

FACT SHEET

NUTRITION FOR MASTERS ATHLETES

ABOUT MASTERS ATHLETES

Masters athletes are a diverse group comprising a range of ages, competitive and/or health goals, previous sporting experience, and health status. In many sports the masters categories begin at age 30-35, however the minimum age depends on the sport – some masters competitions accept competitors as young as 18. Many athletes compete at ages that are older than this; the combined average age of competitors at recent Masters Games in Australia was over 50, and the maximum was 89! As an athlete ages their needs can become more specialised, so consulting with an Accredited Sports Dietitian is recommended. This fact sheet is targeted to the older masters competitors.

IMPLICATIONS OF INCREASING AGE ON PERFORMANCE AND TRAINING

There are many changes within the body with age, some of which may influence exercise and performance. These include cardiovascular, musculoskeletal, thermoregulatory and neurological changes, and may impact bone density, body composition, thirst perception, flexibility, and strength. Adjustments to diet and exercise can be made to assist beneficial adaptations.

Some masters athletes may be new to sport or returning to sport and competition after a hiatus. Appropriate screening with a medical professional is recommended before training and competition begins. There may be adjustments with nutrition and hydration required due to prescribed medications or modifications to training due to past injuries.

TRAINING AND EXERCISING WITH EXISTING MEDICAL CONDITIONS AND MEDICATION

Masters athletes may be more likely than younger athletes to present with medical conditions managed with one or more medications. These can include cardiovascular conditions, diabetes, osteoarthritis, asthma, musculoskeletal injuries, anxiety and depression.

Medications can impact the athlete through associated side effects. It is vital that athletes using medications are aware of potential side effects and impacts on their safety while training and competing as well as their performance. Many common medications are banned for use in sport. Medications used should be checked with a GP/Sports Physician before competition where drug testing is a possibility. For example, beta-blockers are a commonly used medication for hypertension, with a side effect of lowering heart rate – their use is banned in a number of sports. This effect of lowering of heart rate can also mask hypoglycemia. Athletes may need to apply for a Therapeutic Use Exemption to authorise the use of some medications in competition.

ENERGY INTAKE, PERFORMANCE AND WEIGHT MANAGEMENT

Resting metabolic rate decreases by a small percentage each decade which is linked to a reduction in (metabolically active) muscle mass. However, energy requirements for masters athletes could be higher than their sedentary peers due to their activity.

A reduction in energy requirements could make it challenging to attain an energy deficit to achieve desired body composition goals and to meet specific performance targets for macronutrients. The diet should be carefully planned and periodised around performance and other goals optimising body composition. For example, aim for an energy (and macronutrient intake) that meets energy requirements on key training and performance days and a lower energy intake on days of lower activity. Increasing muscle mass and supporting body composition goals could also be targeted in non-competition phases.

It is important for masters athletes to focus on the quality of food consumed to ensure acceptable micronutrient intake, particularly with a reduced energy budget.

CARBOHYDRATE, PROTEIN AND FAT

Carbohydrate recommendations for training and performance are the same for all athletes, however meeting targets must again be carefully mapped in a tighter energy budget. The capacity for glycogen storage may be lower in older athletes but can be enhanced with endurance training. Good quality carbohydrate foods, that are supportive of weight management, digestive health and beneficial for those experiencing chronic disease, include: oats, grainy breads, brown rice, legumes and starchy vegetables.

Protein needs increase with age, so older athletes may need at least 1.2g/kg protein per day with a focus on 35-40g leucine-rich protein foods (e.g. beef, tofu, milk, soy beverage, whey powder) after strenuous exercise. Click [here](#) for further practical suggestions. This higher protein requirement may also enhance satiety and support maintenance of muscle mass during efforts to support body composition changes. As for younger athletes, attention to timing, distribution and the quality of protein intake is important. Care should be taken with protein intake for people with impaired kidney function, which sometimes occurs in type 2 diabetes.

It is important for all athletes to include good quality (unsaturated) fats for health, such as: fatty fish (e.g. salmon, sardines, mackerel), nuts and seeds, avocado and plant-based oils. This is particularly important for athletes with cardiovascular disease or those at higher risk of cardiovascular disease (e.g. people with type 2 diabetes). Lower carbohydrate/higher fat diets have become popular in some athletic circles and while they have been shown to promote adaptations such as enhanced fat oxidation during exercise, they generally lead to an impairment in the ability to utilise carbohydrate for high intensity efforts (e.g. at the end of a race).

KEY MICRONUTRIENTS AT RISK

There are some changes to requirements for vitamins and minerals for older athletes. Ageing, presence of disease and some medications can all impact the ability to absorb and metabolise some of these nutrients. Calcium and Vitamin D are of particular interest in ageing athletes due to an age-related loss of bone minerals.

Calcium

A suitable intake of calcium rich foods should be recommended along with appropriate weight bearing exercise.

The Australian and New Zealand Recommended Dietary Intake for Masters aged athletes is:

Men

31 - 50 years	1000mg/day
51 - 70 years	1000mg/day
Over 70 years	1300mg/day

Women

31 - 50 years	1000mg/day
51 - 70 years	1300mg/day
Over 70 years	1300mg/day

Available research suggests that older female athletes in particular are not consuming enough calcium and should consider the addition of a supplement to ensure adequate intake, if increases in dietary intake are challenging. Please click [here](#) for further information including calcium content of foods.

Vitamin-D

Vitamin D is a key nutrient for bone growth and mineralisation, immune response and muscle function. Ageing can cause up to a 50% decrease in skin capacity for vitamin D production. Dietary sources of vitamin D are not adequate for requirements so if medically indicated, a supplement may be recommended.

Overall quality of dietary intake and other essential nutrients should be assessed by an Accredited Sports Dietitian.

HYDRATION

Age-related changes such as a decreased perception of thirst, decreased kidney function, changes in hormones, and changes in sweat response may mean decreased voluntary fluid intake during exercise and/or increased requirements.

Measurements of fluid needs through pre- and post-training and competition weights are recommended to help determine fluid requirements for individual athletes. Having a **fluid-replacement plan** for specific scenarios may be critical for successful performance for the masters athlete.

RECOVERY NUTRITION

Recovery strategies are the same for all athletes, regardless of age. The dietary strategies for replacing muscle glycogen, repairing muscle, revitalising immune health and rehydration should be followed to facilitate optimal recovery. Please refer to our [Factsheet on Recovery](#) for more information, keeping in mind your higher protein needs!

SUPPLEMENT USE

Masters athletes may take supplements for both health and performance reasons, although less research has been conducted on the sports performance benefits of supplements in older athletes. Recent research has shown that masters athletes commonly take combinations of supplements with unknown effects. Additionally, with the higher incidence of chronic conditions with increasing age, masters athletes may concurrently take medications with supplements, unaware that interactions may cause adverse effects and/or change the expected effect of the supplement and the desired effect of the medication. Competitive masters athletes should also be aware that competitions are often bound by international anti-doping rules.

With the age-related losses of muscle, strength and speed the addition of creatine monohydrate may benefit some masters athletes. Research suggests that older athletes (not over the age of 70) may benefit with increased muscle mass gain and strength from the addition of creatine monohydrate to resistance training. There is limited data for athletes over the age of 70. Masters athletes with kidney problems should discuss the use of creatine with their GP sports physician.

Supplements may have a place in the dietary regime for masters athletes, however it is best to seek advice from an **Accredited Sports Dietitian**.