Milk and Dairy

the art of recovery after sport

Athletes' diets can make a difference to the success of their training programmes. An understanding of nutrition and how it affects sports performance is vital in order to get the most out of your sport, at every level. An increase in training load is associated with an increase in fitness level, but it is often overlooked that the real gains in exercise capacity occurs when the body is at rest. Although the workout acts as the important stimulus for the adaptation process, metabolic recovery and rebuilding occur at rest. One of the key components to support the body for optimal recovery is the timely intake of nutrients; that is, eating at the right time.

Carbohydrates are the primary fuel source during training. The body uses blood sugar and glycogen stored in the muscles as its carbohydrate sources. Owing to relatively little glycogen being available, it is important to replace carbohydrates regularly to avoid running out of fuel. When glycogen stores are depleted, the body resorts to muscle protein as its emergency high-intensity fuel source. Repeatedly failing to replenish glycogen stores will therefore cause unnecessary tissue breakdown.

Exercise also triggers muscle breakdown after training. Without proper nutritional recovery, an athlete may experience a feeling of being unable to keep up – often described as 'lead legs'. The body will also react by increasing its resting heart rate. If an athlete does not recover properly between events or training days, it can lead to poor performance and increased feelings of fatigue.

A sensible dietary intake before, during and after training can support fuelling the body, minimise muscle breakdown and enhance repair and muscle growth, which together aid speedy recovery and decrease injury risk.

Muscle up with milk and dairy

Dairy is an excellent choice for assisting in the recovery process after strenuous exercise and so improve performance. Thanks to its natural balance of sodium, carbohydrate and protein, milk helps the body retain fluid, replenish glycogen stores and build muscle.

The use of milk as an effective recovery drink for exercisers is supported by a recent study in the Journal of Applied Physiology, Nutrition and Metabolism[1], which reported that drinking a milk-based meal supplement after exercise led to better fluid retention than other sports drinks.

The process of recovery involves effort to prepare for exercise as well as to recover afterwards by refuelling and rehydrating the body and repairing muscle tissue.
Dairy proves to be an excellent source of nutrients to support the process at each stage:

<PREPARE>

Before exercise an athlete should ensure adequate fuel stores and optimal hydration through the intake of carbohydrates and fluid. Carbohydrates, stored in the body in the form of glycogen in the skeletal muscle and liver, are the most important source of readily available energy during strenuous exercise. Dairy products such as milk, flavoured milk and drinking yoghurt can be included in pre-exercise nutrition to supply carbohydrates and support hydration.

<RECOVER>

The main goal of sport nutrition is to:

- **REFUEL**
  replenish glycogen stores
- **REHYDRATE**
  maintain adequate hydration levels
- **REPAIR**
  facilitate muscle building.

Optimal recovery occurs within 30 minutes to two hours after exercise. It is therefore essential to replenish your fluid levels, glycogen stores and muscle proteins during this period. Milk is an excellent recovery drink as it contains carbohydrates (lactose), protein (whey and casein in a 1:3 ratio) and electrolytes (potassium and sodium).

An initiative by the Consumer Education Project of Milk SA
For more information on the role of dairy in sport, please visit our website at www.rediscoverdairy.co.za or email: info@rediscoverdairy.co.za

How to ensure effective recovery

- Start the replenishment process already during exercise if the session is longer than an hour.
- Eat immediately after the training session if less than 24 hours is available for recovery before the next training session. This snack should contain a substantial amount of carbohydrate (1.2–1.5 g carbohydrate/kg body weight) and some protein (0.25–0.4 g protein/kg body weight).
  Follow up with a post-training snack an hour later.
- Eat a main meal within two hours after a workout.
- Include a variety of carbohydrate sources, such as fruit, fruit juices, milk, low-fat flavoured yoghurt, drinking yoghurt, bread or cereal, as snack options.
- Add protein sources such as cheese, milk, yoghurt, meat, peanut butter or legumes to the recovery snack.
- Rehydrate properly by including liquids to replenish lost fluids. You should aim to drink up to 1.5 times the volume of fluid lost during exercise, as measured by the difference in your weight before and after exercise. This amount of post-exercise fluid intake is important to compensate for ongoing losses and to ensure that your body's fluid balance is restored within the first 4–6 hours of recovery.

[1] *Desbrow B et al. 2014. Comparing the rehydration potential of different milk-based drinks to a carbohydrate–electrolyte beverage. Appl Physiol Nutr Metab.39: 1366–1372*