Conclusion BCG protection against tuberculosis varies between settings to an extent which cannot be attributed to chance alone. More efficacious results were seen in studies of individuals screened using stringent criteria (to exclude those already sensitized to mycobacteria), and those at a greater latitude from the equator.

OP40 **SELENIUM SUPPLEMENTATION FOR THE PRIMARY PREVENTION OF CARDIOVASCULAR DISEASE (CVD) – A COCHRANE SYSTEMATIC REVIEW**

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Background Selenium is a key component of a number of selenoproteins which protect against oxidative stress and have the potential to prevent chronic diseases including CVD. However, observational studies have shown inconsistent associations between selenium intake and CVD risk; in addition there is concern around an increased risk of type 2 diabetes with high selenium exposure.

Objective To determine the effectiveness of selenium only supplementation for the primary prevention of CVD and examine potential adverse effects on type 2 diabetes.

Methods The following electronic databases were searched with no language restrictions from their inception to July 2011: MEDLINE, EMBASE, CINAHL, Web of Science, the Cochrane Library and trial registers. Studies were included if they fulfilled the following criteria: study design - RCTs, participants - free of CVD (includes those at high risk), intervention - selenium only supplementation, comparator – no intervention or placebo, outcomes – diagnosis of CVD or change in the risk factor profile for CVD (blood pressure, lipids) or adverse effects (type 2 diabetes). Two reviewers independently screened titles and abstracts, assessed shortlisted studies for formal inclusion/exclusion, abstracted data and assessed methodological quality. Data were analysed using RevMan 5.1 software.

Results Database searching resulted in 1310 hits of which 43 went forward for formal inclusion/exclusion; 9 RCTs met the inclusion criteria. Included trials were heterogeneous in the participants recruited, dose of selenium, intervention and follow-up periods, outcomes reported, country of recruitment and baseline selenium status. Meta-analysis was possible for 2 trials reporting clinical events, but the analysis was dominated by the SELECT trial which carried over 80% of the weight. There were no statistically significant effects of selenium supplementation on total mortality (RR 0.97, 95% CI 0.88, 1.08), CVD mortality (RR 0.97, 95% CI 0.79, 1.2) or non-fatal CVD events (RR 0.97, 95% CI 0.9, 1.05). Similarly, the SELECT trial dominated the findings from 3 trials reporting type 2 diabetes, where selenium supplementation increased the risk of type 2 diabetes (RR 1.06, 95%CI 0.97, 1.16) although this did not reach statistical significance. There were no statistically significant effects of selenium on total or HDL cholesterol (measured in 2 trials (5 intervention arms) with varying doses of selenium supplementation).

Conclusion There is still a lack of evidence of the effects of selenium supplementation in the primary prevention of CVD. More trial evidence is needed especially to clarify the potential adverse effect of selenium supplementation on type 2 diabetes.

Population Based Studies: Early Life II

OP41 **BIRTH SIZE AND MORTALITY IN BREAST CANCER PATIENTS**

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Background Previous studies suggest that larger birth size is associated with a higher breast cancer incidence, but the few studies of birth measures and mortality in breast cancer cases have been inconclusive. The aim of this study was to investigate survival of women after breast cancer diagnosis (N=436) in the Uppsala Birth Cohort born in 1915–1929, who had detailed obstetric records available.

Methods Cox regression was used to calculate hazard ratios (HR) and their 95% confidence intervals (CIs) for death from any cause after a breast cancer diagnosis until the end of 2010. Cancer register diagnoses were available from 1958. The main exposures were birth measures: gestational age (GA), birth length (BL), and birth weight (BW) for GA. They were converted to standard deviation (SD) scores to ensure comparability of the effect sizes. Analyses were performed with and without adjustment for own adult socio-economic position (SEP) measured by education, occupation and income. Analyses were additionally adjusted for age at breast cancer diagnosis, decade of diagnosis, and age at first birth. Adjustment for family SEP at birth was considered but omitted since it did not affect the estimates and was not related to mortality after adjustment for other confounders.

