

Brief History of the World's First and only Total Artificial Heart

The CardioWest™ temporary Total Artificial Heart

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In 1982, the world became captivated by the Jarvik-7 Artificial Heart implanted into Barney Clark who lived for 112 days. In the 90's the device and technology moved to University Medical Center (UMC) and was subsequently renamed the CardioWest temporary Total Artificial Heart (TAH-t). Budget cutbacks at UMC came close to stopping the study of this technology. To save the TAH-t, SynCardia Systems, Inc. was formed in 2001 by Marvin J. Slepian, M.D., Richard G. Smith, MSEE, CCE, and cardiovascular surgeon Jack Copeland, M.D.

Today, the CardioWest™ temporary Total Artificial Heart (TAH-t) is the only FDA and CE approved device capable of providing circulatory restoration in morbidly ill patients with irreversible biventricular failure, bridging them to transplantation. In 2004, the TAH-t was named the number one advance in Cardiovascular Medicine by the American Heart Association.

A New England Journal of Medicine paper published on August 26, 2004 (NEJM 2004; 351: 859-867), states that in the pivotal clinical study of the TAH-t, the one year survival rate for patients receiving the CardioWest TAH-t was 70 percent versus 31 percent for control patients who did not receive the device. One-year and five-year survival rates after transplantation among patients who had received a TAH-t as a bridge to human heart transplant were 86 and 64 percent.

TAH-t certified implant centers increase from 9 to 20 centers worldwide in 2006. SynCardia projects the number will increase to 34 in 2007 and 72 hospitals in 2008. According to SynCardia's CEO and President, Rodger Ford, "This growth will convert the company from a scientific venture into a profitable life-saving business."

Some of the world's finest cardiac hospitals and surgical teams have become, or are training to be TAH-t certified centers. In the U.S. these hospitals include Cleveland Clinic, ranked #1, Barnes-Jewish Hospital, #10, Hospital University of Pennsylvania, #13, University of Michigan, #22, and Ohio State, #39 in the "U.S. News and World Report 2006 Best Heart Hospitals" list.

In Europe, certified centers include Bad Oeynhausen - Heart and Diabetes Center NRW, University of Muenster, University of Cologne, University of Munich, La Pitie in Paris, and the German Heart Institute in Berlin.

On July 17, 2006, SynCardia received CE approval in Europe to market portable pneumatic driver units that power the TAH-t. During the European study of this portable driver, many patients were able to recover at home, shop and even travel.