

## ORIGINAL RESEARCH COMMUNICATION

# Is birth weight a risk factor for ischemic heart disease in later life?<sup>1,2,3</sup>

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**Background:** An inverse association between birth weight and ischemic heart disease (IHD) has been seen in observational studies.

**Objective:** We wanted to determine the strength and consistency of the association between birth weight and subsequent IHD.

**Design:** We conducted a systematic review of observational studies.

**Results:** Seventeen published studies of birth weight and subsequent IHD were identified that included a total of 144 794 singletons. Relative risk estimates for the association between birth weight and IHD were available from 16 of these studies.

Additional data from 2 unpublished studies of 3801 persons were also included. In total, the analyses included data from 18 studies on 4210 nonfatal and 3308 fatal IHD events in 147 009 persons. The mean weighted estimate for the association between birth weight and the combined outcome of nonfatal and fatal IHD was 0.84 (95% CI: 0.81, 0.88) per kilogram of birth weight ( $P < 0.0001$ ). No significant heterogeneity was observed between estimates in different studies ( $P = 0.09$ ), nor was there evidence of publication bias ( $P = 0.3$ , Begg test). Neither restricting the analysis to fatal IHD events nor adjusting for socioeconomic status had any appreciable effect on the findings.

**Conclusions:** These findings are consistent with a 1 kg higher birth weight being associated with a 10–20% lower risk of subsequent IHD. However, even if causal, interventions to increase birth weight are unlikely to reduce the incidence of IHD materially. Further studies are needed to determine whether the observed association reflects a stronger underlying association with a related exposure or is due (at least in part) to residual confounding.

**Key Words:** Birth weight • ischemic heart disease • follow-up studies

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