HEALTH & WELLNESS

NUTRITION FOR SENIORS

How to Fight Sarcopenia and Boost Longevity

Evidence suggests that increasing dietary protein may be beneficial for aging population by slowing the effects of sarcopenia. Healthy aging and premium protein supplementation are the new mantra.

by Henk Hoogenkamp

Today, there are increasingly more people who beat the odds of dying at predetermined age expectations. These older seniors are healthier, better educated, as well as more socially active and diverse than ever before. Now that the oldest baby boomers are on the threshold of retirement, it is good to put a number on this group. For the US, that means the number of seniors – 85 and older – is projected to increase to 20 million by 2050, of which some 85,000 people are Centenarians. In affluent societies, the number of people living to the age of 90 and beyond has tripled since 1980. The Census Bureau (2011) has actually reported that these nonagenarians and older people are the fastest-growing segment of the senior population.

Unfortunately the reality is that the quality of life takes its toll as people live longer. Most 90-plus people have one or more disabilities which further increase and complicate as their lives advance. Although most 90-year-olds live in nursing homes, the focus should be on creating an environment to make people who are 85 years and over live at home independently for as long as possible.

The Sarcopenia Threat

Age-related loss of muscle mass is a major reason the elderly loses mobility and cannot live independently, which the Greek termed as “sarcopenia.” Muscle weakening or withering can be significant: an 80 year-old might have not only 30 percent less muscle mass than a 20 year-old, but also strength that declines even more than muscle mass. Weight lifting for 60-year-old men is some 30 percent lower than for 30-year-olds, while the decline for women is 50 percent. Sarcopenia some-

how follows on the heels of osteoporosis, thus the aging population who wants to remain young as long as possible should be prepared to make lifestyle changes to avoid the drop-off. It is estimated that the number of people seriously affected by sarcopenia will reach over 200 million people by 2050 in the US, EU, and Japan. Of this number, an estimated 10% to 20% of seniors are at risk of losing their independence because of this slow progressing disease.

Global Protein Intake

The World Health Organization (WHO) recommends that dietary protein should provide some 10-15 percent of calories when individuals are in energy balance and maintain a stable weight. Recent research suggests that for the aging population these recommendations are not quite sufficient. The benefits of protein synthesis are considered increasingly important for the aging population. As people continue to age, a lack of high quality protein nutrients may have important negative implications. Older people usually have a lack of physical exercise, which results in losing muscle mass rather quickly.

Muscle loss is a natural part of aging. As people get older, muscle mass is lost, often resulting in impaired body functions. It is estimated that after the age of 50, 1-2 percent of muscle mass is lost each year. Together with the loss of muscle mass, strength declines as well at a rate of 1.5 percent per year at 50 and accelerating to 3.0 percent after the age of 60.

Although muscle loss is a natural part of aging, increased protein intake as a regular daily dietary routine can slow down the aging process related to muscle loss and decline of strength.

After just a few days of total inactivity in older people, this will almost immediately result in loss of lean leg mass. It is estimated that the need for increased protein intake for aging people will create awareness of not only adding years to life, but also adding active life to these years.

Bridging the Protein Gap

Increased protein consumption above the recommended dietary allowance (RDA) is needed to ameliorate the loss of muscle protein with age. Evidence suggests that increasing dietary protein may be beneficial for aging population by slowing the effects of sarcopenia or age-related muscle loss. The point is that regular food-based diet and increased

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The Nutritional Benefits of Almonds

When compared gram for gram, almonds are the tree nut highest in protein, fiber, calcium, vitamin E, riboflavin and niacin and are among the lowest in calories. They are also a natural source of protein and are high in fiber, while being naturally low in sugars. A 30g serving has 13g of good unsaturated fats.

Additionally, almonds’ vitamin E content makes them an excellent source of this antioxidant nutrient, which helps fight harmful free radicals that can damage the body’s cells, tissues and even DNA.

A study published in the Journal of Agricultural and Food Chemistry determined the levels of antioxidants in California almonds. The study’s authors concluded that a 30g serving of almonds contains a similar amount of total polyphenols as one cup of green tea or one cup of steamed broccoli.

Many variables can affect how efficiently the body extracts energy from plant-based foods or ingredients, especially those high in dietary fiber. This is especially important today as the food industry focuses on greater usage of higher fiber products, such as nuts. A study conducted by USDA has shown that whole almonds provide about 20% fewer calories than originally thought. Some of the fat in almonds passes through the gastrointestinal tract without being absorbed.

