fibrinogen, HbA1c increased significantly as the numbers of MetSyn components increased whereas levels of ApoA1 decreased ($p<0.05$).
Conclusions Our results suggest that increasing numbers of metabolic syndrome components are associated with an elevated level of both markers of chronic low-grade inflammation and intermediate disease. Our findings support previous work showing that persons with MetSyn are a clinically relevant population with underlying pathogenesis that could benefit from early treatment.

P2-34 ASSOCIATION OF ANTHROPOMETRIC AND LIFESTYLE FACTORS WITH PROSTATE SPECIFIC ANTIGEN (PSA) TRAJECTORIES IN MEN WITH LOCALISED PROSTATE CANCER UNDERGOING ACTIVE MONITORING

doi:10.1136/jech.2011.142976h.70

[1]A Burton,* [1]R Martin, [1]J Holly, [2]F Hamdy, [3]D Neal, [1]J Donovan, [1]K Tilling. *[1]University of Bristol, Bristol, UK; [2]University of Oxford, Oxford, UK; [3]University of Cambridge, Cambridge, UK*

Introduction Widespread use of Prostate-specific Antigen (PSA) testing has lead to a rapid increase in the identification of low risk prostate cancer, with PSA trajectories often used to monitor tumour progression after diagnosis. Here we develop novel age-specific multi-level growth curves to assess the effects of lifestyle and anthropometric measures on PSA trajectories.
Methods Serial PSA measures from 513 men aged 50–70 years with localised prostate cancer undergoing active monitoring were used to develop models. Gleason score, height, weight, body mass index, waist, waist to hip ratio, smoking and alcohol consumption were each added to the basic age-specific growth curve model as explanatory variables.
Results The basic growth curve gave an average PSA at age 50 of 2.10 ng/ml (95% CI 1.85 to 2.38) and a yearly increase in PSA of 1.07 ng/ml (95% CI 1.06 to 1.08) (or 7%; 95% CI 6% to 8%). In these preliminary findings, Gleason score at baseline was strongly associated with PSA growth: the yearly increase in PSA was 3.4% greater (95% CI 1% to 6%) for men with Gleason of 7 or greater vs those with Gleason 6 or less. Current smoking was positively associated with PSA change: the yearly increase in PSA was 3.2% greater (95% CI 0% to 7%) for current vs never smokers. No other factors were strongly associated with either initial PSA or yearly increase in PSA.
Conclusions Smoking status may be associated with PSA trajectory in men being followed up by active monitoring but other lifestyle and anthropometric factors have little association.

P2-35 OUTCOMES OF SMALL FOR GESTATIONAL AGE (SGA) BIRTH AS A PLACENTA ASSOCIATED SYNDROME

doi:10.1136/jech.2011.142976h.71

[1,2]M K Campbell,* [1,2]W R Avison, [1,2]K N Speechley. *[1]Schulich School of Medicine and Dentistry, The University of Western Ontario, London, Ontario, Canada; [2]The Children's Health Research Institute, London, Ontario, Canada*

Introduction Infants born small for gestational age (SGA) are at higher risk for morbidity. This analysis explored whether increased risk is attributable to SGA or its causes.
Methods A population-based cohort (n=2357) was recruited at 10–22 weeks gestation. We collected prenatal data by questionnaire, perinatal data from hospital records, and follow-up data by telephone survey 2–4 years later. Outcomes included neonatal admission to special care nursery (NASC), neonatal Apgar score <7 at 1 min (Apgar1) and, hospital admission (HA) during the 12 months preceding the follow-up interview. Analyses included multivariable logistic regression.
Results Preeclampsia had statistically significant multivariable associations with NASC and Apgar1; OR's (95% CI's) were 2.0 (1.0 to 5.0) and 2.4 (95% CI 1.3 to 4.3), respectively. Apgar1 was also associated with young maternal age and obesity. In secondary analysis restricted to term deliveries, threatened preterm labour (TPL) had OR's of 3.9 (1.6, 9.3) and 2.2 (1.2, 4.2), respectively, for NASC and Apgar1. TPL displaced preeclampsia from the model indicating correlation. Since recent literature suggests that preeclampsia, TPL, and SGA have common aetiologies, we combined these into a single construct, Placenta Associated Syndromes (PAS) (Alilu *et al* 2010). The OR's of PAS with NSC and Apgar1 were 3.9 (1.6, 9.3) and 2.2 (1.2, 4.2), respectively. HA had multivariable associations with preeclampsia and maternal depression (CES-D>24) with OR's of 2.6 (1.1, 6.1) and 2.9 (1.3, 6.4). SGA was not independently associated with outcomes studied.
Conclusion We conclude that SGA is a marker for placental dysfunction, which is the true risk factor for the outcomes studied.

