**Nutrition**

**Ask The Experts: Carbo-Loading and Race-Day Nutrition with Nick Morgan**

**Q. How early should I carbo-load? How much energy can the body actually store?**
**A.** You can eat and store enough carbohydrate to fuel your marathon during the 24 hours before your race. You could start earlier but it's not essential (assuming you aren't starving the body either). The importance of getting it right is crucial though. We studied 257 runners who took part in last year's London Marathon - those that got it right (i.e. met the recommendations of 7g carbohydrate per kg of body weight) ran at a faster pace during the marathon than those who didn't.

In addition, approximately 70% of people said they carbo-loaded before the race, but only 11% actually got it right. Many people make the mistake of eating one massive meal, only to feel full, lethargic and uncomfortable after. Sensible carbo-loading is about breakfast, lunch and dinner (and snacks), not just the evening meal.

Try to add a little extra carbohydrate to your meals throughout the day and add in a few extra carbohydrate-based snacks. For example:

* **Breakfast** (121 g) - a small bowl of porridge (31g), two slices of toast (32g), a banana (32g), and a small glass of orange juice (26 g)
* **Lunch** (97g) - a jacket potato and baked beans (65g) and a banana (32g)
* **Dinner** (110g) - a small pasta starter (27g), chicken curry and rice (60g), and yoghurt (23g).

When you feel most comfortable (normally between meals) also add in raisins (22g per handful), fruit (approximately 30g depending on the fruit) or cereal bars (32g).

**Q. I tried to practice carbo-loading a couple of days before a recent half-marathon but my fat intake ended up being quite high and I ate far too many calories in total. How can I carbo-load sensibly?**

Here are some key tips:

1. Don't just have one big meal in the evening (see above).
2. Look for variety in your food choice (a typical dinner, for example, could include a starter, main and dessert instead of just one huge bowl of pasta).
3. Try to prepare what you're going to eat in advance (that way you'll minimise taking on additional fat).
4. Avoid creamy sauces.
5. Remember that fruit and vegetable are also good carbohydrate sources.

**Q. I'm aiming for a PB and don't want to be carrying unnecessary extra baggage - should I attempt to shed a few pounds over these last few weeks, or could this prove counter-productive this close to the big day?**
**A.** The simple answer to yes, you can try to lose a few pounds at this stage but only if you manage to stay properly fuelled too. Don't be tempted to overdo it - you'll only become tired, lethargic and fatigued if you're not used to it. And remember: losing weight doesn't necessarily translate to running faster immediately.

**Q. Does it matter where the carbohydrates we eat come from?**

**A.** Healthy wholefood options are always your best bet - they have a high nutritional value and will give you a good blend of fast- and slow-release carbohydrates. Ideally, try to consume slow-release carbohydrates with your main meals and fast-release carbohydrates immediately before, during or after you exercise. If you find yourself struggling to eat enough, then high-carbohydrate sports drinks or meal replacement supplements are alternatives.

**Q. A colleague said to avoid carbohydrate for the first two days of the week before the marathon so the body craves carbs when you start to carbo-load. Is this sensible?**

**A.** This was the traditional 'supercompensation' approach - that is, removing carbohydrate from your body before loading it up again (on the basis the levels stored in your muscles would be higher). Current research suggests that carbo-loading 24 hours before your race will leave you with sufficient energy stores so given that this is a strategy you wouldn't be used to, I wouldn't recommend you try it at this stage.

**Q. Is there any mileage in building up your sodium levels as well as your carbohydrate levels?**

**A.** Given all the talk and logic about sodium requirements on the day, you're right to ask whether this is worthwhile. However, I'm not aware of any science to suggest this is something you need to do and a high, acute intake of sodium over a short timeframe may not be tolerated well by the body. The key is to have some sodium during the race (for example, in the sports drinks on course). If you have a history of cramp or sweat heavily, then electrolyte gels may also be a sensible addition.

**Q. I'm feeling overwhelmed by all the nutrition advice out there. Would you be able to outline a very basic fuelling plan using carb gels, water and sports drinks?**

**A.** Think in one-hour blocks - every hour try to consume 30-60g of carbohydrate and 200-400ml of fluid. So, for example, every hour drink 330ml sports drink and either a gel or a packet of Jelly Beans. These will provide you with about 50g of carbohydrate. Drink water throughout too - little and often.

**Q. I can't stomach sports drinks so I'm planning on just using gels with water. Will I be OK with this strategy?**

**A.** Not being able to stomach sports drinks is not uncommon so don't worry, there are other strategies you can follow. Make sure you drink regularly (little and often) and use the water stations that are available. Relying on gels alone is fine, assuming you can stomach four to six of them over the course of the race. We recommend 30 - 60g of carbohydrate per hour - this equates to at least one (possibly two) gels for every hour you run. Given that you won't be taking on any electrolyte drink, you may also want to check your gels contain sodium - this will help replace the salt you'll lose through sweat.

**Q. I've discovered rather late that the gels I'm taking are upsetting my stomach. Is it too late to change my nutrition strategy?**

**A.** It's not too late, although you probably don't have many long runs left to try anything new. To start, I would look at other types of gels or suggest reducing your gel intake. You could also carry another source of energy with you, such as Jelly Beans or an energy bar. Also, the sports drink on course might seem too sweet but don't feel like you have to drink it all in one go. Practise running with a bottle so your consumption is slow and controlled.

**Q. What's the last point in the marathon at which you should take a) a gel; b) sport's drink and c) water?**

**A.** There are no real simple answers to this, but in a nutshell:

(a) **Gels** - if you really want to use the carbohydrate it contains, I would suggest taking your last gel with 25 minutes to go.
(b) **Sports drink** - up until the end if you are thirsty or, for performance benefits, then 20 minutes before you finish.
(c) **Water** - again, up until the end if you are thirsty or, for performance, 20 to 30 minutes before the end.

**Q. What is the best nutritional advice after the race?**

**A.** The race is no dfferent to any other hard run. Drink some fluid to replace what you've lost as sweat, but do it slowly over the first few hours. Eat something quickly to fill the gap until you can have a full meal, ideally a simple carbohydrate source and some protein (eg a chicken sandwich or a ready-made recovery bar/drink).

**Q. What advice can you give us on post-race refuelling? I've heard that you should aim for a 4:1 carb-protein ratio and that there is an optimal window for ensuring maximum glycogen replenishment.**

**A.** Here are some top tips:

1. Carbohydrate - about 1.2g per kg of body weight (i.e. roughly 70g)
2. Protein - about 10-20g is enough (so that ratio is not far off)

Good options include a simple recovery bar or drink, a milkshake or a tuna/chicken sandwich. So far as timing is concerned, there isn't a shut-door scenario but sooner is more advantageous. Realistically you have a few hours as opposed to minutes.