Dietary Patterns during Complementary Feeding and Later Outcomes

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Guidelines for healthy infant feeding during the transition from a milk-based to a family food-based diet provide advice on breastfeeding, complementary feeding and feeding behavior. Dietary patterns can assess adherence to the guidelines. Very few studies have derived dietary patterns during infancy. The Avon Longitudinal Study of Parents and Children (ALSPAC) has used two different methods of deriving dietary patterns: one by comparison to an index based on international infant feeding guidelines and the other using principal component analysis (PCA), a data-driven method. The scores derived have been related to later childhood outcomes. The ALSPAC cohort was recruited during pregnancy in 1991/1992 in an area of southwest England; the parents and offspring have been followed over 8 years [1]. Parent-completed questionnaires assessed infancy diet at 6 and 15 months of age and the social background of the family. The children were weighed and measured at age 7 years and IQ assessed at age 8 years. Food frequency questionnaires completed by parents about the child were collected at 3 and 7 years of age and used to obtain childhood dietary patterns. A complementary feeding utility index was calculated in relation to 14 feeding recommendations [2]. High scores on the index were due to longer breastfeeding, and feeding more fruit and vegetables and less ready-prepared baby foods. High scores on the index showed better adherence to the feeding guidelines and were associated with a more favorable social background. The index scores were positively related to childhood IQ at age 8 years and ‘healthy’ dietary patterns at age 3 and 7 years [3]. Adjustment for social background attenuated but did not abolish the associations. Four dietary patterns were derived from PCA at each age [4]. Three patterns occurred at both ages: ‘HM traditional’ characterized by home-made meat, vegetables and desserts; ‘discretionary’ characterized by biscuits (cookies), sweets, crisps (potato chips), fizzy drinks (soda) and tea, and ‘RM baby food’
infants mainly fed commercial ready-made baby foods. A ‘breastfeeding’ pattern was the fourth pattern at 6 months, with fruit and vegetables also included. At 15 months, a pattern including cheese, fish, nuts, legumes, raw fruit and vegetables was labelled ‘HM contemporary’. The ‘discretionary’ and ‘RM baby food’ patterns at both ages were negatively associated with IQ while the ‘breastfeeding’ and ‘HM contemporary’ patterns were positively associated with IQ [5]. These results suggest that infant diet is likely to influence cognitive development in children and may set a trend for later eating patterns. Comparison of relationships between breastfeeding duration and childhood IQ in two cohorts with different confounding structures (ALSPAC and a Brazilian cohort from Pelotas) confirmed that breastfeeding has an important influence on cognitive development [6]. The infant dietary patterns showed that differences in many other foods and behaviors are associated with breastfeeding; longer breastfeeding occurred in conjunction with the consumption of other recommended foods, such as fruits and vegetables. Infant dietary patterns were associated with childhood dietary patterns and so may be important in setting children on the path to healthy eating.

References