

Nutrition and Hydration during Recovery

Recovery includes a range of processes which include:

- Refuelling the muscles and liver of their expended energy
- Replacing the fluid and electrolytes lost in sweat
- Allowing the immune system to deal with any damage caused by the exercise bout
- Making new proteins, red blood cells and other cellular components

To help recovery, proactive and practical nutritional guidelines are needed to refuel and rehydrate, and support repair and regeneration processes.

Rehydration

Replacement of body water and electrolytes after exercise is crucial when repeated bouts of exercise are planned within a limited timescale. Athletes have to work hard to take enough fluids to fully rehydrate, especially when exercising in the heat. They must not rely on being thirsty as a sign to drink.

Weight change monitoring (weight before minus weight after training or competition) provides a guide to fluid needs – a loss of 1kg equals a fluid deficit of 1 litre. As fluid losses continue during recovery, athletes will need to consume a volume 1½ times the deficit (ie 1½ litres for 1kg lost) to restore fluid balance.

Practice guidelines

- Make sure an adequate supply of cool palatable drinks is available
- rehydration should start immediately with half or full strength isotonic drink. A fluid that contains some sodium (salt) and carbohydrate provide faster body water replacement than plain water, is more palatable and helps in assisting refuelling
- drink to a plan; do not rely on thirst to determine needs
- remember that fluid continues to be lost during recovery through urine losses and ongoing sweating
- caffeine containing drinks and alcohol should not be taken in the recovery period as they can increase urine losses
- where possible, post-exercise activities that promote sweat losses eg hot spas, saunas and exposure to the sun should be avoided

Refuelling

Poor refuelling means that muscle glycogen stores will not be re-stocked before the next session, and will lead to poor quality training. The most important dietary factor affecting muscle glycogen refuelling is the *amount* of carbohydrate consumed; this is particularly important when there is limited time between exercise bouts for recovery.

Practice guidelines

- a high carbohydrate snack or meal giving 50 – 100g carbohydrate (1g/kg body weight) should be consumed within 30 minutes of stopping exercise, and be repeated after 2 hours or until normal meal patterns are resumed.

Each of the following selections provide approximately 50g carbohydrate and athletes should eat one or two portions as soon as possible after exercise.

- 800 – 100mls of isotonic sports drink
- 1200mls sugar-containing fruit squash
- 500mls fruit juice drink or fresh orange juice
- 2 handfuls of sultanas
- 2 handfuls of jelly babies, wine gums, fruit pastilles
- standard bar of Turkish Delight
- 3 jaffa cakes and 2 fig rolls
- 2 – 3 cereal bars
- 2 slices white bread with jam or honey
- 2 pancakes with jam, honey or syrup
- fruit scone with jam or honey
- 2 slices currant or malt bread with jam or honey
- soft white roll with banana
- 3 rice cakes with jam or honey
- low fat yogurt and banana
- 1 tub (150g) custard and 3 tablespoons tinned fruit

- a daily carbohydrate intake of 7 to 10g per kg body weight (typically 400g – 600g) is needed to maximise glycogen storage
- when appetite is reduced or stomach comfort is a problem, athletes should focus on compact forms of carbohydrate; low fibre, high sugar foods and sports bars
- carbohydrate containing fluids are also low in bulk and may be appealing to athletes who are fatigued and dehydrated. Consult the 50g carbohydrate list.
- small frequent meals may help athletes to achieve high carbohydrate intakes without the discomfort of overeating. Routines of meals should be organised to suit individual preferences, timetable of training/competition, appetite and comfort
- carbohydrate rich foods and drinks may provide other valuable nutrients such as protein, vitamins and minerals that are also important for the recovery process
- muscle damage slows down glycogen refuelling and the rate of recovery – try to increase carbohydrate intake during the first 24 hours of recovery to offset this.