Protein and Amino Acids

Background

It is generally not difficult to meet protein requirements during the period of complementary feeding; in fact, there are concerns that in affluent populations protein intakes during infancy may be excessive. A recent report prepared for the International Dietary Energy Consultative Group reviewed protein and amino acid requirements of infants and children and reached the following conclusions:

a. Protein requirements during infancy are 27% to 35% lower than the 1985 FAO/WHO/UNU estimates; during childhood the new estimates are 17% to 20% lower than the previous values.

b. Protein requirements are higher in early infancy than at 6 to 12 months (both total protein and protein per kg body weight). Thus, there is little justification for high-protein "follow-on" formulas.

c. Exclusively breastfed infants receive adequate protein for at least 6 months.

d. The pattern of amino acids in human milk is not necessarily the same as the pattern of amino acid requirements, but there is currently little other information on which to base requirement estimates during infancy. Human milk appears to provide generous amounts of amino acids and remains the reference for requirements.

e. Catch-up growth requires a higher protein:energy ratio, but the optimal ratio depends on the rate of growth and composition of gain.

f. Additional protein is needed after infection.

Research Issues

The following topics merit additional research:

1. Protein needs during growth spurts and the maximum rate of catch-up growth achievable while attaining an optimal body composition.

2. Amino acid requirements during the period of complementary feeding and reevaluation of the amino acid scoring pattern for complementary food diets.

3. The impact of additional protein for infants in environments with frequent infection.


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REFERENCES


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