Call the P.O.L.I.C.E

The rules of injury recovery are changing: rest, as Leo Spall writes, may no longer be best

"There shouldn't be any rest period really: it's detrimental, and not only with muscle strain injuries," says Monika Bayer, as she calls for sports and fitness athletes of all levels to move on from received injury rehab wisdom.

We're discussing the best way to treat strains and sprains of various levels of severity, and the post-doctoral researcher from the Institute of Sports Medicine, Copenhagen, is very clear that time alone is not the great healer.

"There's a much longer time in pain for those athletes who have a rest period, meaning that the tissue repair is probably worse with this time out," she says. "There are studies from decades ago indicating that ligament sprains show basically the same thing: that rest periods worsen the outcome."

If you're like me, you've probably seen a range of health professionals over the years to sort out your aches, pains and tears as you work towards an event or fitness goal; you're also bound to have been told at least once to simply quit the activity that makes it hurt until the problem goes away.

The prevalence of the RICE protocol – Rest, Ice, Elevation, Compression – is likely to blame. The acronym was popularised by Dr Gabe Mirkin's *Sportsmedicine Book*, which was published more than 40 years ago but is still widely referenced online. If anecdotal evidence is indicative, it's used a lot by GPs, too.

Mirkin has since questioned whether icing is the best way to tackle inflammation and there's quite a debate on that issue in sport, but the philosophy persists in the NHS, with the health body still advising the same protocol – only with a 'P' added at the beginning for Protection (PRICE).

Avoiding activities which increase the pain – protection for the injured area – is a good idea, but this should usually be a short-lived phase, and emphasising rest in RICE and PRICE seems to have seen many take this element too far, until the symptoms have gone completely.

"The natural thing is to think, If I rest, it'll get better," says Sale Sharks prop Ross Harrison, who needed treatment on a calf tear last season. "If I was on my own, I probably would have just rested it to start with but that's not what the club's physios advised. Obviously don't push into real pain, but you need to get the range of movement back."

Pro rugby player Ross Harrison credits active recovery with a quicker-than-planned return from injury

Harrison, who was called up for England's victory against the Barbarians at Twickenham in June, was sidelined for just three games and was quickly back in Premiership rugby action thanks to the Sale physios' more progressive approach to rehab. The original recovery timeframe was six to eight weeks.

"The whole principle of RICE, especially the rest, needs to go," says Bayer of the protocol that was only ever designed as a first-aid for injury rather than a rehab programme. "The recommendation must be that you have early, careful and guided mobilisation."

ELITE-LEVEL REHAB

Bayer and her colleagues have studied the most effective methods of recovery. Strengthening and mobilisation have emerged as key, with optimum loading – weight bearing of some sort – used once any inflammation has subsided, and that usually means within a couple of days of the injury occurring. Their research also suggests that with muscle and ligament problems in general, too long a layoff is bad for your body as well as your fitness. Such findings are widely accepted at elite level, where the speed of full recovery can make the difference between performing to your potential at a major event and missing a career-defining opportunity.

Scott Jurek demonstrated this with painful persistence four years ago when recording the 'Fastest Known Time' (FKT) for completing the 2,189-mile Georgia-to-Maine Appalachian Trail. The legendary American ultra runner, in the twilight of his highly-successful career, took a little over 46 days and eight hours to get through it and, while his time may have been beaten since, the fact that he set the standard in 2015 after tearing a quadricep muscle early on adds to his feat and shows how determined he was.

"That was some of the most brutal pain I've experienced in my life," says the two-time winner of the 135-mile Badwater Ultramarathon, which starts in Death Valley and has subjected him to temperatures of 125°F. "I thought it was all over just a week in."

In his book on the FKT attempt, *North*, Jurek describes the way he rehabilitated like this: 'Hobble, Limp. Hobble. Limp. Jolt. Burn. Jolt. Searing burn.' There was a lot more to it, of course, not least because Jurek is also a qualified physical therapist. "The biggest thing was that I had to decrease stress to it," he says. "I actually did not run for almost two days. The second day I started to run a little just to test it out. Running downhills or with high impact or more impact was not possible, so I literally walked it off. My body was able to recover with just the right amount of stress to it, where it was able to still maintain a healing phase. There are certain injuries you can't push through…[but] over the years my training and competitions have helped me decipher what kind of pain I can push through."

