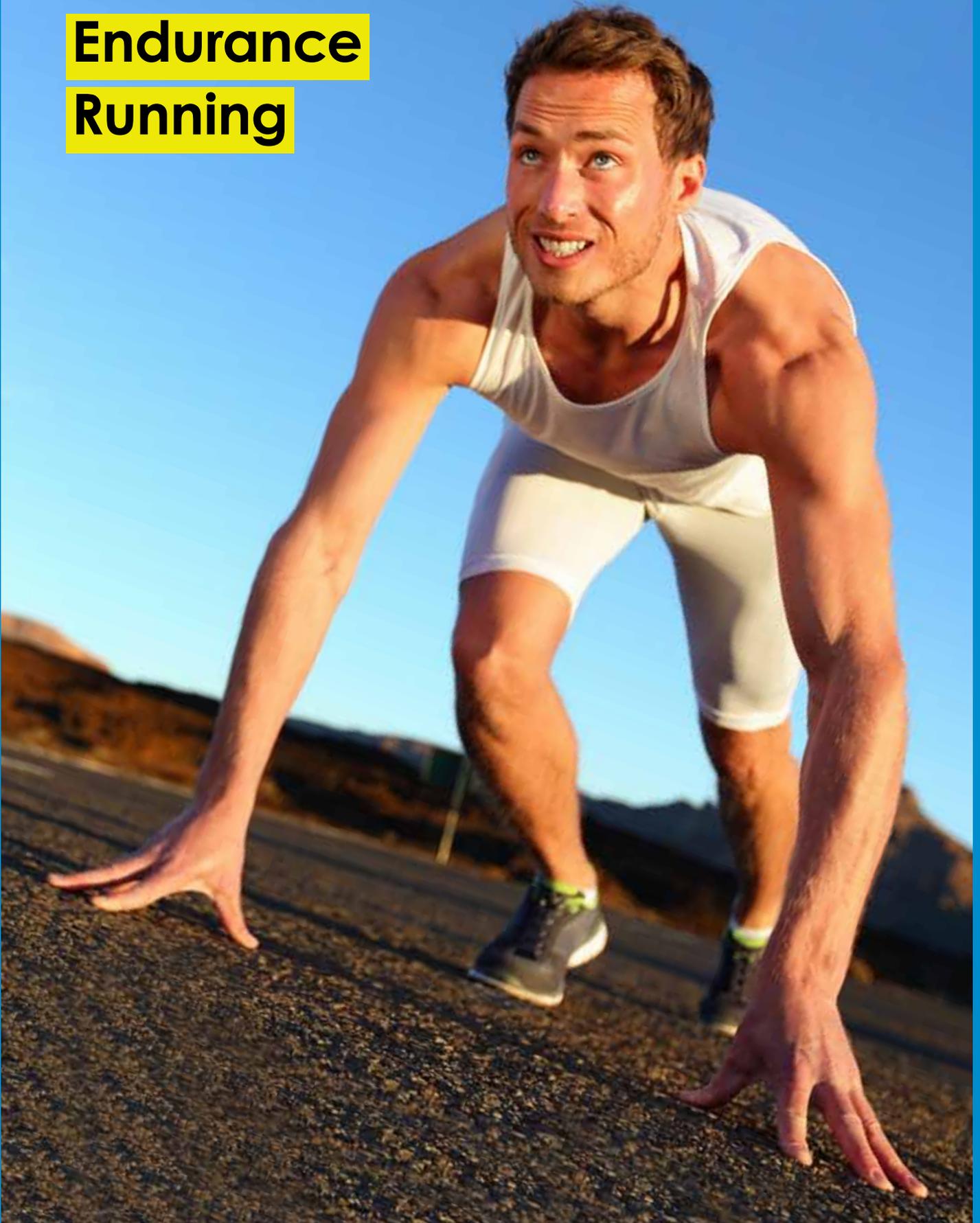




# Endurance Running





Running is a perfect sport, it can be done almost anywhere, at any time and requires no specialist equipment except a pair of running shoes. However, Google the words 'endurance running' and you'll be faced with over 73 million links! This guide is suitable if you're embarking on your first half marathon, looking to complete a marathon or taking on a bigger off road challenge. Use this guide in conjunction with the weekly training plan to help you better understand your training and help you maximise results.

