to 32 g) per capita/day. Similar trends are observed across the three socio-economic groups.

We note a decline in energy purchased from meat and fish (8 kcal), bread and cereals (21 kcal), and fruits and vegetables (9 kcal), but an increase in the calories from dairy (7 kcal) and savoury snacks (9 kcal). There is a decrease in the energy and sugar purchased from less healthy non-alcoholic drinks, such that purchases of energy and sugar from healthier alternatives now exceed in comparison.

The nutritional content of sweet snacks expenditure has not changed (197 kcal and 18 g of sugar per capita/day). In contrast, the energy and sugar purchased from desserts and puddings decreased from 195 kcal (95% CI 194 to 196 kcal) to 166 kcal (95% CI 165 to 167 kcal), and from 20 g (95% CI 20 to 20 g) to 17 g (95% CI 16 to 17 g) respectively, accounting for 46% percent of the total decrease in sugar purchased daily.

Conclusion While small improvements in the nutritional content of food purchased for at-home consumption are detected, these may be offset by different trends in out-of-home purchases. To understand the extent to which these improvements influence social inequalities, further analyses focus on socio-economic differences in the nutritional content of purchases across all the food groups over time.

Cardiovascular disease

OP42 POTENTIAL IMPACTS OF BREXIT ON CARDIOVASCULAR DISEASE VIA CHANGES TO THE PRICE OF FRUITS AND VEGETABLES: A MODELLING ANALYSIS

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Background The UK's decision to exit the European Union will likely affect its current trade regimes. Trade policy can alter food commodity availability and price; it is thus a potentially powerful determinant of food environments and subsequently health. The UK is highly dependent on its fruit and vegetable (F&V) imports. Brexit could therefore affect F&V price and consumption in the UK. Given the strong association between F&V intake and cardiovascular disease (CVD), our analysis aimed to quantify the potential effects of F&V price changes due to Brexit on CVD in English adults between 2020–2030.

Methods We used the previously validated IMPACT Food Policy Model. The model combined publicly available data on F&V trade, published estimates of UK-specific price elasticities, F&V intake data from the National Diet and Nutrition Survey, and coronary heart disease (CHD) mortality projections for 2020–2030. We estimated the number of CHD deaths and life-years lost between 2020–2030 among English adults aged 25 years and above as a consequence of five Brexit scenarios: (1) Transitional Brexit; (2) post-Brexit Free Trading Agreement with the EU and maintaining half of the non-EU free trade partners; (3) post-Brexit Free Trading Agreement with the EU but no trade deal with any non-EU countries; (4) post-Brexit liberalised trade regime; (5) no deal Brexit. We then

performed Monte-Carlo simulations to better estimate uncertainty of inputs.

Results Under all Brexit scenarios, prices of F&V are likely to increase on average between 1.8% and 7.8%. The banana, citrus fruit, and tomato markets are likely to be the most disrupted, with price increases up to approximately 16.7%, 14.3%, and 13.4% respectively. A transitional Brexit is likely to result in approximately 670 (95% Uncertainty Interval: 430–980) extra CHD deaths and 6370 (4,360–8,990) life-years lost. A liberalised regime which eliminates all import tariffs is likely to contribute approximately 940 (600–1,370) additional CHD deaths and 8870 (6,060–12,540) life-years lost, due to non-tariff trade barriers between the UK and the EU. A no-deal Brexit scenario might be the most harmful, generating approximately 2900 (1,820–4,310) extra CHD deaths and 27 440 (18,200–39,630) life-years lost between 2020–2030.

Conclusion This analysis suggested that under all modelled scenarios Brexit is likely to increase the price of F&V and thus have a detrimental effect on the future diet and health of English adults. The UK government should therefore aim to secure a post-Brexit food system that incentivises the UK population to purchase and consume healthy foods.

OP43 FINANCIAL STRAIN MODIFIES THE ASSOCIATION BETWEEN SYSTEMIC INFLAMMATION AND CARDIOVASCULAR MORTALITY

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Background Atherosclerosis and cardiovascular disease (CVD) have an inflammatory origin. Moreover, chronic psychosocial stress is associated both with inflammation and CVD. Our aim was to test whether the prognostic value for future CVD risk of a single inflammation test depends on the presence of chronic psychosocial stress.

Methods Data come from the nationally-representative English Longitudinal Study of Ageing. Psychosocial factors (financial strain, depression, social isolation, loneliness) and inflammatory markers (serum fibrinogen and C-reactive protein [CRP]) were collected in 4762 men and women, free of CVD and aged 52 to 101 y at baseline (2004–2005). Cox proportional hazards regression models were fitted to estimate the relationship (hazard ratios [HR] and 95% confidence intervals) between inflammatory marker and incident CVD death. Interactions terms between fibrinogen and each psychosocial factor were tested. Models were stratified by sex and adjusted for age, smoking, body mass index, physical activity, HDL/total cholesterol, triglycerides, hypertension and diabetes. Added predictive value over conventional CVD risk factors was assessed by change in C-statistics and reclassification.

Results There were 158 CVD deaths during a median follow-up of 8.1 y. The association between both inflammatory markers and CVD mortality was linear: HR 1 g/L of fibrinogen=1.46; 95% CI 1.20, 1.78 and HR log-unit CRP=1.35; 1.16, 1.57. Financial strain modified these associations. In the presence of financial strain (n=506, 24 deaths), the HRs for fibrinogen (3.32; 1.68, 6.57) and for CRP (2.15; 1.42, 3.26) were stronger than in the absence of financial strain (n=4256, 134 deaths) (HR fibrinogen 1.33; 1.07, 1.66 and HR CRP

1.26; 1.07, 1.49). The added predictive value was higher in the group that experienced financial strain, in particular for CRP.

