# Feasibility of Recruiting an Early Scottish Knee Osteoarthritis cohort (FRESKO)

# Patient Information Sheet Imaging and Biopsy - Stage III

*You are being invited to take part in a research study. Before you decide it is important for you to understand why the research is being done and what it will involve. Please take time to read the following information carefully and discuss it with others if you wish. Ask us if there is anything that is not clear or if you would like more information. Take time to decide whether or not you wish to take part.*

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Funder: Chief Scientist Office of the Scottish Government

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**Chief Investigator Prof Gary Macfarlane**

## Participant Information Sheet - Stage III Imaging and Biopsy

### 1. Introduction

Knee symptoms such as pain are very common, they are reported by about 1 in 5 people. In the future we want to recruit people across Scotland with knee pain. Studying such people will allow us to study what happens over the course of time to these symptoms and specifically study people whose symptoms do or do not get worse and to understand why that is and what may be causing the symptoms. Ultimately our aim is to develop new and more effective treatments for those with knee pain.

### 2. What is the purpose of the study?

Before we can undertake such a large and expensive study, we need to make sure all our procedures work and that enough people with knee pain are willing to take part. We need to make sure that they find acceptable what we are asking them to do and the time commitment. That is what this current study is about (we call it a "pilot study")

### 3. Why have I been invited?

People who have features of early knee osteoarthritis, and who have indicated that they are happy to be contacted further are invited to participate in stage III of the study. This part of the study involves some further imaging of the knee and taking a sample for biopsy.

Before you decide, it is important for you to understand what participating in this stage of the study will involve and what you will be asked to do. Please take time to read the following information carefully and discuss it with others, if you wish. Ask us if anything is not clear or if you would like more information.

### 4. What is the purpose of Stage III – Imaging and Biopsy?

In early knee osteoarthritis, individuals can have pain in their knee but x-rays and even standard Magnetic Resonance Imaging (MRI) scans can be normal. There may be early changes in the cells and proteins inside the joint which are invisible to x-ray and standard MRI scanning.

We would therefore like to understand what is happening inside the joints. This will help us to develop new ways to diagnose knee osteoarthritis earlier, understand how knee osteoarthritis develops over time and develop new treatments.

### 5. Do I have to take part?

No. It is up to you to decide whether or not to take part. If you decide to take part, you are still free to withdraw at any time without giving a reason. A decision to withdraw at any time, or a decision not to take part, will not affect the standard of care you receive.

## 6. What will happen to me if I take part?

We would ask your permission to take a biopsy of the lining of your knee joint (synovium), a standard MRI and a Fast Field-Cycling MRI (FFC-MRI) scan, all of which are described in more detail below.

### Ultrasound Guided Synovial Biopsy

The procedure is performed by a physician who is trained to perform this procedure. The procedure is similar to a joint injection to remove fluid, but as well as taking fluid off the joint, small samples of the lining of the joint are taken. We use an ultrasound machine to ensure the samples are taken from the right place. To minimise discomfort, the biopsy procedure is performed under local anaesthetic. The skin overlying the joint and a large surrounding area will be cleaned with antiseptic. A needle is carefully inserted into the affected joint under guidance using an ultrasound machine. Once in place, any additional fluid that has accumulated within the joint is removed. The biopsy needle is then inserted and several (around 12) small samples are taken from the lining of the joint using the same needle hole. All samples will be used for research. The little hole from the needle will be covered with an adhesive dressing. When it heals, it usually leaves a tiny scar.

The biopsy procedure will usually last less than 60 minutes but please allow 2 hours for the appointment. A light bandage will be put on your knee and you should keep this on for approximately 24 hours. You will be asked to stay at the clinic for a short while to be monitored after the procedure.

After the procedure you will be able to walk but should refrain from exercise for 2 days. We recommend that you are accompanied by a relative or friend as you should not drive on the day of the procedure. If you cannot be accompanied, we will pay for a taxi to take you home.

### Are Ultrasound Guided Synovial Biopsies safe?

Before you agree to participate, the physician who will carry out the procedure will discuss with you the possible risks of the procedure and treatments required in the rare event that you were to develop a complication. You will have the opportunity to ask questions and can decide not to participate at any stage.

The ultrasound guided synovial biopsy procedure is generally well tolerated and safe. The procedure is performed under local anaesthetic and should not be painful after the local anaesthetic has been given. Once the local anaesthetic wears off, there may be mild, transient pain and discomfort in around a third of patients. Temporary swelling can also occur. This is usually managed with simple pain medication (such as paracetamol) and should resolve within 1-2 days. If you experience discomfort for longer than this, please contact the telephone numbers in the “Further Information” section and the physician will discuss any action that is needed. The procedure will leave a tiny scar.

