

Achilles Loading Device

Tech ID: 34625 / UC Case 2025-459-0

ABSTRACT

Researchers at the University of California, Davis have developed a portable biomechanical loading system equipped with integrated sensing and monitoring assemblies to apply and quantify controlled mechanical loads on the Achilles tendon for effective rehabilitation.

FULL DESCRIPTION

This technology encompasses a biomechanical loading system, specifically designed for Achilles tendon rehabilitation, that applies controlled dorsiflexion forces via an adjustable foot assembly and tension members. It integrates a sensing assembly with strain sensors and elastic elements to accurately monitor applied loads in real time. The system supports both straight-leg and bent-knee protocols in a compact, modular form factor, enabling objective measurement of load magnitude, duration, and other biomechanical parameters during isometric and dynamic exercises. Wireless communication with external devices allows real-time feedback, data logging, and guided rehabilitation progress in clinical and home environments.

APPLICATIONS

- ▶ Clinical rehabilitation centers specializing in tendon injuries and musculoskeletal therapy.
- ▶ Sports medicine and athletic training facilities for injury prevention and recovery.
- ▶ Home healthcare and remote physical therapy programs enabling patient-monitored recovery.
- ▶ Research institutions studying biomechanics, tissue loading, and rehabilitation technologies.
- ▶ Orthopedic and physiotherapy equipment manufacturers seeking integrated sensor technologies.
- ▶ Wearable medical device markets targeting musculoskeletal health and injury management.

FEATURES/BENEFITS

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CONTACT

Pooja N. Bhayani
pnbhayani@ucdavis.edu
 tel: .



INVENTORS

- ▶ Avey, Alec
- ▶ Baar, Keith

OTHER INFORMATION

KEYWORDS

Achilles tendon,
 biomechanical loading,
 dorsiflexion, isometric
 exercise, load
 monitoring, portable
 rehab device, strain
 sensor, tendon
 rehabilitation, wireless
 sensing, wearable sensor

CATEGORIZED AS

- ▶ **Medical**
- ▶ **Rehabilitation**
- ▶ **Sensors & Instrumentation**
- ▶ **Physical Measurement**

RELATED CASES

PATENT STATUS

Patent Pending

ADDITIONAL TECHNOLOGIES BY THESE INVENTORS

- [Method of Inhibiting Proteins to Dramatically Increase Muscle Mass and Strength](#)
- [Elbow Tendon/Ligament Loading Device](#)

University of California, Davis

Technology Transfer Office

1 Shields Avenue, Mrak Hall 4th Floor,
Davis, CA 95616

Tel:

530.754.8649

techtransfer@ucdavis.edu

<https://research.ucdavis.edu/technology-transfer/>

Fax:

530.754.7620

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