

Introduction

This sports guide is here for you, the The London Marathon runners, to help you ensure that your approach is set up in a way that will allow you to make the most possible progress in the least possible time, without wasting any effort on things which won't actually help you.

The aim with this document is to give you a concise guide to nutritional factors that must be considered for optimally fuelling your body for marathon training. This is to not only optimise performance, but also recovery and immune function. After-all, you can't train if your muscles aren't recovering or you keep getting struck down with illness.

Demands

Running is a sport which has stood the test of time, with popularity growing in the late 60's and staying steadily high ever since. It has grown exponentially in popularity in recent times. The TCS London Marathon (unbeknownst to many) only began in 1981 with 7,000 runners but has grown in its short history to well over 50,000 runners per year.

The distances for running races will vary dramatically between events, with short 1-2km sprints, 5kg parkruns and short "fun runs" leading into half marathons, full marathons and even beyond this to ultra-running and the Self-Transendence 3,100-mile race, the world's longest certified running event. But, seeing as this guide is specifically to help you get through The TCS London marathon, we'll focus on the 26-mile (42.1km) discipline.

That said, even if we were looking at running as a highly varied whole, there are general rules that athletes must adhere to in order to succeed as a runner, regardless of the specific event in which they choose to participate. Runners require specific 'fitness' as well as skill in running and they need extreme amounts of recovery capacity combined with an uncanny ability to avoid repetitive strain injuries or muscle imbalances. We'll offer some general training advice in this guide, but ideally your training will be bespoke to your individual fitness level, taking into account training history, injury history and lifestyle factors including time availability. We aren't trying to teach you to suck eggs, but it never hurts to refresh the basics.

Dietary considerations

As with any endurance-based sport, the nutritional focus of a runner needs to be geared towards maintaining caloric balance in the face of an often hugely varied daily requirement. After this is accounted for, the focus should be on specifically timed workout nutrition and also on supporting the immune system – ask any runner and they will tell you that illness is just as common, and just as problematic, as training related injuries.

The other thing to consider is that the kind of training a runner is undertaking requires fuel, and a lot of it. This means that it is important for a runner to not be afraid of eating a large amount of food around his or her longer training sessions – something which is often forgotten in the pursuit of low body fat levels.

Many people will take up running to help them lose weight but weight, or rather, fat loss is complex and when you throw in a high demand exercise activity it becomes a tricky juggling act of managing energy balance to keep performance high while also forcing your body to use its stores. To lose fat you need to be in an energy deficit, but being in an energy deficit makes exercise harder and, research shows that when Calories aren't tightly accounted for people will compensate for energy (Calories) burned during exercise by using less intensity and moving less after their session. This is part of a process often referred to as 'metabolic adaptation'. Add to this the fact that some people experience increased appetite after exercise (for obvious reasons) and you can see how easy it would be to gain weight while training for a marathon instead.

Maintaining a low(er) level of body fat is important, as carrying extra weight from excess body fat is only going to be detrimental to performance, but staying too lean is very possible, and a small healthy amount of body fat can provide energy late in races as your body switches to body fat as a fuel source. Because body fat is also an endocrine organ, being excessively lean can negatively affect hormone production, especially for females. Simply, racers who are leaner than they need to be are more likely to hit a wall which they cannot get past, than racers who are 2-3% higher in body fat. The lesson here? Eat to perform, and fuel what you need to do with plenty of whole foods and good nutrition.

To be clear, being overweight is a disadvantage and healthy body fat percentage for typical males is between 14 and 24% with athletes often being in the 8-15% range. Single digit percentiles are where things start to get a bit tricky. Females on the other hand should aim for a healthy range of 21 -30% with female athletes often sitting in the 14-22% range. Any lower than that and women run the risk of experiencing problems with their menstrual cycle (among other hormone related problems) which can take months to correct.

