

Heart Pump Therapy – For Patients

For patients with end-stage chronic heart failure who have exhausted medical management, or for those who develop sudden, acute heart failure accompanied by cardiogenic shock, mechanical heart-assisting technology can offer an opportunity to improve survival, serve as a bridge that can lead to a heart transplant and improve overall quality of life.

UAB has a comprehensive Mechanical Circulatory Support Device (MCS) Program, giving patients access to a broad variety of circulatory support devices and expert post-implantation care. Our multi-disciplinary team combines the expertise of specialized and dedicated cardiologists, surgeons, nurses and other professionals to evaluate, treat, and monitor the progress of circulatory support patients.

UAB's MCS Program has the Gold Seal of Approval™ from the Joint Commission. This certification of distinction is given to Ventricular Assist Device (VAD) centers that meet required standards and performance measures. Our MCS program is certified by Medicare as a center for destination mechanical circulatory support therapy.

Patients, families or referring physicians can contact us:
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What is a Mechanical Circulatory Support Device?

MCSs are designed to assist a failing heart. These heart pumps, also known as VADs, can be used to support the left side of the heart (LVAD) and/or the right side of the heart (RVAD). Heart diseases resulting in heart failure (also known as cardiomyopathy) may include coronary artery disease, viral myocarditis, valvular heart disease, congenital heart disease, and hypertensive heart disease. Sometimes the cause of cardiomyopathy is unknown. This is referred to as idiopathic cardiomyopathy. VADs may benefit patients with many causes of heart failure, when the condition has advanced to the point that symptoms are occurring at rest or with minimal exertion.

Generally these pumps work by diverting blood from the heart into a pumping chamber that pushes the blood forward to the body (assisting the job of the left ventricle) or to the lungs (assisting the job of the right ventricle).

When are VADs used?

VADs may be used as a *bridge to transplantation*. When a patient has been listed for a heart transplant, and they are too ill to survive until a donor heart becomes available, a VAD may be used to allow the heart to be supported until a suitable donor can be found. Because of a shortage of donor organs in the United States many patients wait months to years before an appropriate organ is located. During this time the VAD allows them to function at home, with good quality of life.

Patients who are not eligible for heart transplantation (for any of a variety of reasons) may also receive a VAD as *destination therapy*. In these cases the VAD is a permanent treatment for advanced heart failure. Studies have shown functional capacity, quality of life, and survival is much better for patients on a VAD compared to those who have exhausted their options with medical management.

When patients develop sudden heart conditions, such as acute coronary syndrome (also known as a heart attack) or a viral infection of the heart (referred to as viral myocarditis) there is a chance that there may be recovery of heart function if the heart is rested. In these cases a VAD may be used as a *bridge to recovery* to allow time for medications to take effect and allow the heart to recuperate.

How long does the VAD stay in?

VADs may be used for short to intermediate term support (days to weeks) or for long term support (months to years) depending on the condition of the patient. The type of VAD used will be guided by the duration of support that is required. Some VADs are designed to be used for short term support in the hospital only, while others are designed to be used for long term support, with the patient being discharged back to their home, hopefully to resume a normal lifestyle.

What VADs are available?

A spectrum of VADs are available at UAB. Some devices are used for short term support of the failing heart. These may be placed either in the cardiac catheterization lab or the operating room.

Long term devices are placed in the operating room by a cardiac surgeon. There are three generations of long term devices:

1. **Pulsatile Pumps:** These devices fill and empty just like the heart does.
2. **Axial Flow Pumps:** These devices continuously pump blood. The pumping chamber has an impeller that rotates rapidly and is constantly moving blood forward. The potential advantages of these pumps include their small sizes, quiet functioning and long pump life.
3. **Bearingless Pumps:** These pumps also work continuously, however the impeller is suspended within the blood pool by magnetic or hydrodynamic forces. Therefore there are no touching parts within the pumping chamber. These devices are small, quiet and have a long pump life.

Many factors go into deciding which pump is best for you. This is a decision that is made based on your medical condition at the time you are evaluated. During the evaluation process, our team of doctors and nurses will discuss the risks and benefits of VAD therapy with you and your family, specifically based on your medical situation. Our MCSD team actively participates in multicenter clinic trials for which you may be eligible. You may check the following link for more information: www.clinicaltrials.gov

Get Help

If you experience any symptoms of heart failure, talk to your physician about your symptoms and ask if a referral to the UAB Heart and Vascular Services may be right for you. Referrals may be made by calling **MIST** at **1.800.UAB.MIST (1.800.822.6478)**

For more information, contact UAB Healthfinder by calling **1.800.UAB.8816 (1.800.822.8816)**.