Making training a priority within your lifestyle will bring you better all-round results and ultimately make your race more enjoyable. This guide will give you information over and above your physical training programme to optimise elements of your lifestyle that most impact on your training efforts:

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## Getting Started

If you haven't exercised for some time and have any health concerns it is advised that you speak to your doctor before starting a new exercise programme. You should consult your doctor if you have arthritis, diabetes, heart disease, asthma or lung, liver or kidney disease. It's also recommended that you speak to your doctor if you suffer from any of the following:

- Pain or discomfort in your chest, neck, jaw or arms during physical activity
- Dizziness or loss of consciousness
- Shortness of breath with mild exertion or at rest, or when lying down or going to bed
- Ankle swelling, especially at night
- A heart murmur or a rapid or pronounced heartbeat
- Muscle pain when walking upstairs or up a hill that goes away when you rest

**If you know of any other reason why you should not do physical activity it is advised that you check with your doctor first.**



## First, Set Yourself A Goal...

Like anything in life, focusing your efforts on an end goal will help you keep single minded and keep you on track. This is your race, so avoid the temptation to pitch yourself against friends or colleagues, after all, you have no idea of their current fitness levels, health condition, injuries or other motivations.

For some, the goal may simply be to finish the race. You may want to shed some extra pounds, improve your health, achieve a certain time or create a better work/life balance by incorporating more activity into your lifestyle. Without a doubt, you are more likely to achieve your goals by writing them down as a positive statement, ensuring that they are measurable, attainable and within your control. A great tool for logging your efforts and progress is a training diary. You'll find electronic diaries on line or simply jotting them down in a book at the end of the day will keep you focused on your efforts and will enable you to look back from day one.



**Think of ways that you can measure your success, through taking statistics at the beginning of your training programme and at regular intervals thereafter. For example:**

- Achieve weight loss - find scales that measure your body fat % rather than just focus on weight
- Improve strength - pick 3 tests that track your lower body, upper body and core strength
- Increase speed - introduce fartlek and intervals into your training, and complete a weekly time trial
- Achieve a specific race time - introduce introduce fartlek and threshold runs to develop and train at your desired pace
- Better health measures - lower your blood pressure, resting heart rate, improve the quality of your sleep
- Improve your work/life balance - plan your training ahead of each week so that you can integrate it with your forthcoming work commitments



## **PASS** 'MOT' Your Running Form

For both beginners and experienced runners, the need to constantly be aware of and train with good form is essential. Running is a natural movement and therefore should feel comfortable but you should strive to start out with good posture habits to maximise efficiency and minimise injury.

### **Head**

Your running technique starts from the head down, ensure your head is held up, looking directly ahead, keeping your chin up and back. Don't allow your head to jut forward or lead you as this may cause neck problems over a prolonged period of training.

### **Shoulders**

Your shoulders should be relaxed, so push them back (without arching your back) and every so often shake out your shoulders and arms when running to check that you're relaxed and not carrying tension in your upper body, as this can become very tiring!

### **Arms**

Use your arms to drive you forward by keeping your elbows bent at 90 degrees and cupping your hands. Avoid 'sloppy arms' or allowing them to swing across you, your arms should swing forward and back to help drive your body forward.

### **Torso**

Your torso plays a key part in running, so ensure you run 'tall', avoid leaning from the waist. Include core and abdominal work in your programme, which will provide a strengthening benefit to your back and stabilise your 'levers' while you run.

### **Hips**

Be aware of your hips, ensuring they are level, pointing ahead and not tilted significantly. You can monitor this on a treadmill if you have access to a gym.

### **Legs**

Your legs and feet should feel quick and light, with a 'spring' in your step! If you can hear your feet, particularly on a track or pavement, run lighter, imagining a spring under your step, and landing softly. This will decrease the risk of injury to ankles and knees. Land on your heel to your midfoot and push off through the ball of your foot.





## Making great strides...

Spending a proportion of your training on relevant terrain is absolutely crucial to your training. For example, training for a trail run will involve your body handling different scenarios, challenging your muscles, ligament and core with every changing, undulating terrain, requiring changes in direction, balance and speed.

Running drills are a good way of practicing and reinforcing technique and joining a club is a good way of creating the discipline and structure within your training programme to practice these. A club can also provide you with support, information and good running routes plus a network of like-minded people with whom you can train. Incorporate these techniques into your training to see an improvement in your running form and performance. A 6-week period of consistently integrating these into your weekly training programme (at the relevant point) will provide longer term benefits.

### Cross-Training

Cross-training will negate the shortcomings of training your body in just one way, avoiding over-use of joints, muscles or ligaments that may become over-worked and over-time can result in injury. Incorporating a 'conditioning' phase at the start of your programme with some cross training, will build a good base for you going forward. The law of specificity means that there is no better way to train for a run, than to run. However, any good training programme will complement this routine with supportive work such as core and resistance training to strengthen the body's 'chassis'.

### Interval training

Involves a period of fast, hard running followed by a recovery period, but involves more reps than repeat runs. The other difference is that your heart rate is not given as much time to recover before you surge into action again and therefore is a more stressful form of training. Plan your interval runs with a warm up, set number of repetitions and a warm down and use a watch to ensure you are able to train to this structure.

