

Measuring The Impact of Equine Cool Down Time On Post Exercise Recovery

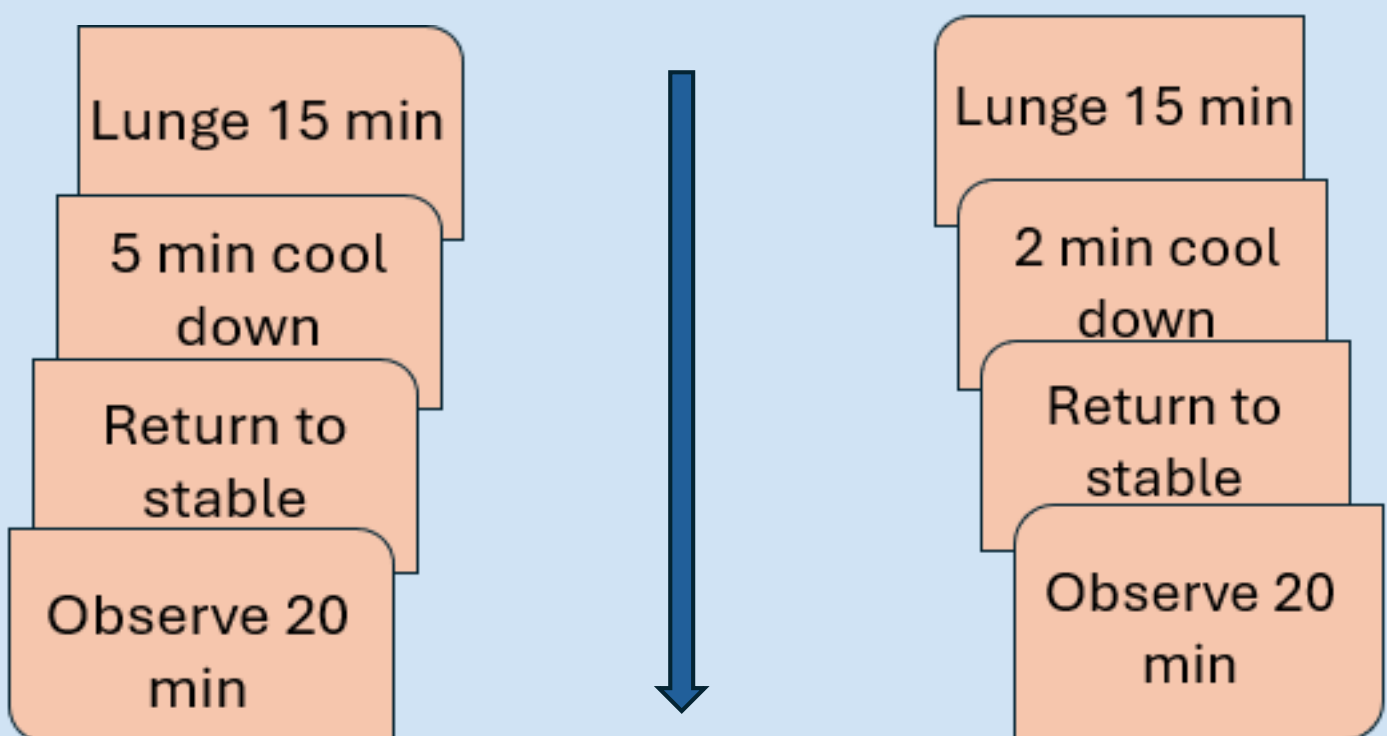
Intro

There is a lack of research and awareness concerning the possible health and well-being implications of poor cool-down procedures. “Cool down” period after exercise is essential for:

- ❖ Gradual redistribution of blood flow
- ❖ Removal of lactate from muscles
- ❖ Reduction of body heat (Takahashi *et al.*, 2020).
- ❖ To reduce stress
- ❖ Reduce risk of injury
- ❖ Improve potential performance in later competitions (McGill, Hayes and Burnham, 2019).

Method

Primary research was conducted, involving lunging 8 horses for 15 minutes on two independent occasions.

