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Fuelling your training

This note is intended as a general guide to healthy eating and fuelling an active lifestyle. It is not intended to be ground-breaking and a lot of the below is simple common sense backed up with a little explanation. The motivation behind this note is that we have on occasion observed some rather grave misconceptions regarding nutrition basics owing to what seems at times to be a society-wide misunderstanding of how the body responds to calorie intake or because of something espoused on social media. Hopefully the below helps to simplify things and dispel some of the misinformation that is out in the ether.

At RIAK Fitness we are not registered nutritionists or dieticians so if you are seeking advice for how to approach your nutrition with a medical condition in mind, please seek specialist help. The NHS website would be a good place to begin your search.

At RIAK Fitness, we are keen for our athletes to view nutrition as engendering two complementary motivations: 1) to promote a healthy lifestyle; and 2) to fuel their training sessions.

A large aspect of fuelling your training is timing. Put simply, each of your sessions should be properly fuelled. Some trainers advocate training fasted in the mornings or even generally. At RIAK Fitness, we would argue that training fasted might be fine for that individual session or if you are on the 'shred', but for the ordinary athlete, you will not be training in a vacuum.

Your body does not categorise its energy reserves according to context. Stress is stress regardless of whether it is training stress or work stress and your body needs fuel to meet the demands upon it. Importantly, as athletes, we are always looking towards the next session as it is the accumulation of **quality** training volume that will see you progress, rather than sporadic poorly fuelled sessions or high-volume 'junk' mileage.

Carbohydrates

Carbohydrates are often seen as the enemy and a road block to losing weight or toning up because they tend to be more calorific per gram than other energy sources. At RIAK Fitness we have seen some strange decisions made with regards to carb intake based on partial or plainly incorrect information on social media.

Whilst it is correct that carbs can be quite calorific, to say that they are a road block to weight-loss couldn't be further from the truth.

The main argument for consuming complex or starchy carbs (i.e. **whole-wheat** pasta, brown rice, sweet potato, **wholemeal** bread) is that they help maintain your blood glucose levels better than simple sugars and less complex carbs (i.e. white bread [be suspicious of 'brown' bread as often it is not wholemeal bread but white bread with some sort of dye or ingredient that is used to make it look more healthy], white pasta, white rice, potatoes).

If a food is described as high GI, this means it is high up on the glycaemic index. The glycaemic index was originally designed to help diabetics control their sugar intake and it essentially ranks how quickly foods are converted to glucose, pure glucose being the highest at 100. For example, white toast with jam will be pretty high on the GI index because both white bread and jam contain relatively simple sugars. Whereas wholemeal toast with a bit of protein (such as almond butter or lean meat) would be much lower as it would take longer to break down into glucose for use by the body.

The theory behind encouraging the consumption of low GI (complex or starchy) carbs is that when consumed, they cause a less dramatic increase in your glucose and insulin levels as they take longer to break down. If you eat something high in sugar, this can cause your blood glucose and correspondingly, your insulin levels to spike and your body will push glucose from your bloodstream into your adipose tissue (fat tissue) and store it as fat. This is why some people who may not notionally eat much, still put on weight or struggle to lose it.

The long and short of it is, carbs can be 'healthy' if the majority of your carb intake comes in the form of complex carbohydrates. The nutrient value of complex carbs is also much higher with the added benefit of often being a good source of fibre and certain vitamins and minerals.

Protein

Protein is a bit of a marketing obsession at the moment. Many supposedly 'healthy' foods market themselves as being high protein and therefore a good thing to eat. However, all high protein foods are not created equal. Often, a high protein food also contains a higher level of saturated fat. For example, steak is a fantastic source of complete protein (contains a complete chain of essential amino acids), but it also contains a relatively high amount of saturated fat when compared with other meat sources such as poultry.

The way a source of protein is cooked can also increase its fat content i.e. frying or roasting will increase the fat content above grilling or baking as they often require some sort of cooking oil or fat. That's not to say you should grill the hell out of everything but it's something to remember. If we use the example of steak again, grilling it would be much more sensible than pan frying it and it will still taste great!

Conversely, a number of vegetarian sources of protein are not complete proteins and so vegetarians typically have to combine sources of protein e.g. rice and pulses; nuts and vegetables. Quinoa and soy foods like tofu are notable exceptions i.e. they are complete proteins.

The point we are trying to make is that it is important to vary your sources of protein and also keep one eye on the saturated fat content.

