

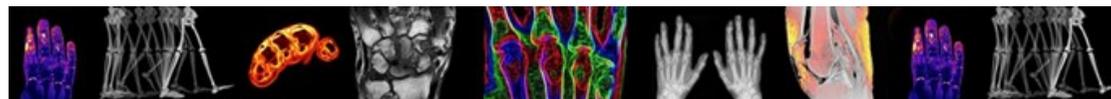


**NHS**  
National Institute for  
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# Patients Matter

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The Leeds Musculoskeletal Biomedical Research Unit  
Patient and Public Involvement Newsletter



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## Welcome

Welcome to the newsletter of the Leeds Musculoskeletal Biomedical Research Unit Patient and Public Involvement Group.



Chapel Allerton Hospital where our Patient and Public Involvement Group is based.

### *Who we are...*

The PPI group of the NIHR Leeds Musculoskeletal Biomedical Research Unit (LMBRU) was established in 2009 to guide, assist, direct and promote research within the LMBRU. Our mission is to create a successful partnership between patients, carers, members of the public, and researchers in order to ensure that the research undertaken within the LMBRU makes a difference to improve patient care.

### *What we do...*

The group is comprised of volunteer patients, carers and members of the public who have an interest in advising and shaping musculoskeletal research.

### *Our members...*

- Engage with researchers
- Provide feedback on research proposals
- Advise on content and presentation of patient literature
- Communicate with the general public
- Contribute to planning the strategy for research
- Advise on issues such as recruitment and publicity



## Recent News

### **BRC Shortlisted**

The LMBRU funding will come to an end in March 2017, and so we are applying for funding for the next 5 years in order to continue our work. The NIHR are no longer funding biomedical research units (BRUs), so we are therefore applying to become a biomedical research centre (BRC) (You can read more about BRCs and BRUs at [www.nihr.ac.uk/about/biomedical-research-centres.htm](http://www.nihr.ac.uk/about/biomedical-research-centres.htm)). We submitted our application and have been shortlisted, and will be heading down to London in July for interviews into the next stage.

### **Website Live**

The LMBRU new and improved website has now been launched. On there you can find out information about the research which is taking place here, as well as more information about our patient and public involvement group. Just go to [www.lmb.ru.leeds.ac.uk](http://www.lmb.ru.leeds.ac.uk)

### **Funding Applications**

Prof. Ann Morgan, Dr Mar Pujades-Rodriguez & Dr Sarah Twigg have applied to ARUK for funding for research into comorbidities in RA. People living with RA often have additional medical problems, or comorbidities. Common examples include heart disease, high blood pressure, diabetes and depression. These additional conditions can make treatment for RA more challenging, as well as impacting the health and wellbeing of the individual. This research team have applied for funding to make use of information already gathered from patients involved in research into RA. and will match this data to data gathered from general practice patient records. They will assess how successfully we can match these two sources of information, and determine which methods are best to make sure accurate information is obtained from general practice records. They will use the additional information to understand how people with RA are affected by two conditions: diabetes and depression. This work will enable them to perform future studies and develop our understanding of how to treat patients with RA and comorbidities. Good Luck!

## Research at LMBRU

### **Ongoing Research—Life Long Joints**

LifeLongJoints is a European funded project conducting research around hip implants. As part of the research project David Lunn (research fellow) has collected motion data for different activities of daily living in 150 total hip replacements patients. The collected data from the patients will be used in computational modelling to understand how patients' daily activities impact the hip implants. The patient data has been fully collected making this the largest total hip replacement cohort of this type in the world.

To understand the impact of total hip replacements on a more local functionality, the research has utilised the facilities of the Muscle Lab in the LMBRU by testing the muscle strength of a subset of this patient group. The results revealed a reduced strength in the patient group compared to people of a similar age who haven't had a hip replacement. These results can help us identify what rehabilitation may be needed after total hip replacements.

### **Completed Research—COSMOS**

Synovitis is an important feature in arthritis and is commonly visualised using contrast enhanced magnetic resonance imaging (MRI). Currently, the reference standard for assessing synovitis is gadolinium enhanced MRI which requires an intravenous injection which carries potential risks. Removing the necessity for using an injection will reduce these risks.

