

Left Ventricular Assist Device Biomedical Seminar ELE

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The LVAD is a surgically implanted mechanical device that helps pump blood. The LVAD works by taking over or assisting in the pump action of the left ventricle. Part of this device is implanted in the heart and abdomen, and the rest remains outside the body. The external part of the unit is carried around the waist or on the shoulder. There are three main types of LVAD's: HeartMate, Thoratec, and Novacor.

HeartMate is implanted in the chest in the upper left portion of your abdomen and the pneumatic air hose exits from the lower half of the abdominal wall and is attached to the pneumatic unit.

Thoratec is on the anterior abdominal wall where blood can be taken from the left ventricular apex and pumped into the aorta. The pipes pass through the chest wall like a chest tube and pneumatic power is used to provide the air pulses.

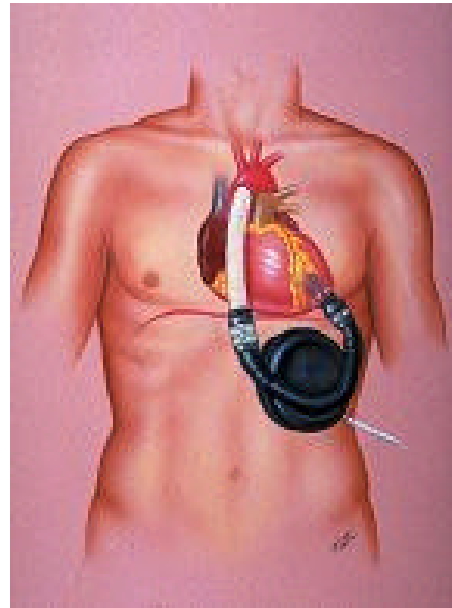
Novacor is implanted in the left quadrant and the electric line and vent tube are passed through the anterior abdominal wall.

Most LVAD units are power using electrical energy on batteries that can last around 5 to 6 hours of mobile time. A separate unit is used to charge the batteries, monitor the condition of the machine, and power the unit without the use of batteries.

There are three basic groups of people that would need this unit. People waiting for a heart transplant that have very weak hearts, people who have heart surgery that do not want to be weaned off of a heart lung machine for a few days, and people with severe heart failure get a LVAD and get to go home.

The price of a LVAD unit can be compared to 45 to 50 days in the ICU. Insurers who might pay for an LVAD include Blue

Cross/Blue Shield, Aetna, Kaiser Foundation/Kaiser Permanente, and U.S. Healthcare.



<http://www.chfpatients.com/implants/lvads.htm#LVADinfection>

<http://www.chfpatients.com/implants/lvads.htm>

<http://www.sts.org/education/faqs/faqvassist.html#Q1>

<http://www.texasheart.org/thoratec.html>
<http://www.worldheart.com/section5/novacor.html>