

The effect of a 12-week multivitamin supplement on everyday functioning in older adults: a double blind, placebo controlled, parallel groups trial

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The UK currently has an ageing population, and the ageing process can lead to declines in physical functioning⁽¹⁾, physiological functioning⁽²⁾ and cognitive functioning⁽³⁾, which can result in worsened everyday functioning. As vitamins are essential for normal cell functioning⁽⁴⁾, playing ubiquitous roles in most biological processes⁽⁵⁾ and being intrinsically involved in every aspect of brain function⁽⁴⁾.

Therefore, they may have the potential to address detriments associated with ageing and improve everyday functioning. Empirical research in the area has shown supplementing with multivitamins can improve mood or reduce depressive symptoms in older adults⁽⁶⁾. As well as reduce depression, anxiety and stress and improve alertness and general daily functioning following 8 weeks of multivitamin supplementation in healthy older men⁽⁷⁾. However, research in the area is sparse and conflicting. The current study aimed to investigate the effect of 12 weeks of multivitamin supplementation on wellbeing, health and everyday functioning in older adults. Ethical approval was granted by the Research and Ethics Committee at the University of Northumbria at Newcastle. The study employed a 12-week, double blind, placebo controlled parallel groups intervention, in older adults (aged 70 years and over), comparing the effects of a multivitamin (Wellman/woman 70+, Vitabiotics) and placebo on measures of wellbeing, mood and memory, physical health and activity and social interaction and loneliness. 228 participants completed the study in full (104 males), 119 were randomised to multivitamin (mean age = 73.91 years) and 109 to placebo (mean age = 74.31 years). Questionnaires were completed by participants, online at home, at baseline and following a 12-week intervention period. Data was split by sex and analysed using one-way independent groups ANCOVA, controlling for scores at baseline. In females there was significantly higher levels of friendliness on the Profile of Mood States⁽⁸⁾ in the multivitamin group compared to placebo ($p = .045$, mean difference = 1.68, SE = 0.83). In males on the Perceived Stress Reactivity Scale⁽⁹⁾ there was significantly lower levels of prolonged stress reactivity following multivitamin compared to placebo ($p = .007$, mean difference = 1.08, SE = 0.39) and significantly lower overall perceived stress reactivity following multivitamin compared to placebo ($p = .019$, mean difference = 4.49, SE = .019). In males there was significantly lower levels of emotional loneliness on the De Jong-Gierveld Loneliness scale⁽¹⁰⁾ following multivitamin compared to placebo ($p = .042$, mean difference = 0.72, SE = 0.35). These findings strengthen previous research in the area, replicating results that have shown multivitamin supplementation can reduce perceived stress in older adults. It is the first to show increased feelings of friendliness and reduced feelings of emotional loneliness following multivitamins. More work is needed in the area to investigate how diet at baseline may interact with multivitamin supplementation.

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