

using Cox regression. Parents' age was the time axis, and subjects' socioeconomic position and years of education were adjusted for. Associations between fathers' own height and mortality were also estimated for the subsample in which data were available.

Setting Sweden.

Participants The parents of all sons who completed the Swedish conscript examination between 1969 and 2001; 1,019,208 mothers and 1,002,851 fathers. Height was assessed at conscript examination. 73,018 fathers also had their own height measured at conscript examination (mean age 18 years).

Outcome measures Parental deaths between 1961 and 2004 from all causes, and specifically from circulatory diseases or from cancer.

Results Within the follow-up period of 35,978,676 maternal and 33,175,065 paternal person years, there were 154,143 maternal and 284,264 paternal deaths, including 51,285 and 128,196, respectively from circulatory diseases and 62,714 and 80,008, respectively from cancer. All-cause mortality in both parents was negatively associated with the son's height (adjusted HR per one SD (65 mm) increase in son's height: 0.96 (95% CI: 0.96 to 0.96) for mothers and 0.97 (0.97, 0.98) for fathers). Son's height was negatively associated with circulatory disease mortality in mothers (0.93 (0.92, 0.94)) and fathers (0.96 (0.96, 0.97)) and was positively associated with cancer mortality in both parents (1.02 (1.01, 1.02) in mothers and 1.02 (1.01, 1.03) in fathers). For all outcomes, adjusted HRs based on the son's height were somewhat closer to the null value than those based on the father's own height (eg, 0.92 vs 0.90 for all-cause mortality).

Conclusions These results confirm that height is negatively associated with cardiovascular mortality, and positively associated with cancer mortality. The use of sons' height in this study as an instrument for parental height suggests that these associations are not fully explained by confounding, including that due to existing disease at the time of height measurement.

Methods and measurement

OP58

ASSOCIATIONS OF MORTALITY RATES WITH HEIGHT USING SON'S HEIGHT AS AN INSTRUMENTAL VARIABLE

D Carslake,^{1*} P Tynelius,² MT May,¹ A Fraser,¹ JAC Sterne,¹ G Davey Smith,¹ DA Lawlor,¹ F Rasmussen,² ¹School of Social and Community Medicine, University of Bristol, Bristol, UK; ²Department of Public Health Sciences, Karolinska Institute, Stockholm, Sweden

10.1136/jech.2011.143586.58

Objectives Height has been negatively associated with mortality from circulatory disease, but positively associated with mortality from most forms of cancer. These results are vulnerable to confounding, including the confounding effect of early stages of disease causing shrinkage and later death. To avoid these problems, we used the height of subjects' sons as an instrument for subjects' own height.

Design A record linkage cohort study of over 2 million Swedish men and women was used. Associations between sons' height assessed at a mean age of 18 years and parents' all-cause and cause-specific mortality were estimated as HRs