

# TenoWrap™ Collagen Tendon Wrap Management and Protection of Tendon Injuries

Zhang F, Jacob S, Jenssen J, et al. Self-rollable type I collagen membrane for reducing adhesion in tendon surgery. Poster presented at: Society for Biomaterials Annual Meeting and Exposition; April 22-25, 2009; San Antonio, TX.

## Objective

A rabbit flexor tendon repair study was conducted at the University of Mississippi Medical Center (Jackson, MS). The study investigator was Feng Zhang, MD, PhD, professor in the Department of Surgery. The results of the range of motion assessment are shown in the following table, where the measurements are the joint flexion of digits (degree, mean  $\pm$  SD).

## Results

**Table 1. Control group vs collagen and normal groups ( $p < 0.05$ ); collagen group vs normal group ( $p > 0.05$ )**

Range of Motion	Control Group (n=6)	Collagen Group (n=7)	Normal Group (n=7)
Proximal Interphalangeal (PIP) Joint	6.5° $\pm$ 1.64°	12° $\pm$ 2.52°	11.17° $\pm$ 4.40°
Metacarpophalangeal (MP) Joint	11° $\pm$ 1.94°	18.17° $\pm$ 4.96°	23.5° $\pm$ 11.13°

**Control group:** Tendon repair without collagen wrap

**Collagen group:** Tendon repair with collagen wrap

**Normal group:** Tendon was not divided and repaired

## Conclusion

At week 3, the collagen group had a significantly favorable joint flexion range compared to the control and normal groups. While the control group showed obvious scar adhesion of the tendon, the collagen group showed that the collagen tendon wrap acts as an effective barrier, preventing adhesion between granulation tissue and the tendon. Additionally, there were no inflammatory cells at the edges of the tendon in the collagen group, indicating that the collagen tendon wrap is biocompatible. No obvious evidence was found to show that the collagen tendon wrap would negatively affect the healing process of tendons.

