

**This Document is approved by the Ohio State Medical Association Council and its Joint Advisory Committee on Sports Medicine.**

## **THE USE OF AUTOMATED EXTERNAL DEFIBRILLATORS (AEDs) FOR THE INTERSCHOLASTIC ATHLETE: A POSITION STATEMENT**

The objective of this position statement is to provide physicians, coaches, and administrators who serve the member schools of the Ohio High School Athletic Association (OHSAA) with guidelines concerning Automated External Defibrillators (AED's) and their possible benefit and use in the school setting based on current medical evidence and research. This position statement is not intended as a proposed standard of care and should not be interpreted as such. Rather, it only describes reasonable practice for the school. Individual treatment decisions will turn on the facts and circumstances presented to the emergency responders at the time of an event. This statement was developed by the Joint Advisory Committee for Sports Medicine (JACSM) of the Ohio State Medical Association. The committee is a collaborative effort of five professional organizations concerned about sports medicine and the interscholastic athlete in Ohio.

An AED is a medical device that can recognize the presence or absence of ventricular fibrillation or tachycardia and determine whether defibrillation should be performed and delivers a shock through electrodes attached to the victim's chest. Throughout the process, voice and screen prompts guide the rescuer. No shock is recommended or delivered for other types of cardiac arrhythmia. The AED is designed to be used by non-medical personnel with little or no training, although a four hour program coupled with basic life support training is recommended.

In the United States, 220,000 people (nearly all adults with coronary artery disease) die from sudden cardiac arrest each year . Before complete arrest, the heart often develops ventricular fibrillation or ventricular tachycardia, irregular heart rhythms in which the heart muscle contractions are disorganized and the effective pumping of blood ceases. Defibrillation is the delivery of an electrical impulse to the heart that allows it to return to a normal coordinated rhythm, and is the most effective treatment for ventricular fibrillation or tachycardia in adults. The sooner defibrillation is provided via an AED, the better the victim's chance of survival. When provided within the first five minutes of a cardiac arrest, the odds are about 50% that the victim's life will be saved. With each passing minute, the chance of successful resuscitation is reduced by 7-10% . After 10 minutes, there is very little chance of success.

Sudden cardiac death is a rare event in school age youth and children. It is estimated (reference) that sudden death occurs in one out of every 200,000 high school athletes each year for a total of about 100 events per year. Ninety percent of the victims are male and 70% come from football and basketball. Ninety-seven percent of victims have structural abnormalities. The most common causes associated with sudden death are hypertrophic cardiomyopathy, anomalous coronary arteries, and left ventricular hypertrophy. The best and most practical cardiac screening method is the medical history, but even a thorough history will detect only 18-50% of athletes at risk. Screening by ECG or echocardiogram may increase sensitivity by a small amount, but the logistical and economic factors involved make these unlikely solutions.

Because of the rare occurrence of cardiac arrest in youth, ages under 18, no studies are available demonstrating the effectiveness of AEDs in this population. However they have been shown to be safe and possibly effective for individuals eight years of age or older, and the FDA has approved a number of AED's for this age group. These devices have been shown to accurately detect "shockable" and "non-shockable" rhythms in children. Research has also shown that 19% of pediatric cardiac arrests present with ventricular fibrillation.

The JACSM believes:

It is essential:

That individuals responsible for overseeing or managing an event be able to provide (themselves or others) basic life support and be able to contact and initiate the EMS system in the event of a sudden cardiac arrest.

That each school establishes an Emergency Action Plan (EAP) regarding decisions for the medical care of its athletes (refer to national guidelines) (National Federation State High School Associates) and that it have as one of its specific goals a response plan that targets a victim's collapse to defibrillation time as five minutes or less.

The JACSM also believes:

Because the incidence of sudden death in individuals under 18, it is unlikely that a given school district will ever use an AED for a student, and there is insufficient medical evidence to recommend AED availability and use. Therefore it is not unreasonable to consider AED's for school age individuals to be an unjustified expense and a luxury at this time. However, it is highly likely that at some time an adult attending an athletic or other school sponsored event will experience sudden death, and therefore:

It may be desirable:

To provide AED's at event sites.

That the EAP should have as its specific goal a response plan (when this is practical) that includes a communication system and a mechanism for transporting an AED and a trained operator to the site of an emergency.

That all personnel responsible at a school-sponsored athletic event or practice are trained in basic life support, First Aid and CPR. Note: By Ohio law, all interscholastic coaches, paid and volunteer, in the state of Ohio must have current C.P.R. certification and possess the Pupil Activity Supervisor Validation, indicative of four hours of sports first aid training.

At activities in which students are spread out over long distances, such as golf events, cross country, etc., the JACSM recognizes that logistics make the above recommendations impractical

**APPROVED BY OSMA Council 3-27-04 JACSM 1-25-04**