



FIT RUNNER

# smartrunner



It was 26 years ago that I became a 'real' runner – the feelings of elation and freedom of being able to complete my first non-stop run of 30 minutes are still imprinted on my memory today. And if you've been following the 'getting started' plan in the last issue, you'll probably be very close to that point yourself, if not already there! But having reached it, there'll come a time when you'll want to think about running better by running faster and longer, with improved form and reduced injury risk. That's when you need to think smart...

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## KEY STRATEGIES

Training smart means employing a few key strategies that will enable you to run better, safer and more enjoyably. These strategies include setting some goals and developing a long-term plan to achieve them; ensuring you warm up and cool down properly before and after your runs, and incorporating ancillary exercises such as stretching to optimise your running form and keep injury at bay.

## WARM-UP

Let's take each of these strategies in chronological order by starting at the beginning with pre-run warming up.

- **What?** The classic textbook warm-up consists of an aerobic pulse raiser, followed quickly by some mobilisation work for the joints, which is rounded off with some pre-exercise stretches for the muscles. The most important of these components is heat – not the 'sitting in front of a log fire' sort, but the internally generated muscular heat produced by a short period of pulse raising aerobic work! The mobilisation work should focus on the main joints involved in running (i.e. ankles, knees and hips). However, recent research suggests that too much pre-exercise stretching after mobilisation may actually be counterproductive because you can lose much of the heat generated in the pulse raising stage. But don't run away with



the idea that stretching isn't important, it's just that for the average fitness and recreational runner, it can equally be done after the run, particularly if you've already included some full range movements in your mobilisation routine.

- **Why?** Like many engines, your body isn't designed to be 'trashed' from cold! When you're running hard, you'll be burning 10-20 times more energy than at rest, and without preparation for this intense work, you'll suffer. Muscles that are cold are also inelastic, and can tear if made to work hard suddenly. Cold muscles also lack a rich supply of oxygenated blood, which leads to higher concentrations of muscle-fatiguing lactate if you work them hard without a warm up. Not only that, but the joints involved in the running action (such as ankles, knees and hips) are stiffer and require more effort to move through their natural range of movement when they're cold, making the ligaments supporting these cold joints more prone to damage or tears.
- **How to pulse raise** The duration and intensity of the pulse raiser will depend on your fitness level and how hard you intend to run. For slow to medium paced running, as little as 5 minutes of gentle aerobic exercise performed at around 55-60% of your maximum heart rate [MHR = 220 - your age] will produce a significant amount of internal heat, enough to help those running muscles and joints become looser and more supple. If you're a beginner, you can probably generate this low warm-up intensity by brisk walking, marching on the spot or even bopping around to some music in your front room! Faster and fitter runners on the other hand will probably find that these methods are insufficient to generate even 55-60 of MHR, and here some slow jogging may indeed be necessary. If you're planning a more vigorous workout (75-85% of MHR), your pulse raiser should be at least 10 minutes in duration as your muscles will be working harder and will benefit from the extra warming effect that occurs.
- **How to mobilise** Mobilisation exercises should last about 2-3 minutes, involve running type movements and should also be quite dynamic, so that the heat you've just generated isn't lost before the run proper begins. Examples of suitable mobilisation exercises include full range calf raises for ankles (standing with the balls of your feet on the edge of a stair or step and raising your heels as far as possible, then lowering slowly as far as possible); high knee lifts for hips (extend onto your toes and lift each thigh high up until parallel with the ground while striding forwards); kickbacks for hips, knees and shoulders (march on the spot and swing your arms vigorously by your side - as you lift your knees, bend them and try to kick your buttocks with your heels); lunge walk for hips (lunge forward into a lunge position and then immediately step forwards into another lunge); sideways skipping (skip 20 paces to one side then 20 paces back to the other side).

### WARM-DOWN

If sprinting to the front door and collapsing in a heap on the sofa is your idea of the perfect end to a run, you need to think again! Performing a warm-down will enable your body to return to its resting state much more gradually. This helps to prevent blood pooling, where de-oxygenated blood collects in the limbs and which can lead to feelings of nausea. It also helps to flush any residual by-products of intense exercise (e.g. lactate) out from the muscles into the main bloodstream, where they can be metabolised much more efficiently. This in turn helps to accelerate your post-run recovery and will also reduce the amount of post-run stiffness. One of the easiest ways to cool down after a run is to simply add about 3-5 minutes of very slow jogging or brisk walking to the end of your run, so that your heart rate gradually drops to below 55% of your MHR.

