

FATTY ACIDS AND HEALTH

Role of fatty acids and micronutrients in healthy ageing: a systematic review of randomised controlled trials set in the context of European dietary surveys of older adults

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Abstract

Background: Ageing is a multifaceted and inevitable process involving a decline in health and well-being that could be ameliorated by dietary modification. We review and discuss the evidence for nutritional interventions that may support healthy ageing.

Methods: The Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) guidelines were used to identify randomised controlled trials investigating the role(s) of fatty acids and micronutrients in relation to markers of healthy ageing.

Results: European dietary surveys suggest that diets in elderly people are generally high in saturated fat, whereas intakes of vitamin D, magnesium, potassium, zinc and copper are below recommended levels. Thirty-four studies meeting the criteria were found, with 12 of these investigating the role of fatty acids and 22 considering intakes of micronutrients in relation to healthy ageing. Overall, these studies suggested that certain nutrients were consistent with healthy ageing; for example, omega-3 fatty acids were helpful for cognitive health, whereas combinations of calcium, vitamin D and K were linked with better bone health.

Conclusions: Vitamin, mineral and fatty acid intakes are in need of improvement to help elderly populations achieve optimal diet quality and support healthy ageing. This could involve the judicious use of supplements alongside dietary advice. Additional research is needed to determine optimal nutrient doses, combinations and forms in relation to desired health outcomes.

Introduction

Human life expectancy in Western countries is now twice that reported in the early Victorian era⁽¹⁾. Average life expectancy in Europe is approximately 78 years, being slightly lower for males at 74 years and higher in females at 81 years⁽²⁾. Furthermore, the number of people aged ≥85 years is projected to rise to 19 million by 2020 and to 40 million by 2050⁽³⁾. A consequence of this demographic change is a 'top heavy' population where the prevalence of disease and impairment rise exponentially

with advancing age, which increases morbidity and reduces quality of life⁽⁴⁾.

Although people are living longer, the additional years of life do not translate into extra time spent in good health. An estimated 52 million European citizens aged 55–74 years have chronic illnesses⁽⁵⁾, whereas 23% of the total global disease burden is found in those aged ≥60 years⁽⁶⁾. The main causes of ill health in older people are cardiovascular diseases (30.3% of the total burden in those aged >60 years), malignant neoplasms (15.1%), chronic respiratory diseases (9.5%), musculoskeletal