Good sources of complete proteins include: eggs, milk, lean beef mince and steak, poultry, low fat Greek yoghurt, soy foods such as tofu, buckwheat and quinoa.

Fat

Fat is a source of energy just as carbohydrate and protein are (protein is not generally relied upon as an energy source except for during very long bouts of exercise). However, your body is less efficient at metabolising fat for energy, which is why it only really comes into its own during fuelling your muscles for lower intensity exercise. Carbohydrate is much more rapidly metabolised and therefore your body relies on it for high intensity efforts such as interval training.

It is important to note that there are different types of fat. Some are more beneficial than others, but even saturated fats have their place i.e. immune system regulation, as a structural element of cell membranes etc. It's just that the body does not require a tremendous amount of saturated fat to fulfil its requirements.

The negative link with fats is the theory that saturated and trans fats, are linked with increased levels of low density lipoproteins and higher levels of blood cholesterol. This in turn has links with heart disease, obesity etc.

The crux of it is, some fats are good, such as naturally occurring unsaturated fats (omega 3 and 6 fatty acids) in things like oily fish and eggs and some fats are best to eat in small quantities such as saturated fats (butter, fried foods, red meat). Trans fats are a hydrogenated or processed form of unsaturated fat that is converted to saturated fat and occur in certain spreadable fats like margarine. We would really recommend staying clear of hydrogenated trans fats as they don't bring much if anything to the table.

Calorie counting and your Total Daily Energy Expenditure (TDEE)

At RIAK Fitness we do not advocate calorie counting. The three foundation stones of the business are balance, accessibility and simplicity. Calorie counting and obsessing about the numbers is in our view not a balanced or simple approach to life and takes all the fun out of it!

However, we do think it is important to have at least an idea of your current calorie intake and then compare that with your TDEE. Put simply, your TDEE is an equation based on your Basal Metabolic Rate (the calories required to keep you alive) multiplied by an activity multiplier that should give you a rough idea of how many calories you should be consuming to sustain your current activity levels.

There are a number of TDEE calculators online and the generally accepted equation is pretty simple to do yourself, if you are minded to do so. Once armed with this number or calorie range, you can then assess your typical calorie intake and decide for yourself whether you are consuming enough calories or not.

It is important to note that your TDEE changes according to how your activity levels change. For instance, if you are following an Ironman training programme you will need to steadily increase your calorie intake in-line with your increasing training volume. It is a common mistake for people to think they can sustain increasing training volume by following the same eating regime they have always had. Chronic fatigue and moodiness often results.

Weight loss

If losing excess baggage is your goal, we would like to remind you of two important things:

1. To lose weight at a sensible and healthy rate, you require only a **small** calorie deficit; and
2. Your weight is not a static state of being, your weight will fluctuate slightly daily if not hourly depending on a multitude of factors. It is important to see weight loss as a long-term goal and track your progress periodically (not daily!).

Armed with your TDEE, you can decide on a calorie intake that allows for a small negative energy balance. This means a total calorie deficit of a maximum of 250 calories.

We would strongly urge against trying to lose weight during the course of a heavy training cycle. Running a calorie deficit when your body is under the greatest level of stress is risky business because getting it wrong can lead to chronic fatigue and poor performance. If you are a triathlete or cyclist, the off-season or winter is the best time to focus on weight loss.

When tracking your progress, weigh yourself bi-weekly or even monthly. Obsessing over daily fluctuations is not helpful psychologically. Weight loss is best determined as a trend rather than an

immediate requirement. We can assure you that stepping on the scales every morning will only lead to emotional peaks and troughs that you simply do not need on top of an already busy training schedule and work life. When you do decide on your monitoring frequency, try to ensure it is repeated at the same time of day each time and under the same/similar conditions. First thing in the morning is best, after you have been to the loo and before breakfast.

What to eat and when?

Breakfast is not the most important meal of the day because it is just as important as your other meals and snacks. Skipping breakfast is simply a terrible way to start the day because it means starting the day with nothing in the tank. Some will argue they don't have time. We would argue it's just not yet a priority and there is always time for the things we prioritise. If you want to prioritise your health and training, skipping meals regularly is the antithesis of this priority.

There are a multitude of different types of diets out there. Some with some genuine scientific research to support them. However, before you decide to follow one of the current trends or philosophies, ask yourself: 'does life really need to be made more complicated?' We would aver that actually, eating well is really rather simple and if there were some secret sauce, everyone would be doing it!

