



Healthy Ageing: Sarcopenia & Longevity

Discover how balanced nutrition and physical activity can combat sarcopenia and promote healthy ageing, ensuring vitality and longevity in your golden years.
By Henk Hoogenkamp

Healthy ageing is the process of developing and maintaining the functional ability that enables wellbeing in older age.

Ageing usually kicks in between 55 and 60 when crucial decisions must be made on how to best utilise physical activity, in tandem with dietary choices, to maintain energy levels and aim for longevity in the best possible health. Amid the growing interest to slow down ageing, new impetus is given to the relevance of dietary protein.

Research consistently shows that most adults in developed countries already get sufficient protein. However, it remains a challenge to meet the increased

and often-unmet additional protein needs of the ageing populations across most social groups, including the critically ill in a medical setting.

Sarcopenia is often associated with reduced appetite and, subsequently, reduced protein intake. It can be concluded that the current Recommended Daily Allowance (RDA) for protein may not be adequate to maintain a healthy lean muscle mass, and that biochemical changes can influence the normal hormonal responses causing degradation of muscle synthesis.

Ageing well is a combination to keep moving with a mix of cardio, power, strength, mental activity, and

balanced nutrition. All of this is easier said than done. There is a strong association between malnutrition and a lower dietary protein intake for sarcopenia-prone people.

Especially older adults (60+ years) are at risk of losing muscle strength and skeletal muscle mass resulting in less body function. This is due to lower exercise or physical activity and lower consumption of high-quality protein formulated foods like nutrient-dense yoghurt, possibly boosted by protein supplement dietary intake.



More, Not Less

There is also empirical evidence that people have the tendency to eat fewer protein foods as they age. Mobility is a great gift and should be maintained as long as possible. Besides considerable savings on healthcare costs, a proactive lifestyle and a nutrient-rich diet can be the cornerstone of growing old healthily.

Ageing usually leads to loss of muscle mass and function and can severely impact the quality of life, thus causing a steady decline in muscle strength and physical performance. The recommended protein intake for the elderly should preferably be around 1.2g/kg – 1.5/kg bodyweight per day, and ideally equate to more than 30 percent of total energy and about 7 to 9g per 100 kcal.

Dietary protein intake, possibly enriched with high quality protein supplementation, is important to deliver essential amino acids (of which leucine is a key component), branched chain amino acids, carbohydrates, and fat.

Sarcopenia affects about 10 percent of the population and impacts functions such as loss of grip strength and increased chances of fall and fractures. If not proactively addressed in time, sarcopenia will most certainly lead to lower quality of life.

Sarcopenia can be significantly slowed down by not only improving mitochondria functions and providing dietary interventions in the form of supplementing nutrients, but also doing physical exercise.

The ageing process is accompanied by a host of physiological changes. The keys to living an active life during the golden years are not only possible medical interventions and improved living standards like hygiene but also preferably balanced or personalised nutrition.

Quality or Quantity of Years

A clear distinction should be made between years of life and quality of life. People with sufficient financial funds generally live some eight years more of “disability-free” life after the age of 50 than people who struggle to make ends meet.

Many people are now working until later in their lives as compared to previous generations, either out of choice or necessity. Socioeconomic and psychosocial factors and disability-free life are closely intertwined, and these include education, physical activity, social class, and wealth.



Women who are financially in the higher ranking of income tend to live 33 disability-free years after the age of 50, 8 to 9 years more than poor women. Financially independent men generally have a lower life span than women yet enjoying 31 disability-free years after they reach 50.

Sarcopenia progressively accelerates after age 65 and it not only affects muscle condition including loss of power-strength, and performance but also diminishes the ability of ageing people to do daily routine activities like climbing stairs or lifting objects.

Relatively speaking, older people seem to need more protein as they age, yet they typically have the habit of consuming less. The latter is often due to loss of appetite and/or limited food choices.

High-quality protein supplementation can be the answer to reduce inflammation and age-related muscle wastage in an active lifestyle, hence, allows maintaining muscle mass throughout the years that improve mobility and sleep quality.

Emphasis should be placed on eating a diet that provides sufficient high-quality protein, as well as vegetables, fruits, dairy, and whole grains, while

limiting added sugar, sodium, and processed meat or highly processed plant foods.

The composition of such a nutritionally balanced diet can be summarised as anti-inflammatory and anti-oxidative, which creates a biochemical environment favourable to the human body.

In addition, regular exercise is important since it can prevent or slow down bone density loss, improve muscle tone, and help with balance and body stability.

Bio-individuality

Compared to many other areas of science, nutrition is rather weak as a science because many studies are based on observational studies which are often contradicting. Therefore, consumers get confused when constantly “digesting” new dietary information. As a result, the world is bombarded with superfoods and fad diets every few years.

For example, some people might be responders to a certain diet, while others are non-responders. Personalised nutrition, including selective microbiome analysis, might provide improved wellbeing and aspects like weight control, women’s health, as well as athletic- and mental health performance.



A Declining Slope

Age-related conditions such as a reduction of smell, taste, colour visualisation, appetite, as well as lack of mobility are variables that may hinder adequate nutrient intake: not eating enough food will reduce basic metabolism, thus reducing energy levels.

These variables are important since the bioavailability decreases as the body ages. The dietary intake of quality protein needs to be coupled with essential micronutrients like vitamin A, C, D and E, as well as minerals like iron, calcium, magnesium, and zinc.

