

## **Take a few steps back to make advances in your training**

Whether you're trapped in an endless cycle of niggles and injuries or struggling to make significant improvements in your performances, if you've exhausted the usual suspects for a solution, where do you turn next? Well, it could just be that your running is too one-directional and the answer may be as simple as turning around and running backwards. James Bamber explains why and how finding your reverse gear could be the best thing you've ever done.

### **Introduction:**

It may sound like a daft thing to do, but taken seriously backward running can be a potent weapon in your training and research has shown that it has massive potential in areas of fitness, well-being and rehabilitation. If you're looking to reduce the risk of injury, a stronger, more balanced lower body, a challenging workout, better posture or an exercise to aid rehabilitation, backward running could be for you. In fact, it could be the missing link.

Backward running, also known as retro-running and reverse running, is gaining credence as a super-exercise for its ability to turn mediocre sportsmen and women into outstanding athletes. The sport is largely unknown in the UK but does have a committed following in southern Europe, where many established races have sprung up over the last twenty years, including the World Backward Running Championships. Yes, they really do exist!

Even based on just a few runs, some of the benefits (tougher workout, gentler running style, fun) will quickly become apparent. These observations are indisputable and just getting out there and trying it for yourself will dispel many of your prejudices, so long as you can think beyond the negative connotations. In fact, many sport therapists will prescribe drills in backward walking and running for patients rehabilitating from knee problems and other lower limb injuries. Elite athletes, particularly sprinters, also utilise backward running in their training. Yet, the exercise remains completely off the radar for the rest of us, until now...

The aim of this article is not to say that forward running is bad for you (perish the thought!) but to highlight the complementary benefits that backward running can offer.

### **How do you run backwards?**

For a starting point, the basic technique is to keep your shoulders over your feet, hold your arms close and low to the body, push off from the balls of your feet and avoid lifting your feet too far off the ground i.e. skim the surface. Try it! The first thing you will notice is that you're hitting the ground with a toe to heel foot strike, with an increased stride rate and decreased stride length. The motion will feel smoother and less jarring and you will be running taller with a healthier posture. What's more, the bulk of the propulsion now comes from the quadriceps. Consider all the functional changes and it's not hard to see why backward running has so much potential and there is much support from academic research and anecdotal evidence.

### **The Benefits – why and how it is good for you**

1. **Running backwards gives you a fabulous cardiovascular workout.**  
The exercise brings into play more muscle groups, especially the quadriceps and because the feet hit the ground more quickly than in forward running more energy is expended to propel the body. Research by the University of Oregon showed that you have to maintain only 80 percent of your forward-running speed for the same amount of effort. Whilst other studies have shown that VO<sub>2</sub> (oxygen consumption) and heart rate significantly increase during backward running. It is therefore unsurprising when people claim that running backwards for just one lap could be equivalent to up to six laps of forward running. Think of the time you could save! There is more good news for runners struggling to lose weight – backward running apparently burns a third more calories.
2. **Backward running restores a balance to the lower leg muscles.**  
Performing the same action repeatedly i.e. running forwards, without some effort to oppose it, means we are stressing the same area of the body and building up a dangerous imbalance, until it inevitably breaks down. Bear in mind that many runners with chronic knee problems demonstrate over tight hamstrings and weak quadriceps. Therefore, by reversing the action and running backward we are in effect performing a much needed counteraction. In other words, *"Running backwards works the calves, shins and muscles of the front thigh (quadriceps) harder than running forwards, which places more emphasis on the back of the thigh (hamstrings). When used in combination with forward running this helps to balance the muscular strength of the legs."* Heidi Mills, BSc (Hons) GSR ([www.sportsinjuryclinic.net](http://www.sportsinjuryclinic.net))
3. Restoring a balance partly explains why running backwards could **reduce the risk of injury**. Further reasons are a change in the lower extremity kinetics and the introduction of a toe to heel foot strike. For the majority of forward runners, the heel hits the ground first and the knees act as the reluctant shock absorbers. However, going backwards the force related trauma is minimised. Sort out the imbalance and integrate into our running a more favourable running style and we could be on our way to a less injury prone life.
4. Backwards running is the perfect **knee rehabilitative exercise** because it can maintain an athlete's cardiovascular fitness levels whilst minimising the impact at the knee joint (see above). Furthermore, backward running develops muscles along the sides of the knee and this actually strengthens the knees over time. Other conditions that could respond well to backward running include shin splints and muscle sprains to the lower back, groin and hamstrings
5. You run with a **more erect posture**, your shoulders will draw back and your back will be straight. Compare this to the slightly slumped posture and protruding abdomen often observed in runners. Studies have also shown that over time backward running can lead to realigned vertebrae and relieve pressure on the nerves.
6. Running without the reliance on sight develops other senses, especially hearing whilst improving your **balance** and **peripheral vision**. There may also be an increase in **proprioception** (the body's ability to sense movement within joints and joint position). Is backward running the ultimate wobble board?

