

Professor Robert Thomas's nutritional tips for cyclist

As a professor of Sports and Nutrition, I am in a fortunate position to keep up to date on the latest, evidence based, nutritional and training tips to improve performance. Although these tips vary in intensity, they are relevant for elite athletes, club cyclists and weekend warriors who just want to improve their general fitness. Hopefully this advice will, not only, help you feel faster and stronger but make your ride more enjoyable and comfortable.

Before we dive into the best nutritional tips to improve your performance, it must be emphasised that by motivating more people to become physically active, cycling should be applauded. It is firmly established that men and women who exercise vigorously for more than 2-3 hours a week have a lower risk of obesity, hypertension, raised cholesterol, type two diabetes, hence gaining protection from the biggest killers, including cancer, heart disease, dementia, and stroke. An evidence review published in the [British Journal of Sports Medicine](#) confirmed that cycling outdoors helps maintain vitamin D levels and circadian rhythm, which boosts mood, enhances sleep patterns, lowers daytime fatigue, and improves motivation at home and work. Exercise improves skin tone, cognitive activity, and slows our aging ticking clock embedded deep in our DNA. Many cyclists, therefore, justifiably argue that they are not only fitter and healthier but also more attractive, intelligent, and biologically younger than their sedentary counterparts.

That said, increasing the amount of training can put a strain on the body unless it is prepared with adequate nutrition, not just on race days but across the week. Here are the main elements to focus on:

Hydration is a critical factor before, during and after exercise. It helps maintain an optimal body temperature by replacing the fluids lost through sweat. Dehydration can lead to heat-related illnesses such as heat exhaustion or heat stroke. It can lead to muscle cramps, kidney damage, fatigue, decreased endurance and a higher risk of muscle or joint strains. Proper hydration supports electrolyte balance, efficient nutrient transport, aiding in energy production and overall performance.

Energy (carbohydrates and fats): The further and faster you go the more fuel you need - pretty basic really. The best way to "load up" before a ride is to make sure your liver stores of glycogen (the storage form of glucose) are full. So, the day before make sure you eat more food than you need - pasta, bread or pretty but anything you enjoy. This glycogen can then be easily converted to sugar when needed during the ride. If you don't do this, your body will look for another energy sources such as protein in your muscles - not good for performance. On the morning of the ride load up with slow release energy sources such as complex carbohydrates including grain sourdough bread, nuts, pumpkin seeds, chia seeds, whole grains (preferably soaked overnight), eggs with lashings of healthy fats such as olive oil. Try to avoid sugary energy bars during the ride unless you start feeling exhausted. When you start taking them you need to continue every 30 mins as if you stop the high insulin levels you have induced may cause hypoglycaemia. If you have taken them, after the ride eat some more nuts, bread and seeds as soon as possible to avoid crashing again.

Protein consumed in adequate amounts helps to promote muscle synthesis and repair facilitating quicker recovery after intense workouts, reducing the risk of muscle soreness and fatigue. Fish, seafood, eggs and meat are obvious sources of protein but plants alone can also ensure you get a wide range of essential amino acids (The building blocks for proteins). Protein rich plants include beans, chickpeas, lentils and peas; almonds, peanuts, walnuts, chia, flax and sunflower seeds; whole grains, quinoa and brown rice. There's not a lot of evidence that taking protein immediately after training makes any difference over increasing the amount and variety of protein rich foods throughout the week.

Essential minerals: Modern intensive farming, over cleaning and processing are depleting many minerals such as zinc, magnesium, selenium and iodine from the foods on the shelves. Additional sweating and the increased metabolism needed for exercise can further increase requirements for the body. Minerals are essential for the formation of protein, bone and cartilage, production of hormones, immune factors and anti-oxidant enzymes which protect from oxidative stress which are a by-product of energy production. Foods rich in essential minerals include clams, mussels and edible seaweed; cocoa, walnuts, pistachios, Brazil or hazelnuts as well as seeds such as pumpkin, sunflower and unsalted peanuts. There is also good arguments for including a multimineral complex in your daily health routine especially when training. Look for one, such as [Phytomineral](#), which has the complete range of essential minerals, including iodine at levels around 100% RDA and not more.

Nitrate rich foods: Nitrates are found in many plants including beetroot, celery, most berries, spinach and other leafy green vegetables. In the presence of vitamin C and phytochemicals nitrates are converted to nitric oxide (NO). Nitric oxide relaxes muscles around arteries, improving blood flow to organs such as the heart and muscles, reducing blood pressure, improving energy levels, [sports performance](#) and mental agility.

