

Count: 17

Abstract ID: 127

**subject:** Cognition: Learning and Memory

**Presentation Type:** Poster

## **Side effect of ethanol on learning in an evaluation of rat seeking behavior**

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**Background and Aim :** Background and Aim: Alcohol can have  $\rightarrow$  destructive effect on the structure, and volume of synaptic pathways, and system performance  $\rightarrow$  in learning and spatial memory. The aim of this study was to evaluate the side effects of ethanol on learning by observing seeking behavior of rats.

**Methods :** Materials and Methods: The treated animals were large white male Wistar laboratory rats (purchased from the Pasteur Institute of Iran) and were tested by observing novelty seeking behavior to the new environment based on the location conditioning. The exploratory behavior encompasses some components  $\rightarrow$ such as Sniffing, standing (Rearing), Grooming, and moving from one side of the evaluation device to the other side (Compartment entering). There are three conditioning phases as follows: Familiarization phase, Conditioning phase, and test or exam. Rats were injected high doses of alcohol (1, 2, 4, 8 mg / kg) after three days of dating and the conditioning phase while at this stage they were bound on one side of the device just before the test. And in the case of low doses of alcohol, animals at the beginning (day acquaintances) were familiar with the assessor and then they passed the intake (0.05-0.11 g / kg) of ethanol frequently (10 days, once per day). In the testing day, as the day they were familiar, they had accessibility to the whole device. In parallel with two methods, the injection of saline solution in the control  $\rightarrow$  was carried out.

**Results :** Results: In the case of high doses, on the test day, animals did not remember the information, and they had great tendency toward the new side on which they were not bound during the conditioning. At low doses, animals showed exploratory behavior such as Sniffing and Rearing

Basic and Clinical  
**6<sup>th</sup> NEUROSCIENCE  
Congress 2017**

December, 20-22 2017 Razi Hall, Tehran, Iran



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on the side of the device, that they frequently (10 days) there (after receipt of medication) were bound.

**Conclusion :** Discussion and Conclusion: Frequent consumption of alcohol in alcoholics causes to multiple problems including alcoholic liver disease. With respect to the results of the present research, a single administration of high concentrations of alcohol impairs learning and spatial memory consolidation; and repeated injections of low- concentration alcohol result in a change of physiological balance and makes psychological dependency on the material.

**Keywords :** Key words: Ethanol, Novelty - seeking behavior, Learning, Liver, Rat