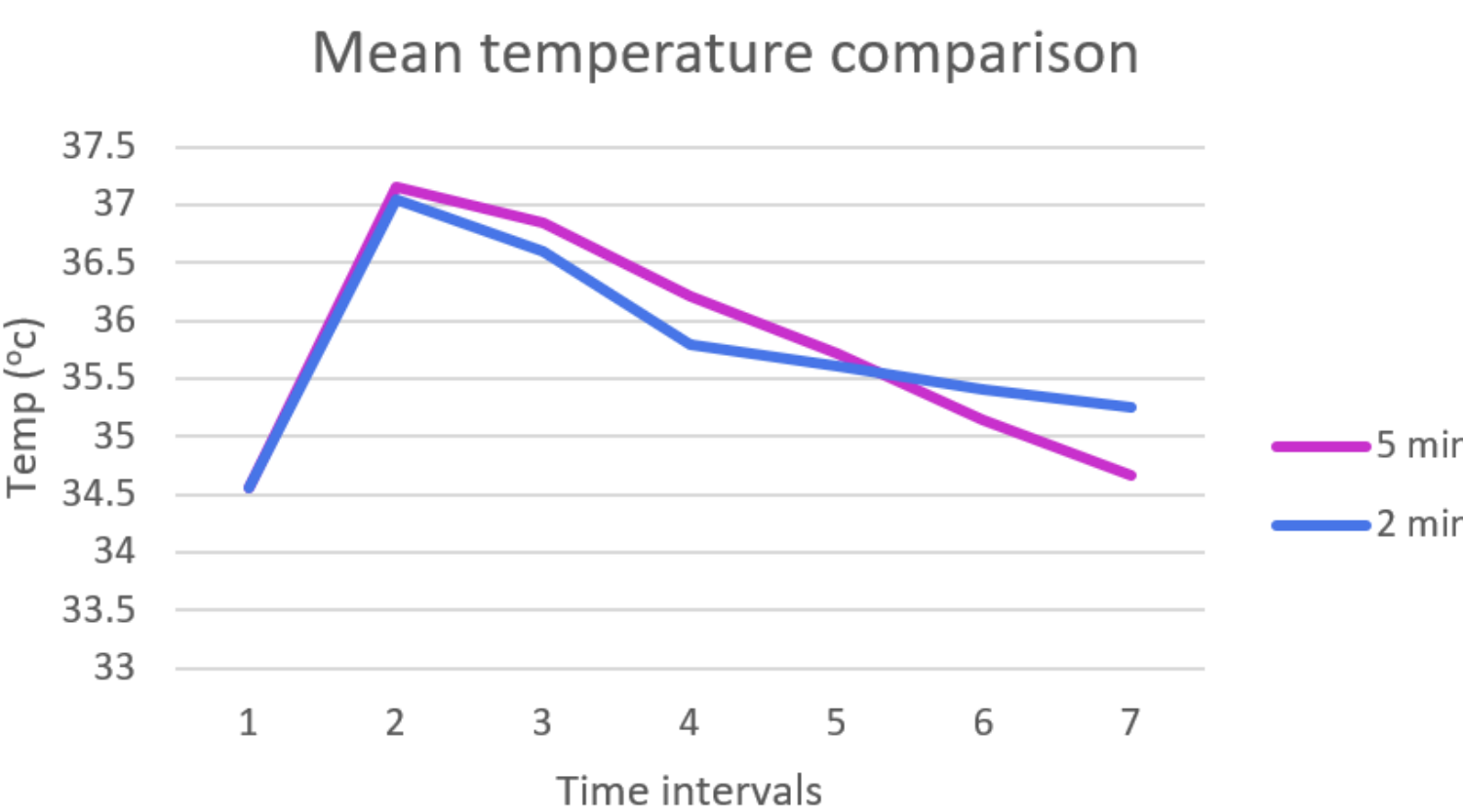
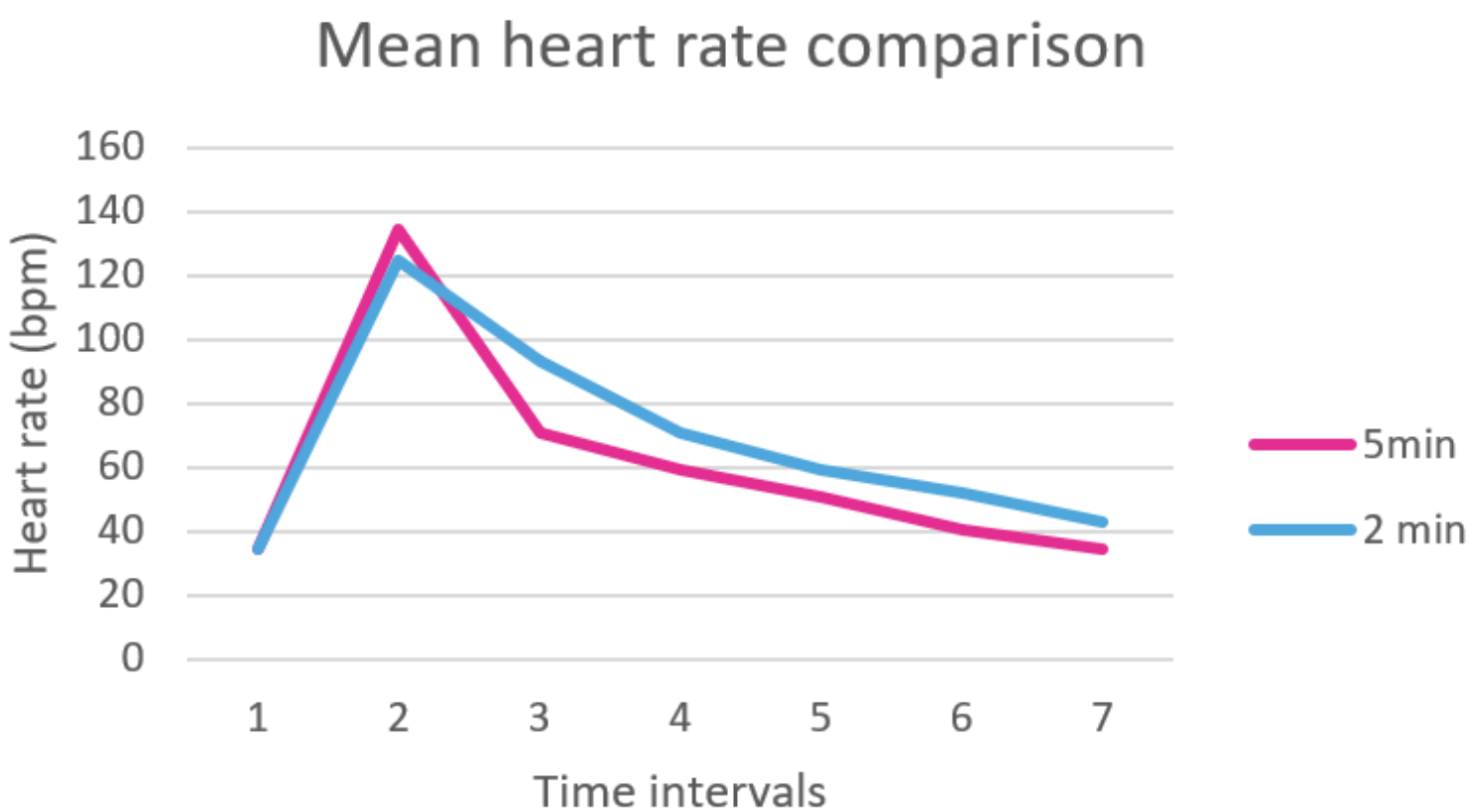


