

Biological Factors Research Study

The purpose of this study is to explore correlations between biomarkers for inflammatory conditions (i.e. coronary artery disease and osteoarthritis) and changes in bone and synovial tissue in patients undergoing knee replacement surgery. Biomarkers that will be measured in the study include serum high sensitivity C-reactive protein (hs-CRP), synovial fluid cytokines, and urinary pyridinoline. Bone and synovial tissue that is normally discarded during surgery is collected for histological analysis. Figures 4 and 5 show synovial tissue in a patient with low hs-CRP and in a patient with high hs-CRP, respectively. Table 1 lists the biomarkers and tissue histology measurements that will be obtained from patients enrolled in the study. Patients with unhealthy hsCRP's (>4.0) are studied relative to patients with healthy hsCRP (<0.7). Pain scores, range of motion, and time to achieve rehab milestones are compared. Nutritional profiles are also studied between the two groups.

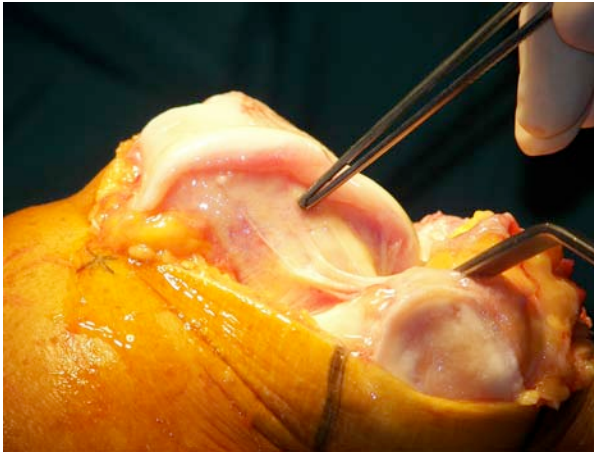


Figure 4. Synovial tissue in a patient with low hs-CRP.

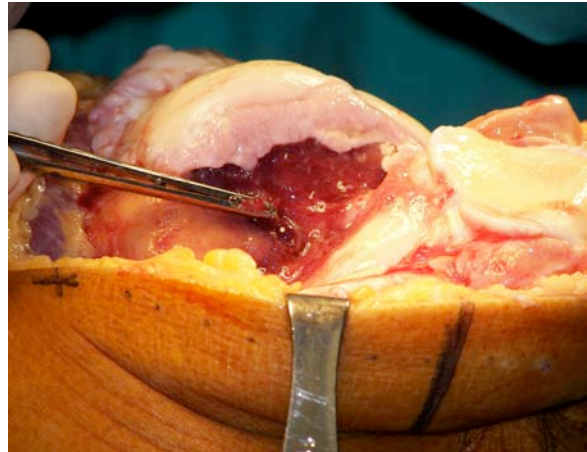


Figure 5. Synovial tissue in a patient with high hs-CRP.

Table 1. Biomarkers and tissue histology measurements taken in the biological factors research study.

<i>Biomarkers</i>	<i>Tissue histology</i>
<ul style="list-style-type: none">➤ Synovial fluid cytokines➤ Urinary pyridinoline➤ Serum hs-CRP	<ul style="list-style-type: none">➤ Bone tissue histology➤ Synovial tissue histology

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