

Birth weight and coronary heart disease among Danish men born in 1953

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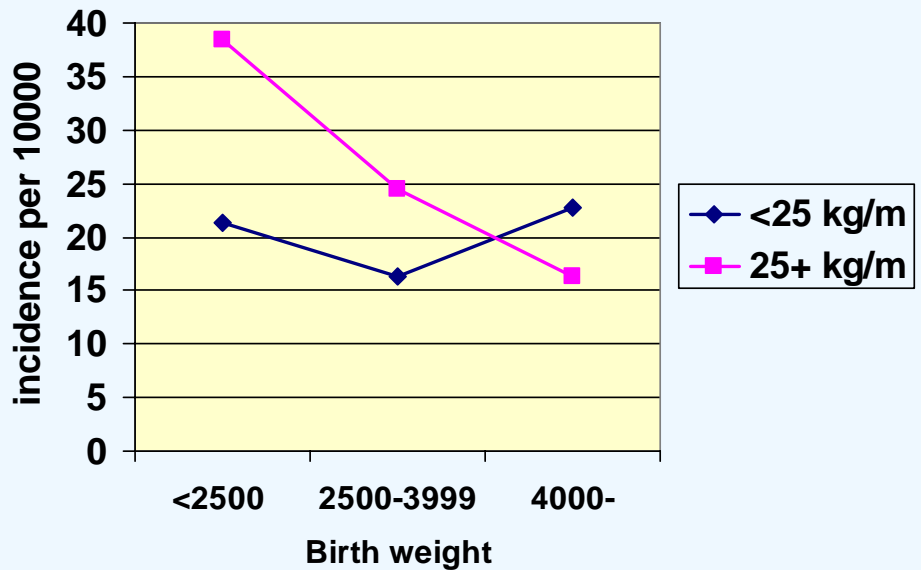
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INTRODUCTION

Small size at birth have been associated with higher risk of cardiovascular disease (CHD) in men, and low weight at age 1 year seems to add to the increased risk. A rapid growth in BMI after age 3 and 6, respectively, has also been associated with an increased risk of CHD. However, a recent study from Aberdeen, UK weight at school entry did not modify an inverse relation between birth weight and CHD risk. Thus, it is unclear, whether weight during childhood influences the expected inverse association between birth weight and CHD.



PURPOSE

This study examines the association between birth weight and incident CHD in Danish men born in 1953 and explores whether socioeconomic factors and body mass in young adulthood influence any associations.

METHODS

A cohort of 9,148 men born in Copenhagen, Denmark in 1953 for whom information on weight at birth and age 18 have been retrieved from birth and conscript registers were followed from 1978 until 2005 (age 25-52 years) for CHD outcomes obtained from the Danish National Patient Registry.

RESULTS

During follow-up 443 subjects were diagnosed with non-fatal CHD (19.1/10,000 py). Low birth weight, high BMI at 18 y, fathers social class low, low education were all associated with higher risk of non-fatal CHD. There was statistical interaction between BMI and birth weight ($p < 0.01$). Birth weight was inversely associated with CHD risk in men with BMI ≥ 25 . For men with BMI < 25 the association was U-shaped and those with a birth weight $\geq 4,000$ g had significantly higher risk of CHD compared to those with a birth weight between 2500-3900 g. Adjustment for social variables did not change this picture.

RESULTS

Birth weight and CHD risk among Danish men born in 1953 with high and low BMI (HR 95% CI)

	Crude	Adjusted
BMI <25 kg/m² at age 18		
BW <2,500 g	1.3 (0.8-2.1)	1.2 (1.0-2.0)
BW 2,500-3,999	1.0	1.0
BW $\geq 4,000$ g	1.4 (1.1-1.8)	1.4 (1.1-1.8)
BMI ≥ 25 kg/m² at age 18		
BW <2,500 g	1.6 (0.9-3.0)	1.6 (0.9-3.0)
BW 2,500-3,999	1.0	1.0
BW $\geq 4,000$ g	0.7 (0.4-1.1)	0.7 (0.4-1.1)

CONCLUSION

In conclusion, the present study suggests that a combination of low birth weight and high BMI in young adulthood increase the risk of CHD in early middle-age.