

Abstracts

characteristics interact so that combinations of factors carry cumulative risk for CVD? (iii) are associations explained by early life predictors of CVD risk.

Design: Birth cohort.

Setting: England, Scotland and Wales.

Participants: 7916 men and women in the 1958 British birth cohort who were in paid employment at 45 y.

Main Outcome Measures: Body mass index (BMI), waist circumference (WC), blood pressure (BP), triglycerides, total and high density lipoprotein (HDL) cholesterol, glycosylated haemoglobin (HbA1c), and inflammatory factors: fibrinogen, C-reactive protein (CRP).

Results: Night work was associated with adverse levels of most outcomes examined (except BP and total cholesterol). Working ≥ 48 h/week was associated with BMI and WC only; low job control with HDL, HbA1c, and inflammatory factors; low demands, rather than high demands, with systolic BP, triglycerides, HDL and inflammatory factors. Several work factor/CVD associations were weakened when mutually adjusted for each other and an interaction between night work and low demands was commonly found. Adjustment for childhood factors up to 16 y explained a substantial proportion of the associations. To illustrate, for BMI, adjustment for a range of childhood factors reduced the associations for night work/low demands (0.78 kg/m², 95% CI 0.35 to 1.21) and working ≥ 48 h/week (0.31 kg/m², -0.01 to 0.62) by 50% and 22%, respectively. However, BMI at 16 y accounted for 45% of the association between working ≥ 48 h/week and BMI at 45 y (adjustment for some childhood factors strengthened the association between work hours and BMI).

Conclusions: Initial findings suggest that childhood factors up to the age of 16 y explain a large proportion of the cross-sectional associations seen for work characteristics and risk factors for CVD in mid-adulthood suggesting that associations arise in part from social and health disadvantage originating earlier in life.

004 LIFECOURSE PREDICTORS OF ADULT FIBRINOGEN CONCENTRATIONS: THE NEWCASTLE THOUSAND FAMILIES BIRTH COHORT

¹MS Pearce, ²A Ahmed, ¹PWG Tennant, ³L Parker, ¹NC Unwin. ¹Institute of Health and Society, Newcastle University, Newcastle upon Tyne, UK; ²London School of Hygiene and Tropical Medicine, London, UK; ³Departments of Medicine and Paediatrics, Dalhousie University, Halifax, NS, Canada

doi:10.1136/jech.2009.096701d

Objectives: To investigate the relative influences of early life and later determinants of plasma fibrinogen concentrations at age 49–51 years.

Design: Follow-up study of the Newcastle Thousand Families birth cohort established in 1947.

Participants: 173 men and 221 women who attended a clinical examination between October 1996 and December 1998 and also gave blood samples.

Main Outcome Measure: Concentration of plasma fibrinogen. This was analysed, using linear regression, in relation to a range of variables at different stages of life, including family history of cardiovascular disease, birth weight (standardised for gestational age and sex), duration breast fed, housing conditions at birth, history of childhood illness, cigarette smoking history, alcohol consumption, percent body fat, physical activity levels, and socio-economic status both at birth and in adulthood.

Results: Poorer housing conditions at birth ($p = 0.001$), longer duration breast fed ($p = 0.025$) and higher adult alcohol consumption ($p = 0.002$) were all significant independent predictors of lower plasma fibrinogen concentration at age 49–51 years. In contrast, increasing body fat percentage ($p < 0.001$) and being a current smoker ($p < 0.001$) were both independently predictive of a

significantly higher fibrinogen concentration. No association was observed between plasma fibrinogen concentration and standardised birth weight or with time since stopping smoking the former smokers. Three significant interactions on adult fibrinogen levels were observed. (1) The effect of being a current smoker, relative to never smokers, was highest among those from the poorest quality houses at birth. (2) The effect of percent body fat was lower among never smokers. (3) The effect of percent body fat was greater among those with the highest alcohol consumption at age 49–51. A full path diagram, exploring the relative contributions, including an exploration of indirect pathways, will be presented.

Conclusions: Concentration of plasma fibrinogen in adulthood is influenced by a range of factors from different stages of life. Although birth weight was not a predictor, there were significant associations with housing conditions in early life and duration breast fed. Regardless, the total variation explained by early life factors was less than half of that explained by adult risk factors. Therefore, modification of adult exposures, particularly body fat percentage and smoking, would be the most likely way to reduce the concentration of plasma fibrinogen in adulthood, which may also reduce the risk of cardiovascular disease.

Maternal health

005 SOCIAL AND BIOLOGICAL DETERMINANTS OF REPRODUCTIVE SUCCESS IN SWEDISH MALES AND FEMALES BORN 1915–1929

¹A Goodman, ²I Koupil. ¹Department of Epidemiology and Population Health, London School of Hygiene and Tropical Medicine, London, UK; ²Centre for Health Equity Studies, Stockholm University/Karolinska Institute, Stockholm, Sweden

doi:10.1136/jech.2009.096701e

Objective: To investigate whether early life characteristics predict subsequent reproductive success in a post-demographic transition population; to ascertain the pathways mediating any observed effects; and to examine whether any of the above effects are gender-specific.

Design: Multi-generational data from a representative, population-based birth cohort and using linkage to routinely collected data.

Setting: Uppsala, Sweden.

Participants: 13 666 individuals born in Uppsala university hospital between 1915 and 1929, who were traced and linked to all registered descendants up to 2002.

Characteristics Measured at Birth: Birthweight for gestational age, preterm birth, birth multiplicity, birth order, mother's age, mother's marital status and family socio-economic position.

Measures of Reproductive Success: Primary measures: number of children; number of grandchildren. Secondary measures of the pathways to reproductive success: survival to age 15, survival from age 15 to age 50; probability of marriage; number of children within marriage; number of grandchildren at a given number of children.

Results: Reproductive success was associated with both social and biological characteristics at birth, and the effects of these characteristics were mediated via both mortality and fertility. In both sexes, a higher birthweight for gestational age, a term birth and a younger mother were independently associated with a greater number of descendants. A married mother and higher family socio-economic position were also associated a greater number of descendants in males (but not females), while in females (but not males) higher birth order was associated with higher reproductive success. These differences between the genders were mediated by the differential effects upon the probability of marriage in men and women. Probability of marriage was also affected by a range of other characteristics at birth including a lower probability of marriage for individuals of low birthweight and males who were