

# Abstract

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## Effects of vitamin B12, folate, and vitamin B6 supplements in elderly people with normal serum vitamin concentrations.

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**OBJECTIVE AND METHODS:** In a prospective, multicentre, double-blind controlled study, the effect of an intramuscular vitamin supplement containing 1 mg vitamin B12, 1.1 mg folate, and 5 mg vitamin B6 on serum concentrations of methylmalonic acid (MMA), homocysteine (HCYS), 2-methylcitric acid (2-MCA), and cystathionine (CYSTA) was compared with that of placebo in 175 elderly subjects living at home and 110 in hospital. Vitamin supplement and placebo were administered eight times over a 3-week period.

**RESULTS:** Vitamin supplement but not placebo significantly reduced all four metabolite concentrations at the end of the study in both study groups. The maximum effects of treatment were usually seen within 5-12 days. Initially elevated metabolite concentrations returned to normal in a higher proportion of the vitamin than of the placebo group: 92% vs 20% for HCYS; 82% vs 20% for MMA; 62% vs 25% for 2-MCA; and 42% vs 25% for CYSTA.

**CONCLUSION:** The response rate to vitamin supplements supports the notion that metabolic evidence of vitamin deficiency is common in the elderly, even in the presence of normal serum vitamin levels. Metabolite assays permit identification of elderly subjects who may benefit from vitamin supplements.

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