Diagnostics Knee Arthrometer for Detecting Anterior Cruciate Ligament (ACL) Structural Changes

Tech ID: 22962 / UC Case 2012-230-0

ABSTRACT

Researchers at University of California, Davis have developed a device that has a potential to detect ACL changes that may be predictive for subsequent catastrophic injury.

FULL DESCRIPTION

The Anterior Cruciate Ligament (ACL) is a major knee ligament that is commonly injured in athletes and these injuries are a significant clinical issue. The ability to quantify ACL behavior quickly *in vivo* provides a means to explore a variety of theories regarding knee injury mechanisms and interventions to prevent ACL injury.

Researchers at UC Davis have developed a device that allows relatively rapid (within minutes) quantification of the anterior/posterior shear force displacement (F-D) of the human knee, which is an indicator of the F-D behavior of the ACL. This device has potential as a diagnostic tool to detect ACL changes that may be predictive for subsequent catastrophic injury and therefore could be useful for physicians.

APPLICATIONS

- Quantify the F-D behavior of an ACL in-vivo
- Pre-injury diagnostic tool

FEATURES/BENEFITS

- Real time continuous, force-deformation, display and recording
- Direct measurement of the relative location of femur and tibial tuberosity to eliminate displacement errors that can result from soft tissue deformation
- Vertical orientation of the leg during testing to apply a traction force at the knee to eliminate bone cartilage contact forces contributing resistance to tibial shear displacement
- Vertical orientation of the leg to prevent the wight of the leg and testing device from applying a tibial shear force

PATENT STATUS

Country	Type	Number	Dated	Case
United States Of America	Issued Patent	11,583,225	02/21/2023	2012-230
United States Of America	Issued Patent	10,327,694	06/25/2019	2012-230

CONTACT

Prabakaran Soundararajan
psoundararajan@ucdavis.edu
tel: .

INVENTORS

- Hawkins, David

OTHER INFORMATION

KEYWORDS

Knee arthrometer, in-vivo

ACL strain detection

CATEGORIZED AS

- **Agriculture & Animal Science**
  - Devices
- **Medical**
  - Devices
  - Diagnostics

RELATED CASES

2012-230-0

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