

DIETARY SUPPLEMENTS AND NUTRACEUTICALS FOR MUSCULOSKELETAL HEALTH AND COGNITIVE FUNCTION

MD, PhD Francesca Gimigliano¹, MD Giovanni Iolascon¹, MD Antimo Moretti¹, MD Alessandro de Sire¹, MD Raffaele Gimigliano¹

¹University of Campania "Luigi Vanvitelli", Napoli, Italy

Introduction: It is well known that vitamins play a key role in the physiological regulation of the body. However, other micronutrients should be necessarily included in the diet, in particular in older people. It was hypothesized that most of nutraceuticals have multiple physiological beneficial effects, being involved in several biological pathways to maintain a good health status. However, there is not a common agreement on the use of these substances, particularly concerning the adequate amount and safety.

Purpose: The aim of our scoping review was to summarize the state of the art regarding the micronutrients that might effectively improve bone, skeletal muscle, and cognitive functions in the elderly population.

Method: The Italian Study Group on Healthy Aging by Nutraceuticals and Dietary Supplements (HANDS) performed the scoping review, based on the following steps: 1. list of all the micronutrients related with musculoskeletal or cognitive functions, included in dietary supplements and nutraceuticals commercialized in Italy; 2. plan of the PubMed research, according to an evidence-based approach; 3. identification of the micronutrients effective in maintaining or achieving an adequate health status in older people, specifying the effective and safe daily doses, according to the selected studies.

Results: We found 12 relevant positive studies (1 international society guidelines/recommendations, 1 systematic review, 7 randomized controlled trials, and 3 prospective cohort studies). Only 16 micronutrients resulted to have appropriate scientific evidence in terms of improving musculoskeletal health and/or cognitive function in older people: beta-alanine, calcium, creatine, fluorides, leucine, magnesium, omega-3 fatty acids, potassium, vitamin B6, vitamin B9, vitamin B12, vitamin C, vitamin D, vitamin E, vitamin K2, and zinc.

Conclusions: This scoping review showed that the selected 16 micronutrients in adequate doses might have an ancillary role in musculoskeletal health and cognitive functions in older people.