

A Device for the Non-invasive Measurement of Tissue Stretch

Background

The accurate measurement of skin stretch is important in plastic surgery and wound healing. An excessive skin stress delays wound healing and causes the development of scar tissues and granulation. Soft tissue stretch is commonly measured by marking the tissue using a pen or colored tape and the changes in position of the marking are then recorded by photography or video to determine the extent and amount of stretch. This method is, however, subject to experimental errors. Existing technologies for measuring skin stretch include laser speckle and holography, and laser diffraction. Laser speckle and holography have been used to measure small changes in skin stretch. However, this technique cannot be used *in vivo* due to motion. Furthermore, commercially available video extensometers for measuring tissue stretch are large devices that only measure flat specimens. **The present invention provides an apparatus that can measure skin stretch by using light reflectivity of skin.**

Description of the Technology

UMDNJ scientists have developed an apparatus for non-invasive, measurement of stretch and deformations on the surface of a material by measuring the changes in reflection characteristics of the material upon application of a load. This apparatus may be used for the measurement of stretch of soft tissues as well as deformations on plastic materials.

Applications

- . •For the determination of deformations on plastic materials
- . •For the measurement of stretch of soft tissues.

Patent Status

- . •United States Patent issued on November 27, 2001
- . •Patent Number 6,324,419 B1

Licensing Opportunity

This technology is available for licensing non-exclusively.

Contact

Peter Golikov, MS, MBA
Director, Ventures and Licensing
University of Medicine and Dentistry of New Jersey
335 George Street
New Brunswick, NJ 08901
Direct Phone: (732)-235-9355
Main Office Phone: (732)-235-9350
Facsimile: (732)-235-9358

golikope@umdnj.edu

File NJMS 97-32/Guzelsu