P2-36 BODY MASS INDEX AND RISK OF INCIDENT ISCHAEMIC HEART DISEASE IN WOMEN: A PROSPECTIVE COHORT STUDY

doi:10.1136/jech.2011.142976h.72

D Canoy,* B J Cairns, A Balkwill, G K Reeves, J Green, V Beral. *Cancer Epidemiology Unit, University of Oxford, Oxford, UK*

Background Various studies have examined body mass index in relation to mortality due to ischaemic heart disease (IHD), but few data are available on incident IHD including non-fatal events particularly in women.
Methods We used multivariate Cox regression, taking into account confounding and mediating factors, to examine the association between body mass index and first IHD event (ascertained from hospital records and death registration) in the Million Women Study, a population-based prospective cohort of middle age British women.
Results In this cohort of women aged 50–70 years, there were 48 895 incident IHD events during 10.7 million person-years of follow-up, including 5108 deaths with IHD identified as the primary cause. IHD incidence rate was 2.1 per 100 women per 5 years. Mean measured BMI (SD) was 26.7 (4.7) kg/m^2. Risk for IHD increased with higher BMI ($p<0.001$). The large number of incident IHD events in this cohort makes it possible to examine in detail possible effect modification by other risk factors, including comparing associations between current and never smokers, or by socioeconomic status or physical activity level.
Conclusion Non-fatal IHD adds considerably to the burden of heart disease. In this very large prospective study, incident IHD in women was strongly associated with excess weight.

P2-37 ASSOCIATION BETWEEN SLEEP DURATION AND ALL-CAUSE MORTALITY IN OLD AGE: 9-YEAR FOLLOW-UP OF THE BAMBUÍ COHORT STUDY, BRAZIL

doi:10.1136/jech.2011.142976h.73

[1,2]E Castro-Costa,* [2]M Dewey, [2]C Ferri, [1,3]E Uchoa, [1]J Firmo, [4]F Rocha, [2]M Prince, [1,3]M F Lima-Costa, [2]R Stewart. *[1]Centro de Pesquisa Rene Rachou, Fiocruz, Belo Horizonte, Minas Gerais, Brazil; [2]King's College London, Institute of Psychiatry, London, UK; [3]Federal University of Minas Gerais Medical School, Belo Horizonte, Minas Gerais, Brazil; [4]IPSEMG, Belo Horizonte, Minas Gerais, Brazil*

Introduction This study investigates the association of sleep duration with risk of all-cause mortality among elderly Brazilians using data from a 9-year population-based cohort study.

Methods it applies a multivariable longitudinal categorical and continuous analysis using Cox proportional hazards models. This analysis used data from the Bambui Health and Ageing Study, conducted in Bambuí city in southeastern Brazil. The study population comprised 1512 (86.8%) of all eligible 1742 elderly residents.
Results In multivariable analysis using sleep duration as categorical variable and controlling for multiple measures of sociodemographic and health status those who slept nine hours or more per night were found to be at higher risk of mortality than those who slept seven hours. Excluding those whose deaths occurred within two years after entry, this association remained significant. In analyses using sleep duration as a continuous variable a linear correlation was found between sleep duration and mortality in all adjusted models in the whole sample and following exclusion of those whose deaths occurred within 2 year after entry. Both linear and quadratic terms were significant reflecting a predicted relationship, with mortality predominantly increasing in association with long sleep duration but with the addition of a slight decrease in association with shorter sleep duration.
Conclusion Long sleep duration rather than short sleep duration was principally associated with all-cause mortality in this sample. It is therefore reasonable to suggest that clinicians should be aware of the potential adverse prognosis associated with prolonged sleep.

P2-38 TOOTH LOSS AND ITS ASSOCIATION WITH OBESITY IN AN ADULT POPULATION OF BRAZIL

doi:10.1136/jech.2011.142976h.74

L M Pilotto, R K Celeste,* S M B de Slavutsky, E Faerstein. *UFRGS, Porto Alegre, Rio Grande do Sul, Brazil*

Obesity and dental caries are important public health problems worldwide and are both associated with many adverse health outcomes. Identify if any of these problems leads to another is important to prioritise prevention actions and direct public policy. The aim of this study was to evaluate the association between body mass index and tooth loss in an adult population in Rio de Janeiro (Pró-Saúde Study), Brazil. Cross-sectional data were collected through self-administered questionnaire and anthropometric measurements were taken from 3930 technical-administrative staff of the university. Self-reported tooth loss (four categories) was the outcome and obesity was the main exposure variable. Data on aspects of diet, access and utilisation of healthcare, socioeconomic factors, health behaviours, and demographics were used as covariates to control for potential confounding. Compared to those with BMI<25, overweight people (BMI >25 & <30) showed a higher chance of tooth loss (OR=1.66, 95% CI 1.41 to 1.95) and obese people (BMI>30) showed a OR=2.04 (95% CI 1.67 to 2.48). Adjusting for diet, access and use of services, health behaviours and socio economic overweight and obese subjects continued with a statistically significant OR of tooth loss. However, this association lost statistical significance after adjusted for weight stability since individuals were 20 years old=overweight individuals showed an adjusted OR=1.10 (95% CI 0.78 to 1.55) and obese individuals an OR=1.17 (95% CI 0.85 to 1.62). This was a surprise because we were exploring the possibility of decay lead to tooth loss and is to be inferred in obesity. More efforts are needed to elucidate this issue.

