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Summary of research

Key words: Reproductive, diabetes, heart disease, cancer, osteoporosis.

Application lay Summary:

The overall aim is to study female reproductive health across the life course and in relation to chronic disease. More specifically:

1. To examine how different reproductive indicators (e.g. age at periods starting and stopping, parity, HRT use) are related to each other.
2. To study the separate and joint associations of female reproductive health indicators with major chronic diseases.
3. To assess whether information on reproductive health improves the performance of disease prediction risk scores for CVD, diabetes, cancer, osteoporosis and Alzheimer's disease.

We will also consider: cognitive, respiratory and mental health, physical capability.

Here we propose to use Biobank to improve our understanding of the role of female reproductive health in disease aetiology and in risk and prognosis prediction. This research has the potential to inform prevention strategies by establishing whether women at increased risk of ill health in later life can be better identified using readily available and easily recalled information on indicators of reproductive health.

Our plan is to look at how women's reproductive health is related to health and disease. We will examine how different reproductive indicators (e.g. age at periods starting and stopping, number of pregnancies) are related to each other; study their separate and combined associations with major health outcomes; assess whether information on female reproductive health aids in disease prediction. We will use data on a range of reproductive health indicators and on heart disease, diabetes, physical capability, bone, respiratory, cognitive and mental health from the baseline examination, and linked hospital, general practitioner and cancer and death registry data.

Full cohort. Although this application is concerned with female reproductive health, we request relevant data on men as well. This is to enable comparisons to be made so that mechanisms can be identified and to increase our ability to make causal inferences.

We would like to examine associations between genetic variants robustly associated with cortisol levels in relation to age at menarche. Cortisol is a marker of stress and stress and the latter has been implicated in determining the timing of sexual maturation. This work somewhat extend the current remit of proposal 6326 to examine the effect of cortisol on a key indicator of reproductive health and function in women.

We would like to extend our investigations to the developmental origins of COPD by examining the association of maternal perinatal smoking with lung function and COPD