7. **Backward running gives your abs a workout.** When you run forward, your lower back takes most of the load, but turning around creates a nice reaction for your abdominal muscles whilst the lower back gets some respite.
8. It's fun, the perfect **psychological lift** for anyone in the running doldrums and adds an exciting, varied element to your workout, especially when performed in a group. Perhaps half way through your next ten mile training run, why not turn around and run backwards (provided it's somewhere safe) for one minute.

### **What are the disadvantages?**

Of course you're blindsided, but with a sensible approach and a suitable place to run you can cut down your chances of a mishap. Don't forget running forwards can be just as dangerous, if not more so, because you become more complacent. Serious backward running athletes compensate for lack of vision by customising a hat with mirrors to avoid excessive neck twisting. There is also the inevitable reaction from the passers by, with the odd taunt and gibe, so just be ready to fire back a witty retort or better still ignore them. But then this will not be a new experience for many runners.

### **Expert view**

Mitchell Phillips a Performance Analyst at StrideUK gives us his opinion on how backward running can help: *"Walking or running backwards covers a multitude of benefits. It is a great way to cool down; it helps improve balance and promotes better neuromuscular efficiency i.e. coordination and stabilisation. It is the perfect remedy to help cure the frequent deficiency between anterior and posterior chain muscle groups i.e. the hamstrings/calves and quads. This switch in movement also helps the bodies antagonistic (opposing) muscles function like the agonistic (contracting) muscles. Overall, backward running will produce a far better relationship between your muscles and help deliver more power... safely."*

Gary Gray, Physical Therapist, who has prescribed backward walking and running to his patients for over twenty years: *"The great thing about backward running is that it's truly a "cross training" exercise for forward running. Doing the opposite for many activities does not feed the benefit of the original activity but because of the unique features of backward running, if integrated appropriately can significantly enhance your ability to move forward."*

### **My own experience:**

To put it mildly, poor biomechanics and years of heel striking for too many miles on hard surfaces in adequate footwear has taken its toll. I have suffered from repeated bouts of shin splints, ankle injuries and ITBS, with the only advice to give up. I have run through three pairs of orthotics, seen literally dozens of sports therapists of various disciplines and even resorted to surgery (twice!). Even I was wondering whether running was for me until I came across the benefits of backward running. Just running a few laps around the track left me in awe of its power whilst the smooth running style suited my biomechanics. With a steady and sensible progression, I have managed to maintain a high quality of pain-free training. I am so convinced of its potency that I find myself even walking backwards whenever and wherever I can!