For a runner, the chief thing to consider is your total energy intake. Generally speaking, for most sports it's a perfectly viable option to take nutrient requirements on a weekly basis and consume around the same amount of food every day. This is great, but for someone engaging in high volumes of endurance training it may be a much more effective strategy to have a 'baseline' nutrient intake and then compensate for any training you do on top of that, in order to maintain bodyweight, performance and recovery from training.

This means eating more on days you run (and maybe the day after if you want to spread it out a little).

As a runner is placing a huge strain on their body and expending a lot of energy, it is generally accepted that they are going to have to accurately track and log food intake for the BEST results, and thus the following advice is assuming you are doing this.

If you are not aware of your caloric intake, this is the first thing I'd suggest you start to find out. Weighing food, tracking calories and paying attention to details may not be as fun as just going out and hitting the road hard and eating well, but the difference between a good and a great runner is not just training effort – it's nutrition and attention to detail. If you're getting the details right in terms of heart rate tracking and proper running shoes but not looking at food in terms of macronutrients and calories, you are not getting the most benefit from the effort you are putting in. Honestly, it's not as time consuming as it sounds.

Using the formula Mifflin St Jeor BMR (Basal Metabolic Rate) calculator, you can work out the amount of calories per day your body needs to function optimally at rest.

Female

(10 x weight (kg)) + (6.25 x height (cm)) - (5 x age (yrs)) - 161



Male (10 x weight(kg)) + (6.25 x height (cm)) - (5 x age (yrs)) + 5

Your BMR is still only your energy needs at rest. To determine how many calories you expend on a daily basis, you also need to factor in your physical activities. This will then give you your total daily energy expenditure, or TDEE. To find your TDEE, the best approach is to multiply your resting energy expenditure (or basal metabolic rate) by an activity factor (see below). This will give an estimate of the number of calories you burn on any given day.

Sedentary: Little or no exercise (desk job, with no additional activity	x1.2
Lightly Active: Light exercise 1-2 days/week	x1.375
Moderately Active: Moderate exercise 3-5 days/week	x1.55
Very Active: Hard exercise 6-7 days/week	x1.725
Extremely Active: Hard daily exercise & physical job, or training twice/day	x1.9

Due to the nature of your sport you will have some days that have an exponentially higher calorie requirement than others. Therefore, you have two options here:

- 1. Calculate your intake needs as an average. Nice and simple
- 2. Calculate your intake needs using the calculator above, but FORGET YOUR RUNNING TRAINING. That means you'd factor in your job and any other training you do, i.e. lifting weights. Once you have this, that's your baseline. Now, every time you go out running, you would add the calories your sports watch tells you that you burned and consider that your needs for that day (of course, you could split this over into the next day, too, if you'd like to).

If you choose option 2, on days you eat more it's OK if your extra calories come from all three, but ideally the vast majority of your extra calories would come from carbohydrate.

But WHAT should you eat?

Nutrition is highly divisive with many having opinions on what we should and should not eat. Despite popular beliefs and bad advice from online fitness celebrities, however, there is no such thing as bad foods, fattening foods or fat burning foods.

My first consideration when offering advice to help someone reach their desired goals is always the same: 'Health Before Performance'.

This is the touchstone for every piece of nutritional advice I offer. The WHO definition of health (World Health Organization): Health is a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity. In light of this I want to delve deeper and offer a view or two on what 'optimal' health means to me. For me, achieving optimal healthy means: Being physically and mentally able to confront whatever challenges life has in store for you everyday with vigour and clarity, rather than being plagued with disadvantages through an uninformed approach towards nutrition, exercise and psychological well-being. Optimal health also means being able to sustain appropriate energy levels, manage stress levels with ease, sustain consistently controlled sleeping patterns, and wake with vigour and with hormones balanced, not relying on stimulants to get through the day. In summary, optimal health leads to optimal performance, optimal performance leads to a damn fun life!

