



## Maximising Energy & Fighting Fatigue in your Athletes

### Understand key symptoms, nutritional strategies and when to reach out for help!

It is quite normal for most people to experience tiredness and fatigue at some stage. Likely causes are lifestyle, stress-related or quite simply due to a lack of quality sleep. General tiredness and feelings of 'acute' fatigue are also common for athletes when there is an increase in the amount or intensity of training. This usually disappears as the body adapts to the new workload provided this is supported with adequate nutrition. If training loads are not supported with adequate nutrition, an athlete may experience low energy availability (LEA). This occurs when an individual does not match their energy intake to the demands of training and their lifestyle requirements, leaving inadequate energy to support health and normal bodily functions. Chronic or prolonged low energy availability can lead to [Relative Energy Deficiency in Sport \(RED-S\)](#) which results in impaired physiological and performance consequences. Referral should be made to a GP or Sports Physician, Sports Dietitian and or Psychologist for assessment and safe management if you suspect your athlete is experiencing LEA/RED-S.

#### 1. As a coach you might notice some of these physiological and performance symptoms in your athletes:

- Drop in performance or lack of expected improvement in performance
- Increased perception of effort during exercise and for general daily activities
- Altered mood and attitude to training
- Muscle soreness and poor recovery between sessions
- Loss of appetite and/or sudden weight loss
- Reduced strength due to weight loss
- Low resistance to infection (colds/flu) or
- Sleep disturbances

Fatigue that occurs around exercise may also be related to various nutritional factors, such as fuel depletion, low blood glucose (hypoglycaemia), and dehydration. In many cases a simple change in eating habits as well as meal and snack timing can increase energy levels and improve performance.

#### 2. Let's take a closer look at the nutritional strategies that can assist minimising fatigue in your athletes:

##### Proactive Planning and Nutrient Periodisation

Individuals with busy schedules or in blocks of heavy training, may find it difficult to achieve daily or weekly energy needs.

Bigger athletes, those trying to increase muscle mass or younger athletes still growing and developing, also need to be proactive in planning appropriate foods and drinks around exercise, over their day and across their week to support additional energy demands. Typically, the training schedules developed for your athletes will vary in duration, intensity and modality. Therefore, your athlete's energy and nutrient intake should align with energy expenditure and individual needs.

Some athletes may deliberately restrict their energy intake to maintain a low body weight for their sport or to achieve a particular weight category for competition. If this is not well managed, it can lead to disordered eating or eating disorders and subsequently increase the risk of RED-S. Click here to download the AIS & NEDC [position statement](#) on disordered eating in high performance sport.

##### Showcase the Role of Carbs!

Carbohydrate foods are important sources of energy for athletic performance pre, during and post daily training sessions as well as across a week. Carbohydrate is also crucial to support immune function and to nourish the brain, supporting concentration, mood and skill acquisition. Your athlete's carbohydrate intake needs to reflect their daily and weekly training load to minimise the risk of fatigue and low energy availability. The type and duration of training as well as goals of the session will drive carbohydrate recommendations.

Athletes with low muscle fuel (glycogen) related to depletion in training and total carbohydrate intake in the days preceding or hours before the session, will most likely experience feelings of acute or persistent fatigue which can compromise training quality – especially at high intensities. The timing of carbohydrate intake is therefore particularly important for your athletes



involved in multiple daily training sessions where there is less than 8-12 hours between exercise sessions. After moderate to high intensity exercise, consuming a carbohydrate based drink/snack or meal is the most effective way to initiate the start of muscle glycogen recovery, followed by further intake of carbohydrate rich foods across the day to ensure adequate replenishment of muscle fuel stores. If there is a longer time between training sessions, your athlete may not need to be as aggressive with their carbohydrate intake across the day, provided they consume enough for their daily requirements.

For additional information, see our fact sheets on [Carbohydrate \(MLA\)](#) and [Recovery Nutrition](#). As a coach you can play an integral role in facilitating a positive, daily training nutrition environment for your athletes. Reach out to an [Accredited Sports Dietitian](#) for more support!

### **Sleep Well & Choose GREAT foods**

Active people and some of your athletes will lead busy lifestyles, which often leaves little time for shopping, food preparation and adequate sleep. Being poorly organised can lead to poor dietary choices that are insufficient in wholegrains, lean meats and dairy, plus fruit and vegetables, along with a heavy reliance on processed snack foods, this can lead to further fatigue, changes in mood and motivation as well as decreased immunity. Athletes may choose to use caffeine to provide a temporary energy boost, however the timing and amount may also disrupt an athlete's eating and sleep patterns, leading to further issues. Fad diets which are often highly restrictive and lack key nutrients, may also contribute to inadequate intake, poor sleep and result in further fatigue.

### **Optimise IRON rich foods**

Athletes and active individuals can be prone to iron deficiency due to iron loss in sweat, urine and faeces. Females also have increased losses due to menstruation, while those involved in contact sports can have regular injuries that result in bleeding. Endurance runners are also prone to iron deficiency due to foot-strike haemolysis (the mechanical damage that occurs in red blood cells as they pass through the capillaries of the foot during the foot-strike phase).

Poor dietary choices, total dietary intake or food avoidances may result in low iron intake, particularly in weight sensitive, female and vegetarian/vegan athletes. Iron needs are higher for athletes and those who follow a plant-based diet. Low iron stores may cause general tiredness with an increase in recovery time, poor immunity, cold-like symptoms, poor appetite, and changes in mental health.

Monitoring changes to iron levels through regular blood tests as advised by the athlete's GP, will give a clear indication of whether insufficient iron is the contributing and or main driver of fatigue. For more information on iron rich foods, check in with your [Accredited Sports Dietitian](#) and see our fact sheet on [Iron deficiency](#).

### **Help Hydrate**

As a coach you can help support adequate hydration status by creating regular training breaks or identifying opportunities across a training route for your athletes to drink. Your athletes may not drink enough fluid during or after to replace their sweat losses and therefore can experience ongoing dehydration. Dehydration impairs exercise performance and may reduce aerobic (fitness) capacity, decision making ability and skill level. Hydration status can be generally assessed by athletes learning to monitor urine colour and volume, thirst, and changes in weight. Frequent urination that is straw like in colour is usually a good indication of adequate fluid consumption. Including a drink with every meal and snack will assist with daily fluid needs. Individuals with high sweat rates should be particularly careful about meeting their fluid needs and should discuss with an [Accredited Sports Dietitian](#).

### **Supplements to assist with fatigue**

Fatigue is largely caused by an imbalance of energy, carbohydrate, protein and fat. Unless addressing a specific micronutrient deficiency (such as iron), the use of medical supplements will do little to reverse this problem beyond giving a psychological boost. The strategic use of caffeine including amount and timing or use of a sports drink/gel during training for performance purposes, should be discussed with an [Accredited Sports Dietitian](#) to optimise performance benefits and to minimise the risks of fatigue.

A nutritious and varied eating plan that enables athletes to better match energy intake to energy expenditure, will help maximise exercise performance at training and competition, including promoting recovery and reducing the negative consequences of LEA or RED-S. Encourage your athletes to seek tailored advice from an [Accredited Sports Dietitian](#) and involve them in your high performance or community-based team.