A strong nutritional benefit of almonds is their role in satiety. A newly published randomized and controlled, clinical study, led by researchers at Purdue University, has found that study participants eating 1.5 ounces of dry-roasted, lightly salted almonds every day experienced reduced hunger and improved dietary vitamin E and monounsaturated fat intake without increasing body weight. The study included 137 adult participants at increased risk of type 2 diabetes. Despite consuming approximately 250 additional calories per day from almonds, participants did not increase the total number of calories in a day or gain weight over the course of the four-week study.

Researchers have also looked at the effects of consuming an almond-enriched diet on factors linked to progression of type 2 diabetes and prediabetes. After 16 weeks of consuming either an almond-enriched or nut-free diet, both in accordance with American Diabetes Association recommendations, the group that consumed an almond-enriched diet showed statistically significant improvements in insulin sensitivity, and clinically significant improvements in LDL-cholesterol levels, both of which are risk factors for heart disease and type 2 diabetes.

Emerging evidence also suggests that adequate vitamin intake like D, B12, and folic acid by food and sunlight is required to ensure optimal musculoskeletal health. Avoiding dietary acids overload (meat and cereals) by excessive intake of acid-producing nutrients and the lack of alkalizing nutrients (fruits/vegetables) is another emerging category that can influence sarcopenia development. Therefore, modifying the diet and increasing the consumption of fruits and vegetables will likely improve muscle and bone health.

**Protein Synthesis**

Protein intake for the elderly is often neglected. Older adults should consume foods in balance to maintain weight and assure adequate protein intake. Protein synthesis is considered more important for the elderly, especially when they stop cooking their own regular meals. Gener-
ally, elderly people eat too little protein and have problems with digesting proteins (especially from meat), as well as swallowing or dysphagia.

Loss of muscle mass and strength might be caused by sedentary lifestyles, oxidative damage, hormonal changes, inflammation, resistance to insulin, and infiltration of visceral fat into muscles. These variables can be further complicated by problems that stem from the brain and nervous system, which activates the muscles. Hence, exercise is a prerequisite for maintaining or restoring muscle mass and muscle strength, particularly resistance types of sport. There is also empirical evidence that people have the tendency to eat less protein foods as they age. Mobility is a great gift and should be maintained as long as possible. Besides considerable savings on health-care costs, a pro-active lifestyle and a nutrient-rich diet can be the corner stone of growing old healthy.

**Net-Protein Balance**

Teaming up resistance exercise and a high quality of bioavailable protein source probably is the key to prevent or delay 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 is correlated with protein intake, protein source, and the relevance of the other dietary macr-o- and micronutrients. In order to accomplish or reach a positive net-protein balance, research is suggesting that the aging population needs closer to 1.3g/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.

The difference between healthy adults and healthy seniors, therefore, is about 0.3-0.5g/kg body weight/day. This translates to a 70-kilo “senior” body weight of consuming an additional 21-25g of daily protein intake. New studies suggest that an intake of 100g/day of proteins with at least 30g per meal is required to help avoid muscle loss and improve calcium uptake for healthy bones. Assuming that the basic protein requirements are met by the regular diet, the additional requirements preferably must be consumed via supplemental nutrition: high-protein formulated beverages, high protein nutri-bars. Chewy “nougat-type” protein nutri-bars are most popular for these segments.

**Improving Bone Health**

In bio-gerontical and geriatric terms, the future of sarcopenia will be as important as osteoporosis is in the present. The World Health Organization (WHO) defines osteoporosis as “a systemic skeletal disease characterized by low bone mass and micro-architectural deterioration of bone fragility and susceptibility to fracture.” The bone itself is a living and growing tissue that undergoes continuous remodeling with constant formation of new bones and resorption of old bones. In growing children and adolescents, the bone formation exceeds resorption. The highest amount of bone density generally occurs between the ages of 20 and 25.

Bone strength and flexibility will become critical as bone health decreases, thus, both targeted nutrition and regular exercise will be highly essential to avoid or slow down bone density deterioration. Some of the bone density supplements are calcium, vitamin D, vitamin K, and collagen. Although calcium supplementation is widely used to build bone density, it is the collagen that builds the frame-work for calcium to attach to. After all, it is the collagen that improves the synergistic effects of bone flexibility that, subsequently, helps bones to absorb shock impact. Without sufficient collagen, even strong bones can break or crack while the body is in motion. A healthy and young body produces its own collagen naturally, though when reaching mid-life its production diminishes.