

Additional File 4:  
Collection and storage of biological samples

### **TRANSPORT AND STORAGE OF THE TISSUES**

Whole blood (5ml) samples will be stored in a freezer (at -20°C) prior to DNA and RNA extraction. Remaining blood (5ml) will be centrifuged as soon after venesection as possible and the serum stored at -70C within freezers in the University of Nottingham Clinical Sciences Building (CSB), City Hospital for future metabolomic studies. Excess samples (DNA, serum, Paxgene for RNA extraction) that remain after the study analyses have been undertaken will remain stored within the CSB for possible future research studies related to OA and/or pain provided that participants are agreeable and sign the optional clause on the consent form. These CSB facilities come within the remit of the Research Tissue Bank (DI Dr William Dunn- Licence Number 12265). Where participants do not agree to the future use of the samples they will be destroyed in accordance with the Human Tissue Act, 2004.

Samples will be stored in linked anonymised format in the CSB and labelled using a randomly generated unique participant identifier to permit accurate linkage to clinical data and the consent form. The master database will be held by Dr Abhishek in a password encrypted file.

### **Laboratory Analysis**

Peripheral blood for measuring Lipid profile, HbA1c and CRP will be sent to the Clinical Pathology Department of the Nottingham University Hospitals NHS Trust.

Whole peripheral blood will be sent from the University of Nottingham to a specialist company or academic partners for DNA and RNA extraction . All shipments will contain a complete inventory of all samples, along with the name of the person responsible for sending the samples. The RNA will be used to identify genetic changes that result from receiving the intervention. The DNA will be used to find any causal variants that explain the response to treatment. It will be explained to the study participants that giving blood for DNA and RNA extraction is optional. Similarly, serum or plasma may be sent to other academic or commercial entities for biochemical analyses . Such analyses will be undertaken on anonymised samples under usual Material Transfer Agreement arrangements The companies would also require a HTA licence for research unless this is being undertaken as part of this research study, or the bloods are being processed to render the samples acellular within 7 days of their receipt or a new ethics application was submitted.