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Summary of research

Key words: Cardiovascular multimorbidity, Survival

Application Lay Summary:

1a: As many cardiometabolic diseases (such as myocardial infarction, stroke, hypertension and diabetes mellitus) share risk factors, these conditions often co-occur (“cardiometabolic multimorbidity”). However, despite increases in the prevalence of such multimorbidity, there is a paucity of evidence concerning the potential consequences for survival. This application proposes to:

1) assess the prevalence of cardiometabolic multimorbidity in a contemporary population

2) identify potential genetic and non-genetic determinants of cardiometabolic multimorbidity

2) estimates the associations of cardiometabolic multimorbidity with the risk of subsequent major health events and mortality.

1b: This research is in the public interest considering population aging and that people who have cardiometabolic multimorbidity has been increasing rapidly worldwide. Evidence concerning the potential consequences of cardiometabolic multimorbidity for survival could importantly inform public health priorities and the targeting of prevention efforts.

1c: We will perform analyses investigating the prevalence of cardiometabolic diseases (such as myocardial infarction, stroke, hypertension and diabetes mellitus) in isolation and in combination. We will assess the associations of cardiometabolic multimorbidity with other prevalent diseases as well as with socio-demographic, lifestyle, environment, early life, psychosocial and physical measures. When available in UK Biobank, we will analyse the genetic data to assess possible genetic determinants of cardiometabolic multimorbidity. Once suitable numbers of disease outcomes have accrued we will examine the relationships of cardiometabolic multimorbidity with future health outcomes.

1d: The full cohort data will be required.