



Application Number / Title: 21421 - Understanding different approaches of harmonization using individual participant data to investigate the determinants associated with age at menopause

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Keywords provided by the Applicant PI to describe the research project: Harmonization, metaanalysis, Individual participant data, age at menopause

Application Lay Summary:

1a: The main aims are to:

1. Explore the impact of different methods of harmonization by investigating the determinants associated with age at menopause
2. Use the most appropriate method to provide an overview of the determinants associated with age at menopause across countries

1b: Research on age at menopause has concentrated on analyzing data from studies in single countries or from different countries separately. We propose to examine the independent associations between a number of factors with age at menopause from multiple large studies done in different countries, using different co-analysis methods of individual participant data. Such analyses, over 500,000 women, will help to gain useful insights about inconsistent determinants of age at menopause found in the literature and will allow to compare results in the United-Kingdom with the UK-Biobank study to Canadian and other European studies.

1c: Using the baseline data from four large epidemiological studies (LifeLines, Canadian Partnership for Tomorrow's Project, UK-Biobank and Constances), we will:

- Conduct analyses to determine the factors associated to age of menopause, using Cox proportional hazards regression, on each cohort separately, using the same confounders but without any harmonization procedures
- Explore different approaches of harmonization to determine the factors associated to age at menopause
- Compare the results (i.e. statistically significant factors, effect sizes, levels of significance and confidence intervals ranges) between the different approaches of harmonization and the individual study analyses and between the different approaches of harmonization.

1d: All female participants.