The COSMOS (contrast-obviated MRI scanning of synovitis) study investigated the use of non-contrast MRI imaging sequences to identify synovitis in the knees of patients with osteoarthritis.

Potential sequences were optimised and then assessed on a large cohort of patients with knee osteoarthritis in order to determine the protocol's suitability to identify synovitis without contrast. The results of the new COSMOS protocol show that it is feasible and practical to delineate synovitis in the knee using MRI without the use of intravenous gadolinium contrast. In addition to this, the characteristics of the tissues within the knee can be measured to provide empirical differentiation of structures.



## What we've been up to

### Training

Kirste Mellish and David Pickles recently held a training event around ethics approval, recruitment of study participants, and patient information sheets. The aim of the training was to provide a better understanding of some of the requirements and processes that researchers go through when conducting studies, and the details that researchers need to provide in order to gain ethics approval. The sessions were successful and we gained great feedback from them. If you are interested in finding out about future training opportunities, keep an eye out on our new website: [www.lmbru.leeds.ac.uk](http://www.lmbru.leeds.ac.uk)

### PARE

Some of our PPI members have been reporting on a collaboration project between the board members and Dr Ponchel for the commissioning of an Amazon-eBook related to the explaining of scientific concepts for patients involved in research. The eBook will include 10 chapters using topical review articles (with their authors permission) related to important concepts and recent research findings and rewrite them in a language comfortable for patients involved in PPI work and contributing to research project (hence not in a view to be distributed to the general public). The book content is set to address tissue banking, biomarker concept and development, cytokines, gene expression signature, autoantibodies and more. Further topics will require negotiations with authors to allow permission to use their review as starting material. The project will continue developing over the next 24 months and currently involves a group of about 10 patients although more are welcome to join.

## What we've been up to

### Falls Prevention

Four final year Masters Students from the University of Leeds have been undertaking a research project to investigate means to reduce injuries that may occur from falls. It is all part of a research focus on providing research for patient benefit and is focused presently on patients who have recently undergone lower joint replacement surgery. The students have mixed experience including Product Design and Mechanical Engineering thus can design products with both strength and functionality. The team has been getting advice from staff at Chapel Allerton Hospital, along with our PPI Group in order to gain a better understanding of this challenging research area.

### Soft Robotics

Some of our LMBRU PPI members recently attended a focus group which was led by Professor Rory O'Connor and Mr Luke Hampshire on an Engineering and Physical Sciences Research Council funded project. The topic of the research is soft robotics, and their project aims to look at options for assisted walking technologies. They wanted insight from the group to ensure that their technology would be patient focused, and were very pleased with the discussions which went on and the feedback they received.

### Get Involved

Would you like to be involved in shaping research? Head to our website where you can read more about patient and public involvement (PPI) and sign up to our mailing list!



## OK To Ask Event 2016

The OK To Ask Event was a great success this year and we thank you everyone who was involved in supporting this event.



We invited staff from all over the hospital to bring information about the ongoing research in the different departments. This included rheumatology, dermatology, radiology, joint replacements, clinical genetics, physiotherapy and occupational therapy. We also had tours of the Gait Lab and MRI control room, and demonstrations of the Biodex machine and the Ultrasound machine. We also had a physiotherapy class, and a Tai Chi class, both of which were really well received.

Leading up to the event, we went to Leeds Kirkgate Market and teamed up with Leeds Clinical Research Facility to promote the day, encourage people to come, and answer any questions they had about research.

The aim of the event is to promote that it is 'OK To Ask' about research. We encourage patients and carers to ask about research, and encourage clinicians to be aware of what research is on-going which could be relative to their patients. If you would like any more information about this, you can visit the NIHR website ([www.nihr.ac.uk/research](http://www.nihr.ac.uk/research)), or visit our 'Public' section of our new website ([www.lmbru.leeds.ac.uk](http://www.lmbru.leeds.ac.uk))

## Ask The Researcher events

### NOW ALSO HOLDING EVENING EVENTS

We aim to hold PPI Events every 6 weeks, and discuss a variety of topics. We welcome ideas for future events, just join the group and have your say!



