

Eat to Compete

OPTIMISING YOUR FOOD AND FLUID INTAKE DURING COMPETITION IS THE KEY TO GETTING THE MOST FROM WHAT YOU'VE GOT, DR NICK KIMBER TELLS YOU HOW.

Summer is fast approaching which means that not only is the temperature rising, but the event calendar is also hot-ting up. If your winter training has gone to plan and you've been following the indoor trainer program outlined by Ian Melvin in the winter edition of MBA, the legs will be primed for a summer of epic rides and events. To ensure you get the maximum enjoyment and performance out of your event entry fees, it's a good idea to start thinking about how you'll fuel yourself for the next event.

I'm sure many of you have experi-

enced the effects of poor nutrition on performance during an event (I certainly have!). It may have been eating too much food close to start time, trying a new product for the first time that didn't agree with you, or even forgetting to eat and drink despite having food and fluid available. Having a nutrition plan for race day is often overlooked and can result in months of hard training being quickly undone. The key to success for race day nutrition is actually quite simple and something that was already discussed in my 'fighting the fat' article—you need a plan! Planning

your meals for competition is actually a good way of focusing on the event. By knowing when, what and how much you're going to eat and drink, you can be confident that you have the best possible nutritional preparation.

Competition nutrition is basically an extension of training nutrition. The correct nutritional strategies before, during and after competition will help you achieve your best possible performance. Let's take a look now at each of these important areas to find out the key planning strategies involved.

PRE-COMPETITION

One of the common nutritional strategies used to prepare for an endurance event is carbohydrate loading. The goal of this technique is to super-load the muscles with an energy source called glycogen to delay fatigue and enable you to maintain high intensity exercise for longer. If your event is going to take you 90 minutes or more to complete, carbohydrate loading is a strategy to consider, although not all studies show a benefit. Carbohydrate loading techniques vary depending on the event; however the easiest way to increase your carbohydrate intake is by reducing the fat in your diet and using carbohydrate supplements such as sports drinks and sports bars.

The pre-competition meal is a key part of your race-day preparation and you should consider the following when planning your food intake:

- When is your competition? You should aim to have a meal with more than 200g of carbohydrate about three hours before the event. If you start too early, it may be more practical to have a smaller carbohydrate meal (1-2g per kg of body weight) 1-2 hours before and concentrate on getting more carbohydrates during the event.

The table below summarises the timing for pre-event nutrition:

- When was your last exercise session? If you're competing in a 12 or 24 hour team event, the pre-ride meal will also be part of your recovery and preparation plan. Follow the same eating schedule listed above and try to eat something as soon as you finish your lap.

Pre-Competition Eating Ideas:

- Breakfast cereal (Weet-Bix®/Sustain®/Nutrigrain®/Just Right®) with



Liquid meal substitutes can be easier to stomach if you can't eat a good meal three hours before your event.

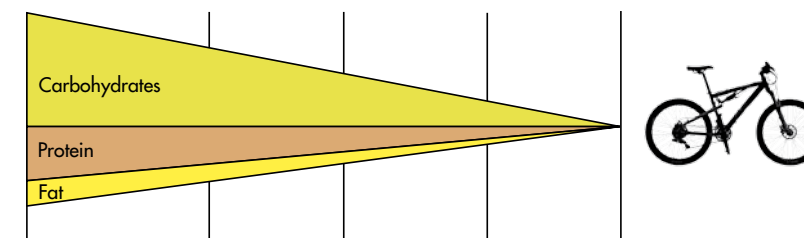
reduced-fat milk, yoghurt and fresh or canned fruit

- Porridge with reduced-fat milk, yoghurt and fresh or canned fruit
- Fresh fruit salad with low-fat yoghurt
- Toast, muffins or crumpets with peanut butter and banana or jam
- Low-fat pancakes with maple syrup and fruit
- Baked beans on toast
- Smoothie using low-fat milk, low-fat yoghurt and banana/mango/berries
- Soy smoothie using low-fat soy beverage and blended fruit
- Creamed rice and fruit
- Risotto with lean meat and vegetables
- Jacket potato with creamed corn and low-fat cottage cheese
- Liquid meals such as Up & Go, Ensure® or Sustagen® Sport

Pre-Competition Fluids

On event day, make sure you maintain hydration by drinking at least 2 glasses (500ml) of fluid with your pre-event meal, then continue to drink up to start time, especially when it's hot. Sipping on a sports drink is preferable in the hour before the event. Be careful of having too much sugar in the hour before exercise however, as some individuals can suffer from a rebound drop in blood glucose levels (hypoglycaemia) which may affect an athlete's performance and endurance.

4 Hours Before 3 Hours Before 2 Hours Before 1 Hour Before Race Time



Aim to have your main pre-race meal 3-4 hours before. This can include carbohydrate with some protein and a little fat. Stick mainly to carbohydrates with less protein and fat as you get closer to the start.

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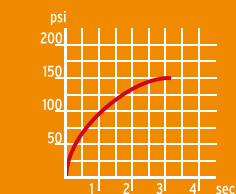


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DURING-COMPETITION NUTRITION

There are several nutrition goals to keep in mind when you're competing in your next event:

- prevent dehydration
- prevent depletion of glycogen/energy stores
- maintain blood glucose
- maintain electrolyte balance
- prevent stomach upsets

The key strategy for achieving these goals is to practice your nutrition plan in training and make sure you write it down.