### Speed work

There are different ways to do speed work, terms you may hear frequently are, repeats, intervals, sprints, strides, surges, farlek or tempo runs. The degree to which you incorporate these into your programme will depend upon your experience and goals.

### Repeats

Involve a fast run, followed by a period of recovery. The fast and hard section is referred to as a repetition (rep) and the runner should aim to recover in between these reps. Whilst the belief is that your long runs should not be run at race pace (to avoid injury) more experienced runners should incorporate long repeats to familiarise your mind and muscles with this pace. Good distances for long repeats are half mile, mile, 1.5 mile and 2 miles with a 2-3 minute rest in between, and then repeat.

### Sprints

Involved an all-out hard run for a short distance (Av 50-100m to a max of approx. 300m) with the aim of developing style, speed and economy, in addition to endurance.



### **Fartlek**

Is a Swedish term for 'speed play', or an unstructured, interval-type of workout. Within each fartlek session you alter your speed between low, medium and fast pace, and repeat this throughout your session. The unstructured nature of this technique means that it's easy to put into place, for example, simply choose to play with your pace between a landmark (e.g lamp-posts or trees along your weekly run) run at your increased pace and then 'recover' between each interval until you've regained your breath and form. Start by doing this for 10 minutes in the middle of a run, and build up slowly, always ensuring you do a gentle 10 minute warm up jog beforehand and warm down jog afterwards.

### **Hill work**

Incorporate weekly hill repeats 4-6 week's into your programme following a period of conditioning and strengthening, so that your body is strong enough to cope with the intensity of these sessions and not pick up an injury. Hill work should be done weekly, over a period of at least 6 weeks to demonstrate strength and stamina gains. Hill repeats also give you an opportunity to practice your running posture essential for trail runners.

### **Surges**

Are fast sprints incorporated into the middle of a long run, allowing you to get out of a stale patch of running, creating a 'gear change' after which you settle back down to a comfortable pace. Surges are a good training strategy but should not be used at the detriment of your energy reserves throughout a race.

### **Tempo or Threshold Runs**

These really push you out of your comfort zone, training at a level that is faster than your normal pace, which challenge and force your body to adapt to a higher demand level. Incorporating a tempo run into your weekly training schedule, for a 6 week period is a good way of raising your lactate threshold, which is your ability to run at a fast pace without accumulating lactic acid, which eventually stops you running. Train on a flat surface ideally as it allows for a consistent pace and level of overload.

### **Running up and down hill (key for trail running)**

Be conscious of your posture when running uphill, lean forward slightly into the gradient of the hill but do not bend at your waist. Reduce your stride length and take smaller, more frequent steps and pump your arms to help propel you uphill, driving them at 90 degrees at the elbow. Similarly, running downhill requires practice, to avoid putting unnecessary strain on your knees and hamstrings. If the downward slope is of medium gradient, lean forward slightly, keeping your knees soft and landing on your heels and using your arms out wide to stabilise yourself. If the hill is steep, you may adopt a 'zig zag' path to lessen the gradient. Leaning back and landing heavily will put unnecessary strain on your body.



## Equipment & Gear

### What do I need?

If you are new to running, don't be put off by the vast range of running kit. Part of the appeal of running is the absolute simplicity of it. Once you've invested in a pair of decent running shoes, you don't need much more but here are some key items that you may prioritise as you run more. If you're an experienced runner you may decide to buy some new gadgets to support improvements in your pace. Prioritise what you are looking to monitor and stick to your guns when choosing, otherwise you'll be paying for wasted functions that you'll never use.



#### 1 Trainers

The simplicity of running is one of its greatest strengths, all you need is a pair of trainers. However running in the wrong pair of trainers can trigger a multitude of problems from sore knees, bad backs and general lack of support leading to other aggravations throughout your training. If you're a beginner, it's 100% worthwhile visiting a specialist running shop where the trained staff will look at your old trainers, assess your running gait and advise you on the best trainers for you. Different biomechanics, body weight, foot shape and where you run should all be considered when you invest in a new pair of running shoes. Trail running shoes provide additional grip and control for the changing terrain of cross country running, so invest and train in a pair of trail shoes if your race is off road. This will make your running experience far more enjoyable and lessen the chance of injury during training.

If you have been running for a full season, don't get complacent with your shoes, check the rigidity of your soles to ensure they are still giving you adequate support.

Always consult a good shoe store where they will assess your gait and you are able to run in the trainers (on a treadmill) before you buy.

#### 2 Supportive bras

Wearing a sports bra for exercise is a must for women to reducing movement and discomfort whilst running, and sagging in the longer term.