### Preventing Rheumatoid Arthritis

On 2nd August, we will be inviting Dr Kulveer Mankia and Dr Laura Hunt to come and present the work they are doing around preventing Rheumatoid Arthritis (RA). Kulveer is currently leading a study called CCP (Co-ordinated Programme to Prevent Arthritis: Can We Identify Arthritis at a Pre-Clinical Stage?) which is investigating risk factors of those who may develop RA, to see if it is possible to prevent the disease from developing.

### Stem Cell Research

On 20th September, Dr Thomas Baboolal and Dr Alam Khalil-Khan will be coming to present on their work in stem cell research. The study AURA is aiming to improve the treatment of cartilage injuries. In doing so they have developed a new medical device which surgeons can use to increase the likelihood of the joint repairing. This device works by increasing the number of cells in the knee which are responsible for repairing the cartilage.



# An Interview with Christine Thomas

## LMBRU PPI Member

### 1. How did you get involved with the PPI Group?

When I retired from work, I started looking for something to do. I had been volunteering since the age of 16 in various roles so decided to explore PPI. I have had arthritis for 50 years, and so getting involved in arthritis research really appealed to me.

### 2. Why do you think PPI is important?

In order to help people get better, feeling part of a team is found to be beneficial. Through PPI this is achieved by working with researchers i.e. doctors, nurses, technicians, podiatrists and physiotherapists. Greater understanding of the research process is then better understood.

### 3. What do you gain from being a part of the PPI group?

I gain increasing knowledge of different diseases, as well as making friendships with people who have different diseases. It really makes me feel as though I'm doing something useful now that I have retired.

### 4. What can others gain from being involved in research?

Patients can benefit from getting the most up to date treatments, especially here at Chapel Allerton Hospital, as the LMBRU is a world leading facility. Research patients also receive more personalised care as they see members of the research team regularly. This means they can ask more questions and learn more about how to cope with their disease. Carers also benefit as they are able to attend the meetings and better understand what the diseases do to the person they care for.

### 5. Can you tell us a bit about research you were involved in and what it was like to be a research subject?

I have been involved in a few studies since joining the LMBRU PPI group, one of which involved hip replacement. I undertook an MRI scan, as part of the study to prove that MRI is much more efficient at early indication of problems than x-rays.

I was also involved in the 'Prevent Rheumatoid Arthritis' study, where I came to Chapel Allerton to have a swab test of my gums. The research project plans to see if there are factors in your saliva which can make people more susceptible to developing RA.

I have heard many stories from other PPI members about why they became involved in research, which is always positive to hear. Personally I want to help in any studies into osteoarthritis, because I know how much such research will benefit us all as we get older.



# Spotlight Brain Chaka

## Senior Research Radiographer

### Background

Brian Chaka is an MRI research radiographer here at LMBRU, and you will often see him if you come for an MRI scan. Brian's career in radiography started when he was a patient himself. He went to have an x-ray and was instantly interested in how it all worked.

Brian qualified in radiography at Bradford University, and was then offered a place on the '3+1 scheme' to do a post graduate diploma in cross sectional imaging in CT and MRI. This was a pilot scheme funded by the Yorkshire & Humber Strategic Health Authority to explore new models of training in certain radiography specialities. Brian is the first and only person in the country to complete this program. During this scheme, Brian undertook his first placement at Chapel Allerton Hospital, where he developed his interest in musculoskeletal imaging. After Chapel Allerton he was on placement at LGI and then St James, and the latter is where he began working after his diploma.

### Coming to the LMBRU

When the opportunity arose for an MRI research radiographer role in LMBRU, Brian could not resist. As previously mentioned, he had developed an interest in musculoskeletal conditions from his placement at Chapel Allerton. Alongside this, he had began a Masters of Science course in Medical Imaging, and believed that working in a research environment, would enhance the research he was undertaking for his course: Systematic



Review of Magnetic Resonance Imaging Techniques to Quantify Fat.

