

# ENDURANCE



When you think endurance you think gels. They're thick, sticky and gooey and have become tri-athletes around the world must have companion. By now you probably realise we are talking about the energy phenomenon that is the carbohydrate gel, or otherwise known as energy gel or sports gel. They are suitable for all activities not just triathlon, the name may be ugly in description but gels are quickly becoming the number one athletic nutritional product. So what makes these sticky packets of carbohydrates so special?

The thing that stands out about gels compared to other nutritional products is their undeniable convenience. Energy gels will provide upwards of 100 calories per use with these calories being roughly made up of complex and simple carb ratio of 4:1 with water being used as the carrier. The importance of drinking water during any exercise activity is a must; however it is of even more importance when consuming energy gels during endurance activities. So now that you're an expert on the finer details of energy gels the final step is how and when to consume them. As an endurance athlete it is essential that you not only enter endurance activities with a well fuelled body but ensure you continually top up muscle glycogen stores to delay the onset of fatigue. A good rule of thumb is to consume 30-60 grams of carbs per hour of exercise. This basically means that you should consume an energy gel every 45 minutes during exercise. It is also a good idea to consume a Gel 15 minutes prior to racing to top up glycogen stores.

Carbohydrate rich gels provide an instant boost of energy in a small and portable packet no bigger than the size of your palm. Gels diminutive size allows them to be tucked into pockets or any other small space you can find on your gear, meaning endurance athletes can consume them on the run. This is an important feature of the gel due to endurance athletes only being able to exercise at peak levels on the body's stored energy levels for a limited time. Once these energy stores are depleted there is a need for extra energy to be supplied to the body. The fact is trying to eat solid carbohydrate rich foods such as pasta and rice while performing intense exercise will more than likely lead to the food coming out the same way it went in. Not to mention shifting blood away from working muscles to the stomach in an attempt to digest solid foods will significantly reduce your performance. Gels provide the best ways around these problems by containing a massive dose of both simple and complex carbohydrates with many gels providing additional nutrients like protein, caffeine, electrolytes and specific amino acids. Sounds like a lot to fit into a small packet but one thing you can be assured is that gels will be absorbed into your blood stream at a very rapid rate.

# MAIN PURPOSE: SUPPORT ENERGY ENDURANCE & RECOVERY

## MAIN INGREDIENT: CARBOHYDRATES

In order to optimise performance in endurance -type events, you need to think about the 3 essential 'windows' or opportunities for supplementing around the event or activity. Look at a nutrition strategy that considers intake before, during and immediately after the event. Quality carbohydrate, good-fats, and protein in the diet are recommended for optimal athletic performance. Research suggests calorie intake should be approximately 350 calories per hour comprised of simple sugars, complex sugars and protein. You can afford to add roughly 50 more calories to this amount when you really start digging deep.

As a result nutrition is categorised as 1 (PRE), 2 (DURING) & 3 (POST).

### PRE-EVENT

Before the event our nutrition strategy is based around food and closer to start supplements that deliver a supply of glucose to our muscles & liver. This 'topping up' of our glycogen stores closer to the event means that we essentially have more petrol in the tank before we start. This is vital because it means that we don't need to break down protein in order to provide fuel over longer distances. PRODUCT: Energy Gel

### DURING-EVENT

This is an often neglected part of the nutrient strategy, probably because we get so focused on things like technique & skill. However we need to acknowledge that this is a vital contributor to performance, so in that respect, in-competition nutrition becomes a defined skill in itself.

There are several objectives of "DURING" supplements including:

- the ongoing delivery of glucose to the working muscles to allow them to continue contracting throughout the event, the provision of all-important electrolytes to promote rehydration & once again, provide an environment where the working muscles can continue to perform optimally throughout. More specifically, this will decrease the likelihood of debilitating symptoms such as cramping, 'heaviness' & 'local' muscle fatigue. PRODUCT: Sports Drink/Gels

### POST EVENT

The focus is on optimising recovery. If we can recover faster, then we are able to train and/or compete again sooner & with a higher quality which provides a distinct advantage. Endurance athletes tend to focus on carbohydrate intake and pay little, if any, attention to protein. As a result, protein deficiency appears often among endurance athletes, with its attendant negative effects on performance and health. Serious endurance athletes do need considerable amounts of protein, far above the normal adult RDA, because maintenance, repair, and growth of lean muscle mass all depend on it, as well as optimum immune system function. Low dietary protein lengthens recovery time, causes muscle weakness, and suppresses the immune system. Chronic protein deficiency will cancel the beneficial effects of your workouts; instead, you will become susceptible to fatigue, lethargy, anaemia, and possibly even more severe disorders. Athletes with over-training syndrome usually have protein deficiency. We recommend a carbs and protein blend post workout to ensure optimal performance.

### POST-EXERCISE

5-10 minutes: products are aimed at providing rapidly absorbed glucose to 'top up' muscle & liver glycogen stores. PRODUCT: Sports Drink/Energy Gels

20 minutes: Protein and carbohydrate formula to repair broken down muscle. PRODUCT: Nitrovol/WPI & Sports Drink/Performance Plant Protein

60 minutes: It is vital to have a quality carbohydrate rich protein rich meal around an hour after the event.

**This 3 phase post workout combination of nutrients will ensure the body is optimally recharged post exercise.**

- We strongly recommend that you get into compression garments as soon as you can so you can back up feeling fresh and fit the next day. PRODUCT: Athletic Longs

## WHAT SHOULD I LOOK FOR IN A GEL?

The nutrients found in energy gels have been scientifically formulated to have specific physiological endurance effects:

1. Carbohydrates: Advanced carbohydrate matrix of complex and simple carbs that act to provide immediate and prolonged released energy allowing a constant supply of energy during periods of sustained exercise.
2. BCAA: Essential amino acids Leucine, Isoleucine, and Valine serve as a critical source of muscle energy as well as nutrition for muscle repair allowing you to go harder for longer.
3. Caffeine: Improves mental and physical alertness whiles delaying the depletion of muscle glycogen allowing for a prolongation of endurance exercise performance.
4. Beta Alanine: Consumption boosts carnosine levels within the body which acts as an Intra-muscular buffer of lactic acid resulting in less muscular fatigue.
5. Electrolytes: Sodium and Potassium content help to replace nutrients lost to sweat reducing fatigue and improving mental concentration. Electrolytes also play a role in electrical conductivity around your body helping facilitate muscle contractions and the nerve signalling from the brain.
6. Vitamins and minerals: Vitamins and minerals aid endurance exercise performance by facilitating the conversion process of proteins and carbohydrates into readily usable energy.