Sports bras will feel very different to a normal bra, so visit a running shop to ensure you get the right fit and try several brands, styles and sizes.





### 3 Sports clothing

Should you buy new clothing, opt for kit that's made from wicking fabric, which draws sweat away from the body. If it's raining, cotton clothing will retain water or hold onto sweat making it heavy and likely to chafe throughout your run. Look out for flatlocked seams which are less likely to chafe and vented panels, usually on the sides or back, which allow air to circulate throughout your running.

Most sports clothing ranges also include hi-visibility colours, or reflective strips or panels to increase your visibility (and ultimately safety) if you are running in the dark.

### 5 Watch

A watch with a timer-stop watch is vital, essential for monitoring your progress during your training. Your watch will become your new best friend, providing you with a focus on your interval runs, motivation on your longer runs and reward as you monitor your progress throughout training. Most ranges have a budget version, so you don't have to spend a fortune.

As you become more aware of your times and statistics, many runners find it motivating to pay attention to their heart rate helping them to achieve their goals, prevent over-training or as an aid to lose weight. The GPS versions provide an excellent tool for measuring distance and speed, again great indicators of progress and huge motivational support throughout your training.



### 4 Sports Socks

Running socks can be expensive so choose carefully and look for socks made from fabric that will keep your feet cool and dry therefore preventing water from getting in. Good socks which 'wick' away sweat help keep feet blister free, limit odour and bacteria.

If you suffer from blisters, review your socks first (as the least expensive option) but drop into a local running shop to discuss your current trainers which may be causing the problem.

Compression socks offer a way of flushing out harmful waste after gruelling runs, particularly relevant for cross country off road runs.



### 6 Water bottle

You don't need water for shorter, quick runs, but may want to leave a bottle during hotter weather or on longer runs. You can carry water bottles in a simple waist belt, or leave your bottle at a point in your run where you may return for a second lap.





## Ten Long Distance Running Truths

### 1 Build up slowly

Your programme should be progressive over a number of weeks, depending on your experience and the length of the race, 12-16 weeks is the average programme duration. This allows your body to go through a sensible adaptation process, which will minimise injury and mean getting to race day fitter and stronger.

### 2 Consistency

Consistent training throughout your programme is better than 'binge' training at the weekends or trying to make up for lost time later on in your programme. The only exception to this is if you are not feeling well, then listen to your body and rest. Otherwise, look to achieve 12 - 16 good training weeks which are the building blocks to your programme.

### 3 Long runs are key

The critical weekly run in your schedule is the long run, a priority above other runs (e.g. speed work, pace runs). The longer weekly run will build your aerobic base and train the body to cope with the physical demands of longer distance runs. The mental benefits of completing a progressively longer distance each week will also be a positive marker in your training programme.

### 4 Take rest days

Training creates a 'stress' on the body, which is required to adapt and progress, but equally requires the body to rest and rebuild itself so that it can gain strength and fitness. If you fail to allow time for this the rebuilding and repair phase will be compromised and injuries, fatigue and illness can compromise your training efforts.

### 5 Prioritise nutrition

Consistency in your training requires a consistency to good nutrition too. Eating well one day will directly affect your recovery from the previous day's training efforts, and fuel you for the next day. Eat badly and you will compromise your physical performance. Carbohydrates in the diet are an endurance runners main source of glycogen which is the body's preferred fuel for running. Levels of glycogen can become depleted in 60-90 minutes so eating a diet rich in good quality carbohydrates, combined with good fats and protein source is key. More later.

### 6 Get your 'B' races in the diary

Planning some organised races, or varying distances ahead in your diary is key. They are a good way supporting you through your longer run and can be much more fun than just running on your own. It also introduces the element of race day preparation, crowds and pacing.



## 7 Pace yourself sensibly

Understanding your pace is key to your success on race day, many runners will train at a pace and then blow it on race day, suddenly feeling swept away by the race conditions and crowds around them only to find this leads to a much slower second half. Use your 'B' races to practice pace and go into your 'A' race with a clear idea of your mile times, and ensure you're freshest for the crucial latter 10k of the race.

## 9 Listen to your body

The repetitive nature of running can turn a small niggle into a serious injury, so listen to your body and take appropriate action immediately. You may require a day's rest, or icing may serve well to reduce inflammation, or visiting a good sports therapist will enable you to spot a problem before it prevents you from training. Particularly good, directly after a cross-country run, is ten to fifteen mins in a cold bath. A few ice cubes has been shown to decrease inflammation by causing the muscles to contract, pumping out metabolic waste. If you can't face this, take a shower instead to avoid the more alluring alternative of a hot soak in the bath. A warm bath may feel like a good option, but adding warmth to already inflamed muscles may actually hinder your recovery.