Lets go back to the basics. What is good nutrition? Basically we want wholesome, safe, single ingredient foods. If it didn't walk, grow or swim, then it probably shouldn't be consumed by us humans..period! What would a lifestyle hypnotist say if he/she was writing this? Imagine your favourite model of car. Imagine that you were given that one car, but that it would be the only car you could own for the rest of your life. How much attention would you pay towards servicing that car correctly? You would naturally give it the best oil, lube, fuel, air and water possible. Because you know you have to maintain and keep that car running for as long as possible. Okay, now replace the image of the car with your own body. Apart from the occassional organ transplant (you really want to push your luck that far?) that same body is all you have to carry you through your lifetime. So why wouldn't you try to take care of it in the same way as the car? Provide it with its best sources of fuel and give it the best chance to perform at its best for the longest period of time. The tired old adage 'you become what you eat' is as true, and more relevant today than it has ever been. Sugars, bad fats and overly processed foods provide our body with unwanted toxins, hormonal imbalances, and elevated levels of stress and at our most basic level excess body fat. So, what basic principles need to be put in place to grasp an understanding on what good nutrition is and how to optimise health? These guidelines will help:

1. Quality: Single ingredient foods is what we human's were designed to consume. Source single ingredient foods locally because most conventional methods of overseas transporting and distribution can often destroy segments of nutrient density. Whether it's enzyme quality, vitamins, minerals, phytonutrients, trace minerals etc; all of these components, and many others, help the body to take care of itself. Try to avoid food items with more than one ingredient in them as this indicates levels of 'processing' and hence the possibility of one or more chemical additives that your liver will have to work overtime managing and discarding. So keeping your food and ingredient choices local, organic and natural would be a great start.

- 2. Protein: Have a protein source with every meal. Protein delivers growth, maintenance, hormonal regulation, enzyme activity, satiety for the body, along with increased thermogenesis and improved cognition levels. This e-book is geared towards endurance performance, so I have to assume that you chose elected to read because you recognise the benefits of regular exercise. If so, you'll find that protein-rich food, coupled with a lower carbohydrate diet, will stimulate the loss of body fat and the sustainability of lean tissue. To prevent muscle tissue breakdown (catabolism) a positive net balance of protein needs to be sustained to maintain anabolic biological functions of the body.
- 3. Veggies: Consume vegetables with every meal. In fact have a rainbow of colours with every meal. The different colours have independent various health benefits Vegetables contain vitamins, minerals, trace minerals, phytonutrients and a range of compounds (new ones are still being discovered) that assist with improvements in health and the removal of diseases. Vegetables (as a key part of a balanced nutritional plan) have been shown to ward off coronary heart disease, strokes, and prevent types of cancers. Also the consumption of vegetables has shown to increase positive mood and energy levels.

A special note on fibre; fibre is contained in many carbohydrate foods like fruit, root veg, wholegrains and pulses, but also in nuts and seeds. Fibre is often recommended to keep you 'regular', but the different forms of fibre do more than just make you poo. It's essential for feeding your gut bacteria and ensuring a well populated microbiome. A healthy microbiome is important for immune function and cognition as well as digestion. A fibre intake of somewhere between 25-35g per day for most people is ideal. Although there is no set upper limit, intakes above 50g may cause significant levels of gastric discomfort in some people so pay attention and adjust accordingly if you're eating a LOT of carbohydrate and it's all coming from potatoes and beans.

4. Water. It makes up 45-75% of a person's body mass and to maintain homeostasis needs to be consumed on a regular basis. Every system of your body depends on water, whether it's for flushing out toxins or transporting nutrients. H20 is essential and the benefits should never be underestimated. As a general guideline your daily consumption should equal 1 litre for every 20kgs of bodymass.

5. Fats. The other 'F-word' is often given bad press and neglected by many, especially endurance athletes. Marketing schemes have demonized fat and as a bi-product of this have littered supermarkets with fat-free options, which has lead to sugar and additive-laiden options. Healthy fats equal healthy cells. Every cell in the human body has a mixture of liquid and solid fats integrated into its membrane. Fat transports and utilizes the fat soluble vitamins A,D,E,K.

