Q&A: This cardiologist warns about sudden cardiac death in athletes

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More than 12 years ago, AMA member Ramin Manshadi, MD, read about two young athletes in his hometown of Elk Grove, California, who had sudden cardiac death during their summer soccer practice. Having played soccer in high school and college, it worried Dr. Manshadi, a cardiologist, that they could not prevent sudden cardiac death in these young people. That’s when he decided to find ways to help.
Interventional cardiologist Ramin Manshadi, MD, represents the California Medical Association in the AMA House of Delegates.

"I started reading more and interviewing and talking to experts and eventually becoming an expert myself," said Dr. Manshadi, who became involved with the American College of Cardiology and also represents the California Medical Association in the AMA House of Delegates and is team cardiologist for the Sacramento Republic FC professional soccer team.

“I was able to work with local hospitals and also some industries to find some money to donate” automated external defibrillators (AEDs) to a dozen high schools in the area, he said.

“The idea was twofold. One was to raise the awareness of sudden cardiac death in athletes, and, No. 2, to place AEDs in high schools because colleges already have AEDs everywhere. High schools don’t have that same luxury. So, my goal was to get these to as many high schools as possible,” he said. “Having AEDs in high school is not only going to help athletes, but it will help all the bystanders and all the other teachers and individuals who are visiting the area.”

The AMA has policy supporting state legislation or education policies encouraging every high school and college that participates in interscholastic or intercollegiate athletic programs to have an AED and trained personnel on its premises.

Dr. Manshadi has been able to donate more AEDs through all proceeds from his book, The Wisdom of Heart Health. And now, with his second book, The Wisdom of Exercise Health, he looks to continue donating 100% of proceeds to buy AEDs for high schools in need.

In an interview with the AMA, Dr. Manshadi discussed the need for physicians to better understand sudden cardiac death in young patients.

**AMA:** Who are your two books written for?

**Dr. Manshadi:** I wrote my second book toward the end of last year and 100% of the proceeds of the first book and the second book are now used to purchase AEDs. The focus of this second book was to be all-inclusive.

It’s not only for athletes, but for athletes of all ages and all capacities—from weekend warriors to professional athletes. I try to be all-inclusive, with different chapters talking about different areas where everyone can find some value within the book.

**AMA:** Do you donate AEDs to high schools outside of California?

**Dr. Manshadi:** I have two or three entities already—not high schools. One is a local youth soccer association. Another one is a community center for an underserved population where the kids can go
after school and do exercise. So, I have two on order right now. They should arrive in June to be delivered to them. And I've been getting requests from other entities also.

**AMA:** How did your role as president of the California chapter of the American College of Cardiology help in your pursuit of providing AEDs for more schools?

**Dr. Manshadi:** When I was the president of the California chapter of American College of Cardiology, my theme was sport cardiology and exercise health. During that time, I came up with the Exercise Health and Sport Cardiology Committee that's going very strong now and is the first of its kind in the United States.

The committee and its mission are twofold. One is to raise the awareness of the importance of exercise health to the general community by working with bigger organizations, such as the Sacramento Republic FC professional soccer team or the Sacramento Kings professional basketball games to raise awareness of this.

And, No. 2, to educate physicians, midlevels and even general cardiologists who are interested in learning about sudden cardiac death and identifying high-risk and low-risk patient populations. Because on many occasions, they get young patients and athletes who have chest pain or heart palpitation, but they don't really know what to do. There's no expertise in the area to try to assess if they're really high risk or not high risk.

So, working with the American College of Cardiology, with our committee and writing articles, the goal is to educate all the other general health professionals and physicians regarding this.

**AMA:** What do we know about the risk and the frequency of sudden cardiac death in high school athletes?

**Dr. Manshadi:** After many years, there's going to be a directory and also a way of finding out how often this happens in United States. Unfortunately, most research that has been done has been after the fact, looking at autopsies and looking at reports from pathologists as far as the cause of death. So we don't really know, but based on my research, it is roughly around one out of 1,000 or so frequency.

