

Patient selection

Obtain informed consent

Total knee arthroplasty

Sample processing

Dissect and wash tissues

Fix in formalin for histological analyses

Flash freeze

Tissue homogenization

“Hard tissues”

Pulverize cartilage, bone and meniscus using mortar and pestle with liquid nitrogen

“Soft tissues”

Homogenize fat pad, muscle, synovium and ligament using hand-held homogenizer

RNA extraction

Total RNA extracted using phenol/chloroform extraction method

Quality control

Assess RNA purity by spectrophotometry:
 $A_{260}:A_{280}$ and $A_{260}:A_{230}$

Assess RNA integrity by electrophoresis:
RIN (RNA Integrity Number)

