

## Orlando Sentinel

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### TECHNOLOGY & HEALTH

# Lifesaving touch within easy reach

## Automated heart defibrillators can make a difference when seconds count.

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For 11-year-old Cheyanne Johnson of southwest Florida, death came as she walked to class. For 19-year-old Keely Dorsey of Tampa, a University of South Florida running back, it struck after his team's workout. And 6-year-old Alexander Callender of Gulfport, Miss., simply collapsed on the school bus, three weeks after having two teeth pulled.

The list of young people who have died so far this year of sudden cardiac arrest -- their hearts abruptly stopped pumping -- is a sobering one. By year's end, it is estimated, it will include 14,000 children across the country. In addition, there will be 325,000 adult victims.

All told, that's more than 900 people every day.

Fifteen-year-old Robert Modeszto of Orlando might have been among those statistics, too, but for two critical reasons. First, when this Timber Creek High School freshman collapsed two weeks ago during a baseball game, he had people around him who knew what to do. Second, one of them had a portable defibrillator.

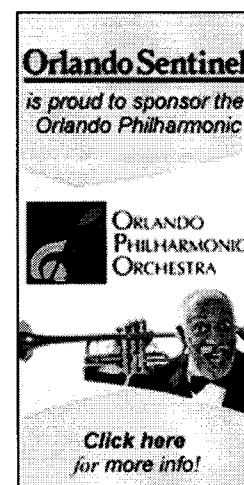
"It was amazing," says the school's athletic director, Jim Priest, who witnessed the rescue. "We were just trained to use this machine last August, and this was the first time we'd ever needed it. . . . The kid was kind of grayish, but when we shocked him he came right to."

The automated external defibrillator -- or AED, as it's often known -- might well have saved Cheyanne or Keely or Alexander, too, though no one can say with certainty. The American Heart Association is an enthusiastic supporter of the technology.

"These are user-friendly, lifesaving devices," says Dr. Ken Kronhaus, a Mount Dora cardiologist and AHA spokesman. "They're not cheap, but wherever the public congregates, it's good to have them."

The heart can stop pumping for a variety of reasons. If, for instance, there is a clot blocking blood flow, an AED won't help. But if the problem is an electrical one, and the heart begins to beat chaotically -- as is commonly the case when a person suddenly collapses, loses consciousness and you can't find a pulse -- an electric shock is typically needed to restore proper rhythm, synchronizing the heart's electrical beat and restarting its mechanical pumping action. Without that, the heart will not be able to pump blood

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effectively to the body's vital organs, and the person begins to die.

For every minute that goes by, chances of survival drop 10 percent.

"After 10 minutes," Kronhaus says, "no one survives."

### A growing presence

According to the American Heart Association, more than 95 percent of the victims of cardiac arrest die before reaching the hospital. Of those who do survive, many have permanent brain damage, which sets in four to six minutes after the heart stops pumping.

"This is why the public access [to] defibrillation is so critical," says Martha Lopez-Anderson of Ocoee, who runs a nonprofit group called Saving Young Hearts. "The average response time for EMS is nine to 12 minutes."

Lopez-Anderson's son, Sean Alexander Anderson -- a seemingly healthy 10-year-old -- collapsed in February 2004 while in-line skating. Two neighbors, one of them a registered nurse, administered CPR to no avail.

For months afterward, the cause of death was listed as "unknown." Eventually a medical examiner found scarring in Sean's heart, though no one knows what caused the scarring or whether it led to his death.

"Often," Kronhaus says, "the victim's first symptom is his last symptom" -- unless someone uses an AED.

AEDs have been in public use for at least 15 years, and their presence continues to grow. They now can be found in airports, government buildings, commercial airliners, shopping malls, corporate offices, police cruisers, schools, churches, gyms, sports stadiums and even private homes, though their numbers vary widely from one community to the next.

Last year, Florida lawmakers voted to require them in all public high schools with sports teams, and Lopez-Anderson and others are now lobbying to have them in middle- and elementary schools, too.

They cost roughly \$1,500 to \$2,000 apiece, and newer versions literally talk you through the procedure. Lopez-Anderson, whose group has donated the devices to local schools, says a fourth-grader can operate one.

"They are dummy-proof," she says of the more-sophisticated models.

They come in what looks like a first-aid box that's usually mounted on a wall or carried by a shoulder strap. The rescuer opens the box and follows verbal prompts to, for instance, call 911, check the patient's responsiveness and breathing, and attach the AED's electrode pads to the bare chest of the victim. The AED then analyzes the electrical impulses of the heart to determine if a shock is needed. If so, it advises the rescuer not to touch the victim and administers the necessary jolt.

It then re-analyzes the rhythm to determine if a second shock is necessary.

Still, training is highly recommended -- and often required -- when AEDs are installed. That's in part because rescuers should do CPR to keep blood pumping before a shock can be administered, and CPR is sometimes needed afterward as well.

"One should not be afraid of using an AED, even if one is alone," Kronhaus says. And even if you have no training. "Because if you don't do anything, it's clear what will happen."

The person will die.

He's living proof it works

Mark Spencer did die, at least for a brief while.

Three weeks ago, Spencer, a 64-year-old freelance journalist from Mesquite, Texas, was on the treadmill at a health club when he began to feel dizzy. Two hours later, he woke up in the hospital with a broken front tooth, a bump on his forehead, a bruised shoulder -- and a lot of people telling him he was lucky to be alive.

"There must have been quite a commotion," he says, now back home with an internal pacemaker and defibrillator implanted in his chest. "A man I know and a woman I don't both dropped to their knees and started to pray for me. They said I was starting to turn purple before the gal applied the [AED]. She'd just had training in using the thing."

Spencer had ventricular fibrillation -- a rapid, uncoordinated quivering in the bottom of the heart that renders the muscle incapable of pumping properly. It's one of the most common causes of sudden cardiac death, but its origin is not always known.

All Spencer knows is that his doctor won't let him go back to eating fried chicken and smoking cigars -- and that emergency workers seemed downright giddy that fateful day.

"It was like, 'Wow, we finally saved one,' " he says.

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