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## **Summary of research**

Key words: Smoking, alcohol, adiposity, morbidity, mortality, quitting

The proposal is to investigate the impact of three classic risk factors (smoking, alcohol and adiposity, each of which can affect many different diseases) on a wide range of health outcomes in UK Biobank. Of particular interest will be vascular outcomes and cancer along with cognitive performance and mood. This study will contribute to a greater understanding of how these classic risk factors combine to affect population health.

The initial focus of this work will be to analyse baseline data comparing risk of major chronic disease according to smoking behaviour, alcohol consumption and adiposity. When re-measurement data become available we will use these to improve the precision of our analyses. When prospective data become available we will extend our analyses to include incidence and mortality. Outcome data of interest will include death, cancer registry data and hospital episode data. When bio-marker data become available we will investigate possible mechanisms underlying the associations of these three risk factors with prevalent and incident outcomes. When genetic data become available we will use these to investigate the interaction between genetic and environmental factors and to further investigate possible mechanisms.

The value of the proposed analyses lies in the statistical power that is available from using the entire UK Biobank cohort. This will enable us to

provide the most detailed analyses of these important causes of morbidity and mortality to date