

Built to endure

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Malta Marathon

By Dr Nadia Portelli PhD

When most people think of endurance running, the marathon is the gold standard. But for a growing community of athletes, 42.2 kilometres is just the warm-up. Welcome to the world of ultra-running, a fundamentally different sport, with its own unique challenges, demands, and coping strategies.

Often loosely defined as any distance longer than a marathon, the term “ultra-marathon” can be misleading. By that logic, including a warm-up and a cool-down before and after a marathon would be an ultra-marathon. But the reality is far more complex.

My doctoral research, grounded in empirical data, reveals that ultra-running is not merely a longer version of the marathon. Even among ultramarathons, comparisons can be deceptive. Terrain conditions vary widely, from road and track to soft forest paths with gentle climbs, to scorching desert flats or steep alpine routes with thousands of metres of ascent at altitude. Distance alone reveals little about the true challenge. The physical and mental demands and the cognitive coping strategies differ so significantly that comparing finish times across different ultra marathons simply doesn't make sense.

Ultra trail running events typically span distances of 50km, 100km, and 100 miles, though some races extend to 200 miles or unfold over multiple days. These endurance challenges subject athletes to a cumulative array of stressors as they push toward the finish line. Research indicates that participants may experience muscle damage, discomfiting pain, sleep deprivation, hallucinations, and gastrointestinal issues, particularly in the longer events. As a result, ultra-running demands specific training, a unique set of coping strategies, and distinct physiological and psychological adaptations, distinguishing it as a sport in its own right.

My doctoral research reveals a key distinction between marathoners and ultra-runners: the point at which discomfort begins. Marathoners typically feel discomforting pain around 29km, while ultra-runners hit that threshold much later, at around 60km in a 100km race and 97km in a 100-miler. This delay, consistent across genders, may stem from more conservative pacing in ultra marathons. Yet once pain sets in, ultra-runners must endure it over far greater distances.

Coping with discomfort during ultra marathons

Ultra-runners rely on psychological strategies to manage the intense demands of their sport. My research shows they use planning, pacing, and close attention to bodily signals and surroundings more often than marathoners to regulate effort and avoid injury. Self-talk such as repeating motivational phrases also helps them stay focused, reduce anxiety, and push through discomfort.

Marathoners, meanwhile, often lean on external support like advice, shared resources, and encouragement from crowds and family members. The social atmosphere of road races fosters this kind of coping. Ultra-running events, marked by solitude and remote terrain, offer far fewer opportunities for such reinforcement.

Interestingly, marathoners also show a greater tendency toward self-blame, internalizing setbacks in ways that reflect the performance-driven culture of the sport. Ultra-runners, by contrast, tend to accept discomfort as part of the journey. They anticipate suffering and meet it with stoic resolve. For many, the race becomes a test of character and a journey into the self.

Embracing pain

Further findings from my research show that athletes who embrace pain during hard training are better at tolerating discomfort in races, but only if they believe that hard and discomforting training is essential for improvement. When this belief is strong, the link between training pain and race-day tolerance is clear. Without it, tolerance drops. These insights highlight the power of mindset. Runners who see discomfort as part of growth are more equipped to endure it while racing. This suggests mental conditioning could be a core component of ultra-trail running training.

This article forms part of the research conducted by Dr Nadia Portelli, undertaken as part of her doctoral studies following the award of a Tertiary Education Scholarship Scheme.

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