The Impact of Sports Cardiology on the Practice of Primary Care Sports Medicine

Where Were We, Where Are We, Where Are We Headed?

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KEYWORDS

- Sports cardiology • Primary care team physician • Preparticipation evaluation
- Collaboration • Sudden cardiac arrest • Heart disease
- Preparticipation cardiovascular screening • Primary prevention
- Secondary prevention

KEY POINTS

- The cardiovascular care of competitive athletes is complex and demands a team effort between primary care team physicians and sports cardiologists.
- Training for competitive athletics induces several physiologic changes in the cardiovascular system that may mimic heart disease (HD) during cardiac testing (athlete's heart).
- Several cardiovascular pathologies can mimic athlete's heart, and primary care team physicians may not have the appropriate training necessary to fully understand the characteristics of this condition.
- The integration of sports cardiologists into sports medicine teams is beneficial to the practice of primary care sports medicine as well as the safety and well-being of athletes.

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INTRODUCTION

Sports participation in the United States has amplified rapidly over the past several years. Although exercise has been proved to provide health benefits due to physiologic adaptations, competitive athletes with undiagnosed HD remain at risk for sudden cardiac arrest (SCA). The various nuances of modern-era competitive athletics, the expectation for excellence both on and off the playing field, and the devastating effects of the loss of an athlete due to undiagnosed HD dictates an overwhelming need for a team approach. Sports cardiologists and primary care team physicians must collaborate to effectively diagnose masked HD, to potentially prevent SCA, and to provide ongoing care for athletes with HD. Fortunately, SCA is a rarity,[1,2] yet the tragic consequences of the demise of any such afflicted athlete leaves a distressing void for several generations. The memories of SCA in athletes has spanned centuries—from Pheidippides (legendary Greek Olympic champion) to Hank Gathers (Loyola Marymount basketball player) to Marc-Vivien Foé (Cameroon national soccer player) to Fabrice Muamba (English Premier League soccer player).[3] And although primary prevention of SCA is a multifaceted process in which there is no single absolute method to prevent SCA, modern medicine is better equipped today to try to prevent further tragedies on the playing field and to accomplish better outcomes if SCA does occur.

Aside from the vital importance of SCA prevention, if deemed safe by a capable sports cardiologist, athletes should be considered for athletic participation even in the presence of diagnosed HD. As such, special attention must be directed toward the intricacies and rigors of the specific sport. The medical disqualification of an athlete from the athletic arena is fraught with implications beyond imagination. The psychological effects of a lost passion after countless hours of hard work on the practice "field of dreams" and commitment to excellence are immeasurable. Long gone are the days when a primary care team physician could solely care for and make prudent decisions about the cardiovascular health of athletes. Primary care team physicians who have not had the good fortune of working closely with cardiologists knowledgeable about sports and exercise cardiology lack the necessary experience and education and thus are at a distinct disadvantage to make independent medical recommendations on the activity or disqualification status of athletes with HD.

Primary care sports medicine practitioners must understand that the specialty of sports medicine has evolved to the point where a thoroughness, a commitment to excellence, and a team approach to cardiovascular care of competitive athletes are imperative and no longer a choice. Meticulous preparticipation cardiovascular screening programs that have a sports cardiology consultant to decipher the challenging cases undoubtedly provide a level of comfort for primary care team physicians. Cardiologists prove an invaluable resource for reviewing any questionable components of the history suggestive of underlying HD as, with extremes of training, cardiovascular symptoms emerge in competitive athletes with otherwise seemingly normal hearts. Although preparticipation cardiovascular screening programs may aid in the diagnosis of HD and thus hypothetically help prevent SCA, physicians must also consider the expected normal physiologic adaptations to training—athlete's heart—that lead to a high rate of false-positive electrocardiogram (ECG) tests.[4–6] Athlete's heart may prove misleading to primary care team physicians who are either unfamiliar or inexperienced with such adaptations. Consequently, athletes may be incorrectly disqualified from athletic participation, resulting in numerous potential negative consequences. Furthermore, studies have revealed insufficient evidence to show that routine ECGs obtained as part of a PPE followed by activity restriction in at-risk individuals are decisive in reducing the risk of athletic-induced sudden death.[7]