BENEFITS OF MEDDIET, EXERCISE AND SUPPLEMENTATION

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Nowadays, there are numerous complications related to diet. Adequate nutrition and regular physical exercise are essential. Failing to meet sufficient dietary requirements today negatively impacts health, particularly in the elderly population. The Mediterranean Diet (MedStyle) has been shown in numerous studies to play a protective role against risk factors for age-related diseases. (1).

Medicine and health are areas in constant evolution, with recent exponential growth. The Nutrition field has already developed supplements designed to address needs that aren't met by the daily consumed diet, either due to its insufficiency or absorption complications.

The Mediterranean diet is mainly based on traditional meals, often homemade, pictured by a high ingest of unrefined cereals, fruit, vegetables, legumes, and olive oil; moderate ingest of dairy products and alcohol, as well as underconsumption of meat (1).

Physical exercise has become an essential part of daily life, especially for the elderly. It is imperative the implementation of physical activity, conjoining walking 15-20 minutes per day with strength exercises due to the atrophy of the muscles, the risk of osteoporosis, and fractures when falling as age increases. Doing from 30 minutes to 1 hour of strength exercises is enough to counteract the effects of age and thus be in better shape.

Different cross-sectional studies described positive associations between MedStyle adherence and reduction in free fat mass (FFM). Adherence to MedStyle has been associated with higher bone mineral density (BMD) and it has shown to prevent bone disease; some components of MedStyle can play a role in the prevention of osteoporosis (1).

Current evidence suggests that MedStyle can be employed as a preventive strategy against the development of cognitive decline and dementia. A meta analysis was performed and suggests the first umbrella review, estimating the association between the adherence to MedStyle and 37 different health outcomes including cognitive disorders, metabolic disorders, as well as inflammatory parameters (1).

It is well-established that there is a direct link between diet, the intestinal microbiome, and the immune system. Diet influences the composition of microbiota, which in turn affects the host's health. Research suggests that the daily consumption of probiotics can help address age-related immune system deficiencies, as well as reduce both the incidence and severity of infections in the elderly. (1).

Supplementation with EPA/DHA is found to be effective in limiting obesity development by decreasing body fat, limiting both fat cell hypertrophy and hyperplasia in mice. Evidence reports lipid accumulation reduction in adipose tissues as well as anti-inflammatory effects of mice on high-fat diet with EPA and DHA supplementation. Moreover, omega-3 polyunsaturated fatty acid (PUFA) supplementation is recognized for its positive impact on both functional capacity and cognitive function, especially among the elderly.(2).

Vitamin D3 supplementation was associated with a 15% reduced cancer mortality risk (3). A review identified a 25% reduction in hip fracture among older adults who received vitamin D3 and calcium supplementation. The daily oral supplementation of 800 IU of vitamin D3 plus 1200 mg of calcium is more effective in reducing hip and non-vertebral fractures. It is advisable to review a patient's calcium and vitamin D intake from all sources prior to commencing calcium and vitamin D supplements (4).

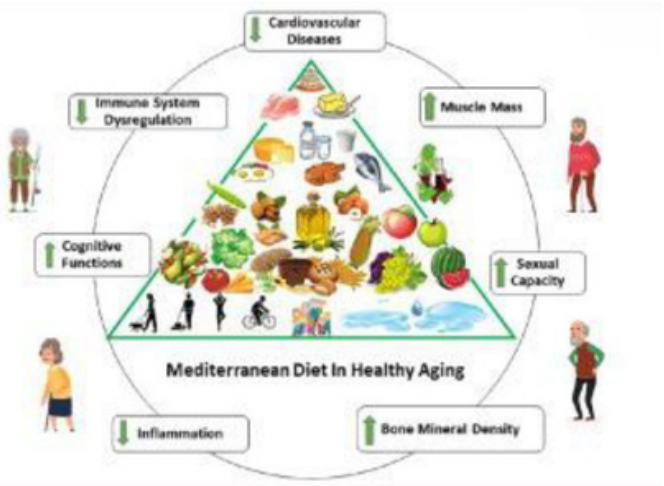
Studies have proven zinc supplementation improves chronic liver diseases such as cirrhosis, which is why supplementation may protect functionality, enzymatic reactions with antioxidant benefits, and other essential enzymes that require zinc including DNA and RNA polymerase impacting on liver function and its potential inhibitory role in cancer pathogenesis.

The dosage of supplementation depends on gender. The intake in males is 14 mg/day and in women, 8 mg/day. Zinc is increased in oysters, red meat, crab, pork, hard cheese, wheat bran, nuts and seeds.

There is an upper limit of 40 mg/day for adult women and men from food and supplement sources (7).

Moreover, zinc supplementation enhances the immune system protecting gastroenteral track by improving the phagocytosis of the monocytes. Escherichia coli and other bacteria living in the human body may infect and cause certain diseases, whereas zinc has proven to decrease the frequency of these infections (7).

Magnesium, on the other hand, has shown to improve mood, stress, anxiety and depression. This might help the elderly improve their quality of life (5, 6).



Mediterranean diet in healthy aging

In conclusion, understanding that nutrition is an integral part of life is essential, as it can be applied to all stages of health. This is particularly significant in adulthood, where the Mediterranean diet offers multiple health benefits including regulating metabolic disorders, cognitive functions, and improving various organs and systems such as the musculoskeletal, and cardiovascular systems. These benefits collectively support healthy aging. When combined with regular physical activity and good habits such as high quality sleep contributes to a healthier lifestyle and reduces health risk problems.

The use of supplements becomes important when recommended or prescribed by a doctor to address specific body needs. In severe cases, supplements can fulfill critical deficiencies. However many supplements require further research to establish full credibility, as their effects can vary widely, leaving a huge field yet to be explored.