

Principal Investigator

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Summary of research:

cancer, caffeine, postmenopausal hormones

Application Lay Summary:

1a: Caffeine has been inversely associated with breast cancer risk in some, but not all previous studies. Caffeine and estrogen metabolism pathways share common enzymes and some of these enzymes are induced by caffeine. Postmenopausal hormones (PMH) increase breast cancer risk. Whether there is an interaction between PMH and caffeine with respect to breast cancer risk is unknown. Further, limited data exist on the association of caffeine with breast cancer risk by tumor's aggressiveness. We will examine interactions of caffeine and PMH with respect to breast cancer risk in postmenopausal women, both overall and by tumor's aggressiveness

1b: Breast cancer remains one of the leading causes of cancer incidence in industrialized countries. Yet, a lot of questions remain open about etiology and prevention of breast cancer as well as risk prediction. The findings of this analysis will help to better understand how these two highly prevalent exposures might jointly contribute to breast cancer risk thus adding to the knowledge in this important area of high public health concern, in line with the UK Biobank purpose.

1c: We will identify women who were postmenopausal at the time of enrollment in UKBiobank and did not have a history of breast cancer (BC). Women who developed BC during the follow-up will be compared to women who did not have any cancer (other than non-melanoma skin) with respect to their hormone use and caffeine consumption patterns. We will examine these associations both overall as well as while stratifying tumor's based on their invasiveness (defined using combination of tumor features including size, grade, nodal involvement, and estrogen receptor status).

1d: We will include all women who were postmenopausal at baseline and did not have a history of cancer at enrollment. Women without breast cancer but any other cancer developed during the follow up will be excluded. The study will include all women who meet these criteria