



# THE SCIENCE BEHIND RECOVERY METHODS

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## CLOTHING

Don't forget the importance of temperature control, says Anne Weir, Fabrics Application Engineer in High Aerobic Sports for Gore. "We use windproof and extremely breathable technologies to enable heat management or thermal regulation through protecting against rapid heat loss (windproof) or avoiding the feeling of over heating (breathability) - solutions to keep you performing at your best."

Whether

looking at improving our PBs and race results or

simply to reach fitness goals, us runners tend to use a simple equation of 'more running = more fitness/better performance'. However, whilst holding some truth (you've all been proverbially beaten over the head with manageably increasing training and introducing variety to a programme), what is often forgotten is what happens once the watch is stopped and you've finished the run.

Good recovery practices could add more to your training programme than simply bolting on an extra run will and, in short, can considerably boost the effectiveness of your training.

In the short term, effective recovery will increase the chance of feeling good, leading to a better session the next time you head out of the door. Meanwhile, the long-term payoff is a reduction in the risk of running-related injury and adapting your body to manage an increase in training load down the line.

But don't be fooled. 'Recovery,' much as it sounds it, and we wish it did, doesn't boil down to putting your feet up with a cuppa and a mountain of pasta (well, at least not immediately). Sometimes, just an additional 10-20 minutes of effort post-run is all it takes to kick your body into recovery mode.

As we head into the spring with this year's racing season about to begin in earnest, over the page are *Trail Running's* essential areas to consider if you want to supplement your running regime...



Get yourself a decent foam roller and you can treat niggles at home



## ROLLING & MASSAGE

**What:** The principles here are the same: to target specific areas of tightness with the aim of working-out knots and promoting blood-flow for healing. The major difference between a sports massage and foam rolling is how this effect is achieved.

**How and when:** For a massage, all you need to do is find your local physio/sports massage clinic, obviously. Be sure that you are seeing a registered practitioner and opt for a sports masseuse who will understand exercise-related injury. Foam rolling can encompass many exercises. Basic techniques include rolling over the muscle and stopping on a tight spot; take 10 deep breaths whilst the knot begins to relax, before rolling gently back and forth and side to side on the point to further release the tight spots.

**Why:** Both therapies have shown to aid in a number of ways. Like compression, an increase in bloodflow to target muscles will aid in removing waste products that might otherwise cause tightness and/or DOMS. Further, muscle adhesions (such as scar tissue) can be reduced, which in turn aids in flexibility both in the short and long term. Whether or not you choose to use a foam roller or a therapist is up to you. A therapist will be able to offer more acute treatments, particularly for injuries, whilst a foam roller will provide bang-for-your-buck value and doesn't require you to make an appointment!

**Shopping list:** Meglio Grid Foam Roller. £9.99, [mymeglio.com](http://mymeglio.com)

PETER KOVAC/ALAMY STOCK PHOTO

## THE ICE BATH

**What:** An ice bath is exactly what its name suggests, and is every bit as frosty as you might expect!

**How:** Fill your bath with cold water – enough to submerge your legs when you sit down. Psyche yourself up, lower yourself in and sit (remember, getting in is the worst part!). Seven to 10 minutes is enough. Don't forget to wear shorts and a layer on your body to make it bearable. Alternatively, purpose-built ice baths can be found at some physio clinics and cryotherapy centres. They circulate water to prevent your body from warming the water around you! As for toughing it out, think of the benefits and try having some

music to pump you up and distract you. **When:** Hop in after a long run or a session to offset some of the general soreness. Ice baths can also be used to aid injury recovery and to alleviate pain.

**Why:** The science says that when exposed to cold water, blood vessels will constrict, meaning a reduction in bloodflow, lowering of muscular metabolic rate and thus prevention of swelling. As you get out, make sure to dry off and warm up with some long pants to help the body reignite bloodflow to the constricted vessels and process waste toxins.

See page 68 for the latest research on ice, and its alternatives.