KNOW YOUR PAIN SCALE

Few have anything like the depth of experience Jurek has amassed, but there are ways around that. Strength coach Zach Long, otherwise known as The Barbell Physio, often uses the Silbernagel pain-monitoring model, which runs a 0-10 scale: from no pain to the worst pain imaginable.

Strength coach Zach Long uses the Silbernagel pain-monitoring model

From 0-2 is the green-light safe zone, 2-5 the amber-light acceptable zone and 5-10 the red-light, high-risk zone.

"The problem is that everybody's pain scale is so wildly different," says Long, a qualified CrossFit coach who has worked with two-time American weightlifting champion Jared Fleming. "So a lot of time I say, 'You're fine to exercise with a little discomfort but if it's changing the way you move, making you feel weaker, hanging around for longer than 24 hours, then that's too much'."

Assessing your pain and what to do about it can be tricky, and if you aren't confident or feel your injury warrants expert help, you should get some. Harrison obviously had that on tap at Sale and, like many committed sport and fitness devotees, he needed it. After using an ice-compression product over the first 24 hours, the 26-year-old was on to controlled calf movements. The injury was in the upper, back part of the calf – the gastrocnemius – and single, straight-leg raises made him sore, so he worked on seated and two-legged

Hobble, limp, hobble: legendary ultra runner Scott Jurek's unique approach to recovery

Photo: Luis Escobar

UNDERSTANDING THE ACRONYM

- **Protection:** if moving or putting weight through the affected area hurts a lot, 'unload' it and/or prevent movement.
- **Optimal Loading:** after 24/48 hours, gradually start to introduce gentle movement and load to a tolerable level.
- **Ice:** apply an ice pack to the injured area every couple of hours in the first day or two.
- **Compression:** put on a compression bandage or clothing to help reduce swelling.
- **Elevation:** keep the affected area up – above heart height if possible – to reduce swelling and maintain good circulation.

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» raises, and strengthened the other part of the calf muscle: the soleus.

"I'm always wanting to push and break through it, almost, but the physios are there and can tell where you are at with the load you've been working with," Harrison says. "They'd get feedback from me as well. "It wasn't a lot of weight on the injured area at first and it was very controlled. We'd apply load to a level where it wasn't painful. I recovered quite quickly: I was doing bodyweight exercises in two to three days, going quite heavy on the soleus, and with the gastrocnemius we'd have less weight and try to build it up."

Long's approach is a far cry from the 'rest and hope it fixes itself' course that many people are advised to take. "The body adapts when challenges are put on it and that's why my philosophy is to modify things to keep people moving," he says. "If somebody is dealing with shoulder pain, for example, and they can't repeatedly press a barbell overhead, but getting it overhead for one rep isn't bad, we can encourage more active rehab: instead of doing 20 overheads, we do one and we do an overhead carry. We're trying to keep the training stimulus as close to the activity as possible, but we're not irritating injured tissues by repeatedly taking them through motion when they're not ready for it. Or, instead of doing a barbell overhead press, you do a landmine press, so you just alter the angle at which you are working. You are staying out of that range of motion that's irritated, but you're still working the same muscles, with the same movement pattern."

START EARLY

Bayer and her colleagues published a study of 50 amateur athletes with severe thigh or calf injuries in 2017, in the *Scandinavian Journal of Medicine Science in Sports*, and the *New England Journal of Medicine*, and it showed the Sale Sharks' approach, and the thinking of Long and Jurek – even if the runner's application was more extreme – is on the right lines. The academics found that starting rehab two days after injury, rather than nine, cut the time needed for the study athletes to become symptom-free by three weeks.

The injuries that were rehabilitated were sustained during a wide range of sports, too, from general fitness work, to handball, rugby and football, and the 48-hour delay in giving them treatment was more to do with the logistics of recruiting test subjects for an academic study than because that was optimum timing.

"The sooner you can start, the better, but you need that initial recovery period," says Lee Herrington, senior physio at the English Institute of Sport, who insists icing does more good than harm immediately post-injury when tissues aren't ready for mobilisation. "Even with a hamstring strain, you need 24-48 hours to allow the tissue to get through the inflammatory phase. The mistake most amateurs make is to do nothing and then quite a lot, relative to what their tissues can cope with. Then they get into a cycle with the muscle getting sore again, try to go back at too high a level."

