

Protein-energy requirements of boys 12-14 y old determined by using the nitrogen-balance response to a mixed-protein diet

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Short-term nitrogen-balance response to traded intakes of a vegetable mixed-protein diet and to a milk-egg protein diet was tested in eight healthy male children aged 12-14 y. They received 72, 104, 136, and 168 mg N · kg body wt⁻¹ · d⁻¹ for 10 d while on the mixed diet, and 160 mg N · kg⁻¹ · d⁻¹ on the milk-egg diet. The mean regression equation was nitrogen balance = 0.64(nitrogen intake) - 74, all values are in mg N · kg⁻¹ · d⁻¹. Apparent digestibility was 86% and 85% for the mixed and milk-egg diets when the subjects received 168 and 160 mg N · kg⁻¹ · d⁻¹, respectively. Mean nitrogen intake for satisfactory nitrogen retention for growth on the mixed diet was 147 mg N · kg⁻¹ · d⁻¹; the recommended protein allowance to cover 97.5% of the population, which was derived by using a CV of 12.5%. is 1.15 g protein · kg⁻¹ · d⁻¹. We conclude that FAO/WHO/UNU recommendations are adequate, at least for short-term nitrogen retention: long-term studies are needed to evaluate the chronic safety of th