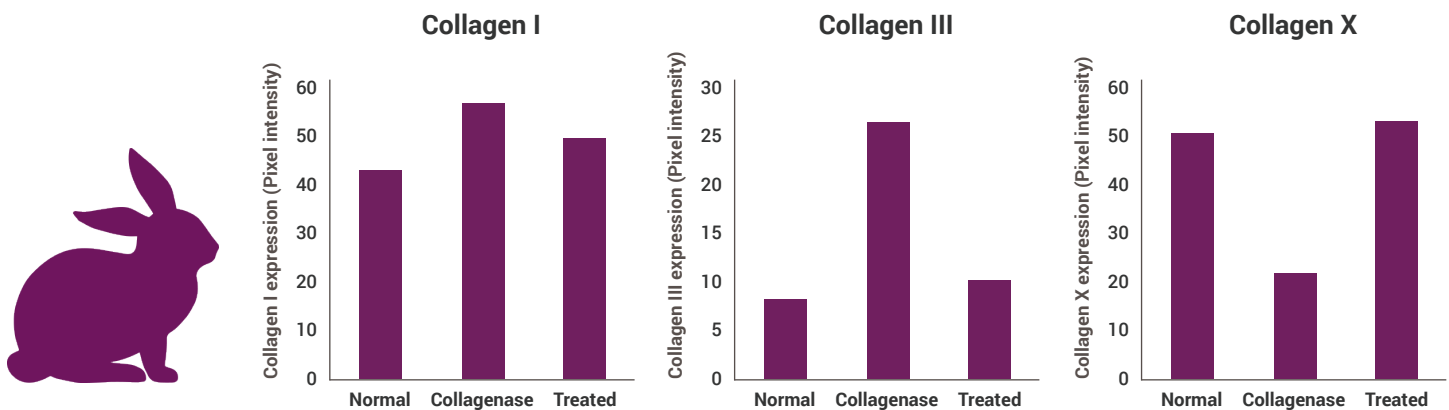


TX System Stimulates Healing and Promotes Restoration of Healthy Tendon Within 3 Weeks

A Rabbit Model Study Published in the Journal of Orthopaedic Surgery and Research (Kamineni et al., 2015)



The Y-axis corresponds to signal intensities: (A) collagen I (129 kDa), (B) collagen III (138 kDa), and (C) collagen X (66 kDa).

Study Methods

- Animal study, n=12 rabbits (6=control; 6=treated).
- Collagenase-induced Achilles tendinopathy (3 weeks) was treated with percutaneous ultrasonic debridement using the Tenex Health TX® System.
- Tendons were harvested 3 weeks after treatment and assessed histologically and biochemically to determine the post-treatment collagen profile.

Results and Conclusions

- Ultrasonic therapy restored collagen type I, III and X to that of normal tendon.
- Treatment stimulated healing, growth of healthy collagen and neovascularization.
- Damaged tendon tissue and residue were removed; not left in-situ.
- Percutaneous ultrasonic debridement of tendinopathy restores the collagen profile to a more normal state.

Key Takeaways

- Scientific basis for “stimulates healing”.
- The treated areas of tendinopathy regrew healthy collagen.
- Improvement seen at 3 weeks.



3 WEEKS - TENDONS RETURNED TO
NORMAL COLLAGEN LEVELS

Percutaneous Ultrasonic Debridement of Tendinopathy – A Pilot Achilles Rabbit Model

Kamineni S, Butterfield T, Sinai A. *Journal of Orthopaedic Surgery and Research*. 2015;10:70:1-8.

Tendonosis is a common clinical pathology, with mixed treatment results, especially when chronic. Localization and treatment of a tendinopathic lesion by a non-invasive technique affords an opportunity for precise and a well-tolerated intervention. Treatment of such lesions by focused ultrasonic energy designed to cut and remove the necrotic tendon tissue is a novel and attractive treatment modality. In this study, we report the results of an ultrasonic treatment to promote healing of Achilles tendonosis, in a rabbit model. Mature female New Zealand White rabbits (n= 12) were treated by ultrasonography-guided injection of 0.150 ml of collagenase injected into the central region of the achilles tendon. The contralateral tendons were used as non-operative controls. A subset of the rabbits with the collagenase- induced

Achilles tendonosis were exposed to an ultrasound guided percutaneous tenotomy of the hypoechoic region consistent with degenerated tendon tissue using the Tenex Health TX system. The tendons were harvested at 3 weeks after treatment and subjected to biochemical (collagen content) and histological assessment. Histopathological examination revealed that tendons injected with collagenase showed focal areas of hypercellularity, loss of normal tissue architecture, and regions of tendon disorganization and degeneration, when compared to control tendons. In animals treated with the TX System, expression of collagens I, III, and X, returned to levels similar to a normal tendon. In conclusion, these results are encouraging for the use of the TX System as a definitive treatment of a chronic tendinopathic lesion, based on the cutting and removal of degraded tendon material.



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