Fast-food habits, weight gain, and insulin resistance (the CARDIA study): 15-year prospective analysis

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Summary

Introduction

The frequency of obesity has risen at an alarming rate in all age and ethnic groups in the USA. The age-adjusted prevalence of obesity, defined as a body-mass index (BMI) of 30 kg/m² or greater, was 30·5% in 1999-2000 compared with 22·9% in 1988-1994, with even higher rates in ethnic minority groups. About two of every three US adults and four of five African-American women were overweight or obese in 1999-2000. In children and adolescents, the prevalence of being overweight rose by 50% in the past decade to about 15%.

The medical and economic outcomes of excessive bodyweight are great, including an estimated 300000 excess deaths and at least US$100 billion per year in medical expenditures. One particularly ominous public-health issue is the occurrence of glucose intolerance and type 2 diabetes in obese adolescents and young adults. Because of its rapid development in genetically stable populations, the obesity epidemic can be attributed to environmental factors affecting diet, or physical activity level. One potentially important dietary factor is consumption of fast food, which can be defined as convenience food purchased in self-service or carry-out eating places. From its origins in the 1950s, fast food has grown into a dominant dietary pattern, with a current estimate of about 247115 restaurants in the USA. Consumption of fast food by children has risen from 2% of total energy in the late 1970s to 10% of energy in the 1990s.

Several factors inherent to fast food as it now exists could promote a positive energy balance and thereby increase risk for obesity and diabetes, including: excessive portion size, with single large meals often approaching or exceeding individual daily energy requirement; palatability, emphasising primordial taste preferences for sugar, salt, and fat; high energy density; and high glycaemic load. Several dietary factors such as trans-fatty acids and high glycaemic load might also enhance risk for diabetes through energy-independent mechanisms.

Surprisingly few studies have investigated the effects of fast-food consumption on energy balance or bodyweight, and most of these are of cross-sectional design. To our knowledge, no data for fast-food consumption and diabetes-related endpoints are available. For these reasons, we aimed to investigate the association between reported fast-food habits and changes in bodyweight and insulin resistance over a 15-year period in young black and white adults in the USA.