Nutritional Timing

Photo: John Hardwick

WHAT YOU EAT IS OBVIOUSLY VITAL TO YOUR ENERGY LEVELS BUT WHEN YOU EAT IS OF EVEN GREATER IMPORTANCE. NICK KIMBER LOOKS AT HOW YOU CAN GET THE MOST OUT OF THE FOOD THAT YOU EAT.

Another summer is upon us and now that the daylight hours are getting longer, hopefully your riding time is also increasing. While the time you spend on the trials is certainly a key factor in gaining fitness and improving your skills, timing is also critical when it comes to nutrition and your overall health, energy levels and your body composition. In fact, when we consider the three most important aspects of any nutrition programme, timing is number one, followed by the type and the amount of food and fluid we consume.

In order to maximise the effectiveness of each training session, it helps to be aware that some foods are best consumed at certain times in the day and are not so good at other times. With this in mind, you can plan each 'exercise day' according to three distinct phases and then consistently follow this plan. The three phases are:

1. The Workout Phase – immediately before and during exercise.
2. The Acute Recovery Phase – immediately post-exercise and early recovery (up to 3 hours after exercise).
3. The Maintenance Phase – late recovery (3 hours onwards after exercise).

The Workout Phase

The workout phase occurs when the exercising muscles are demanding the greatest amount of energy. Appropriate nutrition during this phase should:

- Increase nutrient delivery to the working muscles.
- Reduce muscle protein breakdown and depletion of energy reserves within the muscle.
- Prevent dehydration and maintain electrolyte balance.

An important point to understand about the workout phase is that ingesting carbohydrate immediately prior to endurance exercise offers no benefit to your exercise performance. In other words, if you're an early morning bike rider, having a snack or 'mini-breakfast' directly before the ride offers no benefit to your subsequent training session, even if you're planning an epic 4-5 hour endurance ride! Thus, the key to fuelling your body during the workout phase is what you eat and drink during the ride, so having food and drink readily available on your ride is the key.

Your body's nutrient requirements (what to eat and how much) have already been discussed in MBA Nov/Dec/Jan 06/07, so we won't go over it again in this article. Some examples of what to consume during the workout phase are:

- Sports drink (carbohydrates and electrolytes)
- Breakfast bars, muesli bars or bananas
- Sports bars or carbohydrate gels

The Acute Recovery Phase

The acute recovery phase occurs immediately after exercise and lasts for up to 3 hours. During this phase, your muscles are primed for re-building protein filaments and replenishing depleted energy stores. Muscle breakdown can also occur in this phase if the right nutritional choices are not made. Appropriate nutrition during this phase should:

- Restore the fluid and electrolyte balance.
- Replenish depleted energy stores within the muscle.
- Provide nutrients to help repair muscle damage and allow for muscle growth.
- Ensure a fast recovery so your body is prepared for the next exercise session or event.

After finishing a moderate intensity ride lasting around 60 minutes, your first priority is to consume at least 250ml of sports drink (such as Endura) to rapidly replenish your carbohydrate stores, blood volume and electrolytes. More sports drink will need to be consumed if you've had a high sweat loss due to hot weather or from spending over 90 minutes in the saddle at a moderate to high intensity. Immediately following the sports drink you should also consume a fast acting liquid protein/carbohydrate drink (refer to figure 1). This drink needs to be more favourable towards carbohydrate to ensure rapid carbohydrate replenishment and optimal muscle recovery—ideally a 1:2 ratio of pro-

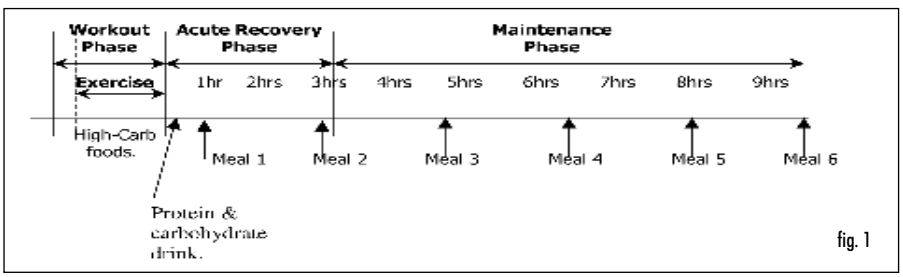

fig. 1

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tein/carbohydrate. You can choose to make up your own drink using whey protein and an energy drink like Sustagen or use something like Sanitarium Up & Go for convenience. Be sure that both of these drinks are ready to go as they should be consumed no later than 15 minutes after finishing your ride—remember that the timing is critical.

Within the first hour of the acute recovery phase, you should plan to have a meal that has sufficient high carbohydrate foods such as breakfast cereal, oats, bread, rice, pasta, noodles and potatoes to further boost replenishment muscle carbohydrate stores. The amount of carbohydrate you consume is dependent on the duration and intensity of the exercise. In general, try to eat 1-2g of carbohydrate per kilogram of body weight in the 2 hours, which will equate to around 50-160g of carbohydrate for most people. Including sufficient protein is also important to further enhance muscle recovery and reduce muscle soreness. This can include foods such as low-fat yoghurt, tuna or salmon, egg, lean red meat or chicken and low-fat cheese. Foods high in omega-3 fatty acids (seafood) and phytochemicals (fruits and vegetables) may also help to reduce skeletal muscle and soft tissue inflammation when consumed in the acute recovery phase. Berries are among the most powerful antioxidants available due to the high level of polyphenol compounds called 'anthocyanins'—the Acai berry from the Amazon rain forest is believed to be the most potent.

