**Summary of research**

**Key words:** physical activity, strength, handgrip, genetics, gwas

**Application lay Summary:**

1a: Physical activity is an important determinant of general health. Furthermore, family studies have suggested that physical activity levels are heritable likely to have a significant genetic component. Furthermore, muscular strength is also an important parameter of health, particularly in ageing. It also has a significant genetic component, which remains poorly characterised to date. Thus, understanding the genetic aetiology of physical activity levels and muscular strength is an important step in understanding the aetiology of disease and physical function during ageing.

1b: Physical activity levels and strength are important determinants of health. The biological inferences that can be gained from human genetic discovery efforts will support future translational research.

1c: We will investigate genetic differences that are associated with variation in physical activity levels and in muscular strength. We can then use this information to understand the role of these genes in the causes of diseases and
mortality.

1d: Full cohort

Project extension:

‘We wish to extend our examination of determinants of activity to not just include genetic markers but also other biological exposures (e.g. body composition, grip strength) and other behavioural variables (physical activity, diet, smoking, and alcohol consumption, etc. at earlier time points).’