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Processed food diet in early childhood may lower IQ

A diet, high in fats, sugars, and processed foods in early childhood may lower IQ, while a diet packed full of vitamins and nutrients may do the opposite, suggests research just published online in the Journal of Epidemiology and Community Health.

The authors base their findings on participants in the Avon Longitudinal Study of Parents and Children (also known as Children of the 90s), which tracks the long term health and wellbeing of around 14,000 children born in 1991 and 1992.

Parents completed questionnaires, detailing the types and frequency of the foods and drinks their children consumed when they were 3, 4, 7 and 8.5 years old.

This information was then quantified to produce a dietary pattern score for three different types of diet: "processed" or high in fats and sugars; "traditional" high in meat and two veg; and "health conscious" high in salad, fruit and vegetables, rice and pasta.

IQ was measured using a validated test (the Wechsler Intelligence Scale for Children) when they were 8.5 years old. In all, complete data were available for just under 4000 children.

The results showed that after taking account of potentially influential factors, a predominantly processed food diet at the age of 3 was associated with a lower IQ at the age of 8.5, irrespective of whether the diet improved after that age. Every 1 point increase in dietary pattern score was associated with a 1.67 fall in IQ.

On the other hand, a healthy diet was associated with a higher IQ at the age of 8.5, with every 1 point increase in dietary pattern linked to a 1.2 increase in IQ.

Dietary patterns between the ages of 4 and 7 had no impact on IQ

The authors say that these findings, although modest, are in line with previous ALSPAC research showing an association between early childhood diet and later behaviour and school performance.

"This suggests that any cognitive/behavioural effects relating to eating habits in early childhood may well persist into later childhood, despite any subsequent changes (including improvements) to dietary intake," they say.

The brain grows at its fastest rate during the first three years of life, say the authors, by way of a possible explanation for the findings, and pointing to other research indicating that head growth at this time is linked to intellectual ability.

"It is possible that good nutrition during this period may encourage optimal brain growth," they suggest, advocating further research to determine the extent of the effect early diet has on intelligence.

Notes:

- ALSPAC The Avon Longitudinal Study of Parents and Children (also known as Children of the 90s) is a unique ongoing research project based in the University of Bristol. It enrolled 14,000 mothers during pregnancy in 1991-2 and has followed the children and parents in minute detail ever since.

- The ALSPAC study could not have been undertaken without the continuing financial support of the Medical Research Council, the Wellcome Trust, and the University of Bristol among many others.

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