The second meal in the acute recovery phase should be around 2.5 to 3 hours post-exercise. Foods should also be low in fat with lean protein and smaller quantities of high carbohydrate foods to ensure glycogen replenishment is achieved and fat storage is minimal. Avoid alcohol until after the acute recovery phase as alcohol increases blood flow, swelling and bleeding to injured areas which prolongs recovery and may worsen the injury.

The Maintenance Phase

The maintenance phase begins about 3 hours after the workout phase and lasts until the next training session, which may be later

Having a protein and carbohydrate drink within 15 minutes after exercise will assist with a speedy recovery.

Foods that are high in easy to digest carbohydrate will keep you pedalling hard during your ride and you also need to stay hydrated.

Examples of What to Eat

	Early Morning Ride (Before Breakfast)	Evening Ride (Before Dinner)
Acute Recovery Phase	Consume sufficient sports drink to rehydrate and an energy drink with a 1:2 Protein:Carbohydrate mix.	
Acute Recovery Meal 1	**Breakfast** • Rolled oats or breakfast cereal (Sustain, Weet-Bix) with low-fat plain yoghurt, fresh or canned fruit and LSA (Linseed, Sunflower and Almond). • Toast with poached egg or peanut butter with fruit salad, low-fat plain yoghurt and LSA. • Smoothie made with low-fat dairy milk, whey protein, low-fat fruit yoghurt & fresh or canned fruit.	**Dinner** • Pasta, noodle or rice dish with lean meat (chicken, tuna, salmon, beef) or tofu and vegetables. • Roast meat with vegetables (potatoes, pumpkin, broccoli, cabbage, peas and corn).
Acute Recovery Meal 2	**Mid-morning Snack** • Fruit salad with low-fat plain yoghurt and LSA. • Low-fat fruit flavoured yoghurt with small handful of dried fruit and nuts. • Multigrain toast with peanut butter and banana. • Be Natural Bar (Nut Delight) and piece of fruit.	**Evening Snack** • Protein shake made with low-fat dairy milk, whey protein and fruit. • Fruit with low-fat plain yoghurt.
Maintenance Phase	**Lunch** • Wrap with lean meat (chicken, tuna, salmon, ham, beef) with vegetables (spinach, carrot, capsicum, cucumber, beetroot, tomato) and piece of fruit. • Green salad with low-fat cheese (cheddar or mozzarella), lean meat and piece of fruit. • Vegetable soup with tofu or chickpeas/lentils and piece of fruit.	**Breakfast** • Omelet made with 1 whole egg, egg whites and vegetables (spinach, mushroom and grated zucchini). • Fruit salad with low-fat plain yoghurt and LSA (Linseed, Sunflower and Almond) and multigrain toast with peanut butter. • Smoothie made with low-fat dairy milk, whey protein, low-fat fruit yoghurt and fresh or canned fruit.
Maintenance Phase	**Dinner** • Lean meat (chicken, tuna, salmon, beef) or tofu and vegetables with couscous.	**Lunch** • Wrap with lean meat (chicken, tuna, salmon, ham, beef) with vegetables (spinach, carrot, capsicum, cucumber, beetroot, tomato). • Green salad with low-fat cheese (cheddar or mozzarella), lean meat and piece of fruit. • Vegetable soup with tofu or chickpeas/lentils and piece of fruit.

Three hours or more post exercise is your 'maintenance phase'. Try to consume lean meats, vegies and a little carbohydrate.

the same day or the following day. During this phase, food intake is characterised by consuming lean, complete protein together with carbohydrate that is predominately from fruits and vegetables. Reducing the intake of high carbohydrate foods during the maintenance phase will minimise the potential for additional fat storage and thus help to reduce body fat stores or maintain an optimal ratio of fat and muscle tissue. However, additional high carbohydrate foods can be added if the duration and intensity of the previous training session was sufficient to really deplete your energy stores. Fat intake should also provide an equal ratio of saturated, monounsaturated and polyunsaturated fats. Good sources of the healthy unsaturated fats include avocado, nuts and seeds, seafood (tuna and salmon are ideal), olive and canola oil and acai berries.

Making it Happen

Now that you have the three phases of exercise nutrition at your disposal, the key to making them work is to plan each day in advance. Firstly, establish when you are going to ride and then prepare your food intake accordingly. Having the right meals and snack foods with you at all times means you're almost guaranteed to be on track during each phase unless you lose your food or forget to eat it!

Following the acute recovery and maintenance phases will help you to get the most out of your ride time and ensure that you recover for your next outing. A well rounded diet will also maintain your energy levels and keep you fit and healthy as well.

Article by Dr Nick Kimber

Dr. Nick Kimber is a competitive mountain biker with a PhD in Exercise Metabolism and accreditation in exercise physiology. He is the director of NutriFit, a nutrition consultancy company offering a range of dietary services to help you eat for health, fitness and vitality. Nick can be contacted by e-mail: nick@nutrifit.com.au