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**Project #1: Rotator cuff muscle response to rotator cuff tears**

Muscle atrophy and fatty degeneration are important factors that affect the outcome of treatment. Some of changes are not reversible. The goal of this project to determine the architectural, molecular and functional degenerations in rotator cuff muscle after rotator cuff tears. The students are expected to work with biological scientists and surgeons from Hospital for Special Surgery (HSS). The students will focus on measuring the passive and active mechanical properties, physiological properties of the rotator cuff muscle, as well as properties of the extracellular matrix (ECM). This project is suitable for a team of 3-4 students.