Annotation

Free milk for children

Historical background

For many years successive governments have recognised the importance of nutrition in childhood and at times have intervened in attempts to improve nutritional standards, particularly by making regulations about school meals and milk for children.

Subsidised milk was first made available for British schoolchildren in 1934 at a time when childhood undernutrition was common, after trials had shown that children's growth could be improved by daily supplements of milk.^{1–3} One-third of a pint of free milk for schoolchildren was instituted by the Education Act of 1944, but in 1968 milk ceased to be provided for secondary school pupils and in 1971 free milk was stopped for children aged between 7 and 11 years, unless the children were designated in need by school medical officers. Now through the Education Act of 1980 local authorities are permitted, although not obliged, to provide free milk for children in nursery and primary education and in special schools.

In addition free milk has been provided through welfare legislation. At present expectant mothers and all children under school age in families receiving supplementary benefit or family income supplement are entitled to 7 pints of milk a week, while children up to 5 years attending approved day nurseries, playgroups, or being cared for by approved child minders receive one-third of a pint of milk each day they attend, irrespective of family income.

Decisions by governments appear to have been influenced by economic forces and political attitudes rather than by scientific evidence,⁴ but little such evidence has been available. This is partly because it is difficult to measure the effect of modifying a single constituent of the diet without controlling the intake of other nutrients, and also because great changes have been made in the nutritional status of children during recent decades, unconnected at least directly, with government food policy. Although the Government Committee on Medical Aspects of Food Policy can and should sponsor appropriate research, it clearly is the responsibility of the medical profession to provide data about the nutritional value of milk, about nutritional need, and about the effects of food supplements, so that government can make sensible decisions.

Nutritional value of milk

Milk supplies most of the essential nutrients in a more absorbable form and in greater amounts per 100 ml than the majority of other foodstuffs that a young child may eat. One-third of a pint of milk (200 ml) provides 130 kcal, 6.6 g of protein, and 220 mg of calcium; the corresponding recommended daily allowance for a 5-year-old child is 1740 kcal, 43 g of protein, and 600 mg of calcium. A nutritional survey of preschool children in 1967–68 which was published in 1975⁵ showed that in children aged between 2½ and 4½ years milk provided about 14% of the daily intake of energy, 25% of protein, and 56% of calcium, as well as a significant proportion of several vitamins (thiamine, riboflavine, and vitamin A); and that if all milk were excluded from the diet the children would be severely deficient in calcium, riboflavine, and zinc (R G Whitehead, 1981, personal communication). Similar findings were reported in a study of preschool children in Newcastle upon Tyne.⁶ Thus milk is an important food for young children and provides an essential contribution of some nutrients including trace elements.

But ingestion of milk is not completely free of problems. Claims that milk allergy is a common cause of recurring symptoms—such as disturbed behaviour or recurrent abdominal pain⁷—have not been substantiated but allergy is a serious problem in some children⁸ although it rarely persists after age 3 years. Hereditary lactase deficiency, which is common after age 5 years in many races, is rare in the UK and although secondary lactase deficiency is a complication of several intestinal diseases, it seldom is prolonged.⁹ The risk of infection from milk can be prevented by pasteurisation.

Perhaps more important criticisms of milk are in relation to its energy and fat content. Two hundred millilitres of milk contain 130 kcal. This is not much compared with the total calorie intake of children but if such an amount were taken every day in addition to an adequate diet, theoretically it could produce about 4 kg of fat in one year and therefore eventually lead to obesity. There are 7.6 g of fat in 200 ml of milk, about two-thirds of which consist of saturated fatty acids. The importance of this is difficult to determine and must depend on the

composition of the rest of the diet. However, in the context of a mean daily total fat intake of between 60 and 70 g in early childhood⁶ it is unlikely to matter greatly.

Therefore, on balance, the benefits of milk greatly outweigh the disadvantages and it may be recommended that preschool and early school-children continue to drink 300–400 ml of milk a day.⁵ But should some of it be provided free? This depends on the extent of nutritional need.

Nutritional need

There are still unexplained apparent anomalies in our knowledge of children's nutritional needs. Since the classical observation of Widdowson¹⁰ it has been known that there are wide variations in the intake of energy and nutrients of children, and that these variations are compatible with normal physical development. More recent studies have shown that the mean energy intake of young children is greater in those from lower socioeconomic groups and large families than in those from small families and the non-manual classes.^{6 11 12} These findings point to variation in need both between individuals and between groups from different social backgrounds.¹³

Recent studies of the nutritional intake of children reviewed in *Inequalities in health*¹⁴ indicate that the average food intake of young children in the UK is good.⁵ Nevertheless, these reassuring figures are means, and they tend to hide the wide variations in the quality of children's diets that exist. For example, although the energy intake of children from poor homes generally is adequate, many such children are having less than the recommended quantities of calcium and vitamins; moreover, the intake of milk has been shown to be poor in some children from lower income families with at least 3 children.¹⁵ There is therefore a theoretical need for supplements of milk to some children. Is this substantiated by experimental data?

Experimental data

During the last few years two groups have studied the effects of the giving of milk supplements to schoolchildren^{16–18} and preschool children.¹⁹ Both groups deliberately included an excess of children from poor backgrounds, the children who theoretically should have benefited most. Despite this the effects of milk supplements on growth were, at most, slight. However, growth is a fairly crude measure of health and more subtle measures might have shown some benefit. Compared with controls the supplemented children were less likely to have riboflavine and calcium intakes below recommended levels; and

despite having a greater daily total milk consumption they did not become obese. Perhaps the extra nutrients had other effects. Perhaps the supplemented children were more alert and active.

Conclusion

Before firm advice about milk supplementation can be given there clearly is a need for more information, both about the nutritional requirements of children in poor families and about ways of measuring the fine effects of nutritional deficiency. At present, the best advice we can give is that young children should drink about 300–400 ml of milk a day. To ensure that they do this, especially children from poor and large families, there is advantage in milk being given at nursery school or school. If the decision about this is left to individual local authorities, as it is at present, then paediatricians and specialists in community medicine (Child Health) ought to play a part in advising them and to base that advice on the needs of the children in the area.

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