The body is made up of billions of cells that have a direct correlation to the healthy fats we consume, but it's understanding exactly what fats are good and bad for the body, that counts most. Avoid all trans-fatty acids and hydrogenated fats. Hydrogenation is when you turn liquid oil into a solid (e.g. vegetable oils made into spreads like margarine) these are dangerous forms of fat that the body doesn't recognize. These kinds of fats consumed consistently over time are one of the factors that can lead to lead to heart disease. The fats that we should aim to consume are organic fatty meats, oily fish, organ meats, avocado, whole eggs, coconut oil and nuts, to name just a few. Many of your supermarket's much—lauded 'low-fat' ingredients, products and diet solutions have been shown to hinder the body's intake of calcium, zinc and essential fatty acids, which are key nutrients especially beneficial for endurance athletes. Again. When it comes to fats — keep it natural.

6. Carb Cycling: Carbohydrates are not an essential component to each meal to retain adequate levels of energy. In a 'resting state' we mostly utilise fats as our primary source of fuel and so it's unnecessary to indulge in large portions of carbohydrates throughout the day. Calorie for calorie, starchy sources of carbohydrates fall short in terms of nutrient density when compared to vegetables and fruit. Your carbohydrate sources when not exercising should come from vegetables and fruit. Save your heavier sources of carbohydrates for post-training to maximise recovery and hormonal responses. The way we metabolise carbohydrates differs from person to person. And so, a well-understood and managed approach to your carb cycling will help strengthen your immune system, stabilize blood sugars and cognition, while all the time assisting in optimal athletic development and body composition.

For endurance athletes, the most important macronutrient is carbohydrates because this is converted into a fuel source called glycogen which is stored in your liver and muscles. This is essential for generating muscle contraction. Marathon runners often refer to glycogen depletion as 'hitting the wall' – this is when all the energy stored in your muscles has been burned up and your muscles simply stops working.

7. How to manage stress: In my experience endurance athletes are amongst the most over-trained and physically/mentally stressed athletes I meet, often constantly trying to incorporate an extra hour of training into their already jam-packed schedule. This high-volume, high intensity, approach towards training takes its toll on your immune system and other metabolic processes of the body. Poor sleep, low-level libido, niggling injuries, poor immune functioning and many other issues can often manifest themselves as a result. So gain control of your respective training programmes and win back your resting energy, lower stress levels and overall vigour. Plan to periodize your training appropriately and incorporate sufficient rest days to optimise recovery.

Let's put in some structured tips to implement this successfully.

- 1. Organisation: Time management and preparation is really what I mean by this. Plan ahead to make sure your shopping trolley holds the appropriate food for the week. Sacrifice time in the morning or away from the television in the evening to prepare your food to make sure you get the appropriate nutrients onboard to fuel required energy levels for the day ahead. For the sustainability of any new habit it takes time to master, but persistence and organisation are KEY!
- 2. Get geeky with the process: Make sure you get heavily involved by researching ingredients to bring variety to your meals. While anything you prepare is going to be better, certainly healthier, than standard breakfast cereals, toast, slim-shakes or 'diet ready-meals', the more effort you put in the more benefit you will gain. Take the time to try new recipes, invest in recipe books and maybe even take a few cooking classes. You'll thank yourself when you start producing wholesome, healthy gourmet meals at every sitting.
- 3. 'Surround yourself with radiators and get rid of the drains'- Heather Jayne Wynn: Don't be deterred from your goal by naysayers holding you back and questioning the value of your investment in good health. Ask (tell) them to respect your choices just as you respect their opinion. If they still can't get onboard with what your life-plan then you need to ask yourself- are they really worth having in your life? Surround yourself with likeminded people and friends that support you.
- 4. Balance: Use the 90/10 rule. If your food is nutritiously rich and in correlation with your daily energy levels 90% of the time, then indulging in the odd 'treat' won't have a significant undermining impact on your overall health or body composition. Do your best no to tip the balance towards the wrong direction and be aware of your dietary intolerances and avoid food sources that contain them at all times. Obvious, I know, but if in doubt ask.

