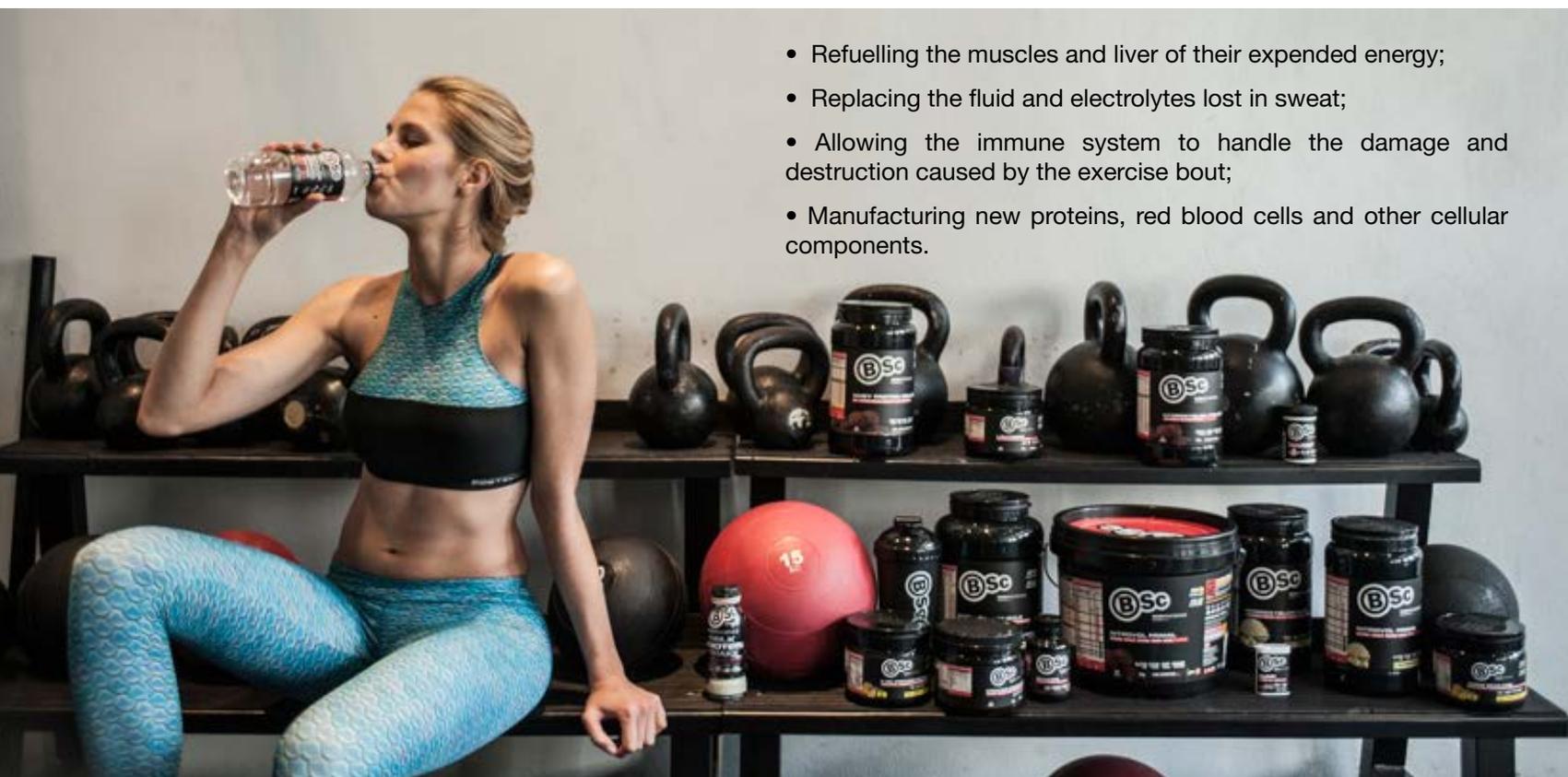


GUIDELINES FOR RECOVERY

Recovery between training sessions and/or competition is critical to achieve the optimal outcome or from the subsequent workout or match is to be achieved. Recovery encompasses a complex 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 handle the damage and destruction caused by the exercise bout;
- Manufacturing new proteins, red blood cells and other cellular components.



