MEETING PROTEIN REQUIREMENTS OF YOUNG CHILDREN IN TROPICAL AND SUBTROPICAL AREAS.

Moisés Béhar, Institute of Nutrition of Central America and Panama (INCAP), Guatemala, C. A.

The average minimum requirements for protein estimated by the Princeton Conference, the FAO Expert Committee, and by Hegsted, which agree very closely, are considered useful as the basis for deriving practical recommended figures for tropical and subtropical areas. For this purpose, nevertheless, several adjustments have to be made on the basis of the following factors: (1) Dietary factors such as: (a) biological value of the protein; (b) adequacy of the diet in regard to other nutrients; (c) type of carbohydrates and proportion of calories provided by carbohydrates and fats; (d) presence of specific substances which interfere with protein utilization; (e) physical characteristics of the food. (2) Human factors such as: (a) individual variability; (b) frequency of infections; (c) retardation in growth.

An actual situation in Guatemala illustrates that apparently sufficient protein intakes for small children (2.3 g/kg body wt.) become highly inadequate when the preceding considerations are applied. When the proteins are of low biological value, adequate nutrition cannot be reached by simply increasing the absolute amount consumed. Furthermore, the low protein concentration of a typical diet for small children in most tropical and subtropical areas, makes it impossible for the child to consume enough of such diet to satisfy its protein needs.

It is evident that trying to increase the intake of the foods that are now consumed in these areas will not solve the problem. A greater consumption of non-processed foods of animal origin is, at present, not practical in most tropical and subtropical areas for reasons related to production, transportation, preservation, cost, food habits and cultural factors. The alternatives are maximum use of protein concentrates, such as fish flour, skimmed milk or yeasts, to enrich the staple foods, and the development of vegetable mixtures of relatively high protein content and quality using local resources, such as cereal grains supplemented with oil seed cakes, nuts, palm kernels, or leaf proteins. Such mixtures should be adapted to the local food habits and produced at a cost within the purchasing power of the populations for which they are designed.

While such measures will contribute significantly toward solving the problem of protein malnutrition in tropical and subtropical areas, further efforts must also be made to improve sanitation, education and general living standards if a definite and permanent solution is to be obtained.

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