

Solutions@Mecmesin Shoulder Prostheses Testing

Specification

Mr Keith Borowsky, an eminent orthopaedic surgeon at the University of Brighton Medical School is developing a new orthopaedic prosthesis for shoulder reconstruction. Shoulder prostheses are used to replace shoulders fractured in falls in the elderly, and occasionally following high-energy motor vehicle collisions or by direct violent trauma. They can also be applied in other situations where shoulder replacement is required e.g. arthritic patients.

The prostheses need to be tested to ensure that they attach correctly to the surrounding bones and tendons, reliably replicating the anatomical structure of a shoulder. This research will ensure that patients retain a good degree of strength and mobility in their replacement shoulder joints.

Solution

Mr Borowsky is using a MultiTest 10-x twin-column, console-controlled force testing system to replicate patient's mobility and movement over a period of time. During the test the prosthesis is attached to a cadaver and the MultiTest 10-x is used to pull the prosthesis repair site at a constant rate of tension, in the line of pull of normal muscles. The cyclic testing feature is used for this application, to exercise the prosthesis between different load limits for 999 times. The results from these cyclic tests give a measurable indication of the strength of the different shoulder replacement prostheses. Mecmesin's Emperor™ Lite data acquisition software is then used to store and manage the test data.

The MultiTest 10-x combined with Emperor™ Lite has provided the University of Brighton Medical School with a cost-effective solution to their application in comparison with other materials testers on the market.

System

- MultiTest 10-x
- 2500N loadcell
- Emperor™ Lite software

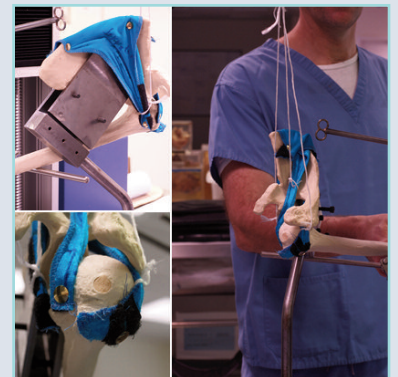
Testimonial

"I am very pleased with both the service from Mecmesin and the MultiTest 10-x test system and would recommend it for testing many of the aspects of soft tissue repair in orthopaedics. The MultiTest 10-x is easy-to-use and ideal for this application, of testing the fixation of bones and tendons around a prosthesis inserted for fracture of the shoulder."

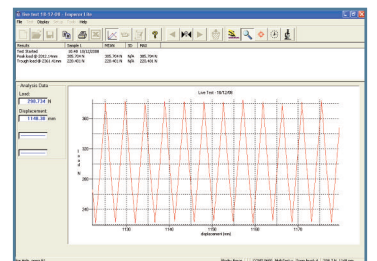
Mr Keith Borowsky, Orthopaedic Surgeon
University of Brighton Medical School



MultiTest 10-x



Set-up for testing shoulder repair in prosthetic replacement for fracture



Sample of test data using Emperor™ Lite software

Mecmesin Limited

Newton House, Spring Copse Business Park, Slinfold,
West Sussex, United Kingdom, RH13 0SZ.

sales@mecmesin.com t: +44 (0) 1403 799979 f: +44 (0) 1403 799975 www.mecmesin.com

medical industry

