

Care of the endurance athlete: promotion, perception, performance and professionalism

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"...we rejoice in our sufferings, knowing that suffering produces endurance, and endurance produces character..."
Romans 5: 3–4

PROMOTION

Promoting fitness and keeping people active is a major focus of sports medicine professionals. Regular exercise reduces the incidence of, and prevents, many diseases and improves quality of life across the lifespan.^{1–3} The American Medical Society for Sports Medicine (AMSSM) is an organisation of primary care sports medicine physicians that is dedicated to promoting safe participation in regular exercise for all people.

Phidippides may have been the first true endurance athlete, running several hundred miles to relay news during the Persian/Greek War 2500 years ago. Following the Athenian victory at the Battle of Marathon, he ran 26 miles to announce the victory and upon completion of his run, died. From this tragedy, the marathon running event was born.

As more and more people complete marathons, the public mystique of the marathon as a way to differentiate oneself from 'normal' athletes is wearing off, and endurance athletes are pushing the envelope farther and longer in a quest for greatness. USA Triathlon recently found that most triathletes compete for the personal challenge, and that triathletes as a population have an increasing thirst for greater challenges.⁴ Within the last 10 years, an explosion of events designed to challenge the human condition by pushing athletes to more extreme environments, and for extended times and distances, has changed how these athletes compete and train.

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PERCEPTION

Endurance athletes train for several hours a day and participate in marathons, ultra-marathons, long-distance triathlon and 24-h events to challenge the perception of what is achievable. The training needed to compete in these new events bears little resemblance to the moderate levels of exercise that have been recommended for cardiovascular benefits. These new, more extreme challenges demand a new paradigm in providing care for these unique athletes.

Many endurance athletes define themselves by their ability to perform their sport. They spend so much time training and competing that their sport becomes their sense of identity and a major source of self-esteem. It can also be a constructive method to relieve stress. Therefore, once injured, the athlete may feel a loss of self-worth and be unable to cope with usual stressors. Understanding this reality will make it easier for both the athlete and the healthcare provider when planning the athlete's return to training.

In an invited editorial, Wortley and Islas,⁵ who both compete in ultra-endurance events, describe the mindset of the ultra-endurance athlete. Marr, an elite age-group triathlete, explains in his editorial⁶ the mindset of the multisport athlete and addresses the need for research to lead to a better understanding of the complex environmental, biomechanical, nutritional and psychological risk factors that can all play a role in multisport athlete injury.

Endurance athletes have a remarkable ability to tolerate mental and physical discomfort and persevere through it, all in an attempt to maximise performance. Parry *et al*⁷ show that the ability to control the conscious thoughts of endurance athletes is directly related to the athlete's perceived level of exertion and ultimately their performance in ultra-endurance events.

This power of perception translates to the recreational athlete as well. Gander *et al*⁸ discovered that those people whose perception of their health status is good or excellent have a lower incidence of all-cause mortality compared with those

with a poor or fair self-perception of their health.

PERFORMANCE: THE DEHYDRATION DILEMMA

Many have attributed dehydration as the cause of poor performance and collapse following events,^{9–11} but recent science suggests otherwise. In marathon runners, those finishing in less than 3 h have an average of greater than 3% body mass loss secondary to fluid loss.¹² Despite this 'dehydration', they were still able to maintain a high-level performance. Goulet¹³ demonstrates that in bicycling time trial performance, exercise-induced dehydration does not alter performance and that simply using thirst to gauge need for hydration will help maximise performance. Similarly, Nolte and colleagues¹⁴ demonstrate that drinking ad libitum is all that was necessary to maintain safe hydration levels with minimal decrement in performance.

Asplund and colleagues¹⁵ critically review the literature to determine the actual mechanism of exercise-associated collapse and find that dehydration has no causative mechanism in collapse following endurance events. Finally, Anley *et al*¹⁶ report that oral hydration is just as effective, if not more effective, than intravenous fluids in exercise-associated postural hypotension, a condition which they hypothesise is due to venous pooling secondary to peripheral vasodilation rather than dehydration.

May this AMSSM thematic issue of the *British Journal of Sports Medicine* stimulate thought, challenge previously held ideas and foster/encourage an environment that promotes exercise, changes perceptions and allows athletes to safely perform their sport.

PROFESSIONALISM: AMSSM 2012 ANNUAL MEETING, ATLANTA

AMSSM is committed to fostering safe participation for all athletes through clinical research and the education of sports medicine providers. We invite you to attend our 21st Annual Meeting from April 21 to 25 in the hub of the South-Atlanta, Georgia. We showcase cutting-edge, clinically relevant content and highlight original research submissions. We guarantee that the educational and social climate at the meeting will be sizzling. Find out more at www.amssm.org. Also check the *BJSM* podcast where we discuss this special AMSSM issue and preview the conference in more detail. Keep active and we'll see you in 'Hotlanta' in April 2012!

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