start line

A 'BESPOKED' GUIDE TO INJURY PREVENTION AND BODY MANAGEMENT FOR ENDURANCE RUNNERS

IN ASSOCIATION WITH THE PRESTON 10 MILE ROAD RACE

BESPOKED PHYSIOTHERAPY
PERFORMANCE AND EXERCISE SPECIALISTS

PRESTON 1881 HARRIERS

2021 EDITION

ABOUT THIS GUIDE

Mark Taylor, Lead Physiotherapist @ Bespoked

Firstly, congratulations on entering the a Preston 10 mile road race. Whether you are experienced in competing at this distance or it is your first time (or even your first race) you have signed up to something which requires a period of training but will ultimately have great rewards.

However you need to give yourself the best chance of actually making the start line, and this guide aims to give athletes of all levels information based on the latest research which will be of use when preparing for this and future events and getting there free of injuries.

Whether you are aiming for a PB, just wanting to get round or are using this distance as a stepping stone for longer challenges many of the same issues apply to everyone in relation to maintaining your body in the best shape for the demands you place on it.

As a competitor myself I appreciate the physical and mental challenges we all encounter during the long months of training and the anxieties that many people have when getting closer to a big goal or race day.

The aim of this guide is to help you stay injury free through the year and therefore reduce any stress you have building up to a race day, however we have also included up to date guidance for addressing any injuries you may experience.

We are delighted to have teamed up with Preston Harriers to offer athletes this guide which we feel is unique and athlete focussed, something in keeping with the ethos of the event.

Good luck in your training and I look forward to seeing you on the start line!

Mark

IN THIS GUIDE

INTRODUCTION

GETTING SIMPLE THINGS RIGHT CAN HELP YOU GET TO THE FINISH LINE SUCCESSFULLY

Statistics from endurance events show that 10-25% of people typically don't actually start the race they entered and many studies show an annual injury rate of around 40% amongst long distance runners.

Whilst a range of reasons will exist it is fair to assume that injury will figure prominently as a reason why people fail to hit their target, the good news is that there are simple steps we can take to help reduce our risk of injury.

When we analyse the factors behind injuries in the build up to events most are due to training error, many are preventable, and sometimes are not aided by people following well-meaning but poor advice.

Everyone from novices through to elite athletes should have an appropriate strategy in place to reduce their risk of injury, and this guide aims to present the factors which should be considered by all athletes to enable them to maximise their chances of making the start line.

Whilst this guide gives mainly generalised advice, with a focus on the 10 mile distance and beyond, some factors for athletes apply which may need more individualised thought, these include:

- Age
- Injury history
- Running history and long distance experience
- Race calendar for year
- Time able to commit to training

Please feel free to contact us if you want any guidance on specific issues you may have.

TRAINING PLANS

finding the 'one for you' and avoiding overload

A multitude of resources exist to get training plans for endurance running challenges. The various options include:

- Free training plan from a website/magazine
- Advice from a friend / teammate
- Personal 1:1 coaching
- 'winging it!'

Firstly let's discuss the last option. Basing training on gut instinct may be able to get you through shorter distance races but in reality once you start targeting races of 10 miles and more following a more structured, nuanced programme is likely to enable you to maintain consistency in training and also give you the best chance of performing to your capabilities.

Any training plan should be designed around you and your 'A-race', ie main target(s) for the season. A crucial factor to consider is being realistic about how often and how much time you can dedicate to your training over an extended period.

Just because a specific plan worked for one person does not mean that it will be the ideal programme for everyone...and it may not even be the best plan for that same person the next time they race at the same distance.

TAKE TIME CHOOSING THE RIGHT PLAN FOR YOU. BE REALISTIC AND DON'T SET YOURSELF UP TO FAIL

Also it is worth considering whether you are just 'aiming to get round' or are competing for age group prizes or a new personal best – a training plan can (and should) look very different for these differing groups.

Be realistic – if you over-reach on a mortgage you'll struggle to meet the repayments, if you over estimate how much you can commit to training then you'll struggle to keep it up and then be left in limbo as to what should give. A criticism of 'off the shelf' plans is that they are frequently unrealistic in terms of the hours that amateur athletes with full time jobs and families can dedicate to their hobby.

These 'free' plans often don't specifically integrate strength and conditioning training into them either, which as we'll discuss later is another aspect to consider for everyone undertaking endurance challenges.

If you need guidance on how to 'tailor' a plan to your specific circumstances then it is worth speaking to an expert on the issue.

ENDURANCE TRAINING CAN BE LIKE MAKING CHILLI...

Once you have decided upon the correct plan for you then don't become a 'slave to the plan' – hopefully you are progressing your load towards the event over a period of several months and so a couple of easier weeks here and there isn't going to have too much impact and you don't need to chase any lost sessions, however if you do find that you are repeatedly missing sessions then it may be worth having a rethink before it is too late.

One analogy I make is that a plan should be treated like a recipe book, each day or week is a different recipe - sometimes you will rigidly stick to the recipe, but occasionally a recipe may say put 6 chillies in and you may only use 3 or 4, the end result will still be a bowl of chilli con carne! A key part of this process is knowing and listening to your body.