Results In adjusted analyses, one SD increase in GA was associated with 7% (95% CI 2–12%) lower mortality and this association did not change after additional adjustments for BL or BW. There was no association between BL and mortality (adjusted HR=1.02 (0.91–1.16)). One SD increase in BW for GA was associated with 14% (1–29%) and 26% (9–46%) higher mortality without and with an additional adjustment for BL, respectively. Adjustment for SEP or other confounders did not substantially alter the estimates.

Conclusion Our results suggest that both low GA and high BW for GA predict a higher mortality in breast cancer cases. This study strengthens the current evidence that size at birth is related to breast cancer mortality as well as incidence. It also brings in new evidence of the inverse relationship between GA and breast cancer mortality that has not been reported before. The observed associations persisted after an adjustment for SEP, although breast cancer cases from lower SEP are known to have a poorer survival and also birth measures are socially patterned. Further studies are needed to investigate how the observed associations are mediated.

OP42 **LIFECOURSE SOCIOECONOMIC POSITION AND COGNITIVE FUNCTION IN LATER LIFE IN CENTRAL AND EASTERN EUROPE: PRELIMINARY FINDINGS FROM THE HAPIEE STUDY**

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Background Socioeconomic position (SEP) across the lifecourse is positively associated with cognitive function in later life in studies of Western populations, with later SEP likely mediating the effect of early life factors. However, it remains to be seen whether similar associations are observed in settings with markedly different social histories with apparently smaller income inequalities. This study aims to investigate the association between measures of SEP reflective of the lifecourse and cognitive function in mid and later life in three Central and Eastern European populations.

Methods Cross-sectional analysis of 7,990 men and women aged 45–69 years in 2002 from the Health, Alcohol and Psychosocial factors in Eastern Europe (HAPIEE) study recruited in Novosibirsk (Russia), Krakow (Poland), and six Czech towns using random probability sampling. Measures of lifecourse SEP included self-reported childhood socioeconomic conditions (parental education, ownership of household amenities at age 10), own education and current material circumstances. Linear regression was used to estimate the associations between lifecourse SEP measures and three

cognitive tests: verbal memory (recall of 10 words), verbal fluency (naming animals) and letter search speed. Fully adjusted models included health and lifestyle covariates (medical history, depression, alcohol, physical activity).

Results Broadly similar patterns of associations were observed across countries. Indicators of SEP across the lifecourse made independent contributions to cognition, with stronger contributions from education and current asset ownership (an indicator of contemporary material circumstances), than from childhood socioeconomic conditions. Socioeconomic advantage was associated with higher levels of cognitive functioning. For example, in fully adjusted models, university education was associated with 3.9 (SE 0.7) word recall advantage in memory performance in Czech men and 2.2 (SE 0.5) and 2.7 (SE 0.3) word advantage in Russian and Polish men; in women these figures were 3.7 (SE 0.4), 3.0 (SE 0.5) and 3.2 (SE 0.3), respectively. The effect of childhood socioeconomic conditions on cognition was largely attenuated after adjustment for education and current material circumstances, suggesting mediation by later SEP measures.

Conclusion Socioeconomic position across the lifecourse is an important predictor of cognition in mid and later life in these Eastern European populations. The attenuation of the effects of childhood SEP after adjustment for own education and current material circumstances supports the model where this association is, at least partly, mediated through later life measures of SEP. Future research should focus on lifecourse influences on cognitive aging trajectories as long-term follow-up of this cohort and other studies in Eastern European populations become available.

OP43 **ARE WE OVERESTIMATING THE BENEFICIAL EFFECTS OF ALCOHOL IN LATER LIFE? THE CASE OF YOUNG NON-DRINKERS**

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Background Non-drinkers have been repeatedly shown to have worse health than moderate drinkers in later life particularly as regards conditions such as coronary heart disease, leading some researchers to suggest that moderate alcohol consumption has beneficial effects on health. However the causal direction between non-drinking and worse health has been contested. Whether poor health is associated with non-drinking among young adults in relation to social and health factors will be investigated. Such a finding would imply that poor health may precede non-drinking even at early stages of the life course.

