

Dr Jenny Gregory

PhD, BSc

Research specialisation: Biomedical image analysis of the musculoskeletal system.

Experience: A specialist in biomedical image analysis, particularly the use of radiographs, DXA and MRI in musculoskeletal disorders and development. Currently a Lecturer in Sports Science at the University of Aberdeen in Scotland UK, coordinating courses on the Science of Sports Performance, Exercise and Health and Biological Imaging. Previously an MRC New Investigator, researching links between bone shape and osteoarthritis.

Research overview: The use of biomedical images and data in the study of musculoskeletal disorders. Interested in understanding how bone shape and structure is determined and changes throughout our lives particularly where it can be related to osteoarthritis fracture and bone loss.

Postgraduate supervision: Currently supervising 2 PhD students. Topics include how physical activity and genetics are linked to bone structure and muscle size.

Research publications: 24 peer reviewed publications and 1 invited book chapter.

Example publications:

- Nicod, J., Davies, R. W., Cai, N., Hassett, C., Goodstadt, L., Cosgrove, C., . . . Flint, J. (2016). Genome-wide association of multiple complex traits in outbred mice by ultra-low-coverage sequencing. *Nat Genet*, 48(8), 912-918. doi:10.1038/ng.3595
- Gregory, J. S., Barr, R. J., Varela, V., Ahearn, T. S., Gardiner, J. L., Gilbert, F. J., . . . Aspden, R. M. (2016). MRI and the distribution of bone marrow fat in hip osteoarthritis. *J Magn Reson Imaging*. doi:10.1002/jmri.25318
- Nelson, A. E., Golightly, Y. M., Renner, J. B., Schwartz, T. A., Liu, F., Lynch, J. A., . . . Jordan, J. M. (2016). Variations in Hip Shape Are Associated with Radiographic Knee Osteoarthritis: Cross-sectional and Longitudinal Analyses of the Johnston County Osteoarthritis Project. *J Rheumatol*, 43(2), 405-410. doi:10.3899/jrheum.150559
- Varzi, D., Coupaud, S. A., Purcell, M., Allan, D. B., Gregory, J. S., & Barr, R. J. (2015). Bone morphology of the femur and tibia captured by statistical shape modelling predicts rapid bone loss in acute spinal cord injury patients. *Bone*, 81, 495-501. doi:10.1016/j.bone.2015.08.026
- Yoshida, K., Barr, R. J., Galea-Soler, S., Aspden, R. M., Reid, D. M., & Gregory, J. S. (2015). Reproducibility and Diagnostic Accuracy of Kellgren-Lawrence Grading for Osteoarthritis Using Radiographs and Dual-Energy X-ray Absorptiometry Images. *Journal Of Clinical Densitometry*, 18(2), 239-244. doi:10.1016/j.jocd.2014.08.003
- Goodyear, S. R., Barr, R. J., McCloskey, E., Alesci, S., Aspden, R. M., Reid, D. M., & Gregory, J. S. (2013). Can we improve the prediction of hip fracture by assessing bone structure using shape and appearance modelling? *Bone*, 53(1), 188-193. doi:10.1016/j.bone.2012.11.042
- Barr, R. J., Gregory, J. S., Reid, D. M., Aspden, R. M., Yoshida, K., Hosie, G., . . . Macfarlane, G. J. (2012). Predicting OA progression to total hip replacement: can we do better than risk factors alone using active shape modelling as an imaging biomarker? *Rheumatology (Oxford)*, 51(3), 562-570. doi:10.1093/rheumatology/ker382



Jenny Gregory (PhD)
 Lecturer, University of Aberdeen
 IMS Room 2.23
 Foresterhill
 Aberdeen
 Scotland
 United Kingdom
 E: j.gregory@abdn.ac.uk