So, in summary some key components to consider when choosing a training plan are:

- consistency
- specificity to you
- flexibility
- realism

INJURY PREVENTION

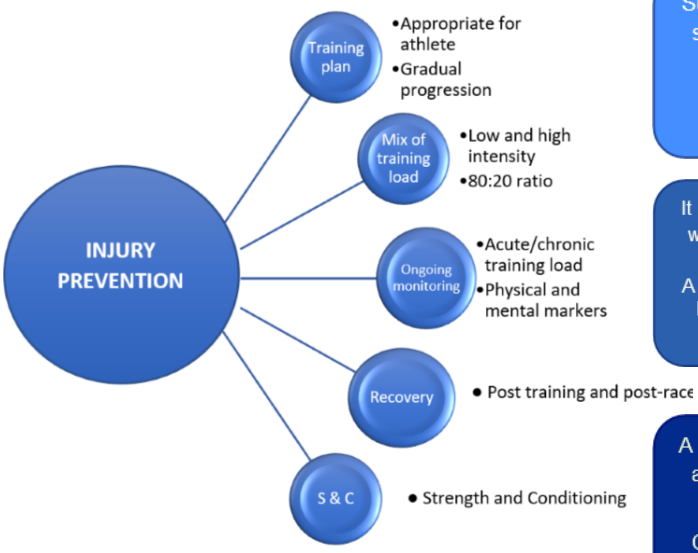
avoiding the avoidable

Being injured is tough for athletes at any level and can have several implications, including:

- psychological challenges with a negative impact on mood and mental wellbeing when not being able to train
- physical implications if unable to train for a prolonged period
- potential impact on performance at the event itself
- forced withdrawal from the event (again it is worth reflecting on the fact that up to 25% of entrants for endurance events do not make the start line)

A KEY AIM OF ANY ATHLETE MUST BE TO AVOID PREVENTABLE INJURIES

The chances of injury can hopefully be minimised in a variety of ways, and the illustration below shows some of the key 'spokes' we should consider when implementing an injury prevention/reduction programme.



Sudden increases in training load are strongly correlated with injury risk – not increasing your load by more than 10% each week is a useful guide although not a strict 'rule'.

It is often said that people do 'low intensity' work too hard and fast and not work hard enough in high intensity work.
A rough guide of 80% low intensity to 20% high intensity has evidential support for endurance athletes.

A simple daily questionnaire can provide an effective 'early warning system' for high risk periods for injury.

Contact us for more details if this is of interest.

Each individual's specific needs will differ based on their circumstances such as their goals for the race (age group contender or just getting to the finish line), injury history, running and endurance sport history and time, however certain principles are applicable to all and the crucial elements include load management and strengthening.

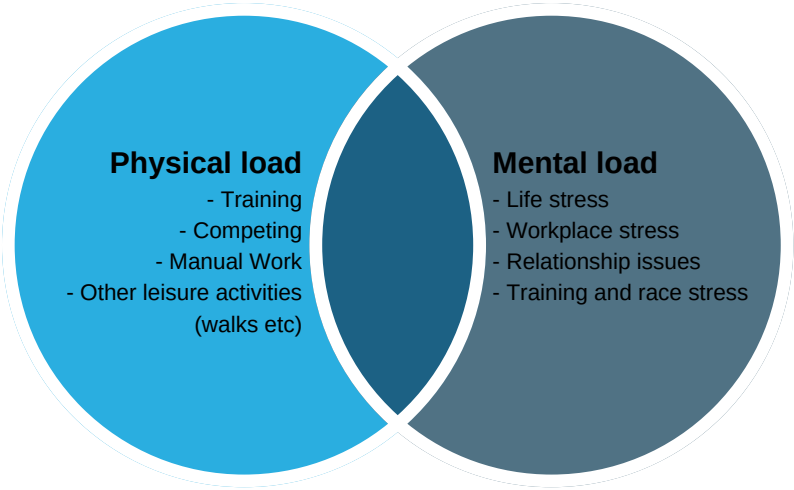
MANAGING YOUR OVERALL LOAD

we need a holistic approach

Your body has a total capacity and it is important that we do not exceed this by placing excessive load on it (if you place too much load on a piece of wood or metal it will eventually break, and the same theory can be transferred to our bodies).

The load on your body is multi-factorial and therefore not purely related to the physical demands of training, although this is a crucial element.

The illustration below shows how various factors affect the overall 'load' you place on your body, and these can obviously have a knock on effect on sleep etc, which can also place you more at risk of injury.



Different people have different stresses, but things such as a new born baby crying overnight, or relationship or job insecurity can have a significant effect on one's mental load, sleep quality - and subsequently place you at a potentially higher risk of injury. This is therefore another area where flexibility with training plans can be sensible a times to avoid a cumulative loading of your body beyond it's capacity.

Having good body awareness is crucial in manging this balance and this can be done by gut feeling, keeping a diary or by more formalised monitoring methodologies.

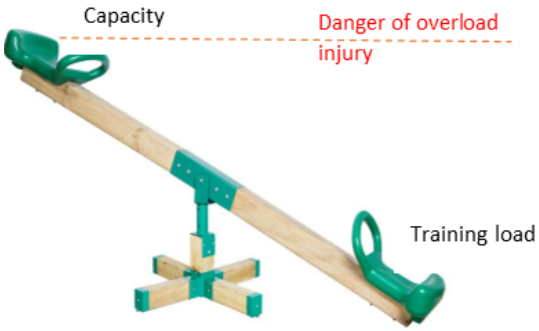
Whilst some issues are more uncontrollable than others (the crying baby being one example) we can influence other factors which give our bodies a greater capacity to deal with the load put upon it.

STRENGTH & CONDITIONING

the importance of strong foundations

Undertaking an endurance training programme and race puts your body under a significant amount of strain. To help minimise the risk of injuries it is crucial that you make your body as resilient as it can be to cope with the demands that will come its way.

If you think of each muscle and tendon of being like a see-saw, if the training load outweighs the capacity of the soft tissue then injury risk is increased significantly.



We can minimise the risk of muscular, tendon and overload injuries by equipping our muscles with the capacity they need to deal with training and races, and simply put we need to do this with strengthening exercises. A further bonus is that in addition to a reduced injury risk increased strength can potentially lead to improved performance.

Various factors determine what the best strengthening programme is for each individual, including previous exposure to such exercises and the environment the work will be done in. Whilst some will choose to do strengthening work in a gym environment it is perfectly feasible to put a programme together for people who have limited access to equipment and aren't members of a gym.

There are many bodyweight exercises which can be done to 'get things started' however it is likely that you will need to incorporate some resistance/weight into your exercises to get maximal benefit from them.

A FORCE BETWEEN 1.5-3 TIMES YOUR BODYWEIGHT GOES THROUGH YOUR LEG ON EACH STRIDE WHEN RUNNING.

