



Boot campers work as a team to save one of their own

Evergreen Valley High School, San Jose, California

Wednesday, October 4, 2016 started like any other day for Subramaniam Sundar. As this 61-year-old Indian-born husband and father of two drove from his home in San Jose, CA to his morning boot camp class, he thought of nothing more than getting in a little early-morning exercise before he started his work day as a chip designer at Toshiba.

At Evergreen Valley High School's track – where the fitness class was held – was Mike Coleman, the 60-year-old class instructor who owns and runs Focused Integrated Training and is a PE teacher and coach at the nearby Davis Intermediate School. Also in attendance were Shannon Opilla, a 47-year-old registered nurse and Michelle Layton, the high school's 45-year-old PE teacher.

What happened next would call on the quick thinking and skills of these three boot camp attendees, all of whom were CPR-certified.

The right people at the right place and time

Subramaniam says he remembered feeling fine. He joined the other participants, warming up with push-ups and sit-ups. Then Mike asked them to run two laps around the track. That's the last thing Subramaniam remembered before blacking out.

As nurse Shannon describes it, Subramaniam fell to the ground and landed on his side. "He was gasping, his arms and hands were stiff, and his color was gray."

Mike heard some class members call out Subramaniam's name. "I saw him on the ground. He was unresponsive, did not appear to have a pulse, and was gurgling rather than breathing."

Mike and Shannon were quickly at Subramaniam's side. Shannon shouted for someone to call 911 and get an automated external defibrillator (AED). Then, she and Mike turned Subramaniam onto his back, checked his pulse and breathing, and began CPR.

There was no pulse

"I checked his carotid pulse. There was none," said Shannon. "I immediately started chest compressions. There was no response. Mike and I continued CPR with a 30/2 compression-to-breath ratio. My only thought was to continue effective CPR until help or an AED arrived."

PE teacher Michelle Layton arrived a little late to boot camp class and was shocked to see Mike and Shannon performing CPR on Subramaniam.



A matter of fact

Sudden Cardiac Arrest (SCA) is one of the leading causes of death in the United States.¹ SCA is often brought on by ventricular fibrillation, a condition in which the heart's electrical activity malfunctions. It can happen to anyone at anytime, anywhere. For the best chance of survival from SCA, CPR and a shock from a defibrillator should be delivered within 3-5 minutes of collapse.²

- There are over 350,000 deaths each year due to SCA; this equates to almost 1,000 a day in the United States³
- The likelihood of a successful resuscitation decreases by 7 to 10% for every minute that passes without CPR and defibrillation⁴
- Just over 13% of workplace fatalities are a result of SCA⁵
- SCA kills more people each year than breast cancer, lung cancer and HIV/AIDS combined⁶
- In cities where bystander CPR and defibrillation are provided within 5 to 7 minutes, the survival rate is as high as 45%⁷

"I was going through my CPR training in my head," Michelle said. "You go call 911 and come back. You go meet the ambulance. You go get an AED and come back." This is when it dawned on me ... we have an AED."

Michelle said she grabbed her work keys and went sprinting to the office to unlock the AED and then returned.

From one survivor to another

Coincidentally, the school's AED had been donated just eight months earlier by Stephanie Martinson, an SCA survivor. Martinson is the founder of Racing Hearts, a non-profit whose goal is to be the first county (Santa Clara) in California with onsite AEDs in all public schools.

After having an SCA while climbing up Yosemite's Half Dome, she was lucky to have her circulation quickly restored without damage to her heart muscle. Says Stephanie, "There are hundreds of other community members who simply don't know their risk. This is why I began Racing Hearts."

With high blood pressure and heart disease, and having undergone quadruple bypass surgery, Subramaniam was aware of his risk. Having always been active by hiking, walking or jogging, he says he felt fine that morning and had no symptoms to indicate what would later happen.

Shocked awake just in time

Mike and Shannon administered a shock from the AED and as Michelle describes it, as soon as they did, Subramaniam "came back."

Subramaniam reflects on his first thoughts when he regained consciousness. "I knew I had a heart problem. I knew that something happened. The paramedics were putting me in the ambulance and I remember joking around with them. I didn't realize the intensity of what happened: that I died and I was then revived."

