

The Coaches Training Tips

Nutrition, Supplements, Sport Food & Snake Oil Potions

By Ian Bowman

During the recent National Road Championships I attended a coaching seminar. These seminars give coaches information on ways to improve their athletes' performance. This time we looked at Supplements and Nutrition. The following is based on information we received from the AIS and Cycling Australia at the seminar.

Supplements

A large number of athletes have a love affair with supplements. There are stories of junior cyclists being given more than ten different supplements every day as well as both juniors and seniors consuming quantities of sodium bicarbonate and No Doz. Supplement usage is becoming so widespread amongst juniors that Cycling Australia is considering releasing a position paper that essentially bans supplements for junior cyclists (except for 'sports foods such as sports drinks, bars and gels).

The issue with supplements is that while some produce a small improvement in some athletes, particularly elite athletes in some sports, others provide no benefit, may actually inhibit performance or provide a high risk of testing positive to a doping test. In addition, supplements are expensive. A much greater benefit can be gained from proper nutrition, recovery and training.

To help manage the taking of supplements by AIS athletes a program has been implemented which identifies supplements that:

(Group A)

- Provide a useful and timely source of energy and nutrients in the athlete's diet, or
- Have been shown in scientific trials to provide a performance benefit, when used according to a specific protocol in a specific situation in sport

(Group B)

- Remain of interest to the AIS because of the background interest of our athletes and coaches
- Are too new to have received adequate scientific attention, or have preliminary data which hints at possible benefits

(Group C)

- Have not been proven to enhance sports performance or health. In some cases, these supplements have been shown to impair sports performance or health

(Group D)

- Are directly banned under the 2005 WADA Prohibited List or provide a high risk of producing a positive doping outcome.

The following table shows the AIS Classification System

Supplement Grouping	A	B	C	D
Definition	Supported for use by AIS athletes	Considered for provision to AIS athletes only under a research protocol	Supplements which have no proof of beneficial effects and are therefore not to be provided to official AIS programs	These supplements should not be used by AIS athletes
Examples	sports drink electrolyte replacement supplements liquid meal supplements sports bars sports gels creatine glycerol multivitamins sick pack iron calcium antioxidants bicarbonate glucosamine caffeine	probiotics colostrum echinacea glutamine hydroxy methyl butyrate (HMB) melatonin ribose	branched chain amino acids & other free-from amino acids ginseng garlic cordyceps rhodiola rosea pyruvate gingko biloba inosine coenzyme Q10 cytochrome C carnitine bee pollen gamma-oryzanol & ferulic acid chromium picolinate intravenous vitamin injections oral vitamin B12	androstenedione DHEA 19-norandrostenedione 19-norandrostenediol tribulus terrestris & other herbal testosterone supplements ephedra strychnine

			intravenous iron all network marketing supplements including Neways, Nuskin (IDN), Usana, Mannatech, Herbalife, Juice Plus, Noni Juice	
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Nutrition

Cyclists that want to be competitive should focus on ensuring they get the right fuel. Just like your car, it doesn't matter how much you spend on additives, if you are using substandard petrol your car won't perform. Similarly, supplements provide little or no benefit if you are not eating the correct food to enable performance. In most cases supplements are a waste of money unless you are competing at the very highest level. The only exceptions are sports food.

The key to a healthy diet is to have a balanced intake from all five food groups:

- Breads and cereals – eat most
- Fruit and vegetables – eat most
- Dairy products – eat moderate amounts
- Meat groups (includes eggs, fish & poultry) – eat moderate amounts
- Fats and oils – eat least

For cyclists competing in endurance events, large glycogen (carbohydrate) stores provide the potential to compete at high intensities for longer periods of time. In general, competitive cyclists need to:

- Increase their intake of carbohydrates, water and dietary fibre
- Decrease their intake of fats, salt and alcohol
- Ensure an adequate intake of protein, vitamins and minerals.

The AIS have produced a fact sheet that I recommend for all roadies. It provides specific information on nutrition for road cyclists. The fact sheet can be found at <http://www.ais.org.au/nutrition/documents/FuelRdCycle.pdf>

Hydration

It is not uncommon for cyclists to lose up to two litres of fluid per hour. This equates to two kilograms of body weight. A two percent loss in body weight through dehydration will impair performance, a three percent loss will seriously impair performance¹.

Cycling Australia guidelines state that you should consume:

- Generous amounts of fluid two to four hours before the race with at least 500ml within the last hour before the event
- 250ml every 15-20 minutes during exercise
- 500ml to one litre during the first hour after exercise

Sports drinks are an important part of any exercise hydration regime. According to the AIS, fluids consumed during exercise should meet the following criteria:

- Have a palatable flavour to encourage greater fluid intake
- Contain 6-8% carbohydrate
- Contain electrolytes such as sodium and potassium
- Be non-carbonated

Bottom Line

For most of us who are not competing in the Olympics or the Pro Tour, there is little to be gained from taking supplements other than sports foods. Many supplements provide no performance benefit and may inhibit your performance. They may even get you banned for taking banned substances. A much greater improvement can be achieved from following proper nutrition regime tailored for cyclists. The only exception is if you are prescribed a supplement by your doctor. However, as with any supplement you need to ensure that you are not taking a banned substance without taking appropriate action.

For more information on nutrition and supplements check out the AIS Nutrition web site at <http://www.ais.org.au/nutrition/>. For information on drugs and medications go to www.asda.org.au

If anyone has any suggestions for this column or wants to discuss their training just send me an email or give me a call on 0402 446 947.

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¹ Cycling Australia, *Level 1 Coaching Manual*, ed. K Tabotta, Australian Cycling Federation, Homebush, 1996.