

Left Ventricle Assist Device (LVAD)

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Karen L. Fandozzi

Biomedical Engineering, University of Rhode Island
Kingston, RI 02881

WHAT IS THE LVAD?

The LVAD is a device used in people who have a weakened left ventricle due to previous heart problems, such as a heart attack. The left ventricle is unable to push blood through the aorta as hard as it is supposed to. This causes the entire body, including the brain, not to receive enough blood. Since blood carries oxygen through the body, this is a serious problem which can cause death if not taken care of.

The LVAD is currently used as a temporary fix of the heart while one is waiting for a heart transplant. Between 1,000 and 1,500 people have received this transplant since the early 1990's.

HOW DOES IT WORK?

The LVAD consists of a tube connecting the left ventricle, a small pump implanted underneath the diaphragm, another tube connecting to the aorta, and an outside power source (battery). In a normal heart, blood

moves from the right atrium to the right ventricle, which pumps it into the lungs to pick up oxygen. After receiving oxygen, the blood re-enters the heart by the left atrium, and then flows into the left ventricle, which pumps it with great force into the aorta to the body. The

LVAD takes the place of the weakened left ventricle. It takes blood in from the left atrium/left ventricle and pushes it through a tube to the aorta, where the blood is then dispersed throughout the body.

The LVAD was once powered by a small battery that was kept outside of the body that needed to be charged every few hours. As you can see, this was extremely inconvenient. But as time went on, batteries became more high tech. Now, most batteries are right inside of the LVAD. Every month, they must be taken out to be recharged or replaced.

WHAT IS ITS FUTURE?

The LVAD is currently undergoing testing at many different sites throughout the country. Research is being done to make the LVAD a permanent fix to this type of heart problem. This will take care of many patients who need transplants, and it is much less risky.

Also, new rechargeable batteries have been designed recently. These batteries can be recharged through the skin, and therefore, never need to be replaced or removed.