**AMA:** The American College of Cardiology released a report on long COVID and cardiac symptoms. Is there any connection between sudden cardiac death and long COVID?

**Dr. Manshadi:** I'm a sport cardiologist for a local university and the professional soccer team in the area, so I get a lot of young athletes coming my way after having COVID-19 and how to clear them, what are the symptoms and what to do because it's definitely a new disease.
Over time, we've shortened the duration when they can go back. But studies have shown that up to one year post-COVID there is a greater chance of heart attack because of increased inflammation and unstable plaque rupturing and so forth. There have also been studies that have shown that if someone got COVID-19 and they're not very symptomatic even, and they have a normal EKG and they have normal troponin, they still have myocarditis based on doing cardiac MRI. What's really important is to see cardiologist or a physician who is well versed in sport cardiology and finding out when we can send these athletes back to exercise. But what we have found out over time is that even though these individuals will have some myocarditis, unless you have really bad symptoms and an echocardiogram shows myocarditis with poor left ventricular function, your risk of having sudden death is low overall. You may have palpitations, you may have chest pains when you exercise or you may have shortness of breath, which will be transient over six months or so until you get better. So, that's what we know now. There's definitely a higher chance of heart attack for older people, and for younger people there's a higher chance of having chest pain, shortness of breath and palpitations, but sudden death is not as common.

**AMA:** What is important for physicians to know about sudden cardiac death?

**Dr. Manshadi:** No. 1, if an athlete comes to you and says, “When I exercise, I get chest pain and when I stop, it goes away,” take it seriously. If they have atypical chest pain at rest, usually it's not that important. If they have symptoms with exercise, that's what's really the most important thing.

So, if they have symptoms of passing out when they're exercising or they used to run all the time and have no issues, but all of a sudden now they have significant shortness of breath with exercise, that's more than usual for them, these are red flags that you have to do further testing. There is this 14-point questionnaire that I have for the athletes that I screen. And if any of those answers are positive, then you've got to do further testing. For example, do you have first-degree relatives with sudden cardiac death? Do you have chest pain when you're exercising? Have you passed out when you exercise? Is there an abnormal EKG? These are some of the questions that our 14-point questionnaire has.

So, listen to the patient, if symptoms are happening with exertion, if they're new, you take it seriously.

**AMA:** What got you involved with being a team cardiologist?

**Dr. Manshadi:** I played sports all my life since I was a child, and my No. 1 sport was soccer. I really wanted to play professional soccer and be a physician. I really wanted to be a physician because I considered myself be a miracle child because I was born in Haifa, Israel, and the doctors gave my father the probability that either myself or my mother would not make it through this emergent C-section that she had to go through.

She went through it. She was in hypovolemic shock for a few weeks, apparently, and eventually survived—and I survived. Once I heard the story, I knew that I wanted to be a physician, give back to
the community and give back to not only the physician society, but also back to the general population. That's one of the main reasons I'm in Stockton and Central Valley, and not in San Francisco or Los Angeles—because I want to help the underserved populations. So, having played soccer and sports all my life and also coaching my boys' soccer team since they were really young at the highest level now, winning state championships, I always had this feel for athletics. Once I learned about sudden cardiac death as well as having the knowledge of cardiology and background of being an athlete all my life myself, I put those together that I wanted to be a sport cardiologist on top of being an interventional cardiologist. We have a local professional soccer team here, but before that I was talking to the owners of the Sacramento Kings about sudden cardiac death. Then an opportunity opened up for me to be the team cardiologist for the Sacramento Republic professional soccer team back in 2014. I accepted it and it has been a great experience for me.

Even though I am not a professional player, I interact with professional players all the time. I also interact with these young athletes who want to be professionals, so I try to bring them together so that they have a vision and goal in life.

All around, it's been a win-win situation for the younger generation and the professionals I am dealing with, and I really enjoy it. I cannot play pro myself but being in this space has been really rewarding for me on top of my general cardiology work that I have been doing.