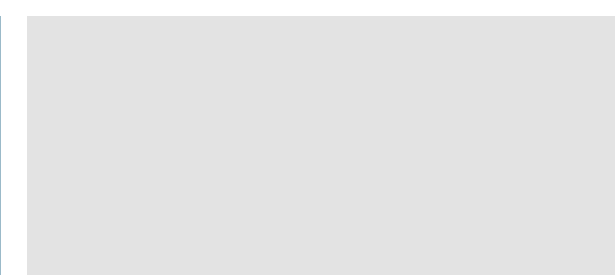
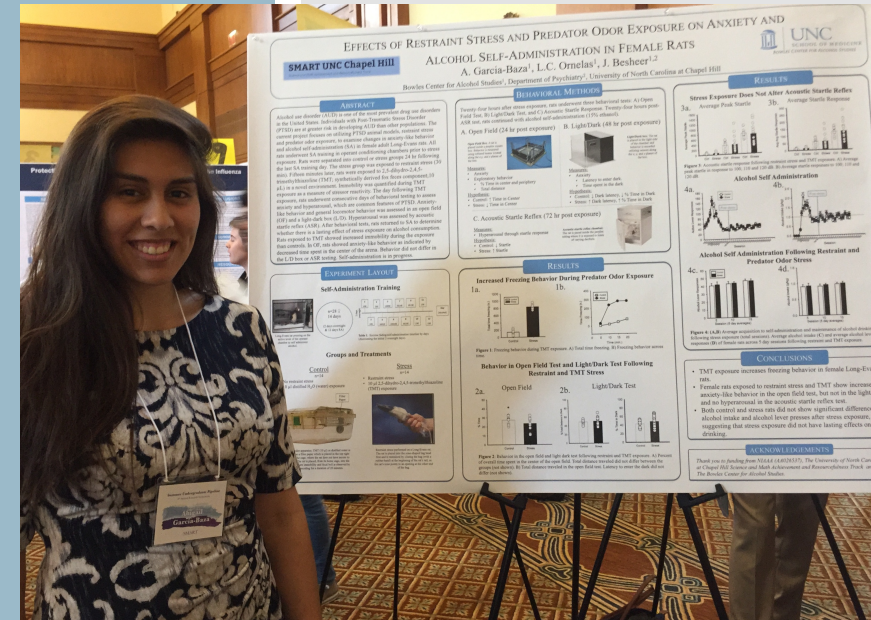


# Effects of Restraint Stress and Predator Odor Exposure on Anxiety and Alcohol Self-Administration in Female Rats

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How can restraint stress and predator odor exposure affect the behavior and alcohol self-administration of female adult Long-Evans rats?

According to the National Survey on Drug Use and Health survey conducted in 2015, 15.1 million adults (18 and older) reported having Alcohol Use Disorder (AUD) in the United States. It was reported that individuals with Post-Traumatic Stress Disorder (PTSD) are at greater risk in developing AUD than other populations. Being that alcohol use disorder is one of the most prevalent drug use disorders, and the third most preventable leading cause of death in the United States, it raises questions on how to help manage AUD in individuals with PTSD.

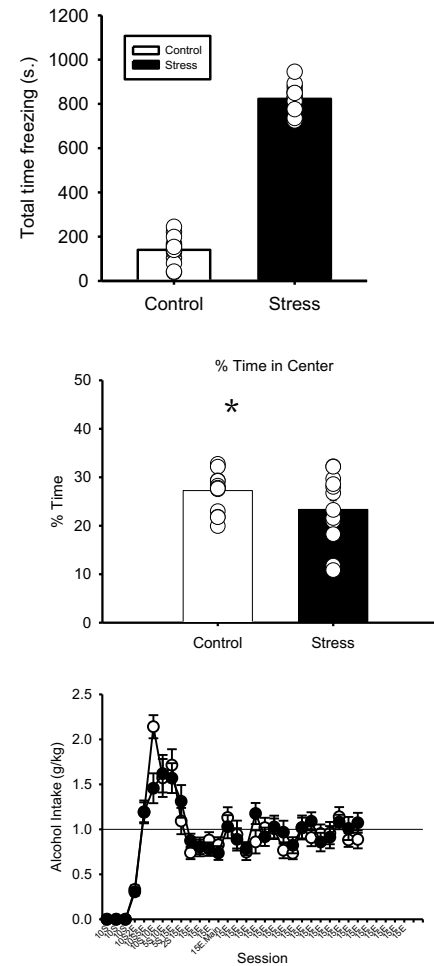
Our research focuses on this issue by studying the effects of traumatic stress exposure on behavior and later alcohol self-administrations in rats, to better understand the underlying neurobiology and mechanisms.

# Results and Conclusions

Our lab used TMT, which is a synthetic derivative of fox feces, as our predator odor, and exposed half of our rats (the stress group) to it. The other half of the rats (known as the control group) were exposed to water. We found that rats who were exposed to TMT showed increased freezing behavior.

We conducted three behavioral tests on all our rats and found that female rats exposed to TMT and restraint stress, which is a type of stress exposure, showed increased anxiety-like behavior in the open field behavioral test. No significant differences were found from the other two tests (light-dark and acoustic startle response).

Both control and stress rats did not show significant differences in alcohol intake after stress exposure, suggesting that stress exposure did not have lasting effects on drinking.



There were *some* apparent differences in behavior between rats that underwent stress and the rats that did not. There were no differences in both treatment groups concerning alcohol intake. Further investigation is required to see if a re-exposure to a stressful environment will elicit different responses in the rats, or if these findings are a result of only using female rats. Our next step is to collect data from the female rats after re-exposing them to a stressful environment. Additionally, another experiment with all male Long-Evans rats will be conducted to compare results between female and male adult Long-Evans rats.