

We once again thank the PRF for funding our research project on “Identifying causal risk factors and health consequences of chronic widespread pain using genetic epidemiology.”

The grant helped to part-fund a research associate and data access for the UK Biobank. The project resulted in two peer reviewed publications and several manuscripts in the submission process.

- 1) We showed that those with genetic liability to chronic widespread pain (CWP) had higher risk of developing and being hospitalized for COVID-19. This was a highly relevant finding at the time when COVID was still a significant public health concern, and suggested that people with chronic pain are an ‘at-risk’ group.
<https://pubmed.ncbi.nlm.nih.gov/35253865/>
- 2) We provided evidence in support of a bidirectional relationship between CWP and depression. Genetic liability to depression is associated with a small increase in CWP susceptibility, whilst CWP is linked to a substantial increase in risk of depression. screening for chronic pain features and timely intervention among those with depression may reduce incidence of CWP. The interruption of the pain-depression cycle with therapeutic intervention (both non-pharmacological and pharmacological) may benefit both symptoms of pain and depression.
<https://pubmed.ncbi.nlm.nih.gov/36963129/>
- 3) In an ongoing collaboration with researchers at the University of Cambridge, we showed that genetically predicted levels of vitamin D was not associated with risk of fibromyalgia. This suggests that vitamin D supplementation is unlikely to reduce fibromyalgia risk. The manuscript remains under review and preprinted at
<https://www.medrxiv.org/content/10.1101/2023.04.12.23288467v1>
- 4) We showed that those with genetic liability to CWP had higher risk of coronary artery disease. However, this manuscript was not submitted for publication because another group published the identical analysis shortly before we submitted.
- 5) One of the grant holders collaborated with a Chinese research group who had performed a systematic review and meta-analysis of the role of physical activity in CWP, and combined their results with a Mendelian randomization analysis of the same. This manuscript remains under peer review at the time of writing. Genetically predicted levels of physical activity are associated with risk of CWP.
- 6) Lastly, in a manuscript under preparation, we showed that insomnia and short sleep duration, but not chronotype, was associated with chronic widespread pain.

In summary, the project has resulted in two published manuscripts, and three more undergoing peer review.