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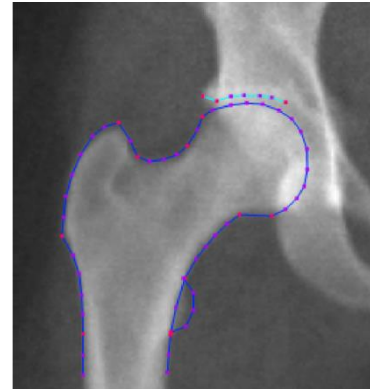
The High Bone Mass Study Newsletter

Hello, this is the 7th edition of the annual High Bone Mass study newsletter, coming to you from the University of Bristol. We have had another busy year, presenting our continuing research findings at several conferences and planning our new round of data collection for the New Year in 2017.

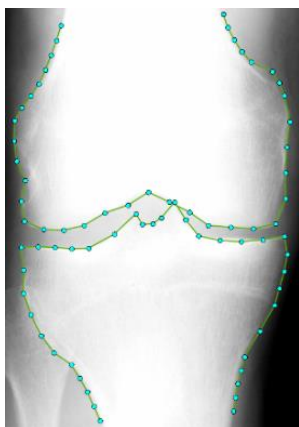
We are very pleased to report that April Hartley has been awarded a prestigious four-year Wellcome Trust PhD studentship at the University of Bristol to continue our research into High Bone Mass. She began her studentship in October 2016. Her research will investigate how bones and joints change over time in people with High Bone Mass, and specifically, following on from the earlier work of Dr Sarah Hardcastle, look at whether osteoarthritis progresses differently in High Bone Mass compared with people with regular bone density. April aims to identify factors which predict different changes in the hip and knee joints, including genetic and metabolic factors which may predispose to certain features of osteoarthritis. We hope that this research will help us understand causes of osteoarthritis. To this end we have recently received ethics committee approval to carry out a follow-up study of all our High Bone Mass participants and families! This new data collection will help us answer many questions about how bones and joints change over time, and how this may

be different in people with High Bone Mass; so you should be hearing further from us on this topic on the New Year 2017 – watch this space!

This year Anjali Patel, our 3rd year medical student working on her BSc in Health Sciences, presented her findings at the Bone Research Society conference in Liverpool in July. Anjali was investigating whether people with High Bone Mass have subtly different hip shapes and whether this predisposes people to develop hip osteoarthritis. She used specialist SHAPE software, developed by our collaborators at the



University of Aberdeen, to quantify different hip shapes using X-rays collected as part of the original High Bone Mass study. She found that as a population people with High Bone Mass have subtly different hip shapes compared with people with regular bone density, such as having more bone where big muscles (via tendons) attach to bone. Interestingly, these subtle changes in hip shape did not explain the higher frequency of hip osteoarthritis that we have previously found in people High Bone Mass. We were very pleased when Anjali was awarded a prize for the best presentation at the conference! We are currently writing the full scientific paper about this work.



In September we welcomed a new BSc in Health Sciences student, George Slade, who is also using this specialist SHAPE software from the University of Aberdeen, but this time to quantify knee shape using the knee X-rays collected as part of the original High Bone Mass study data collection. He will be investigating differences in knee shape between people with and without High Bone Mass. He will also be exploring whether any observed differences in knee shape may be related to features of osteoarthritis seen at the knee.

We will hopefully have some more results to present in next year's newsletter!

Dr Celia Gregson is continuing her work to determine the genetic changes underlying High Bone Mass. She spent several weeks working at the Diamantina Institute in Brisbane with our collaborators who have the equipment and facilities to search for changes in genes not

currently identified as causing High Bone Mass. Dr Gregson is currently analysing these data with some potentially exciting results emerging.

We would like to express again our sincere thanks to all our study members for your time and ongoing interest; without our participants, none of our exciting work would be possible. We are also grateful for our generous financial support from Arthritis Research UK, The Wellcome Trust and the National Institute for Health Research.

If you have any questions, or your contact details have changed, please let us know using the contact details at the top of this letter. From all of the team, we wish you warm 'Season's Greetings' and all the best for the New Year.

With thanks and best wishes

Yours sincerely



Dr Celia L Gregson
Study co-ordinator

On behalf of:

Prof Jon Tobias, *Chief Investigator*

Dr Sarah A Hardcastle, *Clinical research fellow*

Miss April Hartley, *PhD student*

University of Bristol, *website:* <http://www.bristol.ac.uk/clinicalsciencenorth/musculo/>