



## Colorado Science and Engineering Fair

## 2025 Individual Project Abstract Form

**Please print 2 copies of the completed form. Sign both copies, keep 1 for your notebook and submit 1 copy to your Regional Fair Director with your other paperwork.**

Title of Project: How Exercise Affects Stress Levels In Horses

Finalist's Name: Ava Shah

School and City: Summit Charter Middle School Boulder

Sponsor's Name: Valerie Keeney

Category: Animal Sciences

Division: Junior (grades 6 - 8)

Abstract (250 words or less):

When horses don't exercise, they have much more energy and stress when ridden, as exercise can help release dopamine. Since exercise can affect stress levels, it can also change the behaviors that horses have, and when a horse exercises, positive behaviors can be seen, like licking and chewing and having rounded nostrils. Four horses were taken from their stalls individually and were observed for seven specific behaviors for five minutes. After they were observed, the horses were exercised for 10 minutes and then observed again for five minutes for the same seven behaviors. Two prominent behaviors observed were blowing out and licking and chewing, as both their t-test values were well under 0.05, indicating a significant difference between how much they blew out or licked and chewed before versus after exercise. The number of times they performed each behavior increased, which is good because both these behaviors indicate a release of stress, which is demonstrated by the before exercise mean for blowing out which was 1, and after which was 5, with an increase of 4 blows. The same thing happened for licking and chewing, however, the increase was 15 licks and chews. All in all, exercise had a notable effect on four out of the seven behaviors, with some of them being positive and some being negative, however, exercise did have a positive effect on those four, and the other three had no noticeable effect. Exercise was able to decrease the stress levels in these four horses, thus changing their behaviors.

*I hereby certify that the above statements are correct and the information provided in the Abstract is the result of one year's research. I also attest that the above properly reflects my own work.*

Finalist's Signature:

Date:

In addition, all students must complete the ISEF Student Checklist (1A), Research Plan, Approval Form (1B), and Checklist for Adult Sponsor (1), and any other ISEF forms required for this type of project. See the International Rules and Guidelines for form requirements. Return COPIES of all of these forms to your Regional Fair Director with you Finalist Verification/Permission Form. **A signed copy of this form must be included in your notebook.**