For us, our goal at every mealtime is to eat a portion of lean protein with some complex carbohydrates and plenty of fruit and veg. Simple as that.

Obviously having a busy job can mean you are actually surprisingly limited as to what you can buy on the go for lunch. You could make your own food and bring it in with you but for many that just isn't a consistent reality because there are only so many hours in the day and meal prep isn't everyone's cup of tea.

The information above should hopefully be useful to you in helping you to decide what to buy come lunch time. We would suggest looking at the labels or nutritional information of the lunch options you currently go for and spend a bit of time looking around the places you go to and see if you can find an option that better fills the above criteria. Remember: we are looking for small improvements not perfection.

This might seem like a massive pain in the 'A' but all the important information is there for you and scouting out your lunch options only needs to be done once. When you have an idea of the spectrum of options and their nutritional characteristics, you will be better able to make informed decisions when you try somewhere new.

For instance, if you like a tuna, mayo and sweetcorn sandwich from one of the major high-street chains, you know that it is an option relatively low in saturated fat. Using that information and comparing it with other options such as a southern fried chicken wrap will quickly help you build a hierarchy of the types of options that are generally available. You will also begin to see that most of the chains generally offer variations on a theme and once you have broken the code of where your current preferences lie in the hierarchy, you can essentially use that information to inform your decision every time.

One thing we would recommend is trying to have a piece of fruit with every meal. Have it as your desert if you wish. You don't need to buy a hideously overpriced pot of fruit salad; most places will sell loose fruit by the counter at a reasonable price or one of our top tips would be to buy a big bag of apples or oranges to keep in your desk drawer. A good little snack but also means you don't need

to pay £2-4 for the privilege of some cut up fruit drenched in lemon juice to stop it from going brown.

Snacks

Snacking is something we are asked about a lot. We encourage people to snack between your three main meals (by eating the right sort of snacks!) because it helps maintain your blood glucose levels and helps prevent insulin spikes (see above re Carbohydrates). A bonus is the thermic effect of food digestion, which keeps your metabolism rolling. The phrase 'feeding the fire' really is a thing!

The exact same principles apply to snacking as they do to your main meals (i.e. lean protein, complex carb and fruit/veg) but sometimes there is a lot of confusion over snacking because it is difficult to find something both convenient (i.e. something you can carry around and don't need a fully stocked kitchen for) and healthy.

We still want a bit of complex carb and protein regardless. It might be a bit more difficult to get large quantities of veg into the mix, but you can definitely get a piece of fruit into the equation.

At RIAK Fitness we are big fans of overnight oats. Search online for recipes and you will quickly see how great they are and how there is an unlimited number of topping options. Just take your little pot into work with you and you have a perfect snack waiting.

Other options for snacks include:

- Wholemeal toast with crunchy peanut or almond butter (almond butter is typically a bit more expensive but lower in saturated fat and higher in protein)
- Fat free Greek yoghurt with mixed fruit and nut
- Handful of mixed fruit and nut (try to find brands that don't cover it in sugar) followed by an apple
- Toasted wholemeal pitta bread with low fat cottage cheese

Eating before training

This is linked to snacking but try to think of your nutrition in two different respects. Your healthy eating (all of the above) and then your training fuel.

It is important to ensure that all your training sessions are properly fuelled as we want quality of session and consistency. If you try to train fasted or with low blood sugar, you might get away with it once or twice but long term you will begin to pay for it with building levels of fatigue and poor performance.

Ideally, you would snack on something following the guidelines above in the snack section about 2 hours before your session so that it is properly digested and won't give you any intestinal discomfort. However, life isn't always this predictable and you might find yourself within an hour of your session and extremely hungry.

In these circumstances, it is absolutely fine to eat something slightly higher on the glycaemic index such as a cereal bar; or if it's within 30 minutes of the session, a sports drink. The aim is to top up your muscle glycogen levels, so you have something to burn for a good quality session.

In-race/long session nutrition

This subject is worthy of a note in itself but in short, if you put anything solid into your stomach, it needs to be followed quickly by plenty of water.

If you think of your digestive system as a sieve sorting through its contents only allowing through the molecules that are small enough and ready to be absorbed into the blood stream, you can quickly see how solid foods consumed during a long training session or during a race can present problems. This is exacerbated further when race stress is considered and the effect this will have by reducing the blood supply made available to your digestive system.