Subramaniam said he quickly realized how lucky he was. "My doctor told me that after seven minutes without oxygen, the brain starts to lose function. I didn't breathe for four minutes. It took 11 minutes for the ambulance to come."

As a nurse trained in CPR, Shannon knows one thing for certain. "I believe the AED, as research shows, was what saved Subramaniam. Mike and I were able to circulate what oxygenated blood he had left until it arrived."

Mike agrees. "I think it was fortunate Subramaniam had his incident where and when he did, as he was surrounded by people who took immediate and decisive action.

"I am thankful that an AED was present on campus and that Michelle was quick-thinking and ran to get it. I have been CPR/AED-certified for many years, but putting it into action for real brings a whole new level of awareness."

It's not my time to go

Subramaniam is grateful for both the quick thinking of his boot camp classmates and the fact that the school had an AED. "I didn't want to die," he says. Yet he acknowledges that, without the AED on site, he is certain that he would have died. "I don't think we would be having this conversation."

The group is in agreement on several points. First, a cardiac incident can happen to anyone at any time. Second, having and using an AED greatly increases a person's chances of surviving an SCA. In fact, a survival rate as high as 90% has been reported when defibrillation is achieved within the first minute of collapse.⁸ And third, that AEDs should be in schools, airports, churches, gyms, stadiums and other public places.

Subramaniam sums up the importance of having easily accessible AEDs. "I'm the living example of what an AED can do."

"I believe the AED, as research shows, was what saved Subramaniam. Mike and I were able to circulate what oxygenated blood he had left until it arrived."

Shannon Opilla, RN, Evergreen Valley High School



Vice Principal of Evergreen High School with Michelle Layton, the high school's PE teacher.



Shannon Opilla, Subramaniam Sundar and Mike Coleman.

"I am thankful that an AED was present on campus and that Michelle was quick-thinking and ran to get it. I have been CPR/AED-certified for many years, but putting it into action for real brings a whole new level of awareness."

Mike Coleman, PE teacher and coach, Davis Intermediate School

References

1. Heart Rhythm Society. (n.d.). Sudden Cardiac Arrest (SCA). Retrieved December 04, 2017, from <http://www.hrsonline.org/Patient-Resources/Heart-Diseases-Disorders/Sudden-Cardiac-Arrest-SCA>.
2. Ibrahim WH. Recent advances and controversies in adult cardiopulmonary resuscitation. *Postgraduate Medical Journal*. 2007;83(984),649–654. DOI: 10.1136/pgmj.2007.057133.
3. Sudden Cardiac Arrest Foundation. (n.d.) About SCA. Retrieved December 04, 2017, from <http://www.sca-aware.org/about-sca>.
4. American Heart Association. (n.d.) Every Second Counts: Rural and Community Access to Emergency Devices. Retrieved January 24, 2018 from https://www.heart.org/idc/groups/heart-public/@wcm/@adv/documents/downloadable/ucm_301646.pdf.
5. United States Department Of Labor. (n.d.). Retrieved December 04, 2017, from https://www.osha.gov/dts/tib/tib_data/tib20011217.html.
6. Sudden Cardiac Arrest Association. Fact Sheet: Sudden Cardiac Arrest. Retrieved December 1, 2020, from [https://associationdatabase.com/aws/SCAA/asset_manager/get_file/43858?ver=32583#:~:text=Sudden%20cardiac%20arrest%20\(SCA\)%20is,ceases%20abruptly%20and%20without%20warning](https://associationdatabase.com/aws/SCAA/asset_manager/get_file/43858?ver=32583#:~:text=Sudden%20cardiac%20arrest%20(SCA)%20is,ceases%20abruptly%20and%20without%20warning).
7. Sudden Cardiac Arrest Foundation. (n.d.) Proper Placement of AEDs Key to Effective Use. Retrieved December 4, 2017, from <http://www.sca-aware.org/sca-news/proper-placement-of-aeds-key-to-effective-use>.
8. American Heart Association in collaboration with International Liaison Committee on Resuscitation. Guidelines 2000 for Cardiopulmonary Resuscitation and Emergency Cardiovascular Care: International Consensus on Science, Part 4: The Automated External Defibrillator. *Circulation*. 2000;102,S I 61:Figure 1.

