Conclusion Birthweight has a U-shaped relationship with obesity in middle age. This relationship tends towards being J-shaped after adjustment for adult height.

IS THE RECENT RISE IN TYPE 2 DIABETES MELLITUS INCIDENCE FROM 1984 TO 2007 EXPLAINED BY THE TREND IN INCREASING BODY MASS INDEX? EVIDENCE FROM A PROSPECTIVE STUDY OF BRITISH MEN

1S L Haddock, 1T W Morris, 1M C Thomas, 1S G Wannamethee, 1T L Lemon, 2H Whincup. 1Department of Primary Care and Population Health, Division of Population Health, UCL, London, UK; 2Division of Community Health Sciences, St George’s, University of London, London, UK

Objective Incidence of type 2 diabetes mellitus (T2DM) in the UK has increased by two-thirds in the last decade. Understanding the reasons for the unfavourable trend may help inform efforts to curb future increases. The association between T2DM and adiposity has been established. However, few attempts have been made to quantify the contribution of adiposity changes to the observed time trend in T2DM. We estimated the proportion of the time trend in T2DM incidence in British men over 24 years that may be explained by increasing population body mass index (BMI) levels.

Design Longitudinal study.

Setting 24 British towns.

Participants 6400 men from a socially and geographically representative cohort of older British men, followed up for doctor-diagnosed T2DM incidence between 1984 (aged 45 to 65 years) and 2007 (aged 67 to 89 years) inclusive. Men with a diagnosis of diabetes before 1984 were excluded.

Main outcome measures The age-adjusted increase in the hazard of T2DM between 1984 and 2007 and the contribution of changing BMI to this increase, derived from Cox proportional hazards modelling with time-updated covariates.

Results Between the periods 1984–1992 and 1992–2007, the age-adjusted hazard of T2DM more than doubled (hazard ratio 2.53, 95% CI 1.75 to 3.10). An estimated 26% (95% CI 17 to 38) of this hazard increase could be statistically explained by a population-averaged age-adjusted increase in BMI from 1984 to 1999 of 1.42 kg/m² (95% CI 1.10 to 1.74). Earlier and later portions of the follow-up were examined separately. Between 1984–1992 and 1992–1999, T2DM incidence increased by half (hazard ratio 1.59, 95% CI 1.23 to 2.05). 22% (95% CI 12 to 48) of this increase could be explained by rising BMI. Between 1992–1999 and 1999–2007, a similar increase in T2DM incidence was observed (hazard ratio 1.47, 95% CI 1.17 to 1.84). 31% (95% CI 17 to 81) of this increase was explained by BMI.

Conclusion BMI changes can account for an appreciable portion of the increase in T2DM in British men. Control and reversal of rising adiposity levels is therefore an important priority in controlling the diabetes epidemic. There remained a large “unexplained” portion of the T2DM increase. This may reflect imprecision of BMI as a measure of visceral fat or the independent contributions of changes in other determinants, such as physical activity and diet. The presence of other contributing factors would suggest the need for a more multifactorial approach to combat rising T2DM in the population.


1A Aitsi-Selmi, 2M Marmot. 1Wellcome Trust Doctoral Fellow, London, UK; 2Department of Epidemiology and Public Health, University College London, London, UK

Background The global obesity epidemic is spreading rapidly with a social distribution that varies according to the level of economic development: as countries develop, the burden of obesity appears to shift from the rich to the poor. Studying these changes as they occur can help shed further light on the social processes that fuel the obesity epidemic and determine its social distribution. Egypt provides a case in point for this research. Findings would be relevant to other low-and-middle income countries but may also be generalisable to an extent to poor communities in high income countries.

Objectives To examine the social distribution of obesity among Egyptian women by socio-economic status and how it has changed over time.

Design and methods Retrospective analysis using four nationally representative cross-sectional surveys (Demographic and Health Surveys) conducted in Egypt between 1995 and 2008. Socio-economic status was defined as the highest reported educational level attained.

Setting Egypt.

Participants 64,605 women between 15 and 49 years excluding pregnant women.

Main outcome measure Obesity: defined as BMI (height/weight²) equal to or above 30.


1J Mindell, 2H Dinsdale, 3C Ridley. 1Health and Social Surveys Research Group, Department of Epidemiology and Public Health, UCL, London, UK; 2National Obesity Observatory, Oxford, UK

Objective To compare changes in BMI and waist circumference in the past 30 years among English children aged 11–16 years.
Results The overall level of obesity among Egyptian women rises from 30% in 1995 (urban=53%; rural=27%) to 40% in 2008 (urban=43%; rural=34%). Among urban women, in 1995, the prevalence of obesity is lower in the group without education (24%; 95% CI 19 to 29) in comparison to the group with secondary education (33%; 95% CI 29 to 37). In 2008, the prevalence of obesity has risen in a statistically significant manner in both groups compared with 1995. In addition, the prevalence in the group without education (45%; 95% CI 41 to 50) appears to have exceeded the prevalence in those with secondary education (41%; 95% CI 38 to 44). Although there is overlap in the CI at the 95% level, the overall trend suggests that the social gradient in obesity may be reversing, as predicted elsewhere.

Conclusion Egypt provides a dynamic model of the reversal of the social gradient of obesity. Further analysis of Demographic and Health Surveys using other indicators of socio-economic status and risk factors for obesity such as consumption of fruit and vegetables may shed light on the processes behind the probable gradient reversal, and the factors putting the poor at increased risk of obesity. This is important in informing urgent prevention efforts at a population level.

Policy

A POLICY EFFECTIVENESS-FEASIBILITY LOOP? PROMOTING THE USE OF EVIDENCE TO SUPPORT THE DEVELOPMENT OF HEALTHY PUBLIC POLICY

doi:10.1136/jech.2010.120956.51

Readers of this article can contribute to the collection of PubMed records for this article. Learn more.