

ORIGINAL RESEARCH COMMUNICATION

The metabolic syndrome in adults prenatally exposed to the Dutch famine^{1,2,3}

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Background: Epidemiologic studies have shown that the metabolic syndrome may originate in utero.

Objective: We aimed to determine whether exposure to prenatal famine is associated with a greater prevalence of the metabolic syndrome.

Design: We assessed the prevalence of the metabolic syndrome according to the National Cholesterol Education Program definition in 783 members of the Dutch Famine Birth Cohort. Participants were born as term singletons around the time of the 1944–1945 Dutch famine.

Results: Exposure to famine during gestation was not significantly associated with the metabolic syndrome (odds ratio: 1.2; 95% CI: 0.9, 1.7). Birth weight also was not significantly associated with the metabolic syndrome (odds ratio: 1.3/1-kg decrease in birth weight; 95% CI: 0.9, 1.8/1-kg decrease in birth weight). Exposure to famine during gestation was associated with significantly higher triacylglycerol concentrations (0.1 g/L; 0.0, 0.2 g/L). Men exposed to famine in early gestation had significantly lower HDL-cholesterol concentrations (–0.08 mmol/L; –0.14, 0.00 mmol/L) than did unexposed men.

Conclusions: Prenatal exposure to famine or reduced birth weight is not associated with a significantly greater prevalence of the metabolic syndrome. Our findings suggest that, although elements of the metabolic syndrome may be programmed by fetal undernutrition, the origin of the syndrome as a whole is not likely to be found in poor nutrition during gestation.

Key Words: Metabolic syndrome • fetal origins hypothesis • prenatal famine • birth weight

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