A 10 MILE RUN WILL TYPICALLY INVOLVE AROUND 11,500 STEPS SO AN ATHLETE WEIGHING 80KG WILL TAKE A CUMULATIVE LOAD OF AROUND HALF A TONNE THROUGH EACH LEG.

It is probably a 50/50 split between those who love and those who loathe S&C work, and with limited time available many choose to opt out of this aspect of their training to focus on running, however this is rarely a sensible option and we would encourage everyone to explore ways in which they can fit some strengthening into their programme.

Recent research also suggests that strength training can give similar performance benefits to those it is claimed may be garnered from certain footwear.

RESEARCH HAS REPEATEDLY SHOWN THAT ENDURANCE RUNNERS UNDERTAKING STRENGTH TRAINING DO NOT GAIN SIGNIFICANT MUSCLE BULK OR PUT ON WEIGHT.

Whilst running predominantly loads the leg muscles (glutes, hip flexors, quads, hamstrings, calves and also other smaller muscle groups) it also requires a mixture of movement control and stability around the trunk and shoulders – and we should take into account when considering a strengthening programme.

Endurance running places a high demand on the body, and the argument for some form of strengthening programme to help training and performance is therefore inescapable.

WHAT TO STRENGTHEN?

and how?

It is impractical and ineffective to simply look at each muscle used and do one exercise for each, there are though certain muscle groups and body areas which we know are prone to 'overload' injuries and should be the immediate focus of strengthening and mobility exercises.

Consideration also needs to be given to factors such as whether the exercises will be done at a gym or home (and with what available equipment).

The following are the key body areas/muscle groups to ensure are covered in a running strengthening programme and are discussed in slightly more depth in the following section:

- Glutes
- Hamstring
- Trunk stability
- Quadriceps (including hip flexors)
- Calves

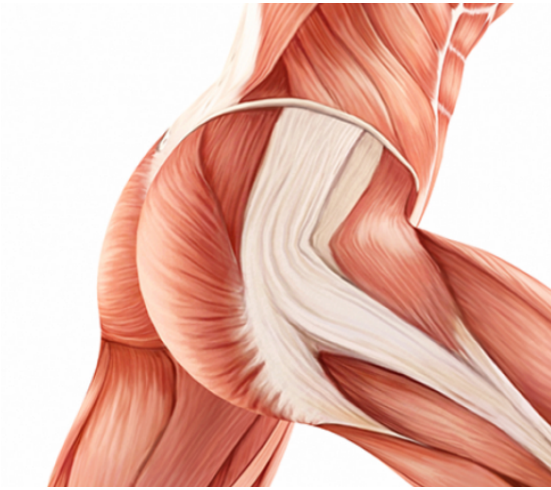
How often should you be doing S&C?

It is accepted that training for endurance events can be very time intensive, however room for strengthening exercises should be factored into your planning, and whilst individuals have their own specific goals and needs we would advise that you aim for at least two to three sessions per week 'out of season' dedicated to strengthening / injury prevention exercises to compliment your running training and this can be reduced to once per week in 'race season'.

STUDIES SHOW THAT A STRENGTH PROGRAMME DONE 2-3 TIMES A WEEK FOR 6-14 WEEKS CAN IMPROVE RUNNING EFFICIENCY AND TIME TRIAL PERFORMANCE (BY 2-5%).

In order to gain maximal gains from strengthening work it is ideal when heavy resistance work can be done, however is this is not possible then adaptations can be made and benefit derived from lighter exercises.

THE GLUTES



The gluteal muscles play a key role in running, and are also a crucial component of what is often termed ‘core stability’.

People are often told they have underactive or lazy glutes often with little further explanation, and whilst this 'diagnosis' is debate-able they are hugely important so it is worth considering why this is.

There are three gluteal muscles:

- the gluteus maximus primarily extends the hip.
- the smaller gluteus medius and minimus control the rotation of the hip and thigh. If the thigh/hip is allowed to rotate inwards (leading to the knees being close together when running) this can lead to hip or knee pain, and is often culpable in cases of ITB syndrome or ‘runners knee’.

Given the above it is important to strengthen all aspects of the gluteal complex.

possible exercises

band walks

hip abduction with gym ball

leg press

weighted step up

QUADS, HIP FLEXORS AND HAMSTRINGS

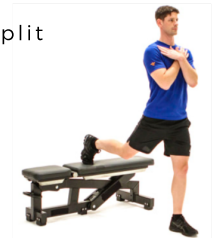
These muscles around the thigh are utilised in most sport, however running places a significant load on them and evidence shows that weakness around this area places you more at risk of pain or injury, particularly around the knee, when increasing mileage.

possible exercises

hamstring curl on ball

weighted squat

Bulgarian split squat



single leg squat

THE CALF MUSCLES

Running places a high demand on the calf complex, and weakness in this area can be predispose athletes to issues such as achilles tendonitis and plantar fasciitis.

There are two muscles in the calf and the deeper of these, the Soleus muscle, is often neglected in strengthening programmes. This muscle works when the knee is flexed (as in most of the running stride) helps form the Achilles tendon and so it is important to consider when planning your S&C.

Studies have been done to show how many single legged calf raises the 'normal population' can do, the results with regular runners are often surprising and highlight a need for increased strength.