Massages are perceived as a luxury but given your commitment in time (and often expense) scheduling a sports massage is a good way of maximising your recovery. Schedule a massage for 48 hours after your long run or as a preventative measure 24 hours before a long/hard run.

## 8 Practice everything

Training is in effect a dress rehearsal for the big day, so practice everything and be prepared to review, adapt and try again until you get it right. Keep a training diary to help you note down how you felt: monitoring food taken on board before your runs; fluids and gels throughout training; post training meals; how you felt the day after a long run; whether your trainers or running gear felt comfortable or are you developing sore spots that need addressing through new clothing or footwear. If you are understaking a 24 hour/overnight event, you will need practice this repeatedly to train your body to deal with sleep deprivation and sustenance whilst training. Never ever try anything new on race day.

## 10 Tapering

Tapering depends on the person and the race duration, there is no definite time but generally a period of approx. 3 weeks before a marathon works well for most people. Tapering allows the body to heal any damaged muscles or fatigue but most also promotes maximum glycogen storage. The aim is to go into your race with strong, fresh legs and fully loaded glycogen stores. Your mileage should therefore drop throughout your taper period but the quality of your running in terms of form and speed should not, in fact entering a 10k in your taper period is an excellent strategy. A gentle jog the day before the marathon is a good way of turning over your legs and reducing nervousness but be sure not to tire your legs.



## Changing Your Lifestyle

### Optimal Training

A positive benefit of good training is improved health. The health benefits are not just attributed to the increased exercise, but the all-round effects of a holistic training plan

- Getting sufficient, good quality sleep
- Resting, to allow your body and mind to recover
- Eating a nutritious and varied diet
- Stopping smoking and heavy drinking
- Exercising frequently

The amount of time you dedicate to optimising your wider training environment, the better your health wellbeing, performance and ultimately your race.

It's easy to brush aside these elements of 'training' which often involve making changes to your lifestyle that may feel out of your control. However, set yourself a goal of focusing on at least one of the following for the duration of your programme and experience the difference it makes!

### Sleep

Arguably the most significant part of recovery is sleep. Sleep is hugely underestimated and often neglected all together. After a good night's sleep, we wake up better equipped for the day ahead, with activities such as reaction time, organisation of information, decision making, learning, emotional stability and memory amongst just some of the many benefits. However, whilst you sleep, your body also stops all vital functions so that repair and growth can be maximised and releases hormones regulating growth (e.g. soft tissue repair) and appetite control.

Sleep deprivation builds up over time, an hour cut short by watching an extra TV programme, a disrupted night's sleep, or a few very early morning starts. Over a period of weeks, this deficit can accumulate to many hours which can be detrimental to your training i.e. reduced cardiovascular function, speed, agility and reaction time.

Start by bringing forward the time you climb into bed by 30-60 mins, read to unwind (or write up your training log!) and create a high quality sleep environment: quiet, dark, cool and comfortable and see how you feel.

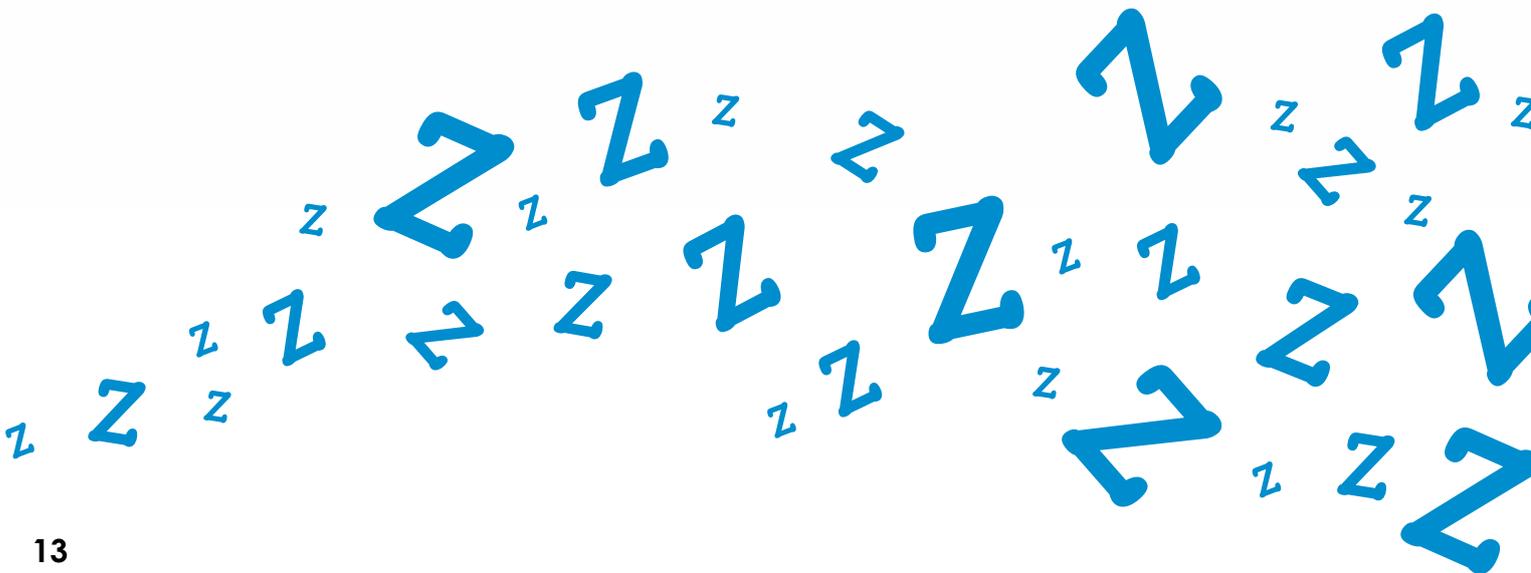
- A high protein snack before bed will promote serotonin production to promote sleep e.g a slice of turkey
- Stay away from any screen devices at least an hour before you go to bed, let your brain unwind naturally
- Remove your mobile (and any other electronic devices) from your bedroom, if you need an alarm clock, buy a stand-alone alarm
- Monitor the temperature in your room, personal preference is best but a room too hot or too cold will stop you from falling asleep. An air conditioner, fan, heater or the weight of sheets or a blanket can help you regulate temperature
- Unload your mind - keep a pencil and paper by the bed to jot things down that are keeping you awake



