# Exercise affects reproductive ability in horses

December 5 2012

In the latest issue of the *Journal of Animal Science*, researchers at Clemson University and the University of Florida examine the impact of exercise on mare reproductive health and embryo transfer.

In the study, researchers divided light-horse mares into three research groups: no exercise (control), partial-exercise and full-exercise. Their goal was to measure reproductive blood flow and embryo number and quality. Partial-exercise mares were moderately exercised for 30 minutes daily during the periovulatory period and rested after ovulation for seven days. Full-exercise mares were exercised for 30 minutes daily throughout the reproductive cycle.

Results from the study showed that exercise induced greater cortisol concentrations in horses. Cortisol has been shown to have effects on reproduction.

Embryo recovery rates were reduced in exercised horses compared to the control group. There was no significant difference in embryo recovery rates for partial-exercise and full exercised groups, but the partial-exercised group had the lowest embryo quality score.

"This led us to conclude that exercise was just as detrimental, if not more so, to the time period just prior to and during fertilization," said Christopher Mortensen of the University of Florida and one of the authors of the study.

The impact of exercise on early pregnancy is still an area that needs

further research. Researchers are looking to study embryo quality because advancing technology has allowed embryo transfer to become a vital part of the horse industry.

"What we hypothesize is the reduced hormone concentrations may be having an effect on the mare's oocytes, meaning they are not as 'competent' and have a reduced ability to be fertilized, or if fertilized, compromised embryo development," said Mortensen.

These findings could have implications for human pregnancy.

"While many studies in women have shown intense exercise can be detrimental to female pregnancy, there are virtually no studies examining maternal exercise and effects on the early developing embryo. Furthermore, there are few studies examining stress and the female reproductive blood flow response," said Mortensen

**More information:** The article, "Impact of moderate exercise on ovarian blood flow and early embryonic outcomes in mares" can be read in full at journalofanimalscience.org

Provided by American Society of Animal Science

Citation: Exercise affects reproductive ability in horses (2012, December 5) retrieved 24 April 2024 from https://phys.org/news/2012-12-affects-reproductive-ability-horses.html

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