normative single leg calf raise figures

Age	Male	Female
20-29	37	30
30-39	32	27
40-49	28	24
50-59	23	21
60-69	19	19

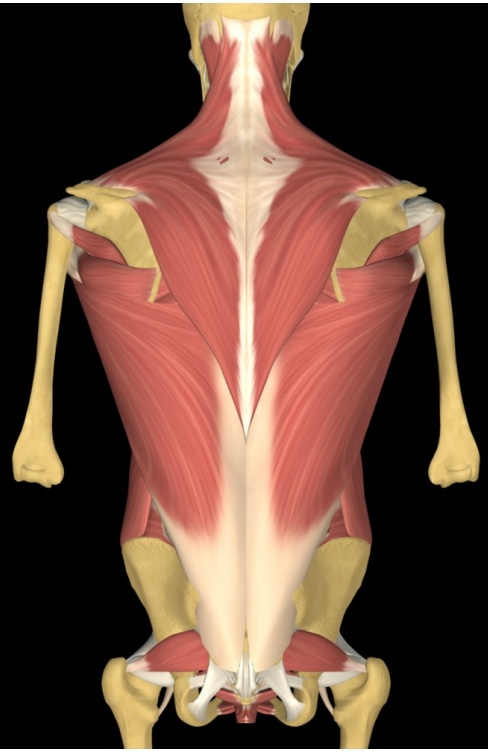
Herbert-Losier et al (2017)

possible exercises

single leg calf raise - knee straight

single leg calf raise - knee bent

soleus press



TRUNK STABILITY

'Core stability' is an often used term and many well intentioned exercises aim at improving this area, although there is some debate to be had about the transferability of exercises where you remain static to running at pace.

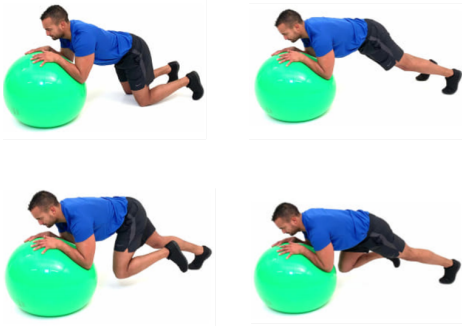
The ethos of having a 'stable middle section' though is important to enable efficient transfer of forces through the body.

Our preference is for fairly straightforward exercises involving some movement which 'automatically recruit' the target area rather than straining to try and actively contract some deep musculature.

Individuals who have a history of injury may require individual tailoring of these exercises however there is usually little need for the over complicated and gimmicky exercises we often see or hear about.

possible exercises

mountain climbers on ball



dead bug

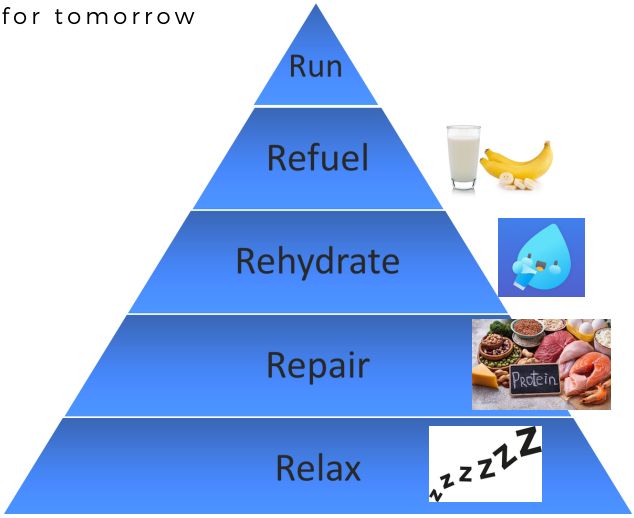
side plank with dumbbell rotation

RECOVERY

getting your body ready for tomorrow

Recovery is an area in which many athletes from recreational to elite levels have room for improvement, hopefully this gives some food for thought and isn't thought of as 'preachy' and if you already have a strategy that works for you then by all means keep going with it!

Many things have been claimed to provide athletes with the optimum recovery, often with a hefty price tag attached, In reality optimal recovery is simple, cheap and should involve lots of sleep!



Basically, if you recover from a hard training session or race well then you are giving your body the best chance of repairing natural (and desirable) damage caused and being in good shape to carry on with your plan or demands, and therefore recovery is a vital piece in the jigsaw of injury prevention and improving performance.

Recovery is an individualised process and evidence suggests that varying the methods used can also have benefits. In addition to performance one effective way of assessing the effectiveness of your recovery strategies is by ongoing monitoring of a variety of physical and psychological markers which can act as an early warning system to indicate when your body may need a rest, please contact us if you wish to discuss this area in more detail.

We will primarily deal with the fundamentals here, and the good news is that they are largely simple, very cheap and can be managed entirely by you.

These basics should be seen as the foundations and walls of your "recovery house" – and if you don't have these in place then anything else you do is going to be of dubious benefit and the equivalent of putting a fancy roof on a building built on sand!

Firstly though: to stretch or not to stretch...

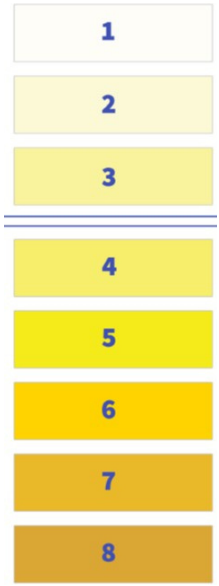
There is frankly little good evidence to support static stretching immediately before or after exercise (in fact there is evidence showing it is detrimental to performance prior to exercise). Dynamic movements are now widely accepted as the best prep for exercise and increasingly seen as being the best way of beginning your initial recovery – so if your session has been high intensity then a gradual reduction in intensity to a very gentle jog and then doing some gentle dynamic movements of various body parts is a good way of initially 're-setting' your body.

If you are stretching to increase flexibility then do that as a standalone session targeted at that aim or attending a good yoga session etc, but you won't get more 'supple' after a hard training session or race.

THE FUNDAMENTALS OF RECOVERY (IN ORDER OF IMPORTANCE)

1. Nutrition and hydration

- The aim here is to help your body to start to repair itself
- As soon as possible after the 'event' have a drink. This doesn't need to be an expensive recovery shake, cow's milk has been shown to offer many of the benefits at a fraction of the cost.
- Make sure you rehydrate over the next few hours (use the pee chart on the right for a rough guide on whether you are hydrated enough). If your urine is 1-3 on the chart then you are well hydrated.
- Eat a proper meal within 60-90 minutes of your session/race finishing, trying to ensure that the meal has some protein (natural sources are far preferable and more reliable than 'powders').
- If it has been a long session or event then you may also need additional food/meals over the next few hours.



