

Further analysis is underway to explore which particular traits and characteristics of those who self-harm are most associated with risk of suicide using cox regression in order to inform intervention targeting.

## Thursday 5 September

### Cancer 2

#### OP31 MEAT INTAKE AND CANCER RISK: PROSPECTIVE ANALYSES IN UK BIOBANK

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**Background** The latest meta-analysis from the World Cancer Research Fund/American Institute for Cancer Research concluded that red meat was a probable cause and processed meat a convincing cause of colorectal cancer. However, evidence for associations between red and processed meat intake and other cancer sites is limited. Furthermore, few studies have examined the association between poultry intake and cancer risk. Therefore, the aim of this study was to examine the associations between red, processed meat and poultry intake and incidence for 20 common cancer sites.

**Methods** We analysed data from 475,488 participants (54% women) in UK Biobank. Participants were aged 37–73 years and cancer free at baseline. Cancer diagnosis and death due to cancer during follow-up were determined using data-linkage with cancer and death registries (with follow-up until 30 November 2014 for England and Wales and until 31 December 2014 for Scotland, respectively). Information on meat consumption was based on a touchscreen questionnaire completed at baseline covering type and frequency of meat intake. We used multivariable-adjusted Cox proportional hazards models to determine the association between baseline meat intake and cancer incidence. Analyses of lung cancer risk were restricted to never smokers. All analyses were adjusted for socio-demographic, lifestyle and women-specific factors.

**Results** Over a mean 5.7 (SD 1.1) years of follow-up 23,117 participants were diagnosed with any type of malignant cancer. Red meat intake was positively associated with colorectal cancer (Hazard ratio (HR) per 50 g/day increment in intake 1.20, 95% Confidence Interval (CI) 1.02–1.41), breast cancer (1.13, 1.01–1.27) and prostate cancer (1.14, 1.00–1.29). Processed meat intake was positively associated with risk for colorectal cancer (HR per 20 g/day increment in intake 1.16, 95% CI 1.04–1.30). Poultry intake was positively associated with risk for malignant melanoma (HR per 30 g/day increment in intake 1.20, 95% CI 1.00–1.44), prostate cancer (1.11, 1.02–1.22) and non-Hodgkin lymphoma (1.26, 1.03–1.55).

**Discussion** Higher intakes of red and processed meat were associated with a higher risk of colorectal cancer. Red meat consumption was also positively associated with risk of breast and prostate cancer, but these associations are not supported by most previous prospective studies and may be affected by residual confounding. The positive associations of poultry intake with prostate cancer and non-Hodgkin lymphoma require further investigation.

#### OP32 SOCIOECONOMIC STATUS AND BREAST CANCER MORTALITY IN SCOTLAND BY OESTROGEN RECEPTOR STATUS

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**Background** Although breast cancer is a disease associated with high socioeconomic status (SES), previous studies report higher mortality amongst women with lower SES. Breast cancer prognosis is highly related to tumour characteristics, such as oestrogen receptor (ER) status. ER+ tumours have better prognosis than ER- tumours as they are responsive to hormone treatments. This study aims to examine if socioeconomic inequalities in breast cancer mortality in Scotland differ by ER status.

**Methods** All women diagnosed with breast cancer in Scotland (recorded in the cancer registry) from 1997 to 2016 were followed up to the end of 2016. Median follow up time was 5.5 years, and 5, 10 and 15 years Kaplan Meier estimates for all-cause mortality were calculated by Scottish Index of Multiple Deprivation (SIMD) –an area-based measure of deprivation, stratified by ER status (82% ER+). Cox models were used to estimate hazard ratios (HR) between women in the most deprived quintile (Q1) of areas and women in the least deprived quintile (Q5) of areas stratified by ER status. Models were adjusted for age, Scottish region, tumour characteristics (grade, tumour size and whether screen-detected or not), treatment regimens and Charlson index of comorbidity. The potential for SIMD and ER status interaction was tested using likelihood ratio test.

**Results** Among the total of 72,217 women with breast cancer 12,923 (18%) were in Q1 and 14,980 (21%) were in Q5. There were 5,688 (44%) deaths in Q1 and 4,526 (30%) deaths in Q5. Women in Q1 had more advanced tumours than women in Q5: 43% vs 37% with poorly differentiated tumours, 45% vs 40% with tumours bigger than 2cm, 24% vs 30% screen detected tumours. Difference in proportions who were dead at 5, 10 and 15 years between Q1 and Q5 were 11%, 14% and 17% respectively. Five and 10 years mortality rates were higher for ER- tumours than for ER+ but there were no differences in mortality at 15 years. Fully adjusted Cox regression models for mortality for Q1 compared to Q5 gave HR of 1.40 [95% CI: 1.30–1.50] for women with ER+ tumours and 1.35 [95% CI: 1.19–1.53] for women with ER- tumours. There was no evidence of interaction between SIMD and ER status (p value=0.375).

**Conclusion** Socio-economic status is inversely associated with breast cancer mortality in Scotland regardless of ER status. Future studies are needed to determine cause of death and the role of comorbidities in this population.

#### OP33 BODY SIZE AND COMPOSITION IN RELATION TO RISK OF ENDOMETRIAL CANCER IN UK BIOBANK

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**Background** Obesity, as reflected by a high body mass index (BMI), is a well-known risk factor for endometrial cancer. Whether more precise measures of body fat, such as body fat