

What running the length of Africa does to the body

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A 27-year-old British man has recently accomplished the astonishing feat of [running the length of Africa](#). Russ Cook, from Worthing, West Sussex, set out on his 16,000km (9,940 miles) run on 22 April 2023. The journey from Cape Agulhas (the most Southerly point of Africa) to Tunisia took him 352 days to complete—with the distance he ran equivalent to running 385 marathons back-to-back.

It's undeniable that Cook's feat goes well beyond what most people—even professional ultra-marathoners—could ever dream of achieving in their lifetime. It's an all new level of extreme sport—highlighting the remarkable capabilities of the human body and what it can endure.

Cook's body would have been subject to all manner of pains and strains throughout the course of his journey—and the recovery process afterwards may be even more painful.

Muscle pain will have been almost constant for Cook throughout the [course of the challenge](#). This would be due to the heavy, repetitive stress put on all of his muscles—especially those making repeated impacts with the ground during each footfall.

Any time he had to run downhill or go across uneven ground would have increased this strain even further. This is because such terrain causes our [eccentric muscles](#) to contract. This is basically the equivalent of our muscles applying brakes.

Both of these actions create [micro-tears](#) in the muscle, leading to the accumulation of an enzyme called [creatine kinase](#). This can lead to delayed onset muscle soreness, a condition which can be extremely painful and can stick around for many days. This muscle soreness can

remain for [up to five days](#) after a 200km run—so 352 days of continual muscle stress over thousands of kilometers will have significantly worsened these symptoms.

Although these micro-tears [do repair](#) themselves, this can potentially be a long, slow process depending on many factors—such as how much time a person has to recover and whether they're eating a good, nutritious diet.

[Active recovery](#), doing low-intensity exercise such as jogging is recommended to help with repairs. But this probably would not have been possible for Cook during his [challenge](#). And post-challenge, [muscle pain](#) may limit his ability to exercise—prolonging the time it will take for repairs to occur.

Cook reported that he [experienced leg pain](#) during the challenge. This could have been signs of damage to the ligaments and tendons in his hips, knees and ankles.

Ultra-marathons of significantly shorter distance have been [shown to trigger](#) bone lesions, cartilage, and even bursae (sacks of fluids that form between bones and tendons or around muscles) issues. But this of course doesn't happen to all ultra-marathon runners. Most only experience [minor sprains and strains](#), and do recover. Of course, few have attempted the feat Cook did—so it's uncertain how his body will recover in the coming weeks and if any pains are long-term.

Inflammation and fatigue

His heart muscles will have undergone significant stress during the challenge both due to the strain of the exercise as well as the [extreme conditions](#) he was often running in.

This form of continued stress has been shown in some ultra-marathoners to be linked with [cardiac tissue damage](#). Indeed, there are even signs of inflammation in the body (which are signs of tissue damage) [after just two days of continual running](#).

However, some studies suggest that genetics may [play a role](#) in whether athletes suffer damage, so it's difficult to speculate if this extreme feat may have triggered similar responses in Cook or not.

Another thing Cook will have experienced during his challenge is [extreme fatigue](#)—a consequence of the continuous energy demands placed on his body, which would have been almost impossible to meet through adequate nutrition and sleep.

Indeed, research conducted on trans-Atlantic rowers—a similarly grueling undertaking—found that despite consuming over 6,000 calories a day, most lost significant amounts of weight, were [permanently fatigued](#) and experienced elevated heart rates.

As Cook progressed through his challenge and exerted more energy, he would have needed more sleep to recover—but there are of course only 24 hours in a day. This can lead to a condition called "[under-performance syndrome](#)", which is linked to poorer immune function and increased susceptibility to [both viral and bacterial infections](#).

But the effects of under-performance syndrome on the [immune system](#) may only become evident now that Cook has finished his challenge. Research shows many ultra-marathon runners experience [upper respiratory tract infections](#) when they stop running—a consequence of the sudden decrease in stress hormones and the extreme fatigue of the challenge.

But one of the biggest consequences of the challenge may be the effects it has on the mind.

Ultra-marathon running has been linked with [increased levels of depression](#) in the days after the run—alongside mental fatigue and feeling less alert.

Considering the extreme tiredness Cook will have experienced, he may very well have suffered low mood during his journey—especially as he pushed further into the challenge.

This could also become an experience in the coming days, as these symptoms are more common in athletes suffering from [under-performance syndrome](#). This is especially if said athlete has pushed themselves deep into the cycle of [tiredness and extreme fatigue](#) to achieve their goals. In most instances, these symptoms do resolve over time—though this is a unique challenge, which may lead to unique responses.

Ultimately, Cook's extraordinary achievement reflects the incredible capability of the human body and its resilience to extreme stresses. We'll now have to wait and see how his body recovers in the coming weeks.

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