

EQUINE TENDINOPATHY: ADVANCED IMAGING AND TENEX EFFICACY

Brad Nelson, Colorado State University –Second Year

This study will enhance our knowledge of equine tendon repair by comprehensive clinical imaging, while simultaneously assessing a novel tendon therapy, improving veterinary and industry understanding.



Tendon and ligament injuries are a significant cause of musculoskeletal disease in equine athletes, which results in an inability to perform their athletic activities and often leads to early retirement. Once injured, tendons heal poorly, and repair tissue frequently consists of scar tissue. This lack of healing response predisposes horses to re-injure, even after several months of controlled rehabilitation. There are many treatments aimed at improving the tendon healing response, but none do this well enough to prevent re-injury.

Percutaneous Ultrasonic Needle Tenotomy (PUNT) with a Tenex device has shown promise in humans with tendon injury by improving the healing process, though it is unknown if it is useful in treating horses. In this study, we propose using a common equine model of the superficial digital flexor tendon (SDFT), a commonly injured tendon in equine athletes, with a modification that more closely represents clinical disease scenarios. This new model will be used to determine whether PUNT has any benefit in horses. Our research team has expertise in advanced ultrasound and MRI techniques and in bench-top tendon analyses. We will use this knowledge to not only improve our understanding of tendon injury and repair, but these methods will also help us critically evaluate if PUNT is an effective treatment in horses. Completing this study will benefit equine veterinarians, owners, trainers and the industry by improving our understanding of tendon disease and has the potential to offer new imaging strategies that can be incorporated into equine clinical practice.

This study will provide us with highly detailed imaging data that can be used to better understand the healing response to tendon injury in horses and will inform clinicians how best to intervene to improve healing. These imaging methods have the capability of being incorporated into clinical practice. Furthermore, if this new tendon therapy results in improved healing, it will have the potential to improve the quality of tendon repair tissue and return horses to athleticism earlier with a lower chance of re-injury. Collectively, this work will improve our knowledge of tendon disease in the horse, which we can use to better inform the equine industry and drive future advancements in tendon injury and therapies.

*Funded
By*



St. Elias Stables

Importance to the Equine Industry: Upon completion of this study, we will be able to provide the equine industry with a more complete understanding of equine tendon healing and the potential benefit of a new tendon therapy for horses. Equine tendon and ligament injuries are frequent, and the long duration of healing needed to return to work and high re-injury rates are a serious problem.

Funded by



**Grayson-Jockey Club
Research Foundation**