## Rest up

Along with good quality sleep, rest is absolutely vital to your training programme. Fail to build in rest days and your body will simply not repair and bear the burden of your training regime, with niggles and injury a common occurrence amongst those that don't rest.

Once you get into a training programme, it can become hard to slow down, coupled with juggling work and other commitments, you may be tempted to cut out sleep or simply pack in too much into your day. Ensure you build in time post-training to rest and relax, both your body and mind need a break and give you the mental strength for a good training week ahead.





## Nutrition & Hydration

### Food is not just fuel

Optimum nutrition is one of the most important aspects of your training programme and one that is often overlooked, but will bring with it a plethora of benefits beyond just fuelling your body for physical effort. It is a vast area and we've provided you with some initial suggestions and ideas which we hope you will want to explore and read about further. The improvement in your general health will be tangible, reducing colds and bugs during training along with longer-term health implications.

If you're looking for a personalised nutritional programme, or have any allergies or conditions that may affect your food choices, you may want to seek further advice from a qualified nutritionist.

### The status quo

As endurance athletes, you may think that a typical runners diet should consist of a lot of carbohydrates and very little fat in the diet. Staples such as pasta, rice, potatoes, cereals, bread and cereals will feature in many meals. The runners shopping basket may include 'low fat' yoghurts, products marked as 'light', and be brimming full of plenty of fruit, all of which sit within mainstream healthy eating. The food mentality of 'calories in equals calorie out' has long justified eating as many calories burned on a long training run. burnt on a long training run.

### A calorie is not necessarily a calorie

However, thinking about the 'composition' of your calories, i.e. the amount of fats, carbs and protein in your day's calories is a fundamental way of optimising your health and wellbeing. This in turn will support weight loss goals, appetite control, energy levels and repair from injury, all of which will have a direct impact on your race training and race performance.

Understanding the macro nutrients (fat, carbs, protein) and their role in your diet will support your goals. There is no doubt that reducing body fat to enhance performance is key, so adapting your macro-splits to support fat loss prior to your training season may encourage a leaner, lighter body for your training. However, ensuring that you have adequate carbohydrates in your diet later in your training schedule, to provide readily available glycogen stores for energy, is also important. Protein and fat play an important role too, so use the principles below to guide and hone your nutrition to suit your goals throughout your programme.



## 1 Think nutrient dense, not calorie dense

**Foods such as:** Fruit (particularly low fructose variants such as raspberries, blueberries, pears and kiwis) a wide variety of vegetables, lean meats, fish (unbreaded), nuts (e.g. almonds) and seeds. Buy the highest quality food that your budget can afford. For example, opt for organic (e.g. meat, eggs, milk, vegetables) or grass-fed meats and always strive to ensure the food that you buy is unprocessed.