The risk of significant complications as a result of the procedure is small but includes: bleeding into the joint (1% or 1 in 100 chance), wound infection (0.5%; 1 in 200), joint infection (0.2%; 1 in 500) a blood clot (0.2%; 1 in 500) or nerve damage (0.02%; 1 in 5000). In the unlikely event that you were to develop a complication like a joint infection, you may need to be admitted to hospital. There is a very small risk that you may develop long term complications from this procedure. Because of the small risk of bleeding we would not carry out the procedure if you are on medications like warfarin or apixaban. The physician who will carry out the procedure will also discuss these risks with you in more detail.

## Standard and Fast Field Cycling MRI scan

### Standard MRI scan

The MRI scanner is very safe and does not expose participants to any radiation. It is a commonly used investigation. You will be asked to lie still inside the scanner for up to thirty minutes. Some MRI scanners are enclosed and have little space but if at any time you feel uncomfortable then you can communicate this to the radiographer doing the scan who will help.

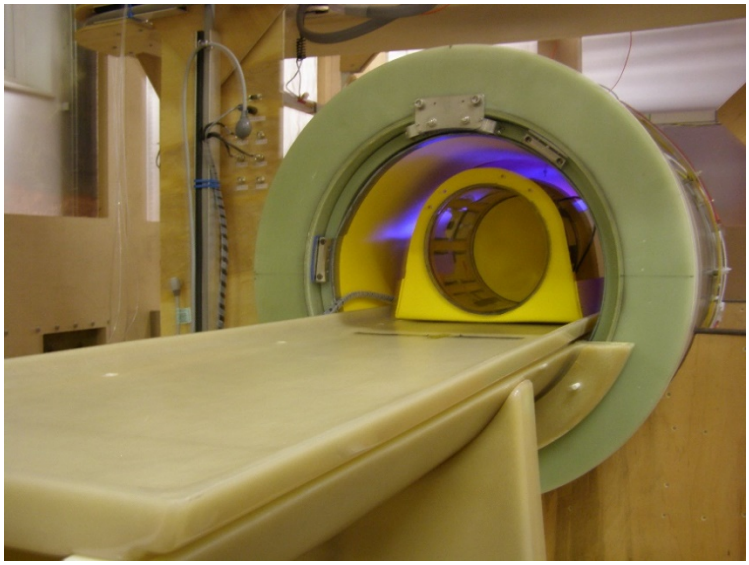
### Fast Field Cycling MRI

FFC-MRI is a new way of looking inside the body that has been developed in Aberdeen. We want to see whether it can detect very early arthritis changes in the joint which are invisible to x-ray or standard MRI.

The scanning procedure will be very similar to a standard MRI scan, but the FFC-MRI scanner will be less noisy and a bit narrower than standard MRI scanners. As we will be scanning your knee, you will go into the scanner feet first and your head will not be in the scanner itself. The scan itself will take approximately 40-50 minutes.

The scanner will be noisy for short periods, but we will provide you with foam ear plugs and headphones. Some people can find it upsetting to be confined to a small space. You will be given a “panic” button to alert the radiographers if you feel uncomfortable, and you will be able to talk to the radiographers between scans.

The scanner is still being developed and changes to enhance its performance are being made regularly by the research team. If for any reason the scanner fails to provide good quality images during your scan, we may ask you to have a repeat scan if necessary.



This is the FFC-MRI scanner which will be used.

**Is MRI and FFC-MRI scanning safe?**

Before you agree to participate, you will have the opportunity to ask questions and can decide not to participate at any stage.

The MRI and FFC-MRI scanners are very safe and do not expose participants to any harmful radiation.

The FFC-MRI scanner is a prototype, as opposed to a commercially-available scanner; nonetheless we have performed the same series of safety checks with this scanner as for a standard hospital MRI scanner.

**Safety**

Before having the scans you will be asked to complete a short questionnaire (known as the Safety Form for MRI) to check if you have any conditions (such as heart valves, surgical clips, metallic implants and electronic devices) that may pose problems to the scan.

You will only have been invited to this part of the study if you have told us you are not pregnant. We will once again confirm with you that you are not pregnant. If you are in doubt, you will be given the opportunity to take a voluntary pregnancy test if you wish to continue, as we will only proceed with the scan if it is safe to do so.

You will need to remove all metallic objects before having the scan.

We anticipate that each scan visit will last no longer than 90 minutes. This is to allow time for the consent process, the opportunity to ask questions, and completion of the MRI safety form.

You will also be given the option to change into “theatre greens” style clothing, to prevent metal objects (which you might have in your pockets or attached to your clothing) entering the scanner

You will be allowed to stop the scan and withdraw from the study at any time, without having to give a reason.