P2-39 SECONDHAND SMOKE EXPOSURE IN CHILDREN IS ASSOCIATED WITH COMMON CAROTID ARTERY INTIMA-MEDIA THICKNESS

doi:10.1136/jech.2011.142976h.75

[1,2]J O'Loughlin, [1,2]B Lauzon, [3]J Dubois, [4]G Paradis, [5]K Maximova, [1,6]S Cengelli,* [7]A Tremblay, [2,3]M Lambert. *[1]Centre de Recherche du CHUM, Montreal, Quebec, Canada; [2]Université de Montréal, Montreal, Quebec, Canada; [3]Sainte-Justine Hospital, Montreal, Quebec, Canada; [4]McGill University, Montreal, Quebec, Canada; [5]University of Alberta, Alberta, Canada; [6]Université de Lausanne, Lausanne, Vaud, Switzerland; [7]Université Laval, Quebec, Quebec, Canada*

Objective To investigate the association between common carotid artery intima-media thickness (cIMT) and exposure to secondhand smoke (SHS) in children.
Methods Data were available at baseline in the Quebec Adiposity and Lifestyle investigation in Youth (QUALITY) study, an ongoing longitudinal investigation of Caucasian children aged 8–10 years at cohort inception, who had at least one obese parent. Data on exposure to parents, siblings and friends smoking were collected in interviewer-administered child, and self-report parent questionnaires. Blood cotinine was measured with a high sensitivity ELISA. cIMT was measured by ultrasound. The association between blood cotinine and cIMT was investigated in multivariable linear regression analyses controlling for age, body mass index, and child smoking status.
Results Mean (SD) cIMT (0.5803 (0.04602)) did not differ across age or sex. Overall 26%, 6% and 3% of children were exposed to parents, siblings and friends smoking, respectively. Cotinine ranged from 0.13 ng/ml to 7.38 ng/ml (median (IQR)=0.18 ng/ml)). Multivariately, a 1 ng/ml increase in cotinine was associated with a 0.090 mm increase in cIMT (p=0.034).
Conclusion In children as young as age 8–10 years, exposure to SHS relates to cIMT, a marker of pre-clinical atherosclerosis. Given the wide range of health effects of SHS, increased public health efforts are needed to reduced exposure among children in homes an private vehicles.

P2-40 PREDICTORS OF SMOKING CESSATION IN ADOLESCENT SMOKERS: A SYSTEMATIC REVIEW OF LONGITUDINAL STUDIES

doi:10.1136/jech.2011.142976h.76

[1,2]S Cengelli,* [2,3]J O'Loughlin, [2,3]B Lauzon, [1]J Cornuz. *[1]Université de Lausanne, Lausanne, Vaud, Switzerland; [2]Centre de Recherche du CHUM (CRCHUM), Montreal, Quebec, Canada; [3]Université de Montréal, Montreal, Quebec, Canada*

Tobacco use causes more than 5 million deaths worldwide annually. In Canada (2009), prevalence of smoking was 13% among those 15–19 years and 23% among those 20–24 years. Many young smokers desire to quit, but have difficulty doing so. Empirical reviews have concluded that smoking cessation programs in youth have limited efficacy. In order to provide a solid knowledge base for tobacco interventions, determinants of self-initiated cessation in youth need to be understood. We systematically searched PUBMED and EMBASE for longitudinal studies on determinants of self-initiated smoking cessation in youth. N=3807 titles and N=787 abstracts were reviewed independently by two and three reviewers, respectively. Inclusion criteria were: published between January 1984 and August 2010, youth 10–28 years, and smoking cessation of ≥6 months. Seven articles were retained for in-depth analysis. 3 of 7 studies retained defined smoking cessation as abstinence of ≥6 months and four studies as 12 months. Seven factors emerged related to quitting: few friends who smoke, no intention to smoke, higher parental education, intact nuclear family, parental disapproval of smoking, good grades, good health, high cigarette resistance self-efficacy, and older age at first use. Additional factors are significant only in some studies or only assessed once. The longitudinal literature on predictors of youth cessation is not well developed. The most consistent predictors of self-initiated cessation include few friends smoking and no intention to smoke in the future. Tobacco interventions should target youth as well their friends as soon as possible after smoking onset given the difficulty in quitting.