This is why water is required - to soften and dilute whatever solid/semi-solid substances are consumed.

A quick general rule for a 40g energy gel that typically contains about 20-25g of carbohydrate, is for each gel, you will need 2-3 proper squidges (around 300-350ml) of plain water for it to be properly diluted and absorbed at an optimal rate (a 4-8% carbohydrate concentration is optimal).

Eating out

When eating out, we think sometimes you do have to accept that you're not really going to be able to ensure you eat healthily and cover all your bases.

It's important that you don't punish yourself by either doing more exercise than planned the next day or eating less to address the balance. Life is meant to be enjoyed so move on and try not to make eating richly a regular habit.

You can however use the principles discussed above to decide what option might be the lesser of two evils.

Recovery food

When people think about recovery food, they typically think of protein shakes or at least getting protein on board for muscle repair.

Immediate protein ingestion after intense exercise is important for recovery and for muscle growth. For an endurance and resistance trained athlete, between 1.2-1.7g of protein per kg of bodyweight per day should be sufficient. 20g of dietary protein (or 0.25g/kg) is a good amount of protein to consume immediately after a session.

However, as cyclists/triathletes, we are always looking towards the next session. Which means we also want to replenish your muscle and liver glycogen stores as quickly as possible, so you are ready for the next workout.

Glycogen is the storage form of glucose and your muscles and liver store enough for about 1-1.5 hours of exercise. After your session, we want to make sure these stores are replenished as quickly as possible. This is another time when slightly higher GI carbs can be useful. However, what we tend to suggest is that for optimal recovery, athletes consume some protein and carbs immediately after their session and then follow up with a decent recovery meal within about an hour of the session, which contains protein, low GI carbs and some fruit or veg.

A lot of people like to use protein shakes. Protein shakes can have their place. For one, they are convenient so if you have a tough strength session and are not sure when you are going to be able to eat properly as you need to travel to work, a protein shake has a practical purpose.

However, generally, people do not require protein shakes to reach their daily protein requirements if they are eating a balanced, healthy diet. The main arguments against protein shakes are that by consuming them instead of naturally occurring sources of protein, you miss out on a spectrum of nutrients a natural source would provide. For instance, if you had a shake rather than milk you would miss out on calcium; or if you had a shake rather than beef jerky, you're missing out on potentially decent quantities of iron.

Protein shakes are often a whey-based form of protein and the way the whey is isolated and dried into powdered form is generally through high temperature treatment. This can mean that a lot of the protein molecules within the whey become denatured and therefore less nutrient dense.

Another thing to remember, is that supplements (including vitamin and mineral supplements) are not required to be screened by law and are not regulated. The big brands are likely to be reliable but the athletes that advertise them, don't necessarily use them in reality.

In short, we are not saying protein shakes are useless, they have their place. We are just saying there are alternatives if convenience isn't your major concern. For example, we love chocolate milk after a hard run or cycle session because it contains both whey and casein protein as well as some high GI sugars that will help replenish your glycogen levels quickly. Alternatively, one of the snacks above would be a good option.

Hydration

Hydration is something we feel cyclists/triathletes are generally pretty good with. The table below will give you an idea of roughly how much water you should look to consume a day. One thing to note of course, is that this table does not consider the volume of exercise you do and so this is a base minimum for a less active person and you should adapt it accordingly.

| BODY WEIGHT (KG) | ESTIMATED DAILY WATER INTAKE (LITRES) |
|------------------|---------------------------------------|
| 55kg | 1.70 |
| 60kg | 1.85 |
| 65kg | 2.00 |
| 70kg | 2.15 |
| 75kg | 2.30 |
| 80kg | 2.45 |
| 85kg | 2.60 |
| 90kg | 2.75 |
| 95kg | 2.90 |
| 100kg | 3.05 |

Caffeine

Caffeine can be super useful when used at the right times and will boost your metabolism slightly due to triggering a rise in your heart rate and the mobilisation of energy stores for activity. We love the stuff too but would advise against consuming caffeine after about 2pm. Otherwise, it can affect your circadian rhythms and disturb your sleep quality.

We would also recommend keeping your consumption to about 2-3 cups of tea/coffee a day. Some people might be able to fall asleep straight after an espresso, but we would question the quality of that sleep with 200mg of caffeine pumping round their system telling them it's time to boogie!