Phytochemical rich foods are an essential addition to every exercise programme whatever the fitness level. A [recent study](#) has highlight how they influence multiple important biochemical pathways that support the ability to train stronger for longer. Higher intake improves safety, comfort and recovery whilst exercising, which in turn can improve motivation, enjoyment, enhance the health benefits of exercise and ultimately performance. They help mop up by-products of energy production called free radicals by supporting anti-oxidant enzymes. Too many free radicals in our cells will damage our vital DNA, so exercising without adequate phytochemical intake can do more harm than good. They also have other [exercise supporting properties](#) including:

- Protecting joints and tendons
- Reducing delayed-onset muscle symptoms and muscle damage
- Improving muscle and tissue oxygenation
- Act as prebiotics which improves gut health
- Helps circadian rhythm, improves sleep and post exercise fatigue
- Elevating mood and motivation to exercise
- Reducing viral colds and flu which disrupt training

Asian and Mediterranean diets are typically abundant in phytochemical-rich fruits, mushrooms, vegetables, salads, herbs, spices, teas, nuts, berries, seeds and legumes. Typical

western diets, on the other hand, are often deficient in phytochemicals, meaning we need to eat a lot more of them, preferably with every meal of the day. There are many [healthy dishes](#) which involve tasty phytochemical rich foods made from readily available, low cost ingredients. In the busy world we live in, it's often difficult to prepare fresh healthy meals on a daily basis. A well-made Phytochemical rich supplement, for some people, is a convenient way to increase phytochemical intake. They can contain foods which are not commonly eaten in a typical UK diet such as turmeric, ginger and cranberries. The vast majority, however, have not been evaluated for safety and effectiveness in robust medical trials. There are some exceptions, such as the [Yourphyto](#) which was developed by the scientific committee of the latest [UK national nutritional intervention study](#) which is evaluating strength, body composition and exercise levels.

Avoid Vitamin A and E supplements: Regular vitamin A and E supplements, unless correcting a known deficiency, should be avoided. Unlike natural [phytochemicals](#) which promote a natural adaptive increase in anti-oxidant enzymes when needed, vitamin A and E are direct anti-oxidants and can actually override this process. Vitamins A & E can also block signals which reduce the anti-oxidant enzyme levels when not needed. As such they cause anti-oxidant enzymes to remain elevated, even when the oxidative stress subsides. Combined with their direct antioxidant properties this can result in a state called anti-oxidative stress. These biological processes explain why [studies](#) have reported that excess intake of vitamin A and E reduces sports performance.

Gut health

The importance of looking after the healthy bacteria in the gut is often overlooked by runners. A healthy gut, [improves performance](#) for several reasons:

- It improves optimal absorption of nutrients, including carbohydrates, proteins, fats, vitamins, and minerals, to support energy production, muscle growth and repair.
- Healthy bacteria help to ferment non-digestible carbohydrates, producing short-chain fatty acids (SCFAs) that can be used as an additional energy source.
- Intense exercise can temporarily suppress immunity, but a healthy gut helps maintain immune balance, reducing the risk of infections. Several [studies](#) have shown that athletes who take lactobacillus probiotics have fewer breaks in their training programmes from colds and flu.
- Poor gut bacteria (dysbiosis) contribute to increased inflammation, potentially leading to issues such as delayed recovery and increased susceptibility to injuries.
- Regular runners often experience bloating, cramping, or diarrhoea. Runners with better gut health are less prone to exercise induced symptoms.

[Strategies to improve gut health](#), include quitting smoking, [lowering alcohol](#) and processed sugar intake; eating healthy probacteria rich foods such as kimchi, kefir and sauerkraut as well as prebiotic high fibre foods such as beans, mushrooms, herbs and vegetables. Nutritional supplements can be a useful way to increase prebiotics and probiotic bacteria in the diet. If considering a probiotic, [studies](#) have shown that blends combining mainly lactobacillus a prebiotic and vitamin D enhance the growth of the healthy strains and help dislodge unhealthy colonies from the gut wall. A good example would be [yourgutplus](#) as it has also been evaluated for safety in clinical studies.

In conclusion, there are multiple reasons why one person becomes an elite cyclist whilst another may experience aches for days after a short ride. Genetic makeup, local facilities, family and peer influences are key, but all of us have the capability to improve our exercise performance by practical changes in our training programme and nutrition.