2. Sleep and rest

- Vital and often neglected.
- You should be aiming for 7-9 hours to enhance your recovery and minimise your chances of future injury or illness.

IF YOU DON'T GET THE BASICS RIGHT THERE IS LITTLE POINT TRYING FOR 'MARGINAL GAINS' WITH OTHER METHODS

3. Active recovery

In addition to 'passive recovery' and rest an element of active recovery is also vital in helping the body recover from high levels of exertion.

- The importance and nature of this will depend on the 'exertion' in the race etc.
- As a rule it is good to at least get out walking etc the day after
- The bigger the exertion the lighter the active recovery, so whereas a hard interval session or 10k race might be followed by a gentle jog, easy bit of cycling or some time in the swimming pool a hard half marathon and beyond may necessitate a short time away from 'proper exercise'.

4. Other methods/modalities

massage

The key thing here is to be honest about the effects of massage. Based upon scientific evidence it cannot be claimed to increase blood flow, circulation or improve flexibility, however that is not to discount it and some benefits can be gained from 'a rub'.

Massage can certainly have a psychological benefit and some studies show there may be some perceived reduced soreness and fatigue the day after and therefore it isn't discounted as something that may be of use as a 'treat' at certain times, and it can be a good time to discuss any other issues with your therapist, however massage doesn't need to be considerd a necessity or a standalone recovery tool.

Similarly foam rollers have a limited evidence base but if people like using them and feel some benefit then they are not discouraged, but shouldn't be used at the expense of the fundamental recovery principles.

ice baths / cold water immersion

This is an area that suffers from having largely poor quality data available and studies differ greatly with regard to water temperature and time spent in the water etc, however certain trends are emerging from studies.

- In periods of heavy training or competition then there can be a reported feeling of reduced fatigue and soreness.
- Benefits are most likely to be seen amongst those who believe that it will be of use, whilst those not 'wanting' to use an ice bath will report no benefits.
- Performance is not improved in endurance athletes as a result of post exercise cold water immersion.

compression garments

Again, some evidence suggests that compression garments may be of use if the fundamentals are in place, however debate exists as to the compressive effect of differing garments and the effect of the compression applied once they have been through a washing machine on a warm wash.

ILLNESS

should you train or compete?

Although nutrition and hand hygiene etc can minimise the risks it is unfortunately a fact of life that illness may strike at some point during a long training cycle encompassing the winter months. The dilemma facing athletes is always the same, should I exercise or not?
We are obviously unable to give specific medical guidance for each individual case however **the 'neck check'** is a useful thing to bear in mind.

Broadly speaking if all symptoms of a cold are above the neck (runny nose, nasal congestion, sore throat etc) then it is usually fine to exercise, although it is probably wise to limit the intensity of any session and if in doubt skip the session as any one day is a very small part of the overall plan for you. If you pass the neck check and want to exercise, then it is advised to do 10 minutes at half intensity and if the symptoms worsen then stop the session and if not then you can continue as able.

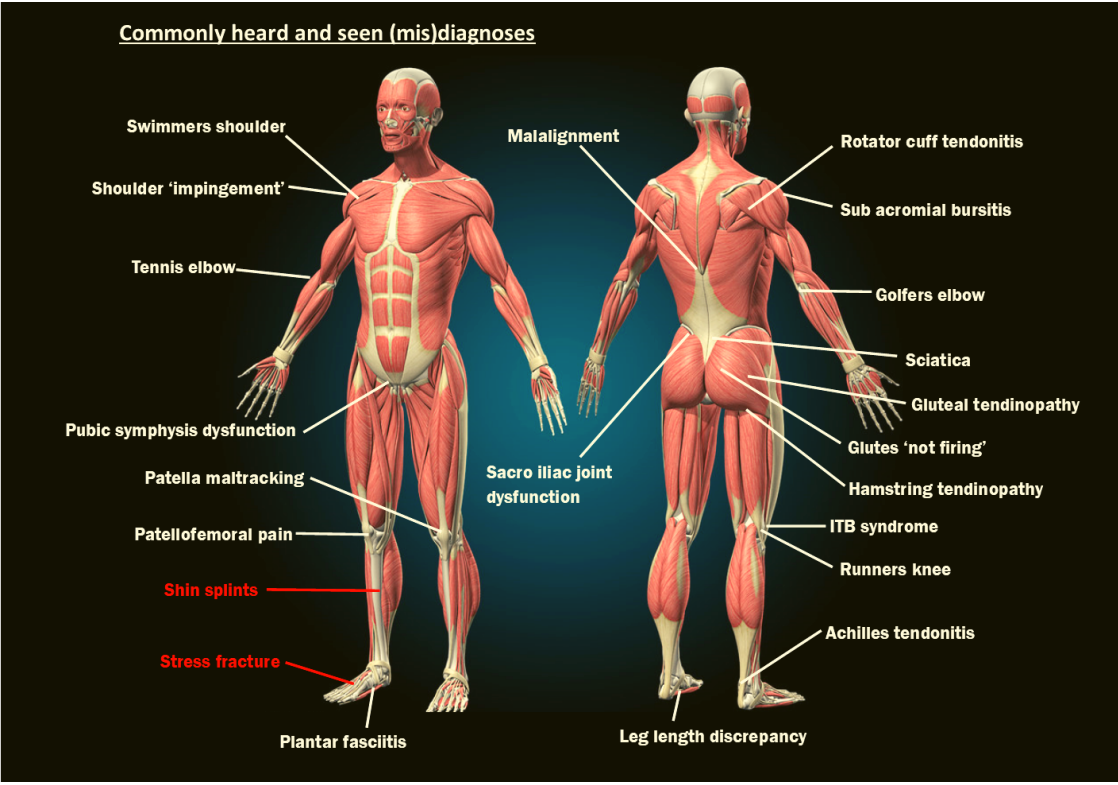
If you have symptoms below the neck, for example a chesty cough, body aches, gastrointestinal problems or a tight chest, then it is advised that you refrain from exercise. Once the symptoms have completely resolved then return to training gradually over a period of a few days.

