

# Nutritional Considerations in the Aging Athlete

## Abstract

Aging may improve the quality of fine wines and cheeses, but it tends to negatively affect physical performance. As the human body ages, there is a decline in cardiovascular functioning, respiratory ability and musculoskeletal strength. All athletes, regardless of age, need to consume adequate energy to participate in their sport and to perform the activities of daily living. However, compared with their younger counterparts, older athletes typically require less energy for weight maintenance. Evidence suggests that an athlete's overall energy needs decline with age, probably because of a decrease in lean body mass (resulting in an overall drop in resting metabolic rate) and a reduction in training volume. Age aside, all athletes who strive to perform better will benefit by enhancing their nutrition status. By improving their diet, older athletes will be primed to maximize their training efforts, potentially leading to winning performances.

**Keywords:** Nutrition, Aging

## Introduction

As fitness professionals and nutrition professionals, we have senior athletes coming to us, not only to improve their health and retain a high level of fitness, but also to seek our advice on how to stay competitive and at the top of their game. While this article is chiefly about seniors who compete at the masters level, much of the information is applicable to your older active clients who are just looking to stay abreast of the competition.

## Aim and Objectives of the Study

1. To plot/ show the influence of nutrition in regard to age, physical activity and level of performance.
2. To identify various aspects of nutrients and their importance in elite level of sports, to sustain performance and need of nutrients in day to day life.
3. To analyse effect of aging on physical and physiological health.

## How Aging Affects Fitness

Aging may improve the quality of fine wines and cheeses, but it tends to negatively affect physical performance. As the human body ages, there is a decline in cardiovascular functioning, respiratory ability and musculoskeletal strength. Research has shown that between the ages of 25 and 85, resting stroke volume, maximum heart rate and VO<sub>2</sub> max all decline at a rate of approximately 10% per decade (Downes 2002). The good news is that consistent physical activity can offset some of the detrimental effects of aging. Even more encouraging, exercise has the added benefit of increasing one's psychological wellbeing, decreasing the risk of chronic disease and reducing overall mortality rates relative to age (Rosenbloom 2006). Older adults who exercise and eat a healthy diet may actually be in better shape than some of your clients who are younger in chronological age. Age is a poor predictor of health, says Christine Rosenbloom, PhD, RD, LD, a professor in the division of nutrition at Georgia State University and a certified specialist in sports dietetics (CSSD). According to Rosenbloom, a habitually active 73-year-old may have a higher level of fitness than a sedentary 50 year old, especially when it comes to measures of VO<sub>2</sub>max, muscle strength and flexibility.

## Nutrition Needs of Aging Athletes

All athletes, regardless of age, need to consume adequate energy to participate in their sport and to perform the activities of daily living. However, compared with their younger counterparts, older athletes typically require less energy for weight maintenance. Evidence suggests that an athlete's overall energy needs decline with age, probably because of a decrease in lean body mass (resulting in an overall drop in resting metabolic rate) and a reduction in training volume. That said, this



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evidence does not take into account individuals who remain active as they enter their golden years. It would be safe to say that while the energy needs of masters athletes are likely lower than those of younger competitors, senior athletes still have higher needs than their peers who remain sedentary (Campbell & Geik 2004). To consume the appropriate fuel to balance their energy expenditure and still maintain a healthy weight, senior athletes need to pay close attention to their energy intake and food choices.

#### Macronutrient Needs of Aging Athletes

The diet of any older athlete should follow the guidelines set forth by the Institute of Medicine's (IOM) Food and Nutrition Board (Campbell & Geik 2004; Rosenbloom 2006). These guidelines commonly referred to as Dietary Reference Intakes (DRIs), rely on the following distribution of nutrients:

1. 45%-65% of energy from carbohydrate
2. 10%-35% of energy from protein
3. 20%-35% of energy from fat

#### The Best Food Choices for Aging Athletes

Masters athletes can meet the government's recommendations for optimal macronutrient and micronutrient intake by

1. maintaining a high intake of colorful fruits and vegetables;
2. choosing whole-grain, high-fiber foods;
3. consuming (oily) fish at least twice a week;
4. opting for vegetable oil-based spreads rather than butter, which is rich in saturated fat;
5. selecting lean meats and vegetable-based sources of protein (e.g., soy, quinoa, legumes);
6. picking skim milk and low-fat dairy over full-fat alternatives; and
7. minimizing intake of partially hydrogenated fats.

#### Carbohydrate

Most athletes require a diet high in carbohydrates, and senior master's athletes are no different. Older athletes retain the abilities to store ingested carbohydrate as glycogen in the liver and muscles; to use glycogen as a source of fuel during exercise; and to recover muscle glycogen levels following exercise. Therefore, senior athletes require a DRI of 5-7 grams per kilogram per day (g/kg/day) for general fitness training (such as performing moderate-intensity exercise for less than 1 hour per day or several hours of low-intensity exercise). For athletes with a higher training load (volume and intensity), 7-10 g/kg/day should suffice.

#### Fat

Because fat is very calorically dense (9 calories per gram), it can be an excellent source of fuel. However, an older athlete's fat intake should not be excessive; it should stay within the acceptable macronutrient distribution range of 20%-35% of total energy. Furthermore, older athletes should be sure to include essential fatty acids in their daily allotment of energy from fat.

#### Protein

The protein used as an energy source during exercise. Given senior athletes' overall age related decline in lean body tissue and the likely decline in volume and intensity of training, the exact protein needs of this population is difficult to establish—and some suggest they may be lower than once thought.

The Recommended dietary Allowance (RDA) for protein has been set at 0.8 g/ kg /day for all adults,  
**Fluid**

Because the effects of dehydration (even modest dehydration) can be detrimental to any physical performance, proper fluid intake is vital for all athletes. Older competitors are more susceptible to dehydration than their younger counterparts, because age causes physiological changes to thirst sensations, sweating rates, and fluid and electrolyte status, as well as blood flow changes that impair thermoregulation. Older athletes experience a natural decrease in renal function, which causes an increase in water output by the kidneys; they also have a delayed sweating response and a decreased perception of thirst, which often leads to insufficient fluid intake over time.

#### Micronutrient Needs of Aging Athletes

An intense training schedule can increase an athlete's need for micronutrients, and older athletes are no exception. Training depletes stores of vital vitamins and minerals, which are lost via sweat, urine and feces. In addition, senior athletes may be less able than younger competitors to synthesize and absorb vitamins D and B. For many micronutrients the ideal intake for older individuals has not yet been established, but the DRIs clearly show an increased need for fat-soluble vitamins, such as vitamins D and E; multiple B vitamins; and minerals such as calcium, zinc and magnesium. Most senior athletes can offset losses in these areas by consuming a nutrient-dense diet and/or by taking a daily vitamin and mineral supplement. However, older athletes with chronic diseases and on corresponding drug therapies should consult their physician regarding specific micronutrient losses as a result of training.

#### Conclusion

Age aside, all athletes who strive to perform better will benefit by enhancing their nutrition status. By improving their diet, older athletes will be primed to maximize their training efforts, potentially leading to winning performances.

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