

AMINO ACID SUPPLEMENTATION OF WHEAT FLOUR. Ricardo Bressani, Moisés Béhar*, Nevin S. Scrimshaw and Dorothy Wilson*. Institute of Nutrition of Central America and Panama (INCAP), Guatemala, Central America.

Eight hospitalized children recovering from kwashiorkor had strongly positive nitrogen retentions when fed a diet providing 2.0 grams of milk protein and 100 calories per kg. of body weight per day. When given a basal diet containing 85% wheat flour, 7% wheat gluten, 3% glycine, 5% corn starch, essential vitamins and minerals fed at the same protein and caloric level, nitrogen retention dropped markedly. Essential amino acids replacing part of the glycine were then added stepwise in the order of their deficiency when compared with the amino acid pattern of the FAO reference protein and in the amounts required to match this pattern. Three 3-day balance trials were run with each combination. Addition of the first limiting amino acid, lysine, resulted in nitrogen retentions equal to those observed with milk. The progressive further addition of tryptophan, methionine, threonine, isoleucine and valine did not alter nitrogen retentions significantly from those obtained with lysine supplementation alone. The results indicate that in the basal wheat diet, lysine was the only physiologically significant limiting amino acid for nitrogen retention in children as judged by nine day nitrogen balance periods. (Assisted by funds from E. I. du Pont de Nemours and Company and from U. S. Public Law 480 arranged through the National Millers Federation).