Other signs such as an increase in resting heart rate can also be used to indicate that your body is fighting infection and would maybe benefit from a short rest.

Whilst quite rare there are occasions where endurance athletes compete when they shouldn't, place their vital organs under too much demand and end up seriously ill. Therefore it is always best to be cautious rather than cavalier.

It should be noted the above is a rough generic guide and persistent or severe symptoms 'above the neck' should also indicate that a rest is needed – even elite athletes get ill at times and require time off training, and taking a rest at the right time can ensure that long term recovery is better than when 'fighting through' illness.

IF IN ANY DOUBT, OR IF SYMPTOMS PERSIST THEN IT IS ADVISED THAT YOU SPEAK TO YOUR DOCTOR.



INJURIES

and how to manage them

Whilst much of this document discusses how we can reduce the chances of injury, unfortunately at times they will occur for some people and so it is important to discuss how best to manage a range of different scenarios.

Injury rates for endurance athletes vary in the literature but some common themes do exist:

- Overuse is the most common cause for injuries
- The percentage of endurance runners experiencing an injury in the last 12 months is fairly high
  - typically an injury rate of around 40% of long distance runners per year experience an injury
  - one recent study claims that 90% of those training for a half marathon or marathon will experience injury or illness)

Any athlete with ongoing discomfort or a new injury will find many well meaning people at work or in clubs etc willing to help diagnose the issue and suggest possible ways forward, and some of the conditions commonly suggested are highlighted on the above illustration.

On many occasions the guidance given by peers is useful and helps people find a way of resolving issues, however on other occasions well-meaning advice (and google searches!) can sometimes be slightly misguided.

Many of the conditions shown on the previous illustration overlap (with different terminology used for similar issues), some are actually very debateable in their existence and impact on our function, others may be secondary to a different issue and some may require medical investigation. Thankfully most of these injuries should be completely avoidable if avoiding the pitfalls of training plan errors etc discussed throughout this document.

We can broadly categorise most of the injuries which may affect middle and long distance triathlon competitors and how you can go about managing these.

TRAUMA INJURIES

Unfortunately some people will suffer incidents such as falling when running off road or in icy conditions, hopefully the main damage in such situations is dented pride however more significant injuries obviously can happen in such situations.

If any bony injury is suspected then you should attend the nearest accident and emergency department for assessment and the relevant investigations.

Signs that there may be a bony injury include:

- significant bony pain
- swelling over bony prominence
- redness/bruising
- visual deformity
- unable to weight bear (if a lower limb injury)

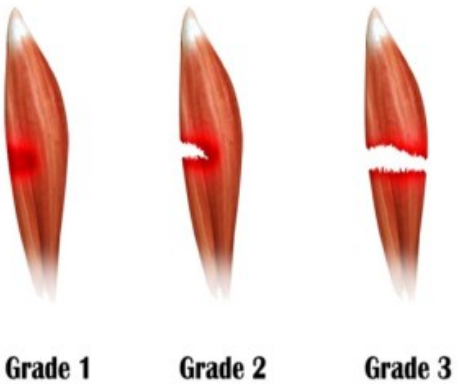
Any skin abrasions should be cleaned thoroughly to prevent infection and if there are any signs of subsequent wound infection such as redness, increased temperature or developing a general fever then medical attention should be sought.

Trauma can also lead to jarring of joints and potential ligament injuries. The extent of swelling, bruising and pain are often good indicators of the extent of any such injury and it may also be necessary to attend hospital to exclude the presence of a fracture. If there is no fracture then it is advisable to seek the advice of a physiotherapist in these cases as effective early management and advice in these cases can have a significant positive effect on the healing process and ensure a safe return to activity and sport.

ACUTE MUSCLE INJURIES

Most common when doing high intensity or heavy resistance work a muscle tear can range from a Grade 1 injury where a few fibres are irritated (most common) right through to a grade 3 where the muscle is completely ruptured (least common and very rare), with everything in between classed as a grade 2 tear.

People complain of a sudden pain, and often a feeling of a pop or 'like being shot' and an inability to continue with whatever activity they were doing.



Contrary to popular belief rest is very rarely the best management plan, and an early start with appropriate exercises helps us influence the tissue healing and can greatly shorten the time out of action. In these cases we would recommend you seek the advice of a physio at the earliest opportunity to ensure optimum management.

OVERLOAD INJURIES

The most common type of injury for endurance athletes is the annoying, ongoing niggle and these make up the majority of conditions shown on the diagram at the start of this section.

Encouragingly though these are the injuries we hope to minimise with effective planning, strengthening and recovery etc, however when occurring they are often the hardest to self-manage as people are torn between rest and 'pushing through it' and not being sure when to seek advice.

Whilst some discomfort is to be expected at times during training for endurance events this should be fairly transient and some scenarios should be flagged up for discussion:

- If you are repeatedly getting discomfort in one body area during training
- if you have had a low-level pain which has lasted for more than a couple of weeks
- if swelling or redness is evident after exercise

There is certainly no need to run to the physio each time you get a slight discomfort however in situations such as those above if the right advice is received early then the issue can hopefully be nipped in the bud without too much disruption to your training (see also following section on time away from training etc).

Discussions with coaches (and also between physio and coaches) can also be very useful in adjusting training plans where necessary when trying to manage the load for a particular part of the body.

