**Project Title:**  Tendinopathy and diabetes  
**Code:**  NCS1

**Host School/ Institute**  
Northern Clinical School

**Address:**  Raymond Purves Bone and Joint Research Laboratories, Level 10, Kolling Building B6 Royal North Shore Hospital E25


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**Project Type:**  Laboratory based

**Project Category:**  Chronic Diseases/Illness, Orthopaedics, Diabetes

**Project Keywords:**  
1. tendon  
2. biomechanics  
3. diabetes  
4. glucose  
5. metformin

**Project Description:**

Injury to a tendon can lead to changes in structure and composition through altered gene expression of the resident cells, which in turn can affect mechanical functionality, limit repair and lead to chronic pain. People with diabetes have a higher risk of tendinopathy.

The current project aims to further our understanding of tendon degeneration processes in different glucose environments and define the links between structure, function and composition. The student will conduct in vitro biomechanical testing of tendons from sheep, some of which have been treated to induce tendinopathic changes using different glucose levels and/or drugs. An extension of the project may further investigate structure, gene expression and biochemical composition in these tendons under stress.

This project would be ideal for an Engineering student interested in biomechanics and/or tissue Engineering.