**Why:** Increased intake of micro-nutrients and antioxidants support your overall health and recovery.

## 2 Eliminate processed and refined sugar from your life

**Foods such as:** Biscuits, chocolate, cakes, fruit yoghurts, jams, condiments, cereal.

**Why:** Conservative estimates suggest that we are eating between 20-34 tsp of sugar a day, exceeding the NHS recommended maximum of 16.5 tsp for men and 12 tsp for women. Processed and refined sugar are linked to weight gain, Type 2 diabetes, high blood pressure, bowel cancer, lower cognitive function, ageing skin, a depressed immune system, liver and kidney disease.

## 3 Moderate starchy carbs

**Foods such as:** Depending on your training requirements, honestly review the number and size of your portions of bread, potato, rice and pasta you're eating per day. When looking to include carbohydrates in the diet to fuel training, remove nutrient poor, refined sources such as bread and pasta for more nutrient dense foods like quinoa and sweet potatoes.

**Why:** Carbohydrates should continue to play a part in your diet but timing and type is key. Carbohydrates should be consumed around training to safeguard glycogen stores. At other times, carbohydrates should be reduced in favour of natural fats and protein and nutrient-dense leafy vegetables.

### Moderate starchy carbs





## 4 Pack a punch with protein

**Food such as:** Eggs, nuts, chicken, turkey, lean mince, fish (such as cod, plaice, haddock and bass) and oily fish such as tuna, mackerel, salmon, sardines and trout. Don't forget game meats such as venison, pheasant and partridge and fleshy protein dense fish such as prawns, sea bass, monkfish and snapper. Whey protein shakes also provide excellent protein for post training snacks (not as a meal replacement).

**Why:** Proteins are broken down by the body and converted into amino acids, which have multiple uses in cell function. This includes boosting the immune system and helping to rebuild muscle after exercise

## 5 Don't be scared of good fats

**Foods such as:** Avocado, nuts (almonds and brazil nuts), oily fish such as salmon, mackerel and sardines, unprocessed meat such as turkey, chicken, venison and lean beef.

**Why:** By focusing your intake on good fats (in conjunction with cutting down your carbohydrate intake) you will be training your body to regain control of blood sugar levels and allow your body to use body fat as fuel. A shortfall of (good) fat in the diet will lead to a lack of essential nutrients which are critical for immune healthy, hormone regulation, bone and cell growth

## 6 Watch out for seemingly 'healthy' foods

**Foods such as:** Reduced calorie salad dressings, condiments such as ketchup, , breakfast cereals, low fat yoghurts (opt for full fat, and reduce your portion size), soft fizzy drinks and fruit juices/smoothies. Eat only the whole fruit, not just the juice.

**Why:** Foods that are marketed as 'low calorie' or 'low fat' often contain more sugar to compensate for the taste experience. Even if you're not looking to lose weight, a glass of orange juice is high in sugar (fructose) which goes straight to the liver and is processed as fat.

### Don't be scared of good fats





## 7 Avoid alcohol

**Drinks such as:** Beer, wine and spirits

**Why:** Actively prevent the body from burning fat, reduce energy levels and encourage over-eating. Try to cut down in the week or experience the benefits of eliminating altogether whilst you're training. You can celebrate your team's success with a glass of bubbly after the event!

## 8 Refuel during and after training

**What:** Carry two water bottles on your bike, water for instant and direct hydration after the hike, and a second bottle containing a sports drink, to provide energy for the third leg of your race. There are a number of different bars, gels and snacks in sports shops for consumption before and during a race. Aim to eat a protein and carbohydrate snack (or meal) within 30-40 minutes of training to optimise recovery.

**Why:** Optimise your refuelling and hydration strategy before race day. Not everyone can digest solid foods whilst on the move, so drinks and gels are a good alternative. How much, when in the race, and how you integrate these into your training is an important element of your training so that you have no surprises on event day.

## 9 Always eat breakfast

**What:** Porridge, poached eggs on toast, omelette, peanut butter on toast, eggs and smoked salmon, Shredded Wheat and Weetabix

**Why:** The most important meal of the day, wakes up your metabolism after fasting throughout the night and kick-starts your body into burning calories. Breakfast is very individual and will also depend on when you're training in terms of composition, timing and digestion.

### Always eat breakfast





## 10 Nutritional training for race day

**Training:** Keep a note of your nutritional requirements specifically around training times. If you train after breakfast, optimise your breakfast so that you know exactly how much time you need (usually 1.5-2 hours) after eating before you can exercise comfortably. Try different energy drinks, bars or gels, during your training and at which point during your hike or bike to take them, so that you have no surprises on event day. Weather conditions will also play a huge role in what form and how many calories you consume, so again keep a note of this in your training diary.

**How:** There are numerous on-line electronic diaries which will automatically calculate your calories and macro splits or simply keep a hand-written diary yourself. Keep a log of what you eat, but also when you eat, and how you feel, in relation to your training. As you move through your training programme you will find that certain foods affect you differently such as: fuelling before exercise, ease of digestion and best recovery foods.

