

ORIGINAL RESEARCH COMMUNICATION

Anthropometric measures in middle age after exposure to famine during gestation: evidence from the Dutch famine^{1,2,3,4}

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Background: Few studies in humans have related maternal undernutrition to the size of the adult offspring.

Objective: The objective was to assess whether reductions in food intake by pregnant women during the Dutch famine of 1944–1945 were related to offspring length, weight, and indexes of adiposity in middle age.

Design: We recruited 1) exposed persons born in western Netherlands between January 1945 and March 1946 whose mothers experienced famine during or immediately preceding pregnancy, 2) unexposed persons born in the same 3 institutions during 1943 or 1947 whose mothers did not experience famine during this pregnancy, and 3) unexposed same-sex siblings of persons in series 1 or 2. Anthropometric measurements ($n = 427$ males and 529 females) were obtained between 2003 and 2005. We defined 4 windows of gestational exposure (by ordinal weeks 1–10, 11–20, 21–30, and 31 through delivery) on the basis of exposure to a ration of <900 kcal/d during the whole 10-wk interval.

Results: Exposure to reduced rations was associated with increased weight and greater indexes of fat deposition at several tissue sites in women but not in men (P for interaction <0.01). Measures of length and linear proportion were not associated with exposure to famine.

Conclusion: Reduced food availability may lead to increased adiposity later in life in female offspring.

Key Words: Anthropometric measures • body composition • body mass index • body size • famine • maternal and infant health • Netherlands • nutrition • obesity

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