Maintaining lean body mass becomes harder with ageing. The average man in good shape is about 85 percent lean weight, blood, organs, bones, muscles, and skin to 15 percent fat.

For the average healthy woman, this ratio is 75/25. It is more challenging with age, but strength training can maintain lean muscle mass until the age of 70. Older people who do not engage in regular resistance training will lose about 5 kilos of lean muscle per decade.

Regular physical activity of both resistance and aerobic exercise is important to minimise the physiological changes that occur with age. For the elderly, it is important to know that more evenly distributed protein intake throughout the day coupled with regular physical activity results in higher muscle-strength.

Bio-gerontical Healthy

The main function of a bio-gerontical healthy diet is, first and foremost, to prevent degenerative diseases and, secondly, to add quality years to the lifespan. A healthy lifestyle is the very basis for longevity. Besides

sufficient low-intensity activities, it is important to engage in resistance exercise to maintain or strengthen muscle mass.

Without regular exercise, men, and women at 80 years of age will lose between 30 to 50 percent of their muscle mass. The muscle mass in humans starts to decline as early as age 30 by approximately 1 percent per year, picking up speed when the body reaches 55 years of age.

It is generally accepted that consuming proteins in a balanced way during the day provides more muscle strength than when consuming more during the evening meal and less at breakfast. If the protein intake decreases, the synthesis is not done correctly, and this can lead to loss of muscle mass.

Senior Residential Living

New approaches and initiatives are needed to rein in healthcare costs and improve care. In affluent societies, senior residential living communities with or without inpatient beds are emerging to serve the fast-growing population in need of more assistance with daily activities.

The specially designed medical homes can make the transition to a new residence easier. These medical homes, also termed congregate living health facilities, continue to grow in affluent societies as people are getting older and people with disability are living longer.

These congregate living health facilities may provide inpatient service, including essential help such as medical supervision, 24-hour skilled nursing, dietary support, as well as social and recreational activities.

To do all this, sophisticated technology support such as remote patient monitoring and telemedicine, which allows physicians to provide one-on-one personalised care in the right setting at the right time, will become routine episodes.

The use of predictive analytics will allow patients to encounter fewer health-related complications, thus, reduce the need for expensive treatments and emergency room visits, which are often critical in chronic care management.

Protein is Key

When it comes to seniors, proteins are not created equal. Maintaining and rebuilding muscle mass in seniors is of great importance and especially whey



protein –because of its high leucine content- has all attributes as a key stimulator for achieving muscle protein synthesis. The latter is important to avoid expected bouts of prolonged inactivity and possible hospital stays.

Besides the well-documented advantages of the whey protein components lactoglobulin as a key driver for muscle building and maintenance, also alpha-lactalbumin and “slow acting” casein protein (a milk protein derivative) should be considered, because it supports overnight recovery and promotes a restful sleep.

Cause and Effect

Neuromuscular functions and changes in muscular strength are closely associated with adequate dietary intake of protein, combined with calcium and vitamin D. This is especially true for the elderly individuals who are at risk of falling, which may cause fractures and lead to substantial morbidity and mortality.

While bodies do produce their own vitamin D through exposure to sunshine, the levels in some countries are so weak during the long winter months that insufficient vitamin D is synthesised. This means that dietary supplements and/or fortified foods can be considered as effective tools to offset looming deficiencies.

Teaming up resistance exercise and a high quality, bioavailable protein source is probably the key to preventing or delaying the onset of sarcopenia. It is important to maintain a net-protein balance or a protein synthesis greater than protein breakdown.

Protein dietary requirements are age-dependent and correlated with protein intake, protein source, as well as the relevance of the other dietary macro- and micronutrients.

To accomplish or reach a positive net-protein balance, research is suggesting that the ageing population

needs an intake somewhere around 1.2- 1.5-g/kg body weight to obtain the nutritional status for optimum muscle maintenance. In comparison, healthy active adults generally require an RDA of 0.8 – 1.2g/kg body weight/day.

To be on the safe side, there is scientific evidence that people aged 55 and over should consume 1.5g/protein/kg/day –almost double the RDA recommendation. This amount may be necessary to avoid muscle waste or sarcopenia to maintain optimum health and avoid a decline in strength and other associated functions, including wound healing, immune status, bone health, and blood pressure.

In addition, the ageing population may want to divide protein consumption into smaller portions throughout the day to stimulate a process called basal muscle-protein synthesis. This is because ageing muscle is less sensitive to lower doses of amino acids, thus, higher protein intake may be needed to stimulate muscle protein synthesis.

Healthy Ageing is a Choice

Medical literature has identified biomarkers of ageing that offer better estimates of how old a person really is. It is expected that both biologically and chronologically controlled parameters will eventually be used to determine the most optimum dietary regimen. Many dietary studies arbitrarily excluded old people for no reason other than age.

People aged 85 and over are the fastest growing segment of Western- and affluent societies in other parts of the world. Reduced mobility, impaired cognition, taste perception, as well as financial constraints make the old-age segment of the society particularly vulnerable to dietary deficiencies and malnutrition.

Food intake, environment, and lifestyles have changed enormously since the 1980s. This created a sobering picture of ageing - an early indicator of the tsunami of degenerative illnesses and many medical disorders for a whopping 80 percent or more of the 70-year-old-plus generation stretching the numbers in the years ahead. **APPI**



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