### The role of a Research Radiographer

On a daily basis, Brian operates the MRI scanner as part of sub-studies which are on going here at LMBRU. When scanning for research, he must ensure that all scans are completed in the same way to ensure reproducibility so that results can be compared. This differentiates from Tuesday mornings when the LMBRU conducts clinical scans for Chapel Allerton Hospital patients.

Brian also works on protocol development, where he collaborates with researchers, medical physicists, and radiologists to develop techniques and protocol for new MRI substudies. Brian's role also encompasses undertaking Quality assurance (QA). In order to deliver the best possible imaging service in research, it is necessary to ensure that the means through which that service is provided - the imaging equipment - is operating as well as it could be and the only way to ensure this is through regular testing against a predefined standard. Brian therefore undertakes QA on a regular basis.

### Public Engagement

Brian is relatively new to the LMBRU, and so at our last OK to Ask event in May, Brian was keen to get involved in the day and show members of the public how Magnetic Resonance Imaging (MRI) works. He enjoyed explaining what he looks for when patients come in for a scan, and explaining what the images from the scanner represent. He also highlighted some of the on going studies and the different techniques used to acquire images. Additionally, Brian also enjoyed meeting the PPI members.



# Spotlight: Biodex Machine

The Biodex System 4 Pro (also known as the Biodex machine) has recently been moved from the Gait lab in Chapel Allerton Hospital to the Muscle Lab in LMBRU as it is being used increasingly in research studies here.

## The machine

The machine is used to look at muscle strength and to test how strong tissue is. It can be used to look at person's peak strength and identify deficits and weaknesses, some of which would not be picked up without the machine.

The machine fits in well to the LMBRU, as researchers are able to compare findings from the biodex with other facilities. For example, results from MRI (e.g. if someone has atrophy or reduced muscle size) can explain why someone has reduced muscle strength. Or another example might be weak muscle strength on the Biodex can explain slow walking speed in the gait lab. In this way the different measures can explain the reasons for outcomes we find.

## Biodex in rehabilitation

The most common use of the biodex machine is for rehabilitation. If someone has an injury, they can use the machine in a similar way to gym equipment to build up muscle tissue around the injured joint so that forces which go through the joint don't damage tendons. Many sports teams use the machine for things such as include preseason screening, injury prevention and athletic performance enhancement.



*The Biodex machine is situated in the Muscle Lab in the LMBRU*

## Biodex in research

Danny Tadross, a medical student at University of Leeds, has been using the Biodex machine to monitor muscle strength 1 to 5 years after hip replacements. There are currently two approaches for hip replacements, and they disrupt different muscles when the surgeon operates. Danny is comparing hip replacement patients with healthy controls to see the effects of these two different surgical approaches, to see if either approach is less detrimental to the muscles. Depending on his findings, he will be able to show surgeons the follow up effects of the type of procedure they use, in order to improve patient mobility in the future.

Emma Harris, a researcher in Leeds Institute of Rheumatic and Musculoskeletal Medicine (LIRMM), is currently using the biodex for her study (STAY-ACTIV) to measure knee extension and flexion peak muscle strength in patients who are prescribed long-term oral glucocorticoids (GCs). The aim is to find out whether muscle strength decreases following six months of GCs, and whether this is accompanied by changes in muscle size as assessed by MRI. Future studies may incorporate these outcome measures to assess whether lifestyle interventions and/or drug therapies can modify the potential negative effects GCs have on skeletal muscle.





# Patient and Public Involvement Group



*Some of the PPI core members at a PPI  
planning meeting in LMBRU*

## **Want to be involved?**

You can get involved with LMBRU PPI in a number of ways.

- Come along to our ask the researcher event
- Get involved with the PPI group we have meetings every two months
- Volunteer to be on a PPI study focus/PPI advisory group
- Review grant applications

Contact **Emma Rice** for more details:

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**Visit:** <http://lmbu.leeds.ac.uk>