Methods We performed logistic regression analysis of cross-sectional national survey data on 18 to 34 year olds, collected from The Health Survey for England 2006 and 2008. Data was collected through face to face interviews and is self-reported. Logistic regression analysis of longitudinal data collected from the National Child Development Study 1958 were also conducted. This is a follow up study to assess whether poor health at age 16 is associated with non-drinking at age 23, and whether these people are more likely to abstain at subsequent age sweeps.

Results HSE 06 & 08: Having a limiting longstanding illness during early adulthood increased the odds of being a non-drinker 1.74 times for men (p<0.01), and 1.45 times for women (p<0.01). In both men and women belonging to the lowest income quintile or having no qualifications was associated with increased odds of being a non-drinker (p<0.001) indicating that the social gradient in non-drinking begins at an early age. Men and women aged 18 to 34 years with the lowest activity levels were also more likely to be non-drinkers (p<0.01).

NCDS: Preliminary analysis reveals that non-drinkers at age 23 have higher rates of medical conditions at age 16 as assessed by a medical officer such as having a mental condition (p<0.001) a physical condition and heart and haematological condition (p<0.01).

Conclusion Young adults who have a limiting longstanding illness are more likely not to drink alcohol even after adjusting for a range of social and demographic measures. Studies on the putative health benefits of moderate alcohol consumption later in life need to take account of early life history. Further analysis using longitudinal data will explore whether poor health precedes non-drinking right at the start of drinking history and whether people with poor health continue to abstain from alcohol at older ages.

OP44 **RACE, BULLYING AND SELF-ESTEEM AT THE TRANSITION BETWEEN PRIMARY AND SECONDARY SCHOOL**

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Background Studies from the US have suggested that children who experience racial discrimination have higher rates of depression, anxiety, behavioural disorders, and lower self-esteem. Children are generally more vulnerable to such problems at the transition from one school to another. Our aim was to investigate the associations between race, bullying, mood, behavioural difficulties and self-esteem during the transition to secondary school in a population-based cohort of English children.

Methods Children from the Avon Longitudinal Study of Parents and Children (ALSPAC) were asked to define themselves by skin colour when aged 12 years (n=7017). Analyses were performed using logistic regression, adjusting for gender and maternal education. The primary outcome measures were bullying and racial discrimination at 12–12.5 years. Secondary outcomes were bullying at 8 years, depressive symptoms at 11.6 years, behavioural difficulties at 11.6 years, friendships at 12 years, mood and self-esteem at 13.8 years.

Results 94.2% of children defined themselves as white (n=6607), 3.6% as mixed race (n=255) and 2.2% (n=155) identified with a specific ethnic minority group. At primary school (8–11 yrs), there were no differences between these groups in reported bullying, types of friends or prevalence of behavioural problems or depression. At secondary school (12.5 years), the reported prevalence of racially motivated violence was 10–13%, and for name-calling was 31–33%. Compared to white children, ethnic minority but not mixed race children were more likely to experience overt bullying (OR 2.98; 95% confidence interval 1.38 to 6.42). Mixed race children were more likely to retain friends of different races after the transition to secondary school (OR 1.89; 1.32 to 2.71). Ethnic minority children were more likely to feel 'different from others' at 13.8 years (OR 1.63; 1.01 to 2.36).

Conclusion Although children of different colour had similar experiences at primary school, ethnic minority children were more likely than white children to experience bullying and discrimination at the transition to secondary school. Racial discrimination affected up to one third of ethnic minority and mixed race children at 12 years of age, and these children felt more socially isolated and were less happy than their white peers at 13 years. Strategies for prevention of bullying should be targeted at this vulnerable group of children, particularly during this high-risk period of transition.

HSR: Quality And Outcomes of Care

OP45 **CAESAREAN SECTION AND SUBSEQUENT FETAL DEATH: SYSTEMATIC REVIEW AND META-ANALYSIS**

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