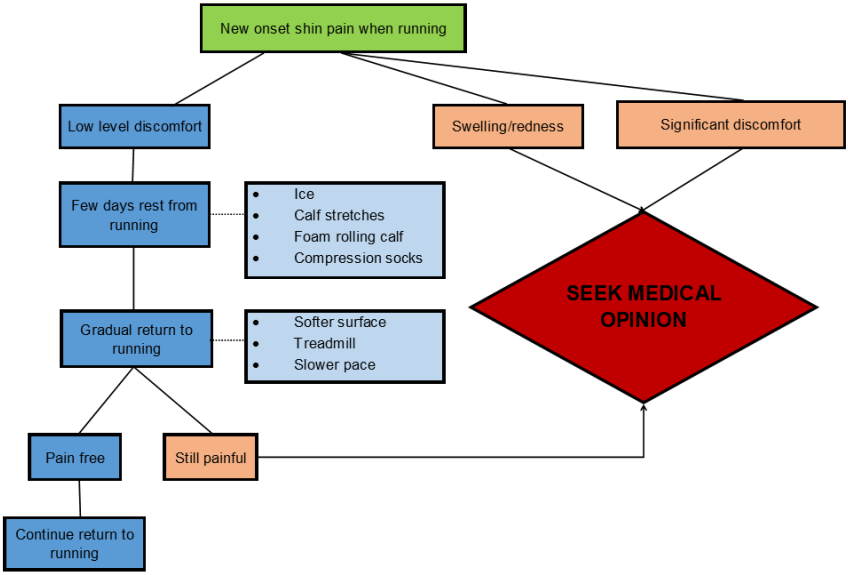
BONY STRESS

The issues highlighted in red on the diagram on page 19 are unfortunately ones which do affect some enduarance athletes, with training plan error and sudden increases in mileage being the most common causes, however other issues such as hormones can play a part.

Shin Pain

Shin splints is 'catch all' layman's term for a range of injuries classified as Medial Tibial Stress Syndrome – if managed well at an early stage this should be a something that does not pose a long term problem, if managed poorly then there is the potential to develop a stress fracture.

The diagram below gives some guidance on how we can manage new onset shin pain:



Foot pain

Bony pain can also be felt around the foot (especially the outer edge) when increasing running miles. In this scenario if the pain persists for more than a few days with rest then it is advisable to get a proper assessment by a medical professional to see if there is any possibility of a bony stress injury.

In all cases of bone pain in the shin or foot the advice is that if you are in any doubt then get it checked by a medical professional.
Do not try to 'run through' this type of bony pain as a very manageable issue could turn into a significant long-term injury.

BACK PAIN

Back pain is a common injury amongst the general population, and studies show that it is an issue that also affects many runners. The pain can be localised, but in others will spread to the buttocks or even down the leg. In the vast majority of cases the cause of back pain is innocuous and simple advice will ensure a swift resolution and return to full activities.

People with back pain often worry about 'slipped discs', 'trapped nerves' and 'sciatica' – all of which are not actually specific conditions. The main thing to realise is that back pain does not mean that there is any structural damage.

Unless it is an emergency situation scans and x-rays for back pain are not indicated, and if done can often show up many things which are not actually a problem.

The basic advice for acute low back pain is fairly straightforward and shown in the diagram on the right.

MOVE - gradually increase how much you do and introduce bending and twisting as able.

STAY ACTIVE - stay in work if possible and maintain some exercise as able. Getting in a pool, using a cross trainer or even doing some weights commonly helps people.

Take appropriate pain relief as required - discuss this with a GP or pharmacist if needed.

THE VAST MAJORITY OF BACK PAIN IS INNOCUOUS AND WILL IMPROVE QUICKLY IF MOVEMENT IS ENCOURAGED AND MAINTAINED

If you want specific guidance or reassurance then a physio should be able to give this, but there is limited evidence on the need for specific 'hands on' therapy or manipulations in cases of acute low back pain.

If you are still suffering from pain after more than 10-12 days then this would probably be a sensible timeframe to seek a face to face physio appointment.

There are occasions when seeking medical attention is necessary, and whilst extremely rare they are worth highlighting:

- **Bladder or bowel disturbance**
  - **Difficulty starting or stopping flow of urine**
  - **Not knowing when bladder is full or empty**
- **Pain, pins and needles or numbness down both legs at the same time**
- **Numbness between inner thighs or back passage**
  - **Altered sensation when using toilet paper**
- **Sexual disturbance/function**
  - **Change in ability to achieve erection or ejaculate**
  - **Loss of sensation in genitals**

IF YOU HAVE ANY COMBINATION OF THE ABOVE THEN SEEK MEDICAL ADVICE IMMEDIATELY

ACUTE INJURY MANAGEMENT

what to do in the early stages

The medical professions have argued over the years about the best guidance for managing new injuries, although much of this has passed everybody else by and so most athletes are unaware of the most up to date guidance. This guidance is applicable for most acute injuries, although in cases of trauma it should be ensured that there is no need to seek emergency medical attention (discussed previously in the 'trauma' section).

Most athletes are aware of the PRICE guidelines, however modern research has argued that these should be replaced with anacronyms such as POLICE or PEACE, the guidance given here merges these two...PEA ICE anyone?!

The reason for getting the early management right is to optimise your body's healing response, if this is managed well then the next stage (rehabilitation) may be brought forward and hence your time away from exercise can be kept to a minimum.

P	**Protect**	Rather than complete rest which can result in deconditioning of soft tissues, protect newly injured tissues by avoiding aggravating movements (maybe using over 5/10 on the pain scale as a guide). Sometimes short term use of a brace, support or crutches can be useful, or using but unless advised otherwise by a medical professional these should be weaned as able after 1-3 days.
E	**Elevate**	Limited evidence exists to support it's continued use however elevating the injured body part above the level of the heart is still advised to promote a reduction/minimisation of swelling.
A	**Avoid anti inflammatory medication**	The first stage of your body's healing process is to instigate inflammation – and therefore in acute injuries it is important and necessary, and the use of anti inflammatory medication in the first 72 hours post injury adversely affects this process.
I	**Ice**	Rather than reducing swelling directly the main evidence supporting the application of ice is for it's pain relieving properties, which can help in regaining movement etc, so we therefore we still advocate it's use. Apply ice in a damp cloth for 10-20 minutes 2-3 times a day – alternatively there are also 'ice gels' available which some evidence supports the use of.
C	**Compression**	Another area where the evidence is inconclusive but the general advice is to include it in our management to help minimise the build up of swelling. A tubigrip or cohesive bandage can be used to compress the injured body part (joint or muscle), making sure that it is not too tight and that blood circulation is still adequate beyond the compress. The compression can be removed at night if required.
E	**Education**	This is a crucial aspect of most injury management, as empowering the injured athlete with information about their injury and the necessity for appropriate active recovery rather than relying on passive treatments can lead to a more effective return to full activity.

