

Comparison of Suture Tape on Tendon Abrasion

Objective

Compare abrasiveness on tendon of two different brands of suture tape: CONMED Hi-Fi® Tape and Arthrex® FiberTape.

Methods

Bovine tendon was loaded onto an MTS machine as shown in Figure 1. An incision was made in the tendon through which the suture tape was placed, and its limbs attached to a reciprocating pulley. A constant tension of 10N was applied to the suture and allowed to pre-load to eliminate stretching. The tape was cycled at a frequency of 0.5Hz with an alternating motion of the tape through the tendon by a total excursion of 30mm.

After 50 sawing cycles, the resulting cut in the tendon by the suture tape was measured by the displacement of the upper head of the MTS machine. Each pair of Hi-Fi® Tape and FiberTape were threaded through the same incision to account for differences in tendon quality.

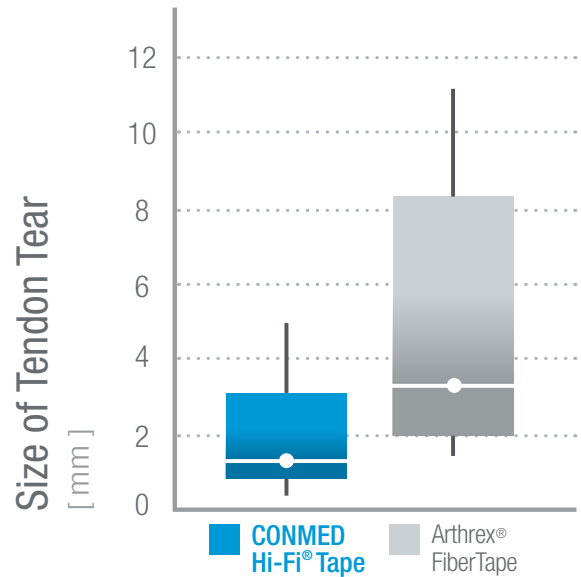


Figure 1. Tendon and suture tape loaded on MTS machine

Results	CONMED Hi-Fi Tape	Arthrex FiberTape
Median Defect size after 50 cycles (mm) ¹	1.02	3.29
Mean percentage of Defect Created by Individual Suture Tape ¹	27%	73%

Table 1. Tendon tear-through results of Hi-Fi® Tape and FiberTape

Tendon Tear-Through by Suture Tape



Relevance

FiberTape is 3.2x more abrasive on tendon than Hi-Fi® Tape (p=0.007) when comparing tendon tear-through via suture tape following a simulated rotator cuff repair.

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