assessment via elevated plus-maze (EPM) or modified T-maze. The results indicated that paternal ethanol exposure, prior to breeding, resulted in offspring that consumed significantly more ethanol than water or untreated controls. Furthermore, no significant differences were observed in the number of head/front paw protrusions from the closed arm of EPM and amount of time (in seconds) spent in the open arm of the EPM were observed in all paternal conditions. Not only that, but there was a significant difference in the control compared to the water and ethanol paternal conditions on the average highest barrier reached and the percentage of large barriers crossed on the modified T-maze apparatus. The present results add to a growing body of literature suggesting that paternal pre-conception alcohol exposure can have harmful effects on the offspring.