Often pain from an injury will settle quickly, there is no residual swelling and you can resume exercise with no problems. In cases where this does not happen it is important to get some guidance on loading the injured tissue and appropriate exercises and subsequent progressions.

TIME AWAY FROM TRAINING

Endurance runners are by nature committed athletes, however one common error we find when examining training programmes is the lack of appropriate rest periods built into the calendar. A process called periodisation is designed to allow athletes to develop their training programmes in order to peak at specific points of the year, commonly putting training into 'blocks' of set periods, however one area overlooked by amateur athletes is the need for some 'time off' at certain points.

Elite level athletes will have at least one period of rest each year, allowing their mind and bodies to reset and recharge ready for the challenges ahead. Amateur athletes often forgo this rest, commonly worried about the negative effects on fitness levels etc. Whilst the racing calendar will guide each individual case (including when rest periods would be most beneficial) we would advise at least one or two periods of 1-2 weeks complete rest per year. This will enable the body to recover from the demands placed on it, minimise overload injury risk and (as long as there is not too much overindulgence!) will not have any long-term negative effects on fitness.

Similarly, when injured athletes should be reassured that periods of up to two weeks should not have a negative effect on fitness, although the overall effect does depend somewhat on the timing and any knock on regarding prep races etc.

If unable to complete training then think about replacing it with other forms of exercise – for example replacing running with a cross trainer if you have been advised to avoid impact for some reason. The session you do on other equipment can then be tailored to replicate the session you would have done under normal circumstances, for example an interval session.

FAQ'S

I have been told that I should be running more on my forefoot rather than heel striking is this right?

No.

There is no right or wrong way to run and if you aren't experiencing pain you should be wary about making changes to your running style, for example suddenly changing from heel strike to forefoot can often lead to Achilles tendon pain.

Studies show the vast majority of marathon runners are 'heel strikers' and if this is efficient for you and causing no issues then there is in likelihood no need to change.

If you are getting pain when running then a comprehensive biomechanical running assessment with a therapist specialising in running can help identify areas to address.

How fast should I be doing my long runs?

This question should more be 'how slowly should I be doing my long runs', to which the answer would be 'slower than you think!' It often shocks people how slowly world class athletes do some of their work - for example Eliud Kipchoge in training for his sub 2 hour marathon (at 2.50 min/km) will often start long runs at 6.00 min/km (9.40 min/mile) and do 10km runs in the comfortable (for him) time of 41 minutes. Translating these percentage differences to your own work can often be an interesting exercise to see if your may be working hard but not smart.

it is all about what is the focus for that specific workout and if it is to increase mileage then this should be at a very low intensity (think 3-4/10 on an exertion scale, ie you can easily hold a conversation whilst running). Tempo runs will typically fall somewhere around 7/10 on the exertion scale (i.e. you could answer a question with a few words)

Higher intensity training/intervals should be at 8-9/10, i.e. you couldn't hold any form of conversation during the 'efforts'. Also ensure that you follow the guidance on rest/low intensity work between high intensity efforts as many people tend to neglect this important aspect of these sessions which allow you to get maximal benefit out of the high intensity work.

Technology can obviously help monitor exertion in some respects (heart rate monitors, watches etc) but it is good to not become over reliant on these and develop an appreciation for how your body is feeling during different sessions, and this can in turn help you know 'what is left in the tank' in a race situation.

Should I do all my running in one pair of trainers?

Footwear is a very individual thing and what is right for one person may not be right for the next, regardless of what is shown when on a quick treadmill test in the running shop.

We trend to advocate using a variety of shoes and rotating them considering what type of session you are doing. This can mean light, less supportive shoes for a speed session and more cushioned supportive shoes for a long slow run.

Since I have been training harder my periods have become irregular is this expected?

No.

Irregular periods, loss of libido, fatigue, loss of weight and regular illness/injuries can be symptoms, amongst others, of a condition known as Relative Energy Deficiency in Sport (RED-S).

This can affect men as well as women and present as a loss of morning erection. Young female athletes can also be affected and this can present as delayed onset of periods.

If RED-S is not addressed then it can potentially develop into a long term health issue and significantly increase the risk of bony stress injuries, fractures and osteoporosis.

If you are concerned at all on this issue then you are advised to speak to a therapist or medical practitioner with a good understanding of this type of condition.

Is running bad for your knees?

No, no, no RUNNING IS NOT BAD FOR YOUR KNEES!

Repeated studies have shown that running DOES NOT increase the risk of osteoarthritis in knees and may even reduce your risk of developing the condition.

Studies also show that runners with some osteoarthritis in their knees suffer less with the condition than people who do not run,

To return to a common theme in this booklet though - running along with strengthening exercises and load management is the best way of maintaining a happy and healthy musculoskeletal system.

We hope that this document has been of interest and is of use, it is by it's nature intended as a general guidance however we are always delighted to talk about anyone's specific needs or circumstances.

We offer a range of services which may be of interest and these include:

- Musculoskeletal screening
- Strength and conditioning advice and programmes
- Injury prevention / monitoring programmes
- Injury management
- Ad-hoc and unlimited online/telephone physio triage and advice

We always seek to offer people a package specifically tailored to their individual requirements and are happy to discuss these with you.

Whilst we are based in Clitheroe, Lancashire we can provide some of the above services regardless of location, and if necessary we are happy to travel to meet and discuss your specific needs.

If you do wish to arrange a time to discuss anything with us then please just make contact and we will arrange a time to call you.

BESPOKED PHYSIOTHERAPY
PERFORMANCE AND EXERCISE SPECIALISTS
Lime Kiln, Fern Court,
Clitheroe,
BB7 1AZ

info@bespokedphysio.co.uk
0790 88 00 170
www.bespokedphysio.co.uk