5. Daily goals: Long-term goals are great but many often negate the benefits of daily goals. Making sure you focus on the day at hand and what you need to do to help yourself. Write down basic nutritional, training and stress management goals each day and focus your energy on achieving them.

Examples:

- -Eat a protein source with each meal
- -Drink 3-4 litres of water progressively throughout the day
- -Have 3 different coloured vegetables at each meal
- -Focus on getting my post recovery shake onboard after training
- -Be in bed by 10pm with my diary organised for the next day

I find these simple guidelines help many stay on track and maintain their focus from day to day.

6. Make this a lifestyle 'thing': Being healthy and feeling great shouldn't be a fad but a lifestyle to lead, day in day out.

During a standard day, your nutritional approach should be one of a typical 'healthy diet'. 3-5 meals per day depending on preference, with an even distribution of calories, carbs, fats and protein. Each meal should be focused around whole foods, with carbohydrate sources being chosen due to fibre and micronutrient content (meaning opting for sweet potatoes, potatoes, beans, whole grains and starchier vegetables like parsnips), for the most part.

Without micronutrients, an athlete cannot be healthy, and if you are wanting to avoid missing races and training sessions due to sickness, you need to get the veggies in! Consuming an adequate amount of fibre (as mentioned earlier) will also help you to digest and process a large amount of food much more effectively too, helping to avoid GI distress associated with large food intakes. However, on training or race days, things may be a little different.

Prior to a training session, the focus should be on a good source of complex carbohydrates which sits easily on the stomach. This will provide enough glucose to work at a top standard without making you 'too full'. Eating a carb source with too much fibre has the potential to leave you with a lot of undigested food in your GI tract which could be a disaster for overall performance. This is the perfect time for a relatively light yet energy dense meal such as sushi or a pasta dish with white meat or fish.

During the run you may require a carbohydrate source, but these should be factored into your total intake for the day as calculated above, and not just included out of habit. If your session is only going to last 60 minutes or so, you should not really need anything more than adequate liquid and maybe some electrolytes if you are training in the heat or the type of person who sweats a lot.

As a guide, the amount of carbohydrates you may need during exercise are as follows according to the International Society for Sports Nutrition:

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Up to 1-hour = zero
1-3 hours = 30-60g per hour
3+ hours = 60-90g per hour
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Ideally this will be in the form of easily absorbed sugary foods with a high glucose concentration. Gels are ideal, but some people experience GI distress using these and prefer more natural foods such as dates so experiment and see what works best for you. Don't wait until fatigue sets in, keep drip feeding those carbs every 30-60 minutes.

After your session, the calories you have used should be replaced, again with predominantly whole foods, focusing on 'quality' carbohydrates for the most part – though after a 1,000 Calorie plus training session, some Belgian Waffles aren't the worst thing in the world!

Additionally, it almost goes without saying that staying properly hydrated should be a priority for anyone, let alone anyone wanting to perform optimally in a physical activity or sport. A rough figure to aim for is 24ml per kilogram of bodyweight at rest, with an additional 750-1,000ml per hour of sport. Including electrolytes with or without carbs to your training liquid intake can dramatically improve absorption rates and allow you to stay hydrated with far less liquid, meaning fewer 'pit stops' during a longer excursion. It is possible to over consume water and in extreme cases athletes have died from a condition called Hyponatremia which happens when too much plain water is consumed, resulting in a significant decrease in serum sodium levels. To avoid this, we recommend that you drink to thirst and consider adding salts to your beverages during longer sessions.

Lifestyle considerations

Because training is going to be highly demanding with a lot of overall volume and physical stress, your lifestyle is going to need to be tailored to support your efforts on the pavement. Overtraining is relatively common in endurance sports, but nowhere near so much as under recovery. On top of eating as per the above, the best thing you can do to make sure you recover optimally is to sleep as often and for as long as your schedule will realistically allow.

