

Survival following sudden cardiac arrest poor: Just one in 10 student-athletes survive

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Seattle, WA - For young people participating in athletics, the odds of surviving a sudden cardiac arrest (SCA) remain extremely poor, a new study has shown [1]. Investigators observed an average of 69 cases of SCA per year over a recent span, but just one in 10 of these student-athletes survived the cardiac event.

"Survival following exercise-related SCA in young individuals has been poor over the past seven years in the United States," write **Dr Jonathan Drezner** (University of Washington, Seattle) and colleagues, in the June 2008 issue of *Heart Rhythm*. "Despite the poor survival rate, there is a statistically significant trend toward improved survival in recent years, and there may be a concurrent trend toward increased automated external defibrillator [AED] use."

The new report culled data from an intensive search of media reports and other electronic databases. Investigators identified 486 cases of SCA in elementary school, middle school, high school, and college students from 2000 to 2006, for an average of 69 cases per year. The overall survival during this period was 11%, with a range of 4% to 21% survival per year. Of the 55 students who survived, the media reported the details of resuscitation in 40 cases. Of these 40 SCA events, 93% received defibrillation, 35% of those with an AED by a nontraditional first responder and 58% through defibrillation by emergency medical services.


The authors note that the study identified a higher proportion of female victims of SCA than previous studies. Past studies found a male-to-female ratio of approximately 9:1, compared with the 5:1 ratio observed by Drezner et al. Females were significantly more likely than males to survive an SCA (21% vs 9%, $p=0.001$). The reason for the higher proportion of female SCA events in this study is likely because recreational athletics and all exercise-related SCA were included in the analysis, according to investigators. Past studies primarily focused on competitive athletes in organized athletics.

In the US, evaluation of SCA in young athletes is hindered by the absence of a mandatory reporting system for juvenile sudden death, according to the authors. "Without an improved reporting system," writes Drezner and colleagues, "reliance on media reports is one of the only means of identifying cases of exercise-related SCA. . . . The impact of sudden death in a young athlete is disproportionately large, and the low survival rate should compel the medical community to support methods for better investigation, prevention, and secondary management of these events should they occur."

The reason for the improvement in survival in recent years, according to Drezner and colleagues, is not entirely clear, although improved recognition of SCA and the increasing presence of on-site AED programs in high school and college athletic programs could be one reason. The numbers were too small to statistically analyze the correlation between improved survival and AED use in this study, they note.

Source

1. Drezner JA, Chun JS, Karmon KG, Derminer L. Survival trends in the United States following exercise-

related sudden cardiac arrest: 2000-2006. *Heart Rhythm* 2008; 5:794-799. 

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