### SUPPLEMENTARY TRAINING

The second of these strategies involves adding in some supplementary training to your running routine:

**i) Stretching** One of the drawbacks of running is that most of the muscles involved in the running action tend to work through a partial

(rather than full) range of motion. Combined with the repetitious nature of running, the unavoidable consequence is tightened and stiff muscles, particularly in the hamstrings of the rear thigh, the calf muscles and those around the hip. Over time, this tightness can limit the range of motion of these muscles, which not only increases injury risk, but also makes running smoothly and fluidly more difficult and uncomfortable, especially at a faster pace. In a nutshell, all runners need to stretch and should aim to stretch calves, hamstrings, and hip muscles two to three times a week. Rather than bouncing or using jerky ballistic movements, this stretching should be of the static kind - where the muscles and

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joints are moved slowly and steadily until you feel the sensation that the muscle is being stretched and then held for 20-30 seconds without bouncing. Once this point is reached, you can stretch just a little further but you should ensure that the sensation remains just comfortable; never push beyond the comfort zone. If stretching is something you're unfamiliar with, it's well worth purchasing a decent book on stretching - it'll pay you dividends in the long run. In the meantime, here are three basic stretches that you should be performing regularly:

- **Calves** Stand slightly away from a wall and lean on it with your forearms, head resting on your hands. Bring your right leg forwards and place the foot near the wall with your leg bent. Keep your left leg behind you and straight. Now lean into the wall by bringing your hips forward but keeping your left leg straight, toes pointing forwards and the left heel firmly on the floor. Bring the hips in until you feel a stretch in the left calf. Pause and then return. Now reverse legs and repeat.
- **Hamstrings** Lie on the floor on your back and bring your left foot up alongside your right calf by bending your left knee slightly. Keeping your lower back flat, bend your right leg slightly and raise it up in the air so that your right knee comes towards your head. Place your hand gently around the back of the right knee and, keeping it slightly bent, ease the right leg towards your chest until you feel a stretch in the rear thigh. Reverse legs and repeat.
- **Hips** Lie on the floor on your back, but this time with both legs straight. Keeping your lower back flat, and your left leg outstretched, bring your right knee up towards your chest. Place your hands around the front of the bent knee and ease your right thigh in towards your chest until you feel a stretch in the front of the hip (and maybe also the right buttock). Make sure that the knee and foot of the right leg are in exact vertical alignment with the rest of the body; don't twist the hip (i.e. let the knee point inwards or outwards). Reverse legs and repeat.

**ii) Weight Training** Weight training helps to build strength and develop flexibility and power. It can also correct the strength imbalances that running alone tends to produce and so can help keep injury at bay. Space constraints preclude a detailed breakdown here of all the resistance exercises for running, but see Ultra-FIT 14.8 Why Weights Work For Runners and this issue's Fit Moves, Intelligent Design for a good overview of what's involved. Suffice to say that any resistance program should include as a minimum the exercises listed overleaf:

**iii) Form And Posture** Look at runners and it soon becomes clear that each of us has our own running style. But studies have shown that trying to artificially alter your stride length or cadence to try and optimise your running form often leads to less running efficiency, not more. However, there are a couple of tips that may help improve running form and posture:



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Exercise/Muscles worked	Benefits for Runners
Leg extension/Quadriceps of frontal thigh	Helps to strengthen quadriceps and promotes proper knee joint action. Can help counteract tendency of outer quad muscle (vastus lateralis) to dominate over inner quad muscle (vastus medialis), which can result in knee pain
Lying or seated hamstring curl/ Hamstrings of rear thigh	Promotes stronger, more flexible hamstrings, reducing tightness and the chances of a hamstring tear
Standing straight leg calf raise/ Gastrocnemius of calf	Stretches and strengthens calf muscle, adding more 'spring' to the step and reducing chances of an Achilles tendon injury
Seated bent leg calf raise/Soleus of calf	Improves calf strength and flexibility, especially for hill running
Seated leg adduction/Adductors of inner thigh	Improves lateral stability and reduces likelihood of groin strain, especially when training over uneven terrain
Seated leg abduction/ Abductors of outer thigh/side buttocks	Improves lateral stability and the tendency for the muscles around the hip to become tired during longer runs
One legged leg press/Quadriceps and gluteal muscles of buttocks	Improves thigh and buttock strength, increasing power and hill climbing ability. Working each leg separately also helps to promote equal leg strength

☞ **Think gazelle!** Try to visualise yourself running as smoothly, gracefully and fluidly as possible. Picture yourself not as a plodding runner, but as a lithe gazelle covering the ground with ease and with as little footfall as possible. It may sound daft, but visualisations like these can actually translate into smoother, more fluid running action, which will increase your efficiency.

