Patterns of Complementary Feeding (Weaning) in Countries of the European Union: Topics for Research

Timing

The 4- to 6-month guideline has been adopted for more than 25 years in individual countries[1] somewhat before the adoption of this arbitrary range by WHO and the North American countries. It was also mentioned in documents intended for Europe as a whole eg, from the European Union and professional societies.[2,3]

Nevertheless, many mothers ignore these guidelines. For example, in Britain 90% of them have introduced other foods apart from breast milk or formula by the age of 4 months, indeed a quarter of them have done so by the age of 8 weeks.[4] Because cows' milk is rarely consumed at this early age embarrassment of renal concentrating ability and hypernatremia are almost never seen now despite this introduction of complementary foods earlier than recommended.

Are these infants coming to any other harm? Alternatively, should we accept that their mothers' instincts to complement earlier are acceptable? One study found that among children aged 7 years who had received weaning foods before 15 weeks of age there was a greater prevalence of respiratory symptoms (21% vs 10%) and more body fat (19% vs 17%)[5] Other studies are needed.

Individual Foods

In normal children (ie, no illness so far and no family history of atopy, celiac disease etc) should different foods have different ages for earliest introduction ie, a later introduction policy for certain foods/nutrients.

In Britain advice is commonly given to avoid gluten before 6 months although for complementary foods generally the recommendation is "rarely before 4 months" (the actual recommendations[6] could be clearer because wheat is specifically mentioned but not rye, barley, or oats). When discussing first weaning foods with a mother I always gave examples that happened to be gluten-free, eg, infant rice or maize-based cereals.

Moreover, for these apparently normal children what about other foods that have an above average chance of causing allergenicity in susceptible children? Examples are egg (some pediatricians differentiate in their advice between the white and the yolk), citrus fruit, and nuts. Should these be delayed? Is there firm evidence for our customs and recommendations in normal children or are we allowing the requirements of a few children to dictate policy for the majority?

Clearly, we do not follow a later introduction policy where cows' milk protein is concerned. A very large number of complementary foods contain cows' milk and it makes a significant contribution to the energy, protein, calcium, and riboflavin intake of the infants. Is the risk of avoiding cows' milk in complementary foods between 4 and 6 months in many normal children greater than the benefit for a few children who will develop cows' milk protein allergy—it probably is (ie, the potential risk for the majority of being on a cows' milk protein-free diet outweighs the benefit for a few children who are cows' milk protein-sensitive). On the other hand to avoid egg until 6 months is unlikely to cause nutritional deficiency in Europe and perhaps the prevention of the few cases of egg allergy would be worthwhile (ie, a small benefit numerically but at little risk to the large majority). However, the epidemiologic evidence to support these arguments is not available as far as I know.

First Foods for Breastfed Infants Are Different From Those for Formula-fed Infants

It may be argued that first complementary foods should be different in the 2 groups. The formula-fed infant will continue to receive more of certain nutrients such as iron and zinc than a breastfed one. Even after allowing for different availabilities of the nutrients in the foods, net absolute absorption will be greater in the formula-fed infants. The complementary foods of the breastfed infant should therefore contain greater available quantities of these nutrients; meat is suggested as suitable. The formula-fed infant is less reliant on complementary foods for these nutrients; cereal dishes complementing the intake of energy and protein are adequate. Plausible as the argument is, however, I am not aware of comparisons of micronutrient status in infants receiving breast milk plus either meat or cereal dishes.

Micronutrient Deficiencies, Supplementation, and Fortification

Deficiencies of iron and vitamin D still occur commonly in Europe particularly in vulnerable groups such as immigrants.[7,8] They often occur together and additional work is necessary to establish whether this association is merely two effects of the same poor diet or is causal (for example, via an effect of iron deficiency on vitamin D absorption or an effect of vitamin D deficiency on the bone marrow).[9–11]

Zinc supplementation enhanced growth in the exclusively breastfed older infants of North African immigrants to France.[12] Despite the considerable evidence from developing countries, the prevalence and role of zinc deficiency in Europe is not clear. Although intakes of zinc and concentrations in plasma/white blood cells provide some evidence it is probable that only intervention trials will establish to what extent deficiency exists in European weanlings.

Supplementation and fortification with combinations of micronutrients present problems of interaction. A zinc supplement given in water depressed the absorption of iron but not when both were added to a hamburger (food fortification).[13] These interac-

tions require additional study so that empirical programs of supplementation and/or fortification are on a firm scientific footing. Animal studies may be used initially, but there is no alternative to adequate pilot field trials of a potential policy.

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