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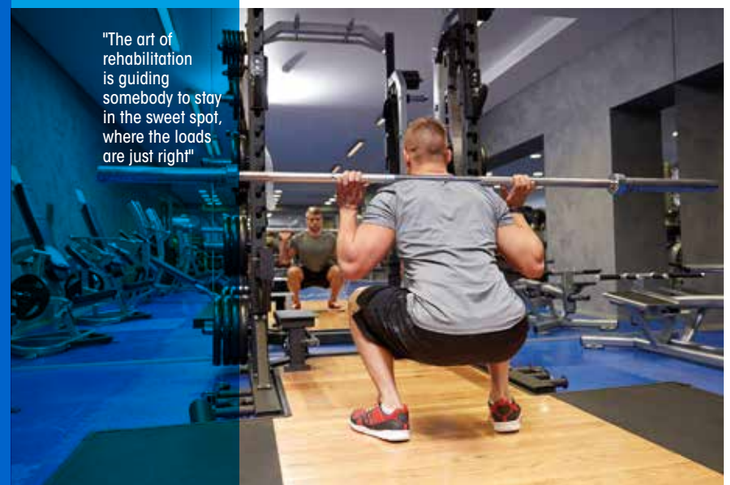
Herrington works with sports across the board and his current focus is trying to keep Britain's potential 2020 Olympians from getting injured. But he has used active rehab for a wide array of injuries, including after operations, and employs three general phases. "The approach is: allow the area to recover, put some basic abilities in place and then find the sweet spot for loading the tissue," he says. "We've used this generally after cruciate ligament reconstructions, hip surgeries, tendon stitching, and we would use the same approach to a muscle tear or strain. The exercises look slightly different, but fundamentally we put things into those kind of boxes. We've applied this in combat sports, power sports, endurance sports – you name it. We had a powerlifter who totally tore his bicep and it was the same sort of approach."

PEACE AND LOVE

If you do nothing for too long after a soft-tissue injury – to muscles, ligaments and tendons – they heal in a "disorganised" way, according to Herrington. With the right mobilisation and load, they strengthen along the stress lines worked and become better able to deal with the exercises or sports you want your body to handle. "There's too much stress and too little. It's a bit like the porridge in 'Goldilocks and the Three Bears': there's too hot, too cold and just right," he says. "People can get it wrong sometimes. The art of rehabilitation is guiding somebody to stay in the sweet spot, where the loads are just right. and keep challenging them."



"The art of rehabilitation is guiding somebody to stay in the sweet spot, where the loads are just right"

Photography Shutterstock / Sale Sharks

Recovering from injury, then, may not be as simple as doing nothing, and you can get it wrong if you're not cautious, but at least it's not as complicated as the acronym factory it seems to have spawned. There's been RICE and PRICE, but the Bayer prefers POLICE, which stands for Protection, Optimum Loading, Ice, Compression, Elevation.

It doesn't end there, though. Earlier this year, two academics from Laval University's faculty of medicine in Quebec, wrote a blog in the *British Journal of Sports Medicine* calling for those treating soft-tissue injuries to prescribe PEACE and LOVE. These stand for Protect, Elevate, Avoid anti-inflammatories (because of suggestions they might harm the healing process), Compress, Educate (about avoiding unnecessary passive methods) – PEACE; LOVE spells out Load, Optimism (because, they say, psychological factors have an impact), Vascularisation (cardio work), Exercise (mobility and strengthening).

The acronyms may be confusing but the message is clear: stay active to come back stronger.

RECOVERY PROTOCOL

PHYSIO LEE HERRINGTON'S 5-STEP PROCESS

1. Take no more than a couple of days off, and apply ice and rest as much as possible.
2. Go back to the activities you were doing, but try to find a level of load and movement you can cope with.
3. Imagine a graph which shows where you are now and the level you want to get back to. Create a series of load and movement progressions to gradually work through.
4. The three pillars of rehab to work on are strength (starting with weights), static balance (from standing on one leg to doing so while performing movement with the other leg) and dynamic movement (landing and changing direction with control).
5. Remember, though, that the rehab graph line is never straight – even in the elite world it goes up and down. There will be setbacks. That's normal.