

**Conclusion** In contrast with existing research, we find that the majority of rises and falls in deaths during the Great Depression was unrelated to economic shocks. Spurious correlations can occur when immediate effects are not decoupled from long-term trends, especially problematic with trending variables, such as GDP. Consistent with existing work, we observed that bank suspensions led to rapid rises in suicides and falls in road traffic fatalities. Further research should investigate alternative explanations for the reductions in infectious diseases and their marked variations across cities and states, such as nutrition, sanitation, the New Deal, Prohibition and other public health measures at the time.

## Diabetes

### 017 SOCIO-ECONOMIC STATUS, INCIDENCE OF TYPE 2 DIABETES AND RELATIVE MORTALITY IN SCOTLAND 2001–2007

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**Background** RRs of mortality associated with type 2 diabetes (T2DM) have declined in recent years but are higher in women than men in many populations. The role of socio-economic status (SES) in risk of mortality among people with diabetes is not clear.

**Methods** We used data from a population-based national diabetes register to investigate the associations between T2DM, SES and mortality. SES was categorised with Q5 and Q1 representing the most deprived and most affluent quintiles from an area-based measure. Age-standardised incidence for 2004 and RRs for all-cause mortality among people with incident T2DM of 35 to 84 years of age between 2001 and 2007 were estimated using general population data, the European standard population and Poisson regression models.

**Results** Complete data were available for 111 441 people who developed type 2 diabetes between 2001 and 2007 and there were 8775 deaths before the end of 2007. SES had a more marked effect on age-standardised incidence of T2DM among women (717.5 vs 357.2 per 100 000, age-adjusted RR for Q5 vs Q1 (95% CI) 1.91 (1.62 to 2.25)) than men (comparable estimates 918.6 vs 568.9 per 100 000, 1.59 (1.38–1.84)). Age and SES adjusted RR (95% CI) for mortality were 0.97 (0.93 to 1.01) for men and 1.11 (1.07 to 1.16) for women. Age and sex adjusted RR for mortality associated with type 2 diabetes was lower for Q5 (0.93 (0.89–0.97)) than for Q1 (1.19 (1.12 to 1.27)).

**Conclusion** RRs for mortality associated with incident T2DM were lower in this population than reported in previous studies. Incident diabetes was not associated with increased mortality among men but was associated with higher mortality in women compared to women without diabetes. SES modifies the effect of T2DM on mortality but does not explain sex differences in RR. Further work is required to establish whether these findings can be explained by risk factor patterns.

### 018 FORECASTING DIABETES PREVALENCE USING A SIMPLE MODEL: ENGLAND AND WALES 1993–2006

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**Background** Current projections of diabetes prevalence are mostly based on demographic change. Explicitly including trends in obesity and other risk factors could improve the accuracy of the projections and assist in evaluating policy options for prevention.

**Methods** The model integrates population, obesity and smoking trends to estimate future diabetes prevalence. From three starting states (healthy, obese and smokers) the number of people with diabetes and deaths by diabetes status are estimated using a Markov approach. The transition probabilities and RR associated with risk factors were obtained from the literature, except for diabetes incidence that was estimated using DISMOD. For validation purposes, we developed a model for the England and Wales population (1993–2006), and compared model outputs with diabetes prevalence reported by the Health Survey for England (HSE) and the English Longitudinal Study of Ageing (ELSA).

**Results** The prevalence of diabetes mellitus in England and Wales in 1993 was 3% in men and 2% in women (HSE; adjusted for self reporting, 3.9% and 2.6% respectively) and increased to 6% and 4% (7.3% and 5.5%, adjusted) by 2006. Obesity prevalence almost doubled and smoking trends showed a more complex pattern. Comparisons with the HSE showed almost parallel trends, over a period of 13 years. Prevalence as estimated from the model was 7.3% for men and 5.7% for women for 2006 and 8.9% and 7.2% for 2012. The model tends to slightly overestimate prevalence but accuracy improved in later years. The estimated prevalence compared well with that reported in ELSA (Men: model: 9.9%, ELSA: 11.6%; women: 8.3% and 6.8%).

**Conclusions** The model provide a reasonably close estimate of diabetes prevalence for England over the 1993–2006 period, compared with contemporary independent prevalence surveys in the same population. Although the model seems to slightly overestimate prevalence, the observed and modelled trends are almost parallel. Further testing and validation in a range of populations would be desirable but the model appears to provide reasonably accurate estimates of diabetes prevalence that could be used by policymakers.

### 019 ETHNIC DIFFERENCES IN TYPE 2 DIABETES RISK MARKERS IN CHILDREN IN THE UK ARE NOT EXPLAINED BY SOCIO-ECONOMIC STATUS: CHILD HEART AND HEALTH STUDY IN ENGLAND

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**Objectives** To examine the influence of socio-economic position on type 2 diabetes risk markers in different ethnic groups and determine whether differences in socio-economic position can explain ethnic differences in type 2 diabetes risk.

**Design** Cross-sectional survey of children in 200 primary schools in London, Birmingham and Leicester (Child Heart and Health Study England, or CHASE) in which standardised anthropometric and fasting blood measurements were made. Ethnic origin was defined by parental self-report. Parent's socio-economic position (based on occupation) was measured using the National Statistics Socio-economic Classification (NS-SEC). Statistical analyses were adjusted for age and sex and included a random effect for school.

**Participants** 4796 children (1153 white European, 1306 South Asian, 1215 black African/Caribbean) aged 9–10 years.

**Main outcome measures** Height, adiposity (ponderal index, skinfold thickness, fat mass index, waist circumference), glycated haemoglobin (HbA1c), glucose, insulin resistance, triglyceride, HDL-cholesterol, C reactive protein.

**Results** In the whole study population, NS-SEC showed weak and inconsistent associations with diabetes risk markers. However, there were marked differences between ethnic groups. Low socio-economic position was related to higher adiposity, insulin resistance