It's a very good idea to keep on top of your overall stress levels when taking part in running, or any sport for that matter. Undertaking a serious training regimen on the road and in the gym is going to place a large stress onto the body and adding to that with work and life stress is not a good idea.

Our body views stress as a singular thing, and when life stress is taking up our ability to handle the strain, the adaptations we can cause by placing training stress upon ourselves is diminished. In short, if you're stressed all of the time, your progress will slow down in whatever physical endeavour you choose.

Below is a whole library of useful London Marathon nutrition content, from my colleague Alex Ritson. He's a far smarter man than I ever will be, so be patient with the content of the videos. They are very thorough and helpful:

The Importance of Carbohydrates for Endurance Events



Nutrient Timing For Endurance Performance



Myth Busting



Gastro-Intestinal Recommedations



Post-Workout Nutrition Consideration



Amounts, type, and timing of intra-race fuel carb intake



Carb loading recommendations



Race Day Breakfast



Hydration



Simple Marathon Checklist



Sleep Guide



Summary

The recommendation in this ebook are merely a guide. Feel free to adjust anything accordingly but try to remain within a small distance from that which is suggested. How well you are recovering and, of course, your personal taste preferences will dictate variations. A hypothetical ideal that you hate is a long way from ideal indeed!

Keep an eye on your sleep, if you suddenly find that you aren't sleeping well, maybe you are finding yourself waking up between 3-5am, this could indicate that the allostatic load on your body is too high and that you are under recovering. If this is the case you might try upping your kcals by 1-200, with the extra kcals coming mostly from carbohydrates.

To be clear, whatever protein range you choose that should remain pretty consistent (within +/- 10g) each day. Fats and carbs can fluctuate but keeping a minimum level of carbohydrates at the very least will benefit your training. What we mean by this is that individual variances mean that one person might be able to thrive on a lower level of 3 or 4 g/kg while another person might need 5-8 g/kg. This will obviously be dependant on your total Calories and any adjustment in Carbohydrate intake will result in an equivocal adjustment in fat intake (bearing in mind that fats provide 9kcals per gram while carbs provide 4kcals).

The most important thing is to listen to your body and be aware that disruptions in sleep, excessive muscle aches (DOMS) after training, unusual mood swings, cognitive decline (brain fog) aren't to be ignored. Likewise, supportive tech feedback showing unexpected changes in training numbers; such as time per mile/km increasing instead of decreasing, unusually high pulse/RPE or increased resting HR are all potential indicators of under recovering.

Hopefully this guide has given you everything you need to know in order to enjoy and be empowered for your TCS London Marathon. But this is no substitute for bespoke coaching and even Eliud Kipchoge has a coach.

We wish you all the best and hope to see you at the finish line.



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A COACH WHO IS PASSIONATE ABOUT HELPING INDIVIDUALS FIND FULFILMENT IN EVERY ASPECT OF THEIR LIVES. WORKS EXCLUSIVELY WITH A NUMBER OF CHARITIES AND THEIR 2,000 TCS LONDON MARATHON RUNNERS, WITH THE GOAL OF REDUCING DROPOUT RATES AND INCENTIVISING HIGHER LEVELS OF FUNDRAISING.

He does this through the 15 years of being involved with the event, the understanding of the individuals involved, and educating them around his principles of PreFormance®. Preparing the body & mind for the lifestyle demands of getting to the startline.

Nutrition, strength work, intelligent training, recovery, stress management, breathing, and other protocols. Training for this running event, isn't just about running. Neither is crossing the finishing line the hardest one to cross.

He uses the event as a platform to inspire people to find Purpose, create Balance, and to Change the(ir) World.

Disclaimer Always warm up adequately before any workout and immediately cease any exercise which results in pain or discomfort. Consult a doctor before beginning any new exercise regime. Whilst this plan been designed to be appropriate, and of benefit to runners, Fitness Aspirations Ltd shall not be held responsible for any loss or injury that is incurred through the use of the information or exercises within this document. In using the information contained within this document, you hereby agree to the above terms.