



The heart of an athlete

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Editorial

The death of a fit person, especially when young and apparently healthy, always causes concern. Recent high profile cases have focused attention on screening to identify those who might be at risk, in order to give preventable advice. In addition, cardiac support facilities and experienced personnel need to be available at sporting venues such as soccer grounds and major events such as marathons. However, even the most comprehensive screening cannot and does not exclude sudden death. This raises the question as to whether in the presence of an apparently normal heart sudden intense exercise renders the athlete acidotic to a degree that induces arrhythmias.

In this very timely issue, we address the basics of energy metabolism and how optimizing cardiac energy metabolism can improve cardiac efficiency and function, and move on to clinical scenarios where the focus is on preventing cardiac events. The clinical evaluation of the athlete is comprehensively reviewed by Cox and Sharma and supported by articles demonstrating how to evaluate the athletic heart using imaging techniques. The importance of differentiating physiological from pathological left ventricular hypertrophy and separating healthy normal ventricles from the hypertrophic cardiomyopathic cannot be emphasized enough. It is also important to use pre-participation screening to identify the inherited arrhythmogenic athlete as Corrado et al demonstrate.

Exercise toxicity and the idea that an individual may have a "typical dose-response" in which a level of exercise may be achieved which does more harm than good is thought provoking and Baggish opens the door to the concept that high level exercise is not evidence based with regard to disease prevention.

Given that metabolic changes occur during exercise, which may in certain circumstances be counterproductive, the role of metabolic modification is explored by Chen who links trimetazidine's beneficial effects. Of special concern, as addressed by Ussher et al, is the use of banned performance-enhancing drugs that not only provide unfair advantage but also jeopardize the health of the user.

Pelliccia et [1] review the differences in consensus recommendations between the United States and Europe. I recommend this article and the recent review by Prior and La Gercha [2]

Exercise is an important lifestyle intervention, increasing well being and improving prognosis. While benefit exceeds harm for the vast majority, here we address identifying those vulnerable to exercise induced cardiac problems with prevention our over-riding ambition. •

References

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2. Prior DL, La Gerche A (2012) The athlete's heart. *Heart* 98(12):947-955