### **History**

It's believed that backward walking can be traced to ancient China, but backward running is a far more recent phenomenon. Early in the 20<sup>th</sup> Century, the exercise was pioneered by American sportsmen who excelled in disciplines as wide ranging as Greco-Roman wrestling, tap-dancing and boxing. The boxers, Muhammad Ali and Sugar Ray Leonard, ran backwards as part of their training. Towards the 1980's its benefits in physical therapy became more widely known and in 1981 there was a ground breaking book on backward running by Dr Robert K Stevenson, who concluded that, "*Anyone seriously interested in improving their athletic performance, physical condition and outlook in life would do well to take a closer look at backwards running and its benefits.*"

More recently, the recreational side of backward running has gained some momentum with an increasing number of races, from sprint distances to middle distance, popping up across Europe. There was even a half-marathon race in Italy in 2009. Whilst the third **World Backward Running Championships** ([www.retrorunning.org](http://www.retrorunning.org)) are taking place in Kapfenberg, Austria this year over the weekend of 7<sup>th</sup> and 8<sup>th</sup> August. The championships are organised in the same format as a typical athletics meet with distances from 100 metres up to 10 km, including relays, for adults and juniors. 12 Euros guarantees you entry to three individual disciplines and the relays. It may now be too late to enter, but why not start training for the next event in 2012 at a yet-to-be decided venue.

### **Do you think you could run one mile backwards? Why not give it a go...**

On Sunday 22<sup>nd</sup> August, Heaton Park in Manchester will host the **UK Backward Running Championships** – the UK's very first official one mile backwards running race. The race is on wide and flat traffic-free paths with plenty of space. The aim is for everyone to challenge themselves to complete the whole course, running or walking. However, there will be a competitive element with the luxury for those in the lead that they will be able to view the rest of the field without making any nervous glances behind. You may think one mile is not that far, but hold that thought until you have attempted it at least once. If you want to enter or to find out more about the race, go to [www.reverserunning.com](http://www.reverserunning.com)

### **Beginners guide to backward running:**

Intrigued? Why not follow our beginner's guide and see for yourself. Running backwards for the first time will feel awkward, but be patient. Remember to make small, delicate strides at first (try and mirror the technique described earlier), perhaps walking backwards until you're more at ease. Backward running will also wake up muscles you never new existed and leave you more tired than expected so make sure you allow plenty of time for recovery between sessions.

- **Choose a safe venue** that is flat, wide and has a soft running surface, free from potholes, bumps and obstacles. A field, park or beach (at low tide) is ideal as is an athletics track, but run on the outside lane to avoid upsetting other runners. This also makes it easier to negotiate the bends.
- **Find a partner.** If you struggle to find anywhere suitable, then run with a partner and take turns to run backwards. You may also want to wear some protection e.g. elbow and wrist pads, cycling helmet.
- **Walk the course** first to check for potential hazards.
- **Start slowly** with a series of short runs forward and backward, perhaps 50 metres each way. Inevitably, you will experience the odd wobble, but just get back up and try again. When you feel more confident and your

lower body adapts, increase the distance (100m, 200m, 400m and so on) and speed.

- Initially you will find yourself constantly looking over your shoulders. **Learn to look behind without over-straining your neck** and alternate between your left and right side. Also, make sure you stretch your neck muscles before each session.
- **Avoid** running along the high street expecting cars and pedestrians to see you coming, and never run backwards down a hill, for obvious reasons. Finally, because of the stability issues you will initially experience, it's advisable to put a trial run on hold if you have an existing ankle injury such as a sprain that could be easily aggravated by an unforeseen mole hill.
- Aim to be able to run backwards for one mile within a few months, but remember to maintain a balanced training regime. **For a really tough challenge**, why not try and run backwards up hill or on a very soft, sandy beach.

### **On a final note**

Backward running will not be suitable for everyone: some of you will just not feel comfortable with the lack of vision and others will have no biomechanical need. There will of course be those who refuse to accept backward running as a legitimate alternative. Nevertheless, the myriad benefits other than staying free from injury merits its consideration and there really is very little argument against backward running. Just once a week, the long-term benefits could be amazing and this lesser known exercise offers us an opportunity to eschew our blinkered approach to dealing with injuries and embrace something new. What do you have to lose? Good luck and once you start, you may never look back again - or should that be forward?

### **About the author:**

James Bamber has been backward running for over two years and will be leading a small GB team at the World Backward Running Championships. He is also planning a series of backward running races around the UK, beginning with Manchester this year. For more information on backward running in the UK and around the world, visit the backward running site, [www.reverserunning.com](http://www.reverserunning.com)