



Grooming as a Means to Cool Down

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Abstract

Many people believe that the only method of cooling down their horse is to walk them, and sometimes for long amounts of time depending on the work and length of work the horse was used for. Brushing a horse's coat mimics a natural equine behavior (mutual grooming) between horses that can induce a horse to relax – and thus affect his heart rate and cause it to lower (EquiMed) quicker. There are even certain studies that show heart rate reduction when the withers and nearby areas were groomed, but no reduction when the shoulder and other areas of the horse was groomed (S. Normando). There is not a lot of research projects on this idea that heart rate could help cool down horses after a workout, which would in turn save some time for the horse's caretaker. If a horse is groomed immediately following exertion, then their heart rate should decrease at a rate faster than if they were walked after the exerting exercise. I concluded that there is a faster decrease in heart rate of the horse following a few minutes of grooming. The results that were found here should help show and explain to horse owners that grooming is a good practice to exercise after a horse has exerted itself with work. This could be extremely beneficial to the racing industry, where the cool down process is extremely important but consumes large amounts of time.

Purpose

The purpose of this research is to prove that grooming (brushing) a horse after they have done some work will lower their heart rate faster than walking them.

Questions, Hypotheses, and Predictions

Question: Will the calming affect that grooming produces in horses act in the same way after they have exerted effort in work?

Hypothesis: If a horse is groomed after a period of time of work, then their heart rate should decrease significantly faster than simply walking them around after said period time of exerted exercise.

Prediction: It is predicted that grooming as a means to lower a horse's heart rate after exercise will decrease their heart rate.

Study System

The species of interest was the horse, specifically 2-3 year old colts and filly's at the KSU Horse Unit. They are housed together in a big pen, and they have been taught different training techniques as well as being ridden in the Advanced Horse Training class. These American Quarter horses are mainly bred to be reining or cutting horses, so they are quick on their feet but are thicker and heavier in their hindquarters than most other horse breeds. Most of these young horses are not fully grown, although some are close to their adult, mature size and weight.

Methods and Experimental Design

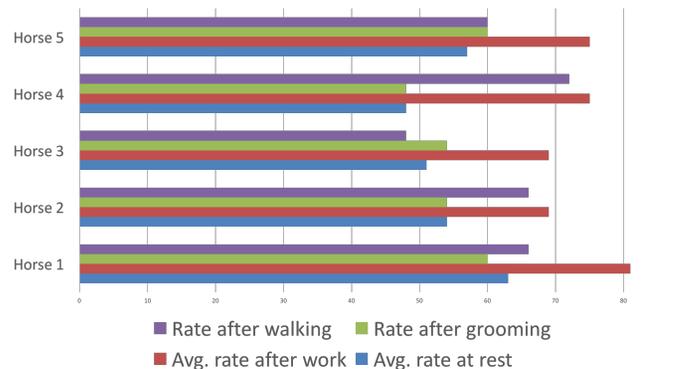
Over the course of several sessions, I was able to collect data on 5 different 2 year old horses. The equipment that was used consisted of: halter with lead rope, lunge whip, stopwatch, stethoscope, paper, and pen. This research was conducted at the Kansas State Horse Unit, North of Manhattan. I began by taking the horse's resting bpm (beats per minute) using the stethoscope placed behind the horse's left shoulder, in a little pocket just before the stomach rounds underneath the horse. I counted the beats for 15 seconds and took that number and multiplied it by 4 to get the resulting bpm. Then, I lunged the horse at a trot for 3 minutes, with some changing of directions to keep the horse from getting bored. Some horses were excited and loped or cantered during the experiment, resulting in a higher bpm. Once the horse was worked for 3 minutes, I stopped the horse, and took their bpm before either 1) brushing or grooming them for 2 minutes, or 2) walking them slowly around the arena for 2 minutes. With each horse I completed each option, and once that option was completed I recorded the bpm again. I analyzed my data by looking for significant decreases in bpm from grooming versus the walking. The data was collected and put together to form the graph below.



Results

In 4 of the 5 horses it was shown that grooming them following exercise has a greater affect on lowering their heart rate compared to walking after exercise.

Measured Heart Rates of 5 Horses



Cool-down Method	Heart Rate (beats/min) After Method
Walking	62.4
Grooming	55.2
paired t-test: t=1.39, df=4, P=0.237	

Conclusions

From a small-scale study such as this one, it can be concluded that grooming does have a positive affect on a horse's heart rate not just before work but following work or exercise. This information could be crucial in providing information to horse owners about building a post-work regimen including grooming, which could in turn help the horse to cool-down faster, lessening chances of health issues.

Future Directions

The next step in continuing this research would be to explore or expand several different aspects of the project. Those being: possibly using different horses of different ages and genders and breeds, using more horses, extending the amount of time of work or exercise with adding riding to the regimen for advanced horses, and conducting the experiment in a controlled environment (indoor arena) with no distractions or things to spook or upset the horses. I would definitely expand this project to include more horses and have a person or friend aid in collecting data so there is no variable time between options or steps in the process.

References

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Acknowledgements

Thank you to the following people or organizations: KSU Horse Unit, Horse Unit Manager: Sterling, Dr. Marshall