☞ **Keep a level head** Next time you're running past some shop windows, watch your reflection. Efficient runners have a minimum of 'up and down' movement and a maximum of forward movement. If your head is bobbing up and down madly, try to conserve energy by smoothing out your running action and keeping your head more level. Make a mental note of what this feels like in terms of your running action and try and replicate it as often as possible.

**GOAL SETTING AND PLANNING**

Last but certainly not least in this trio of smart running strategies is goal setting and planning. Before you can make any sort of running plan, you need to establish some kind of goal in your mind, however simple. For example, your goal could be to build up your endurance so that you can run that 5-mile route without stopping, or to develop enough running fitness to tackle that hill you've been avoiding. However, any goal should be appropriately matched to your needs, circumstances and abilities; if you're 15kgs overweight with a knee injury, and haven't trained for five years, there's no way you're going to be able to run a marathon in three months' time! Don't forget too that setting goals demands a commitment both in terms of time and effort. Set an unrealistic goal and you'll struggle to meet work and family commitments, adding pressure and diminishing your running enjoyment. Finally, don't allow yourself to get pressured into training for a running event by partners, family, friends and colleagues, unless it is something you really want to do. We all need a prod now and again, but you need to be sure you're training for yourself and not for anybody else.

**SHORT-TERM PLANNING**

Once you know where you're going, you can start to plan how to get there. A good idea is to devise a shorter-term day-to-day, week-to-week

☞ **Routes** Try to find at least the same number of different routes as the number of days a week that you run. That way, you don't have to run the same route more than once a week. Try to choose routes with varying scenery, terrain and gradients.

☞ **Timing** The long days of summer afford plenty of training opportunities, but winter training is more challenging. Weekends are the time to get your longer runs in, but winter weekday runs may require running in your lunch-break, or (if it's not too far away), running into work once or twice a week. City dwellers can run at night, but it can be hard to drag yourself out into the dark and cold, and there's also the obvious issue of security, especially for lone women – something we'll cover later in this series. Remember that while the scenery's not as good, a treadmill workout gives you as much distance and gradient as you want at the touch of a button and if you don't have a gym nearby to train in, the good news is that good home-use treadmills have never been cheaper.

☞ **Rest** Adequate rest and recovery is especially vital for any runner seeking to improve performance and/or stay injury free. Beginners and recreational runners should schedule in at least two days of complete rest per week, while even advanced runners still need a minimum of one complete day of rest per week. Remember that planned rest is far more preferable to the unplanned sort, when you're forced out of training for days or weeks on end with an injury.

**ADAPTING YOUR PLAN FOR THE LONGER-TERM**

Building your endurance base with increased mileage is a good first step to improved running performance. However, it's vitally important that you plan any build up in such a way that allows your body to get plenty of rest and recovery along the way. An excellent method is to 'cycle' your running training by planning in recovery weeks with much reduced distance, even though the overall trend is up. For example, suppose your goal for the year is to compete in an 8km fun run in 16 weeks' time and your current maximum run distance is 3km, a program using the cycling principles might look something like the table below:

Week No.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Weekly Distance (km)	8	9	10	5	9	11	12	7	13	15	17	8	16	18	19	10

routine that fits in generally with your needs and lifestyle, and then gradually adapt it according to your longer-term goals. When planning your weekly sessions, try to think about the following:

☞ **Training Frequency** For beginners, 2-3 times a week, evenly spaced is a good starting point. More than this means you'll be running on two consecutive days, thereby reducing your recovery time and increasing the risk of an injury.

You can be quite flexible exactly how you plan your recovery weeks, which can be useful – for example if you're on holiday, or you know that there are specific periods looming when work or family commitments will cut into your training time. Once you've built a solid endurance base, you can think about building speed and pace by using techniques such as interval training and timed sessions. But this is something we'll tackle in greater depth when we look at 10K running.