

The nutritional demands of cricket

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Characteristics of the sport

Cricket is a game of skill that requires power, strength, speed and agility. Traditionally, matches are played in hot and humid settings therefore players also need to be able to concentrate for long periods of time in very challenging environmental conditions(1) .

Teams consist of eleven players which include batsmen, bowlers, a wicket keeper and a few all rounders. In theory, all team members get an opportunity to bat and field, whilst only the specialist bowlers and all rounders are required to bowl. Competition games are structured in the following ways (1, 2):

- Twenty fixtures: involve maximum 20 overs per side and last approximately 3 hours
- Limited over (one-day) games: involve one innings (maximum 50 overs) per side
- 4-5 day games: involves 2 innings per side

Training requirements

Cricket is primarily a summer sport, with the season running from May to September in the United Kingdom. Club level cricketers are therefore generally inactive through the off season, unless they are involved in other sports or off season training regime. Elite level cricketers, on the other hand who participate in international tours are required to play all year around and only have a short off season of about 3-4 weeks (1,2).

At club level, pre-season training begins around March/April with general fitness work. Recreational cricketers may train once or twice per day and elite cricketers 3-4 times a day depending on the time in the season. The intensity of sessions is determined by the training goals of the session and can therefore range from low to very high. A weekly training program will typically involve two 45 minute to one-hour sessions of moderately paced running, cycling or other activity at approximately 50-60% maximum heart rate as well as some resistance training. As the season approaches training incorporates more skill work and focuses on batting and bowling practice as well as fielding skills (1).

Competition requirements

League and county cricket is played on weekends and is often in the form of one day competitions, or two day fixtures. International cricket involves a one day series and a test series (five matches). Players maybe involved in one or both types of competition. Test matches tend to be played during the day, whereas limited overs matches are played as either day or day-night matches under lights. If players are not needed for international fixtures they will usually return to play in their county competitions (2). The physical requirements of a cricket

game vary with the type and duration of the match (one-day vs. multiday) as well as the player's position in the team (1, 2, 3).

Physiological demands

Acts of bowling, batting and fielding primarily utilize the anaerobic energy system. Players are also required to stand for long periods of time, bending, stopping and squatting and these low- moderate paced exercises require a good aerobic fitness as well (1,2,4).

Cricket training should therefore be a combination of anaerobic and aerobic training as well as resistance training. A strong cardiovascular system and solid aerobic fitness will assist the players in dealing with fatigue and will also positively impact their attentiveness in the course of a long match (1, 4).

Cricketers have been known to come in many shapes and sizes. More recently however, cricketers are required to be fitter than ever before, therefore very high body fat levels are no longer tolerated and lower body fats are promoted. A lower body fat composition enables a player to be faster, more agile, have increased stamina and be more tolerable of the heat. Fast bowlers in particular, benefit from low levels of body fat (2, 4, 5, 6).

Nutrition and performance

Energy requirements

The energy needs of a cricket game vary with the type and duration of the match (i.e. one day vs. multiday) as well as the player's build and position in the team. Fast bowlers for instance often have higher energy needs than batsman (1,4,7). For example, a 70kg cricket player would expend approximately 342kcal/hr batting and 371kcal/hr bowling. An 80kg cricket player would expend 396kcal/hr batting and 426kcal/hr bowling.

Training nutrition

Cricketers need to ensure that their training diet is well planned to coincide with their training goals and their schedule. As with most sports, training nutrition needs to focus on eating nutrient dense meals and snacks that include wholegrain cereals, fruit and vegetables, low-fat dairy products, lean meat, poultry/fish or vegetarian alternatives. In addition the timing of meals also needs to be well planned to aid rapid recovery between sessions. When players expend more energy (i.e. heavier training days) they should be encouraged to include extra snacks to fuel the extra training load (3,4,6,8).

TIP: To date there are no specific dietary supplement that has been proven to improve sporting performance in cricket players.

Body fat levels

Cricket can involve long hours of low intensity activity; therefore players can find themselves gaining unwanted weight particularly when enjoying the social aspects of cricket. Players wanting to lose some body fat will need to reassess

their training load and incorporate some aerobic activity in addition to scheduled training sessions. The combination of increased aerobic activity, regular training and a diet that is low in fat and in alcohol will assist in fat loss (1,2,4).

Replacement of fluid

Research has found that cricket players sweat at a rate of approximately 1200ml/hr (9,10). However, that said sweat rates and fluid needs will vary according to a player's position (batting or bowling), playing style and the weather. It is therefore important for each player to identify their individual fluid needs (11).

Typically, athletes are advised to try and keep fluid deficits to less than 2 % of body weight as exercise performance is impaired above this level. Studies revealed that a fluid deficit of just under 3% of body weight impaired bowling accuracy by approximately 15%. It is therefore vital that during training and in competition those fluids are replaced in sufficient amounts to minimise weight loss to less than 2% body weight (9, 10,11).

