

Effects of Differences in Dietary Fat on Growth, Energy and Nutrient Intake From Infancy to 8 Years of Age

Boulton and Magarey, as part of the ongoing Adelaide (Australia) Nutrition Study, evaluated retrospectively growth and energy intake in a cohort of 140 randomly selected children. Subjects were seen at 3, 6, and 12 months of age and at 2, 4, and 8 years of age. Before each of the visits, the parents kept a record of the child's diet. Up to 2 years of age, a 7-day weighed food record was kept. At 4 years, a 3-day record was kept; and at 6 and 8 years, a 4-day weighed food record was kept. The diet composition was analyzed using a computer program. Energy and nutrient intakes were expressed as mean intake per day. Fatness was evaluated by the sum of 4 skin-fold thickness measurements (left mid-biceps, triceps, subscapular, and suprailiac). At each age, the sample was divided into 3 groups according to the percentage of food energy derived from fat: <30%, 30% to 34.9%, and >35%. These cutoffs were chosen since 30% corresponds to the fat intake target for Australian adults, and 35% is the recommended maximum level of fat intake for young children in some countries.

The authors state that there were no significant differences in energy or nutrient intake or attained height and weight through infancy to 8 years of age according to the proportion of fat in the diet, and those in the low-fat group did not have lower essential mineral intake. They speculate that the boys in the low-fat group at 2 years of age may have had a slower growth velocity, thus accounting for their slightly lower height at age 15. They conclude that a shift to a low-

fat intake in early childhood is unlikely to have any deleterious effects on growth.

Boulton TJC, Magarey AM. *Acta Paediatr* 1995;84:146-150.

Editor's comment: *This is a very interesting and important retrospective study. The current dietary recommendation for adults in the United States is to derive <30% of our daily caloric intake from fat. Whether this level of fat intake will have a significant effect on growth and the timing of puberty has been the subject of some controversy. The fact that in the present report boys with lower fat intakes at age 2 were somewhat shorter at age 15 than those with higher fat intakes suggests that there may be some validity to these concerns. However, what is not clear in this study is whether these 140 children remained in the same fat intake group throughout childhood. Children were not randomly assigned to a specific level of fat intake but rather their natural eating habits were evaluated using 4- to 7-day food records. Thus, there is a strong possibility that some children switched from group to group throughout childhood. There is also some concern with regard to the validity of dietary food records, although recent studies suggest that this is a relatively accurate means for measuring nutrient intake. Despite these potential shortcomings, the information in this study is of significant interest and importance to physicians who prescribe dietary regimens for children.*

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