Heart rate and temperature were recorded using a Polar equine heart rate monitor and a thermographic camera at intervals during the study. This methodology has been developed based on Farinelli *et al.*, 2021.

Results

Despite statistical analysis concluding there was no significant statistical difference between data sets, graphical summaries do suggest there was some difference between the heart rate and temperature of horses when lunged with and without a cool down period

With a sufficient cool down time, physiological factors such as heart rate and temperature experienced a gradual return to normal after a short period. In comparison a shorter cool down period caused a steep initial fall and a gradual return to rates higher than resting. However, no statistical difference was found.



Discussion

There were some limitations to this study which could be improved upon to create more reliable results:

- ❖ Convenience sampling – less reliable than other sampling methods (Sedgewick, 2013)
- ❖ Small sample size – provides less data, can distort effects shown in statistical analysis (Hackshaw, 2008)
- ❖ Different fitness levels in horse – may have been difficult for some horses to maintain canter when lunging – workloads could vary (Thabane, et al., 2010)
- ❖ Weather conditions – may have impacted rate of cool down temp – data collection completed on different days – weather could be recorded. (Farinelli et al., 2021)
- ❖ Technology issues – variations in how thermographic camera was used may have impacted results – this could be standardised (Johnson et al., 2012)
- ❖ Variations in lunging technique – some horses lunged on a small circle therefore overall distance travelled may vary
- ❖ Clipped vs unclipped horse – clipped horses loose heat quicker therefore results may not be solely due to difference in cool down. (Walsten, et al., 2012)

There is a clear difference within the industry and within current research between the culture regarding warm up and cool down processes and a disregard for the effects of the latter. More awareness and widespread knowledge are needed to promote new practices in order to improve welfare, reduce wastage within the sport and increase longevity at all levels.

Conclusion

Overall, despite this research being a small-scale study with few resources, data showed some physiological effects between the difference in cool down. This should be considered as a pilot study for larger future research. The technologies gaining popularity within research should be utilised at competitions and sporting events to provide greater insight to equine physiology before during and after exercise. The necessity for ongoing improvement of equine welfare relies on the continuation of further up to date research.

References

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