## 7. What do I do if I have any complications after participating in the study?

If you think that you have developed a complication following either procedure, you should phone or email us to discuss any action that might be needed. There are contact details for the study coordinator in the “Further Information” section of this information sheet. You will be given appropriate care if you develop any complications.

## 8. What are the possible benefits of taking part in the sub-study?

There will be no direct benefit to you from additionally participating in this part of the study. However, information from the study may help other patients in the future

## 9. Can I bring a relative or friend?

Yes, you may be accompanied. Any friend or relative that accompanies you to the scans will not be able to enter and will be asked to remain in reception for the duration of your scan.

For the knee biopsy we recommend that you are accompanied by a relative or friend as you should not drive on the day of the procedure. If you cannot be accompanied, we will pay for a taxi to take you home.

## 10. What will happen to my data and samples?

For the synovial biopsy samples, we will look at the tissue and the cells under the microscope (histological analysis). We will also study which molecules are produced within each cell (gene expression analysis). The histological samples will be securely stored in the NHS Grampian Biorepository. The gene expression samples will be processed at the Centre for Genome Enabled Biology and Medicine. Data from the MRI scans and biopsies will be stored securely on the University of Aberdeen server.

With your permission, we may use your anonymised scan images, collected as part of this study, in future ethically approved research projects, scientific presentations and publications, to communicate our results to other researchers and clinicians.

## 11. What will happen if I can’t or don’t want to carry on with the study?

You can withdraw from the study at any time without having to give a reason. This will not affect the standard of care you are receiving. With your permission we will use the anonymised data collected in the study, up until the point that you withdrew.

If at any point you become incapacitated (no longer able to express your own wishes) or if you are unable participate due to ill health, you will be withdrawn from the study. Again, with your permission, we will use any anonymised data collected in the study, up until the point that you were no longer able to continue participating in the study.

## 12. What if relevant new information becomes available?

The images acquired from the MRI / FFC-MRI scanner will be checked by a clinical radiologist, who is a medical doctor who specialises in reading medical scan images. If any clinically significant information comes to light then, with your permission, we will let you know and inform your GP about these.

## 13. Will my travel expenses for study visits be paid?

Yes, we will reimburse you for reasonable travel expenses for attending the study visits.

## 14. Will my taking part in this study be kept confidential?

Yes. All information that is collected about you during the course of the research will be kept strictly confidential. All data collected is subject to the Data Protection Act 2018 and General Data Protection Regulations (GDPR).

The University of Aberdeen is the Sponsor for this study, based in the United Kingdom. We will be using information from you in order to undertake this study and will act as the data controller for this study. This means that we are responsible for looking after your information and using it properly. The University of Aberdeen will keep identifiable information about you for 5 years after the study has finished.

Your rights to access, change or move your information are limited, as we need to manage your information in specific ways in order for the research to be reliable and accurate. If you withdraw from the study, we will keep the information about you that we have already obtained. To safeguard your rights, we will use the minimum personally-identifiable information possible. You can find out more about how we use your information at http://www.abdn.ac.uk/privacy.

NHS Grampian will collect information from you and your medical records for this research study in accordance with our instructions.

NHS Grampian will use your name, NHS number and contact details to contact you about the research study, and make sure that relevant information about the study is recorded for your care, and to oversee the quality of the study. Individuals from The University of Aberdeen and regulatory organisations may look at your medical and research records to check the accuracy of the research study. NHS Grampian will pass these details to The University of Aberdeen along with the information collected from you and your medical records. The only people in The University of Aberdeen who will have access to information that identifies you will be people who need to contact you to or audit the data collection process. The people who analyse the information will not be able to identify you and will not be able to find out your name, NHS number or contact details.

NHS Grampian will keep identifiable information about you from this study for 5 years after the study has finished.

## 15. What if there is a problem?

If you have any concerns about any aspect of this study, you should speak directly to the researchers who will do their best to answer your questions, details are at the bottom of this information sheet.

If you still remain unhappy and wish to complain formally, you can contact NHS Grampian Feedback service on Tel: 0345 337 6338 or by email: nhsgrampian.feedback@nhs.net

## 16. What will happen to the results of the research study?

The results from this pilot study may be published in the form of a scientific manuscript but mainly will be used to inform the development of a future Scotland-wide study which would recruit and follow-up people over a number of years.

## 17. Who is organizing and funding the research?

This research study is funded by the Chief Scientist Office for Scotland. The study is being coordinated by the University of Aberdeen and NHS Grampian.

## 18. Who has reviewed the study?

This study has been reviewed and approved by the North of Scotland Research Ethics Committee (2) and by the Chief Scientist Office for Scotland

## 19. Further Information

For further information please contact the study coordinator Mrs. Laura Moir Tel: 01224-437421 Email: fresko@abdn.ac.uk

**Thank you for considering taking part in this study**