## EPSOM SALT BATHS

**What:** A more pleasant and relaxing alternative to an ice bath! A warm bath with Epsom (Magnesium Sulfate) mineral salt dissolved in the water.

**How and when:** Dissolve a few handfuls of Epsom Salt in a warm bath. Get in, breathe in, relax... 10-15 minutes is all you need. Have a water bottle at hand as you might sweat if the water is toasty, and there is some suggestion that the minerals in the water may dehydrate you slightly. Can be used after sessions, particularly when its chilly out, or just as a relaxing bath at the end of a long day.

**Why:** Magnesium found in Epsom Salt is said to help the body use glucose to process waste in the muscles. It also is purported to reduce swelling, much like ice therapies. If nothing else, the warm water relaxes your body and mind, whilst lots of varieties of Epsom Salt smell great, which can have a more significant therapeutic benefit than the science suggests.

**Shopping List:** Westlab Pure Mineral Bathing Epsom Salt (1kg). £4.99, [boots.com](http://boots.com)

BEAUTYSTOCK/ALAMY STOCK PHOTO

Think of your cool down as a reward for a big training effort - you'll enjoy it even more!



## COOL DOWNS

**What:** Easy aerobic exercise (i.e. a jog) performed after your main effort. A lot of people will use the term to encompass the post-sesh jog plus any stretching, rolling or extras, but here we'll refer to just the jogging part.

**How and when:** 5-15 minutes of jogging at a very light intensity after a hard run or intervals, perhaps even slowing down between the start and the end. This effort is not meant to be making you more tired (although sometimes, after a hard effort it may seem taxing or an imposition!). It's best performed after moderate to hard efforts, and particularly after an interval session.

**Why:** Cooling down - or 'warming down' to some - affords the body a period to transition from intense exercise to its recovery state. Slow jogging will gradually reduce your heart rate, preventing blood from pooling, and allowing the blood to flush toxins by providing muscles with oxygen. On top of its physiological benefits, warming down has been cited as aiding the mind, too. Focussing on relaxing, feeling 'good' (inverted commas here need no explanation) and running with good form, despite a lighter pace, will teach these cues for when the going gets tough. Plus, adding a 10-minute cool down jog will add more time on your feet without being too taxing.

## COMPRESSION

**What:** Compression clothing is tight fitting gear (for runners, that usually means tights and knee-length socks) that supports the muscles and aims to increase bloodflow to targeted muscle groups.

**How and when:** Simply pull on your gear! Be aware that some gear is designed specifically for use as a recovery garment, whilst some will also be designed to be worn during exercise.

**Why:** Matt Davey, brand manager at leading compression firm CEP, says, "The 'squeeze' you feel when wearing compression gear counteracts blood pooling, particularly in the extremities of the legs and feet. This aids the body's natural circulation in removing waste products by returning blood to the heart so that fresh, re-oxygenated blood is transported back to where it is required."

Graduated compression, such as that found in CEP products, provides a strong squeeze at the ankle that gradually reduces towards the knee, further encouraging circulation, rather than being restrictive and uncomfortable.

CEP also advocate compression for reducing all kinds of muscular ailments including cramps, post-run soreness, and the likelihood of strains.

**Shopping List:** CEP Run Compression Socks 3.0, £45; CEP Socks For Recovery, £34.99. [cepsports.co.uk](http://cepsports.co.uk)



# 5 ways to help speed up recovery

Katherine Brook investigates which has the backing of science

**F**or a runner, or any keen athlete for that matter, being injured is the worst. Not only can it be a huge training setback, but it can also have a psychological impact. It's no surprise then that the industry is overflowing with different ways to aid fast recovery, from supplements to gadgets and even clothing. We'll go to great lengths to shave days off our recovery process, but which method works best?