### Nutrition on Race Day and Post Race Day

Experimenting in training is key to honing your race day nutrition. This will involve knowing what is the ideal breakfast, how long you should eat before the race, managing your bowel movements and taking extra calories on board during the race. Practice eating when you're training, as it's not the most comfortable thing to do, so experiment with gels and liquid energy or electrolyte drinks.



After your race, the first thing you should do is hydrate yourself with water and fluid replacement. If you sweat more than average you may want to consider an electrolyte drink. After this, there is a well established 'carbohydrate window' in which your body best refuels itself. Ensure you eat some simple, easily absorbed carbohydrates within 40 minutes of finishing your race (e.g. banana). After two hours, you should eat a well-balanced meal which includes protein, fat and carbohydrate and eat plenty of protein throughout the week to help fuel your body for a complete recovery. Mackerel or sardines on toast is a great post run meal.



## The Principles of Training

Training can be a highly rewarding activity. One of the many unique qualities of the human body is its ability to respond and adapt to regular exercise and therefore training with a progressive load and effort will bring improvements over a period of time. For this improvement to occur, your body must be confronted with some form of 'stress' for the body to respond to, whether that is weights in the gym, a run outdoors, or a hilly bike ride.

This 'stress' will leave the body feeling some discomfort in the form of muscle soreness if unaccustomed to the type of activity that you're performing. Exercise-induced muscle damage is also known as Delayed-Onset Muscle Soreness (aka DOMS) and symptoms appear 24-72 hours after exercise. This is perfectly normal and part of the natural adaption process.

Your programme will initially build your aerobic base whilst conditioning your body so that it can cope with the intensity and load applied later in the programme. This will allow for the soft tissue, ligaments and muscles to adapt with reduced risk of injury and discomfort. Thereafter more intense sessions (e.g. hill training) can be incorporated into your programme.

With these principles in place, a good training plan will allow your body to adapt slowly, train consistently, progress continuously and rest regularly, to ensure 12 - 16 weeks of good quality training.





## Injury Prevention

### Strength and conditioning

A simple circuit of exercises should be incorporated twice a week to condition and strengthen our joints, tendons and ligaments. These structures hold our body together, whilst the large muscles (quads, hamstrings, calves) make us move. When these large muscles become tired, over-worked or tight (through training) then we develop problems which can lead to injury. You should also remember that you never run on both legs and therefore should incorporate single leg exercises into your cross training, to maximise single glute, quad, knee and ankle strength along with core, to maximise your running efficiency and strength. If you are a member of a gym speak to a gym instructor or personal trainer who can help you with a programme.

### Stretching

It's been long believed that stretching provides a longer, smoother stride and reduces risk of injuries. Before your run, do some 'dynamic movements' to warm up the muscles and take your joints through the full range of motion and improve your soft tissue extensibility. You can create your own dynamic warm up incorporating hip swings, gentle squats, lunges, calf raises and leg swings, with slow, smooth movements at first so as not to make any sudden aggressive movements. The time to do your static stretching is after your run, when you can stretch (without straining) calves, ITB, hip flexors, quads, hamstrings and glutes (as a minimum) holding each stretch for approx. 20-30 seconds.

The whole stretching process should not last more than 10-15 minutes and you will notice quite a bit of difference in how flexible you are after performing these consistently for 2-3 weeks.

Sports massage is a widely adopted to help recovery from a runners training regime, in addition to a regular stretching routine. Sports massage can release muscle tension, keep soft tissue in good health and help to flush away waste products. The best way to find a reputable sports masseuse is by recommendation from other runners.





## Managing an injury

Should you be unfortunate enough to become injured then stop training immediately and please consult a medical professional for advice.

Alleviate any inflammation by icing the area straight away and resting. Eat foods with anti-inflammatory properties such as garlic, green tea, dark berries and dark chocolate! Ensuring you eat a healthy well-balanced diet, with protein to encourage muscle and tissue repair and plenty of nutrient dense foods such as fruit and vegetables will also aid your general recovery - vitamins and minerals help support collagen formation, enhance immune cell function and promote wound healing.

## Good Luck!

We hope that you enjoy your challenge and with the help of the guide and training programme will see and feel a difference to your health, fitness and well being. Hopefully you will have achieved some personal goals and may be thinking about your next race already! Guide Dogs have lots of different events throughout the year, whether you're looking to improve your time or would like to try a new challenge such as swimming, cycling or our unique Coniston Challenge, go to

[www.guidedogs.org.uk/events](http://www.guidedogs.org.uk/events)

Thank you for your passion and support for Guide Dogs.

Guide Dogs Events Team





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