The traditional approach to recovery is a passive one—'let it happen'. Other athletes take an even less effective route—they 'make it even harder approach'. This might involve activities such as drinking excessive alcohol, further heat exposure via sun or saunas despite already being overheated, or failing to get sufficient rest or sleep. Such activities hamper recovery processes and/or add to the damage that must be repaired. The best approach is a proactive recovery. In dietary terms, this means providing the body with all the nutrients it needs, in a speedy and practical manner, so that refuelling, rehydration, repair and regeneration processes are all optimised. Where specific recovery processes have been identified and studied, clear nutritional guidelines can be stated. This is the case for rehydration and refuelling. Unfortunately, the post-exercise functions of the immune system, protein metabolism, anti-oxidant defence and many other issues relating to recovery remain unclear. Current research indicates that ideally you should aim to consume about 1g of carbohydrate per kilogram of body weight within 15-30 minutes after the finish of a session in order to facilitate rapid recovery of muscle glycogen levels. It is during this time period that the muscles in particular are most sensitive to glycogen replenishment. For most, at the very least you should aim for a 50g snack of carbohydrate.



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As a general rule the following principles should be followed to optimise recovery after training and competition:

- Consume a high-carbohydrate meal or snack within 30 minutes of completing a strenuous exercise session. Be organised to have suitable food and drinks available—at the exercise venue if necessary.
- Aim for an intake of typically 1.0–1.5 g of carbohydrate per kg BM (typically, 50–150 g of carbohydrate) immediately after exercise, and repeat after two hours or until normal meal patterns are resumed (see the panel on the following pages).
- A daily carbohydrate intake of 7–10 g per kg BM (typically 400–700 g) is required to optimise muscle glycogen storage.
- When carbohydrate needs are high, and appetite is suppressed or gastric comfort is a problem, focus on compact forms of carbohydrate—low-fibre forms of carbohydrate foods, sugar-rich foods and special sports supplements such as Fuel bars.
- Carbohydrate-containing fluids are also low in bulk and may be appealing to athletes who are fatigued and dehydrated. These include sports drinks, fruit juices, commercial liquid meal supplements and fruit smoothies.
- Low glycaemic index (GI) carbohydrate foods such as lentils and legumes may be less suitable for speedy glycogen recovery and should not be the principal carbohydrate source in recovery meals.

This is generally not a problem, as typical Western diets are generally based on carbohydrate-rich foods of moderate and high GI.

- Small, frequent meals may assist the athlete to achieve high carbohydrate intakes without the discomfort of overeating. However, organise your routine of meals and snacks to suit your individual preferences, timetable and appetite/comfort. As long as enough carbohydrate is consumed, it doesn't appear to matter how you space it over the day.
- When gastric comfort or total energy requirements limit total food intake, high-fat foods and excessive amounts of protein foods should not be consumed at the expense of carbohydrate foods.

Focus on high-carbohydrate foods and meal choices first.

- Nutritious carbohydrate-rich foods and drinks may provide protein and other nutrients (vitamins and minerals) that are important in other post-exercise recovery processes. These will be important in the overall diet. Future research may show that intake early after exercise could enhance other activities of repair and rebuilding.
- Muscle damage interferes with glycogen storage—this may be partially offset by increasing carbohydrate intake during the first 24 hours of recovery. Carbohydrate needs may also be increased if exercise is undertaken during the recovery period.

FACTORS THAT WILL SLOW THE RATE OF RECOVERY:

- Damage to the muscle (contact injury or delayed-onset muscle soreness caused by eccentric exercise).
- Delay in intake of carbohydrate after exercise.
- Inadequate amounts of carbohydrate.
- Reliance on carbohydrate-rich foods with a low glycaemic index.
- High-intensity exercise during recovery.

WHAT DOES 50G CARBOHYDRATE LOOK LIKE?

Examples of food and drinks supplying 50 grams of carbohydrate for immediate recovery (moderate to high Glycaemic Index choices). Eat one to two of these portions to ensure speedy recovery after a heavy exercise session, and repeat this pattern after two hours or until normal eating patterns have been resumed:

- Serve of Nitrobulk Protein and skim milk.
- 500ml juice, flavoured mineral water or non-cola soft drink.
- 50-60 grams jelly beans or jelly lollies.
- 2 crumpets or whole English muffins.
- 3 rice cakes or corn thins with jam or honey.
- 3 pieces or a bowl of fruit (eg melon, pineapple, ripe bananas).
- 100g dried fruit eg . packet apricots or 2 handfuls sultanas or 10 dates.
- 2 breakfast bars, 2-3 muesli/fruit bars.
- 1 large or 2 small cake style muffins, fruit buns or scones.
- 2 large pancakes or 4 pikelets with lots of syrup/honey/jam.
- Bowl of creamed rice.
- 60 grams pretzels/rice crackers.



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Nutrition and snacks are an important factor in the recovery associated with training. Learn More.

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RECOVERY BETWEEN TRAINING SESSIONS IS ESSENTIAL IF YOU ARE TO ACHIEVE OPTIMAL PERFORMANCE

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