

Nutrition for Cycling, or “Eat to Win”

Talk given by Rachel McKay to the Verulam Cycle Club, Monday 26th March 2007.

Nutrition for cycling covers all food and drink both on the bike for both racing and training as well as off the bike for pre-race, post race and day-to-day eating. In other words, if you want to “win” (which means doing the best you possibly can in your chosen events) then you must look at everything you eat and drink all the time.

The science behind nutrition is often presented as very complicated but basically involves the following simple principles. For food:

- 1) The type of fuel your body uses depends on the length of time you’re cycling. Carbohydrate is burned from 6 seconds to as long as you have sugar in reserve. If you don’t replace your blood sugar then you “bonk” after two hours. When you “bonk” you switch to fat-burning exclusively.
- 2) You start burning fats anyway roughly 40-60 minutes into a ride, alongside carbohydrates. This again continues for as long as you’ve got fat to burn.
- 3) In extreme cases you will start to burn protein but this is only when you are starved, e.g. soldiers fighting without food for a fortnight.

For drink, you need to replace electrolytes (posh word for salts) after one hour of continuous riding and drink at least one pint of water.

Pre-Race

Your main meal for the event should be eaten 12 hours beforehand so, for a morning event this means the night before. A rice or pasta meal low in fat, protein and fibre is ideal. On the day of your race, eat a small light meal 2-5 hours before, e.g. toast and jam or a bowl of cornflakes. However don’t eat anything in the two hours before your event as this gives you “sugar low”.

During the Race

You can eat a light snack (energy bar, banana, marshmallows, jelly babies or carbohydrate-rich drink) in the 30 minutes while you’re warming up but in some people this still produces a “sugar low” and others it brings on nausea. For events lasting up to four hours / 100 miles then some riders can survive just on energy drinks while others need solid food, e.g. bananas, energy bars. Again, experiment. For longer events (12 hour time trials, Audaxes/Sportives) then you need more substantial meals. Common favourites are rice pudding, peanut butter & jam sandwiches, baked beans on toast. The emphasis here is carbohydrate, keeping fats and protein to a minimum. For drink, reckon on one pint of fluid per hour and for events over 30 minutes this should be an “isotonic”, carbohydrate-based drink. Make up 40 grams of carbohydrate at an 8% concentration with a pinch of salt. Sports drinks like SiS come in pre-measured sachets otherwise I find two dessert spoons of glucose powder with a pinch of salt just as good and a lot cheaper although tests have proved that Maltodextrin (corn/maize starch) is slightly better.

Towards the end of a race lasting one hour or more you can benefit from an energy gel or flat coca cola as these contain caffeine as well as sugar.

Post-Race

In the 30 minutes after your race, your body is in what's known as a "carb window". This means that it can absorb up to 80 grams of carbohydrate as opposed to the usual 40. Your body is also more receptive to protein and it's been proven that drinking animal milk (cow, goat, etc.) starts repairing your muscles straight away, thus reducing recovery time. Also, if you are taking Creatine as a supplement then again absorption is highest immediately post-exercise. Finally it's vital that you rehydrate properly. If like me you find it hard to eat immediately after a race or hard training then I have my own recovery milk shake formula (below). This gives you everything you need and keeps you going for the first hour after a race. After this your next meal should be a tuna pasta salad, chicken sandwich, or equivalent. You should also drink 1 pint of water every hour until you pass a reasonable volume of clear or pale yellow urine.

Daily Eating

A good well balanced diet should give you enough carbohydrate, fat, protein, vitamins and minerals without the need for supplements. Divide your dinner plate into thirds, one each for carbohydrate, protein and fruit & vegetables. Limit yourself to 10% fat per meal. Stick to unrefined and whole grain starches (rice, pasta, potatoes, bread); avoid simple sugars and refined foods. Stick to fish (both oily and non-oily) and poultry and avoid too much fatty red meat. Steam, microwave or stir-fry vegetables to retain nutrients. Think "traffic lights" to get a good nutrient balance on your plate.

Drink 1.5-2 litres of plain water a day and avoid too many cups of tea and coffee.

Supplements

A good quality multi-vitamin and mineral ensures that you are getting all the micro-nutrients you need, especially when training hard or racing. Well-regarded brands include Pharmaton, Solgar and Higher Nature. If your urine is bright orange or yellow after taking a multi-vit then you're not absorbing it very well.

Cyclists, with the exception of track sprinters (and in other rare circumstances), do not need to take protein supplements. You get enough from your food – roughly 1.5 grams per kg bodyweight.

Creatine can help, especially if your body does not produce enough of its own naturally. There is a specific regime you follow of loading, maintenance and rest covering a cycle of eight weeks.

Carbohydrate loading can help especially for events lasting more than two hours with prolonged high intensity. Simply follow a normal taper process: reduce the volume of training by up to 90% while retaining the intensity two to three days before the event. At the same time, eat a carbohydrate-rich diet (8-10 grams per kg bodyweight).

Recipes

Isotonic Drink

To make a standard (500ml) bottle:

40 grams (2 dessert spoons) glucose powder (supermarkets or Holland & Barrett) or maltodextrin powder (Maxijoule, chemists)

Pinch of salt

1 pint water

Recovery Milk Shake

Mix the ingredients dry and store in airtight containers:

1 500g packet Ready Brek

1 300g tub Tropicana egg white powder (B-Healthy, Quadrant, Marshalswick or Internet)

1 200g tub goat's milk powder (Holland & Barrett)

1 1lb packet glucose powder (supermarkets or Holland & Barrett)

1 teaspoon salt

1 serving:

4-6 dessert spoons mix

1 pint water and/or (soya) milk

Left over banana from ride (optional)

Whisk thoroughly in a blender

Creatine

1 1kg tub Creatine Monohydrate powder

Loading phase:

1 dessert spoon Creatine taken with 1 pint of water, 5 times daily, 7 days

Maintenance phase:

1 dessert spoon Creatine taken with 1 pint of water, once daily, 4-6 weeks

Rest phase:

No Creatine for 2 weeks

Drink plenty of water when taking Creatine, at least 2 litres per day.

Do not take with fruit juice.

Best taken with protein (e.g. my recovery milk shake) immediately after exercise.

When It All Goes Wrong

Hunger Knock / Bonk

You have enough sugar in your blood stream and liver to last for two hours if you take no extra carbohydrate. When it's all used up, you switch to "fat burning" and you will be unable to exercise at anything above 50% VO₂max (equivalent to Zone 1 or "active recovery" rate). However, as soon as you eat or drink a sugar-rich snack (e.g. Mars Bar, carbohydrate drink, Kendal Mint Cake, Coca Cola) your body recovers in a minute or two due to a brain response triggered by the sugar.

Dehydration

If you lose 2% of your bodyweight in fluid (3lb for a 10st athlete) your performance will drop by 10%-20%. A loss of 4% may cause nausea, vomiting and diarrhoea. At 5% performance drops by 30% and 8% causes dizziness, laboured breathing, weakness and confusion. At this point immediate medical intervention and possibly hospitalisation is required.

Rachel McKay, ABCC Coach, 27th March 2007

Word count: 1,311