## 1 STRETCHING

A lot of us swear by stretching after a run, in the belief it will help reduce DOMS (delayed-onset muscle soreness) and prevent injury. Stretching, like many other recovery techniques, is thought to increase bloodflow to damaged muscles, which removes waste products produced after intense exercise, to help rebuild the muscle. Train, damage, repair (stretch), become stronger... sounds logical. However, a 2011 Cochrane Library study into the benefits of stretching to reduce soreness found that 'muscle stretching, whether conducted before, after, or before and after exercise, does not produce clinically important reductions in delayed onset muscle soreness in healthy adults.' But don't throw in the towel just yet; if it's what you've always done, keep stretching.

## 2 SLEEP

The benefits of sleep cannot be overstated, especially following an intense session. Through the night, we cycle through four stages of sleep, the final two being associated with memory processing, when the body releases hormones to repair tissues, and 'REM' (rapid eye movement), where we also engage our procedural memory, responsible for cognitive and motor skills. Dr Nicola Barclay, departmental lecturer in sleep medicine at the University of Oxford, and Mammoth sleep ambassador, says: "Individuals with chronic sleep loss are more prone to injury, increased pain, elevated levels of cortisol and inflammation, as well as decreased growth hormone and levels of testosterone, indicating that sleep loss may alter tissue repair." She also says that the level of sleep we need a night is very individual, so we shouldn't become "fixated on the eight-hour average." But, if you do find yourself struggling to get in the hours, napping throughout the day is also a great way to catch up on sleep.

## 3 NUTRITION

Many folk think they need to get their protein and carbohydrates in straight after a workout, in the form of a shake or a meal. But really, unless you're training multiple times a day, when you eat doesn't have as much an effect on your recovery as what you eat.

Nutritionist Pollyanna Hale says runners should focus on three things after a run: muscle glycogen replenishment, muscle repair and hydration. "Running depletes muscle glycogen (stored sugar)," she says. "So it's important to replenish these with easy to digest carbohydrates like bananas, or a balanced meal containing protein, with rice or potatoes. Protein is rich in amino acids, which will help to repair muscles."

Keeping hydrated during exercise and after is also just as important, as a 2% drop in hydration can cause a 10% drop in performance.



## 5 INFRARED CLOTHING

After a long run or intense training session, it's common to see runners reaching for their compression clothing, under the spell that it will lessen their DOMS. There's more on the efficacy of that practice on the opposite page. Slightly newer to the market than the more established compression brands like 2XU and Zone3, but using a different method of clothing construction to very much plough its own furrow, is Kymira Sport. This clothing company uses infrared technology in its kit to accelerate your recovery.

The material used by Kymira Sport works by absorbing body heat and visible light, which it then transforms to a targeted area of the infrared spectrum. The makers tell us that the energy is then penetrated up to 4cm into the athlete's body. On the face of it, we'll admit this does sound a little far-fetched, but many international athletes have endorsed it, including two teams that contested the 2019 Rugby World Cup.

Tim Brownstone, founder of Kymira Sport, says that the key difference between the compression approach and the use of infrared is that, "Compression products require muscle activation in order to get the most out of them. However, the crucial difference between this and infrared is that infrared has an effect even when you are just sitting there doing nothing." Slip the clobber on and just sit there? We're all for taking it easy, once in a while...

## 4 MASSAGE VERSUS GADGETS

Over the past few years, the fitness industry has been inundated with gadgets designed to promote recovery. From vibrating rollers to percussive therapy massage guns, each 'gadget' claims to increase blood flow to the muscles. Sceptical as some may be, there is some science behind it. Dr Jason Wersland, founder of Theragun, says: "Percussive

therapy combines the science of frequency, torque, and amplitude to provide deep muscle relief, reducing tension, alleviating pain and enhancing fitness, health and wellbeing."

While punching your body repetitively with a small gun sounds much more fun than the arduous task of rolling on a spikey ball for 30 minutes a day, how does it compare to a proper massage? "There's mixed evidence for whether percussive therapy can actually speed up recovery time and while it definitely has its place, you can't beat a good deep tissue massage," says Sam Olden, lead physiotherapist at CP+R.



Kymira's kit employs infrared tech to quicken muscle recovery