

Project proposal

Project title	<input type="text" value="The effect of rehabilitation therapy on exercise-induced inflammation and tissue repair."/>
First Supervisor	Dr <input type="text" value="Hannah Moir"/>
Second Supervisor	<input type="text" value="tbc"/>
School	<input type="text" value="Life Sciences"/>
Other member of supervisory team (no more than three KU supervisors in total)	<input type="text"/>
Specific requirements beyond 2:1 degree	<input type="text"/>

Project summary (max 4,000 characters)

MSc by Research

Exercise-induced muscle soreness and inflammation can impair subsequent physical performance, increase recovery time and the risk of further injury. Muscle damage has also been associated to detrimental stiffening of the arteries and increasing risk of cardiovascular events (Barnes *et al.*, 2010). Therefore, athletes and individuals performing physical activity are concerned in strategies that reduce the onset of exercise-induced muscle soreness and inflammation to maintain performance and prevent the onset of chronic injury.

The current project intends to verify the ability to measure various biological markers of inflammation and tissue recovery as well as develop a reference guide for the use of treatment and rehabilitation therapies for chronic musculoskeletal injury. The sampling of biomarker levels may then be used in the field for monitoring athletic and disease populations such as arthritis response to rehabilitation and recovery. Monitoring the effects of rehabilitation therapies such as massage (foam rollers), cryotherapy (ice-bathing/cold-water) and compression garments will help expand our understanding of the effects on the recovery process following exercise.

The aim of the project is to analyse biomarkers of inflammation in regard to musculoskeletal pain and exercise-induced muscle damage. This study aims to investigate the effects of rehabilitation therapies (such as cryotherapy, massage, stretching and compression garments) on muscle soreness and markers of inflammation following exercise. This study also aims to identify the signalling mechanisms that occur in response to such recovery strategies.