

Ontario Equestrian and its Members Donate to Lameness Research at OVC



A team of equine veterinarians and researchers from the Ontario Veterinary College (OVC) are excited to announce clinical trials are ready to begin using allogeneic umbilical cord blood stem cells in the treatment of superficial digital flexor tendonitis or “bowed tendons” in horses. The goal is to develop a readily available treatment to prevent the formation of scar tissue and create good quality tendon tissue to replace the damaged tissues, which are less prone to re-injury. This team includes Dr. Thomas Koch, Dr. Nathalie Coté, Dr. Stephanie Nykamp, graduate student Alejandro Merchan Munoz, led by primary investigator Dr. Judith Koenig.

Much thanks goes to Ontario Equestrian (OE) and its members who scrapped their membership cards to create the Member Equine Research Fund program in 2017. This year, OE members chose to donate to lameness studies resulting in a donation of just over \$30,000. The Equinosis Q Lameness Locator[®], previously donated to the OVC by the Equine Foundation of Canada (EFC) will play an integral role in this study. Funding has also been provided by Equine Guelph.

There is a great demand in the industry for more efficient treatment options for superficial digital tendonitis, improved recovery, and prevention of re-injury. “Currently, the re-injury rates reported are between 56 to 75% for superficial digital flexor tendon injuries once the horses return to competition,” shares Dr. Koenig.

Cultured bone marrow derived stem cell treatments have been found to be effective and also boasts a low re-injury rate, but there is a short time frame for this treatment to be effective. A study out of England found that the tendon needs to be injected within six weeks of an injury in order to be beneficial, however this can be hard to accomplish depending on the expansion time needed to harvest the bone marrow.

In a pilot study conducted by Dr. Koenig with three horses, it was found that repeated injections of the allogeneic stem cells were very effective and that two of the horses were able to successfully return to racing and the third was able to start a career as a competitive sport horse.

“My hope is that we can develop a treatment that can be available within an hour of taking out of the freezer,” says Koenig. This treatment uses allogeneic stem cells, which means the stem cells do not need to be from the recipient. These stem cells are collected non-invasively from the umbilical cords of newborn foals and then stored for later use. See [video](#) and [prior research](#) leading up to these clinical trials.

The next challenge is to enroll horses in this study. “The study requires very tight parameters in order to have meaningful results,” says Koenig. The horses need to be Thoroughbreds in race training that have raced at least three times and incurred an injury to their superficial digital flexor tendon (SDFT) and have sustained lesions that have been diagnosed by a veterinarian. The lesions also will need to fall between specific measurements. The treatment and rehab period is expected to take between eight months to

one year. The owners will receive cost incentives for enrolling their horses and following treatment and rehab protocols. [More details on enrollment.](#)

A lameness evaluation will be performed followed by an assessment using the Equinosis Q Lameness Locator[®]. The Lameness Locator, which is the current gold standard for semi quantitative field measurements of lameness, will be used as an additional objective evaluation to confirm the diagnosis. The Lameness Locator will prevent any biases as it does not 'know' what study group the horse is in (treatment or control). Initial blood work will be done to evaluate baseline immune status. Comparisons in blood work will be performed over the treatment period. The person that is carrying out all these tests will be blind to which study group the horse is in. A strict exercise and rehab protocol will be provided. Each horse's progress will be monitored at monthly intervals.

It is the hopes of the study that the horses will return to full work within eight months to a year. The progress of the horses in the stem cell treatment group will be compared to that of a control group which will be receiving platelet rich plasma (PRP) injections. PRP is currently a common treatment used in the field for superficial digital flexor tendonitis.

Having more efficient and effective treatment options for superficial digital flexor tendonitis will improve the health of the horse, extend competitive careers, and reduce economic losses. This clinical trial will provide insight on the very promising treatment of allogeneic umbilical cord blood stem cells. Thanks to industry support from Ontario Equestrian and its members, Equine Foundation of Canada, and Equine Guelph this clinical trial is imminent and may bring the industry one step closer to providing optimal SDFT treatment options for our equine partners.

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Notes to Editor:

Equine Guelph is the horse owners' and care givers' Centre at the University of Guelph in Canada. It is a unique partnership dedicated to the health and well-being of horses, supported and overseen by equine industry groups. Equine Guelph is the epicentre for academia, industry and government - for the good of the equine industry as a whole. For further information, visit www.equineguelph.ca.

Story by: Melissa McGilloway

Photos: courtesy of Dr. Judith Koenig

Photo Caption: Lameness assessment using the Equinosis Q Lameness Locator equipment donated by EFC

Web Link(s):

Story web link: <https://www.equineguelph.ca/news/index.php?content=626>

Other web links:

Enrolling a horse in the study:

<https://bulletin.ovc.uoguelph.ca/post/186634524200/participants-wanted-for-new-thoroughbred>

Earlier Stem Cell Therapy studies at OVC

<https://www.equineguelph.ca/news/index.php?content=469>

Video link:

https://www.equineguelph.ca/images/movies/20100721_eCB_Collection_Koch%203.m4v

Media Contact:

Jackie Bellamy-Zions
Communications
Equine Guelph
Guelph, ON N1G 2W1
519.824.4120 ext. 54756
jbellamy@uoguelph.ca