Conclusion The positive association between inflammatory biomarkers and CVD death was much stronger in the presence of financial strain. When assessing the presence of inflammation with a single test for prediction of CVD risk, it may be necessary to take into account the presence of chronic psychosocial stress.

OP44

#IDEAL CARDIOVASCULAR RISK PROFILES AND AGEING: EVIDENCE FROM 421,000 OLDER PERSONS IN TWO COHORTS

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Background Individuals with low cardiovascular risk factor profiles experience lower rates of cardiovascular diseases (CVD) and mortality. However, little is known about how older persons with near ideal cardiovascular risk factors age, especially for non-cardiovascular outcomes. We tested whether older individuals with near ideal CVD risks were less likely to develop ageing-related adverse health outcomes in two large cohorts.

Methods Data were from population representative primary care medical records (Clinical Practice Research Datalink, CPRD, England, n=239,591) and also healthy volunteers (UK Biobank, UKB, n=181,820), aged 60 to 69 years at baseline followed for up to 10 years. A cardiovascular risk score (CRS) summarized smoking status, low density lipoprotein cholesterol (LDL), blood pressure, body mass index (BMI), fasting glucose and physical activity, grouping individuals as low (all factors near ideal), moderate or high CRS, following the American Heart Association 'Life's Simple 7' approach. Data were available on a range of prevalent and incident ageing-related adverse health outcomes from CPRD and UK Biobank. Logistic regression and Cox proportional hazards regression models (Fine and Grey models including death as a competing risk) were used to test associations between the CRS and prevalent or incidence health outcomes respectively.

Results Older subjects with near ideal CVD risks had less chronic pain (UKB baseline odds ratios (OR), 0.52, 95% CI 0.50 to 0.54), lower incidence of incontinence (CPRD sub-hazard ratio (sub-HR), 0.75, 95% CI 0.63 to 0.91), falls (sub-HR, 0.82, 95% CI 0.73 to 0.91) and fragility fractures (sub-HR, 0.78, 95% CI 0.65 to 0.93). Only 5.4% in our primary care sample with near ideal CVD risks became frail (Rockwood index) versus 24.2% with high risks. All-cause mortality was markedly lower in the low CRS group (vs. high CRS, HR, 0.40: 95% CI 0.35 to 0.47). All associations showed dose-response relationships. Estimates of associations were remarkably similar in both cohorts despite differences in the cohort profiles and risk factor ascertainment, suggesting robustness of results.

Conclusion Persons aged 60 to 69 years with near ideal cardiovascular risk factor profiles have substantially lower incidence of common conditions of ageing, including frailty. Optimizing

CVD risk factors may substantially reduce the burden of morbidity in later life: we thus likely already have the tools for radical improvement in ageing health outcomes. However, further work is needed to provide evidence of whether this association is causal. Using largescale data from UK Biobank, we aim to expand the existing study and tease apart the roles of component risk factors using genetic evidence.

OP45

ALLOSTATIC LOAD AND EFFORT-REWARD IMBALANCE: ASSOCIATIONS OVER THE WORKING-CAREER

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Background Although associations between work stressors and stress-related biomarkers have been reported in cross-sectional studies, the use of single time measurements of work stressors could be one of the reasons for previously inconsistently reported associations. This study examines whether repeated reports of work stress towards the end of the working career predicts allostatic load, a measure of chronic stress related physiological processes.

Methods Data from waves 2 to 6 of the English Longitudinal Study of Ageing (ELSA) were analysed, with a main analytical sample of 2663 older adults (aged 50+) who had at least one measurement of effort-reward imbalance between waves 2–6 and a measurement of allostatic load at wave 6. From this main analytical sample, a subsample of 1020 respondents had their allostatic load measured at wave 2. Cumulative work stress over waves 2–6 were measured by the effort-reward imbalance model. Negative binomial regression models were used to estimate the association between effort-reward imbalance and allostatic load after controlling for covariates (categorized age, gender, ethnicity, smoking status, general health, number of medications used, depressive symptoms using the Centre for Epidemiologic Studies Depression Scale, physical activity, and alcohol use in the last 12 months).

Results Employees with effort-reward imbalance at the more recent waves 5 (0.09, -0.002–0.17) and 6 (0.13, 0.03–0.22) had higher levels of wave 6 allostatic load compared to those who did not report any imbalance at those waves. The predicted levels of allostatic load by cumulative reports of effort-reward imbalance from the model controlling for wave 2 allostatic load showed that workers who reported two or more occasions of effort-reward imbalance had a higher estimate of the allostatic load index (0.11, 95% CI 0.01 to 0.22) compared to workers who never reported effort-reward imbalance.

Conclusion The study finds some evidence that older adults aged 50+ living in England who repeatedly reported work related stressors had higher levels of the allostatic load index than those who did not report any effort-reward imbalance. This association was robust to controlling for a range of potential health and socio-demographic confounders, as well as baseline levels of allostatic load. The findings of a dose-response association between effort-reward imbalance and allostatic load, as well as the timing of the stressor and stress response, suggest that exposure to work-related stressors may have adverse consequences for physiological health through increasing adverse levels of stress related biomarkers.