

## UFHCC Research Day 2017 | Abstract Template

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### LIST ALL AUTHORS and AFFILIATIONS – underline presenting author

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### TITLE

Interactions of coffee consumption and postmenopausal hormone use in relation to breast cancer risk in UK Biobank.

### HYPOTHESIS:

The association between coffee consumption and postmenopausal breast cancer risk varies by the status of postmenopausal hormone therapy (PMH).

### BACKGROUND/AIMS:

The findings of previous studies on the associations of coffee consumption with breast cancer risk are inconsistent. The polyphenol antioxidants contained in coffee have been suggested to have a protective association with breast cancer risk. On the other hand, caffeine also has the potential to influence estrogen levels as the enzymes involved in the metabolism of caffeine are also involved in estrogen metabolism. Importantly, circulating estrogens are known to increase the risk of postmenopausal breast cancer. Whether there is an interaction between coffee consumption and PMH is unknown. In a prospective cohort, we investigated the association of coffee consumption with postmenopausal breast cancer risk, overall, and for the first time, by the status of postmenopausal hormone therapy.

### METHODS:

This study included 126,182 postmenopausal women (2,636 with breast cancer and 123,546 without) from the UK Biobank. Cancer diagnoses were ascertained through the linkage to the UK National Health Service Central Registers. Information on breast cancer risk factors and coffee consumption was collected at baseline and updated during follow-up. We used Cox proportional hazards regression to evaluate associations between coffee consumption and breast cancer, overall and in stratified analyses by woman's PMH status (none, past, current).

### RESULTS & CONCLUSIONS

In the overall analysis, coffee consumption was not associated with breast cancer risk (Hazard Ratio [HR]=1.00, 95% CI 0.91-1.11 for 2-3 cups/day, and HR=0.98, 95%CI 0.87-1.10 for  $\geq 4$  cups/day, p-trend=0.69). Women with no PMH history who consumed  $\geq 4$  cups/day had a 16% reduced risk of breast cancer as compared to women who consumed  $< 7$  cups/week (HR=0.84, 95%CI 0.71-1.00). Among women with past PMH, those consuming  $\geq 4$  cups/day had a 22% greater risk of breast cancer than women consuming  $< 7$  cups/week (HR=1.22, 95%CI 1.01-1.47). No association was found among current PMH users. We found no significant interaction between PMH and coffee consumption (p=24). Coffee consumption might be associated with decreased breast cancer risk in women with no history of PMH and with increased breast cancer risk in women who used hormones in the past. Further studies are warranted to confirm these findings and elucidate potential biological mechanisms underlying the observed associations.