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Application Number / Title: 18219 - Genetic and epidemiological analyses of low back pain

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Keywords provided by the Applicant PI to describe the research project: low back pain, genome-wide association study, gene, risk factor,

Application Lay Summary:

1a: We wish to perform genetic analysis and meta-analysis to identify markers associated with low back pain as part of the FP7 Pain_omics study. In addition, we would like to examine environmental risk factors for low back pain.

1b: Using the phenotypes reported in the UK biobank database we wish to study the detailed low back pain phenotype and associated genotype of all volunteers. We will classify subjects as cases who report low back pain and controls who don't. From GWAS analysis we hope to improve the knowledge of this common health condition and ultimately improve treatment of low back pain.

1c: We will perform epidemiological and genetic epidemiological studies of low back pain (LBP) by comparing profiles of individuals presenting with back pain to those who do not present with back pain. We note that many more people report LBP than don't. As such, it might be appropriate to

- a. consider a combined phenotype with other chronic pain such as leg pain
- b. consider the 'controls' as cases and regard the GWAS as a search for variants

which protect against LBP.

We will also examine variables influencing LBP such as sex, age, BMI alcohol consumption, socioeconomic status, smoking, exercise, occupation.

1d: The full cohort (>500,000)and more as available