

History is made with first small LVAD implant for young muscular dystrophy patient

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Dr. Pradeep Mammen, associate professor of internal medicine in the division of cardiology, holds the same LVAD Eric Ramos has to help keep his heart pumping blood through his body. Credit: UT Southwestern Medical Center

"Today, we're going to make history," said 18-year-old Eric Ramos on the day UT Southwestern Medical Center doctors operated on his ailing heart. Eric, who has Duchenne muscular dystrophy, is one of only three

patients in the United States with the condition to receive a battery-operated left ventricular assist device (LVAD) to keep his weakening heart pumping blood through his body. He is the first patient in the country to be given a specific, smaller LVAD, which means doctors would not need to manipulate his diaphragm, which could compromise his already limited pulmonary function.

Duchenne muscular dystrophy, a recessive X-linked form of the disease, affects around 1 in 3,600 boys. Diagnosed at age 6, Eric has used a wheelchair for the past seven years because his muscles, including his heart and lungs, are rapidly degenerating. Nevertheless, Eric has the heart of a champion. He views his latest challenge as an "unreal accomplishment" and says he is honored to be part of history, paving the way for other Duchenne patients with advanced heart failure.

Lead surgeon Dr. Dan Meyer, Professor of Cardio Thoracic Surgery and Director of Mechanical Assist Devices, says it took a team to pull Eric through this historic feat. "We had cardiologists, cardiothoracic surgeons, LVAD coordinators, neurologists, pulmonologists, social workers, nutritionists, and a host of nurses and others excited to be a part of this unique opportunity," Dr. Meyer said. "Delivering advanced medical care to patients like Eric is something you can only do at an institution like UT Southwestern, where we have the experience and the specialized care to perform higher-risk surgeries that other hospitals would not even entertain."

The decision to operate, however, was not easy. The team members recognized the severity of the situation, but they were put at ease the moment they met Eric. A senior in high school, Eric spends his free time playing video games, tinkering with computers, and hanging out with his friends, just like most teenage boys. But Eric exudes maturity well beyond his years.

"We could see that Eric is a vibrant young man, despite the fact that he is bound to a wheelchair," Dr. Meyer said. "The tough part was making sure we would increase his quality of life and that undergoing surgery was worth the risks."

Because of his faith, Eric says he was cool, calm, and collected the day of his surgery. "Hope canceled out my anxiety and fear," Eric said. "I knew that I was making history, and that one day people were going to read about my case, and to me, it felt good to be a trailblazer."

Another person in Eric's corner is Dr. Pradeep Mammen, Associate Professor of Internal Medicine in the division of cardiology and Medical Director of the Neuromuscular Cardiomyopathy Clinic at UT Southwestern.

Dr. Mammen is one of Eric's biggest advocates. A heart failure/transplant cardiologist with special expertise in the cardiovascular complications that can occur in patients with neuromuscular disorders, Dr. Mammen spent countless hours conducting background research on all the key components needed to ensure Eric would thrive pre- and post-LVAD implantation.

"For me, working with Eric and advocating on his behalf has been one of the highlights of my career," Dr. Mammen said. "This is a paradigm shift in how we approach the treatment of Duchenne muscular dystrophy patients, as well as patients with other forms of muscular dystrophy. We clearly have moved the field forward in terms of how we treat patients with muscular dystrophy and subsequent heart failure."

To Dr. Mammen, Eric is proof of the principle that LVADs can help prolong the lives of [muscular dystrophy](#) patients. "This procedure has to be done for the right patient, by the right team," Dr. Mammen said. "Our team flawlessly executed this endeavor for Eric."

Eric is happy to have a team of health care professionals working hard to make his life better and, of course, for the support of his family and friends at home in Rowlett, Texas.

Today, when Eric looks in the mirror, he says it is "thrilling to see the torque of the pump pushing blood through my body. My whole body pulsates." He likens this to the body's response when a sports car accelerates. Eric looks forward to a bright future, including graduating from high school this spring, and he hopes someday to receive a healthy heart via transplantation.

UT Southwestern has played an integral role throughout the relatively short history of LVAD therapy and in the devices' rapidly evolving technology. UT Southwestern participated in the landmark clinical trial (REMATCH) that led to FDA approval of the first LVAD for destination therapy and was the only North Texas center to participate in the HeartWare Bridge-to-Transplant trial, which was completed in 2012 and led to FDA approval of the device.

Provided by UT Southwestern Medical Center

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