

DIFFERENCES IN IMPULSIVITY BETWEEN HIGH-ALCOHOL PREFERRING AND LOW-ALCOHOL PREFERRING MICE IN A DRL TASK

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High impulsivity, the propensity to prefer small immediate rewards to larger delayed rewards, is more observable in alcoholics as well as drug addicts than in non-addicts. However, it remains unclear whether impulsivity precedes and potentially causes substance use disorders. Of particular interest to us is whether the high drinkers differ from low drinkers in their ability to perceive time. In this study we examine differences in impulsivity, as measured by a differential reinforcement of low rates of responding (DRL) task, in mice selectively bred for differences in alcohol consumption, High Alcohol Preferring (HAP-II) and Low Alcohol Preferring (LAP-II) mice. In this task, subjects must inhibit instrumental behavior until an unsignaled DRL interval has elapsed. We hypothesize that due to their previously demonstrated impulsivity, the HAPII mice will perform poorly and receive fewer rewards than LAP-II mice. We expect that our results will indicate that due to premature responding, HAPII mice will receive fewer rewards than LAP-II mice during the DRL task, but obtain more rewards during a basic fixed interval task, when early responding is not punished. Therefore, alcohol naive HAPII mice will be more impulsive than LAP-II mice, as measured by the DRL task. This finding suggests impulsivity is a heritable endophenotype that precedes exposure to alcoholism or drugs.

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