Fluid Intake

Sufficient fluid intake is going to be your first priority, especially when the hotter months arrive. Fluid needs can be calculated prior to race day by weighing yourself before and after training on an accurate set of scales. Weighing yourself in light clothing with sweat dried off will also make the results more accurate. A 1kg loss in weight means you have lost about 1 litre in sweat, provided that you have not consumed any fluid during the training session (if you did drink, add the amount consumed to the weight loss). Aim to replace at least 80% of your fluid losses which will be around 500 – 1,000ml every hour for most athletes

under standard environmental conditions. To achieve this, start drinking early in competition and continue drinking at regular intervals during the event (150 – 250ml every 15 – 20 minutes is ideal).

Always familiarise yourself in training with any sports drink that you consume during competition. A sports drink with 4-8% (i.e. 40-80g/L or 4-8g/100ml) carbohydrate and 500-700mg/L (20-30 mmol/L) sodium is recommended. Sports drinks with added magnesium may also assist with reducing the severity and frequency of cramps. If you're looking for that boost towards the end of an endurance event as well, having a fluid with both glucose and caffeine is a useful strategy. I can personally verify that fluids such as Coca Cola (or what I call the black doctor!) work extremely well for getting you across the line at the end of a long ride! Refer to the previous article on supplements for more information on caffeine.

Carbohydrate Intake

For events of less than 60 minutes in duration, there is no benefit from consuming carbohydrate (either from food or fluids) for the exercising muscle. However, a recent study indicates that rinsing the mouth with a

carbohydrate solution results in a significant improvement in time-trial performance lasting 1 hour, suggesting that carbohydrate intake can improve high-intensity performance through a central drive or motivation effect².

When competing in events lasting between 90 minutes and 5 hours, ingesting around 30 - 60g of carbohydrate from food or fluids will assist with supporting moderate to high-intensity riding and delaying fatigue. As outlined in the previous article on supplements, either whole foods or formulated products like sports bars and gels are suitable, depending on your taste preferences and budget.

For the hard-core ultra-endurance athlete out there who is planning to race continuously for 5 hours or more, 0.8 - 1.0g of carbohydrate per kg of body weight per hour is required to prevent muscular fatigue from the depletion of muscle and liver glycogen stores and mental fatigue from lowering of blood glucose. There are many food options for obtaining sufficient carbohydrate intake during a long-distance event (potatoes, soup, biscuits, muffins), however make sure that whatever you choose has been well rehearsed during training and provides low amounts of fat.

Protein Intake

Combining protein together with car-

bohydrate during 6 hours of exhaustive endurance exercise has recently been shown to improve protein balance (increasing protein synthesis and decreasing breakdown) in well trained males³. This means that if you use supplements like protein bars and protein shakes or have some lean protein foods such as low-fat yoghurt and low fat chocolate milk during an ultra-endurance event, you could be fast tracking your recovery and possibly reducing excessive muscle soreness. A suitable protein intake would be 0.20 – 0.25g protein per kg of body weight per hour.

Carbohydrate Intake

Here are two real life examples of food & fluid intake that will meet the needs of a 70kg individual for every hour of competition during a 24 hour event.

Option 1

1 x 750ml bottle of Gatorade made with 1 scoop powder	32g
1 x PowerBar gel (41g)	27g
Total	59g of CHO per hour

Option 2

1 x bottle or 750ml of water	0g
1/2 a pack (75g) of Parkers Pretzels	29g
1 x medium banana	20g
1 x Uncle Toby's muesli bar	20g
Total	69g of CHO per hour



The right combination of protein and carbohydrate can improve performance and recovery in endurance events.



Gel sachets are an easy to consume mid-race source of carbohydrates.

POST-COMPETITION NUTRITION

Once the event has finished, most of us either don't feel like eating, are too fatigued to eat anything, don't have suitable food available or are distracted by post-race celebrations if you've had a good day. Following competition, it is essential to have a fast recovery so your body is prepared for the next ride or event. The first 2 hours after finishing

are the most critical as this is when your muscles are most receptive to any carbohydrate and protein you eat. Restoring fluid and electrolyte balance is also an important goal.

Restoring Fluid & Electrolyte Balance

• Even the best nutrition plans result in some degree of dehydration. Start drinking as soon as possible after exercise and aim to replace about 1.5 times the estimated fluid loss, as fluid loss continues during recovery.

• Sports drinks provide optimal rehydration as the sodium encourages greater fluid retention in addition to carbohydrates for recovery.

• Avoid caffeine and alcohol until your refuelling goals have been met—these drinks increase fluid loss and make it harder to rehydrate.

Replenishing Carbs & Preventing Muscle Breakdown

• Try to eat 1-2g of carbohydrate per kg of body weight in the 2 hours after prolonged exercise. This will equate to around 50-160g of carbohydrate for most people.

• Moderate to high glycaemic index (GI) foods promote greater carbohydrate storage than low GI foods such as fruit. Recovery meals can have fruit but it should not be the only source of carbohydrate.

• Including protein with essential amino acids in the recovery meal (such as whey or dairy products) may also improve protein balance³ and reduce muscle soreness⁴. The ideal carbohydrate to protein ratio in recovery is 2:1 (2g of carbohydrate for every 1g of protein).

Post-Competition Snack Ideas

- Sports drinks
- Whey protein shake with low-fat milk or soy milk
- Banana sandwich

- Fresh fruit, canned fruit with low-fat yoghurt
- Sweet muffins
- Breakfast bar, muesli bar
- Sports bar (Aussie Bodies Protein FX)
- Smoothie using low-fat milk, low-fat yoghurt and banana/mango/berries
- Soy smoothie using low-fat soy beverage and blended fruit

With this information at hand, you'll now be ready to maximise your enjoyment and performance on the race circuit this summer. For more specialised nutrition advice about a particular event or development of a race day nutrition plan, contact NutriFit.

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services to help you eat for health, fitness and vitality. NutriFit Pty Ltd PO Box 500 Malvern, VIC 3144.

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Yoghurt is an excellent post event recovery food.



Richie airs out with Easton



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