

Nutrition



TRAINING

The basic training diet should provide enough energy and nutrients to meet the demands of training and exercise, divided approximately as follows:

- More than 55% from carbohydrates
- About 12-15% from protein
- Less than 30% from fat

Athletes who exercise strenuously for more than 60 to 90 minutes a day may need to increase the amount of energy they get from carbohydrates to 65-70% of energy intake. The World Health Organization states that athletes can consume up to 35% of energy from fat without compromising performance. Some sports nutritionists suggest that extra fat in an athlete's diet may improve performance for endurance events; however this is not widely recommended or practised.

Glycogen is the most important energy source for the body during exercise. When you exercise, glucose in the blood is used as an energy source. The body converts the stored glycogen back into glucose to fuel the exercising muscle tissue and other body systems. Athletes can increase their stores of glycogen by regularly eating high carbohydrate foods. If carbohydrate in the diet is restricted, a person's ability to exercise is compromised because there is not enough glycogen kept in storage. This can result in a loss of protein tissue (and muscle) because the body will start to break down muscle tissue to meet its energy needs. The type and timing of food eaten should be tailored to maximise the performance for longer training sessions versus short periods of intense activity during competition times. Eat more total (complex) carbohydrates when you are training at higher intensity. Maintain other foods from your healthy diet, e.g. proteins and vegetables, while focusing on the wholesome nutrient dense carbs. Read the food labels to find the quantity and quality of the carbs versus the sugars, fats and other ingredients.

Estimated carbohydrate needs of athletes (Burke 2010)

- Light training low intensity exercise = 3-5 g per kg each day
- Moderate exercise (approximately 1 hour/day) = 5-7 g per kg each day
- Endurance program (approx 1-3 hours moderate to high intensity) = 6-10 g per kg each day
- Extreme exercise (>4-5 hours moderate to high intensity) = 10-12 g per kg each day

Carbohydrate-rich food examples (Burke 2010)

Wholesome nutrient dense carbs	Refined nutrient poor carbs
Simple carbohydrates	
Fresh fruit, stewed and canned fruit, dried fruit, yoghurts, custard, low fat fruit crumbles, light muesli	Sugar, jam, honey, Nutella, soft drinks, cordial, sports drinks, sports gels, lollies, chocolates.
Complex carbohydrates	
Wholegrain breads, muffins, pita breads, crumpets, cereal, pasta, rice and other grains, lentils, baked beans, rice cakes and some low fat fruit base deserts such as crumbles and fruit muffins.	French fries, pastry, crisps, high fat cakes, biscuits, deserts.

Download a carbohydrate ready reckoner to help. There are many online such as:

<http://www.calculator.net/carbohydrate-calculator.html>

www.sportsci.org/news/compeat/grams.html