Monitoring changes in body weight and fluid intake over training sessions and matches will provide each player with an idea of their typical sweat losses in different situations so that a hydration strategy can be put into place. Some general guidelines to ensure that players are hydrated are as follows (2,9):

- Begin a training session/ match well hydrated, by increasing your fluid intake the day before the match. This will ensure that only moderate amounts of fluid are needed on match day to complete adequate nutrition.
- Make the most of opportunities such as warm-up, breaks during over changes, the fall of wickets and when not fielding to sip on a drink.
- Try and drink at a rate that is comfortable and keeps pace with sweat losses as much as possible.
- Drink at least 250-500ml of fluid during each drink break to replace fluid sweat losses.
- Use isotonic sports drinks to replace fluid, electrolytes as well as carbohydrates, (particularly batsman, bowlers).
- Replace both fluid and carbohydrate losses at the end of a match. The amount is individual, however general guidelines indicate that for every kilogram of weight lost during a match, replace with 1.5L fluid

👉TIP: Be wary of drinking too much that you actually gain weight over a match.

Pre-Match nutrition

On the first day of a match cricketers do not know whether they are batting or bowling until 45 minutes prior to the start. Consequently, players need to prepare for a match assuming they will be required to play on the first day. When fuelling for a game, basic guidelines are as follows (2,3,4,8):

- 1) **Days leading up to a match:** Consume adequate carbohydrate (7-10g carbohydrate per body weight) to ensure glycogen stores are fully topped up.
- 2) **2-4 hours prior to the match:** Consume a pre- event meal that is high in carbohydrates (low- moderate GI), low in fat and moderate-low in protein. Good examples are:
 - Wholegrain breakfast cereal with semi skimmed / skimmed milk
 - Wholegrain sandwich with peanut butter & jam/ low fat cheese and salad
 - Durum wheat pasta or Basmati Rice with tomato based sauce (low fat)
 - Baked potato with cottage cheese filling
- 3) **1-2 hours prior to match.** Top up glycogen stores with a small snack that is high carbohydrate (moderate to high in GI) and low in fat. Good examples are:
 - 500ml isotonic sports drink
 - 200g low fat yogurt & 40g (snack pack) of sultanas
 - 360ml smoothie
 - Sports bar
- 4) **1 hour prior to event:** Supply your body with high GI liquid fuel :
 - 500 ml isotonic sports drink

🔥**TIP:** Experiment with type, timing and amount of food that works best for you.

During match nutrition

Players should take advantage of the breaks between play to hydrate and top up glycogen stores. High carbohydrate, low fat foods and fluids are recommended however it is important for each player to practice, practice practice (!), so that they are able to establish what works best for them (2,3,4,8).

- 1) Replacing fluid losses with an isotonic sports drink and water needs to be a priority
- 2) Good low fat high carbohydrate options are:
 - a. Low fat smoothies
 - b. Banana sandwich
 - c. Pasta/ rice with a plain sauce
- 3) Bananas can also be eaten at half time

🔥**TIPS:** If snacks are not provided at the match venue, it is important for cricketers to be organised and pack suitable foods and drinks with them for pre and post training/ match if snacks.

Post match nutrition

Common sports nutrition practice recommends that immediately after a training session or an event (0-30 minutes) players need to replace any fluids lost and as

well as to refuel muscles by eating or drinking carbohydrate-rich foods and beverages. This applies to cricket players, particularly after long sessions of play (i.e. when a player has been required to bowl many overs or to make many runs). The aim should be to ingest 1-1.2 g of carbohydrate per kg body weight immediately after training (i.e. 50-100g of carbohydrate). Higher glycaemic Index (GI) carbohydrates are digested quickly delivered quickly to depleted muscles (3,6,8). Good examples of recovery snacks are (2,3,6):

50 g Carbohydrate sources are:

- 800 - 1000ml sports drinks
- 3 medium pieces of fruit
- 2 cereal bars
- 2 X 200g cartons low fat yogurt
- 1 bowl of fruit salad with 200g Low fat yogurt
- 250-300ml smoothie
- 250-300ml Low fat milk / flavoured milk i.e. For goodness Shake
- 1 bowl of cereal with low fat milk
- 3 slices of toast

Following your post exercise snack, a more substantial meal containing both carbohydrates and proteins needs to be consumed (3-4 hours) post match.

Celebratory drinks... are they allowed?

Alcohol is very much interwoven into the cricket culture. Moderate intake of alcohol use doesn't impair or affect performance however alcohol intake can interfere with post-exercise recovery (2, 9,10). Alcohol acts as a diuretic and will therefore slow down re-hydration processes after a match. Players are therefore encouraged to use alcohol in moderation only after meeting recovery goals, and to avoid "binge drinking" at all costs. Recommendations are:

- 1) Re-hydrate with sports drink straight after a match.
- 2) Ensure that you replenish your glycogen stores with carbohydrate (either in the form of an isotonic sports drink or a carbohydrate rich snack).
- 3) Enjoy a celebratory drink. Set yourself a limit and be aware of how much you have consumed.
- 4) If you have any soft tissue injuries or bruising, avoid any alcohol for **24 hours post** exercise (as this will prevent extra swelling and bleeding as well as promote recovery).

TIP: Contrary to popular belief beer does not fuel up your muscle glycogen stores after a match

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