

Giving your heart strength.  
**Ventricular Assist Device.**



MEDICINE *of* THE HIGHEST ORDER





## National leader in **Ventricular Assist Devices**

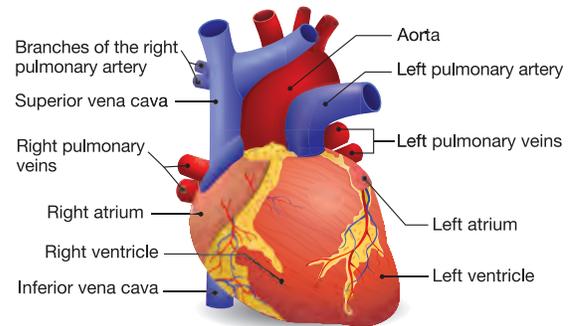
Although you may be nervous when considering heart surgery, you can rest assured knowing that UR Medicine offers the region's best heart failure care. In fact, we have been the only Advanced Heart Failure Program in the region offering Ventricular Assist Devices (VAD) and we are one of the largest and most experienced VAD centers in the country. We are also the only Joint Commission certified VAD program in Upstate New York.

UR Medicine has been implanting VADs for nearly two decades. We are a national leader in VAD clinical trials, having been involved in most major VAD studies over the past 15 years. If you choose to get a VAD at UR Medicine, you will be getting treatment from a surgeon with significant experience in this procedure.

This booklet is meant to educate you about VADs, which may be an effective treatment for your condition. You will also find important information about how you and your family will need to prepare for your VAD procedure.

## Deciding if a ventricular assist device (VAD) is right for you.

When you have heart failure, making decisions about your heart health can be stressful and overwhelming. At UR Medicine, we want to alleviate the pressure you are feeling and help you choose the option that will have the most benefit to you. This booklet is meant to educate you about VADs, which may be an effective treatment for your condition.



### What is heart failure?

Heart failure occurs when the heart muscle can't pump enough blood to meet the body's needs. Symptoms of heart failure include shortness of breath, fatigue and swelling.

### Why am I being considered for a VAD?

You are being considered for a VAD because you have been diagnosed with severe heart failure, a condition in which the heart is unable to pump enough blood to meet the needs of the body's organs and tissues. If medication or other treatments are no longer effective in treating your heart failure, a VAD may help. Your doctor may have recommended a VAD for one of these reasons:

**Living longer** – a VAD can be life-saving.

- Survival rates for patients with VADs are quickly approaching those of patients with heart transplants.
- After one year, eight out of 10 patients who got an LVAD (Left Ventricular Assist Device) are still alive.
- Ventricular assist devices are designed to last for years. Nationally, patients are living more than 10 years on LVAD therapy.



Alive **with** VAD after one year.



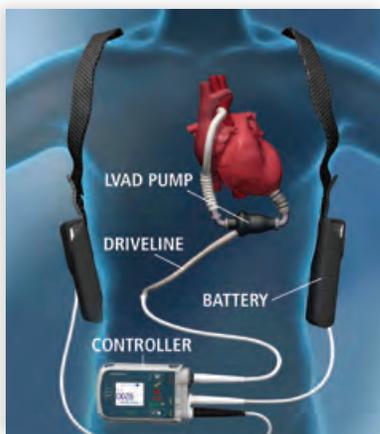
Alive **without** VAD after one year.

**Feeling better** – a VAD could help you feel better and improve your overall quality of life. Some possible benefits include:

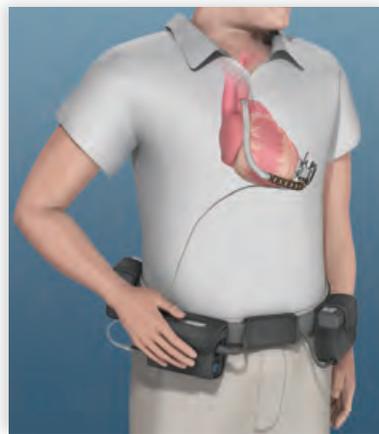
- Less fatigue
- More strength
- Better breathing

## What is a ventricular assist device?

A ventricular assist device, also known as a heart pump, is a mechanical pump that can support heart function and blood flow.



*HeartMate II™*



*HeartWare™ HVAD™*



*HeartMate 3™*

### How the VAD works:

The pump is placed inside the chest. A small tube carries blood out of your heart and into the pump. Another tube carries blood to your blood vessels, which deliver blood to your body.

### A VAD consists of the following parts:

- A pump that is attached to a ventricle inside the body.
- An external controller, which is a small computer that monitors the pump.
- A driveline cable that connects the pump to the controller.
- Batteries, which are power sources that run the pump and controller.

## Other Types of VADs

### **Percutaneous Devices**

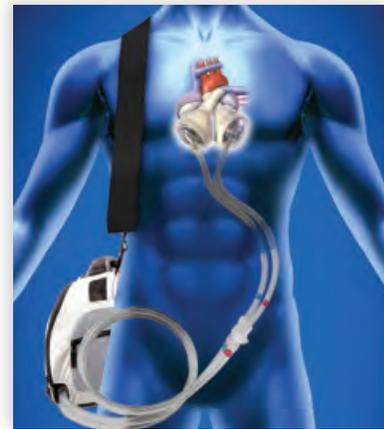
Percutaneous pumps such as the Intra-Aortic Balloon Pump (IABP), Abiomed Impella® and the TandemHeart™ are temporary devices usually used for a period of days to support the heart while patients are being evaluated for heart recovery or for longer term devices.

### **ECMO**

Patients who are extremely sick may need extracorporeal membrane oxygenation (ECMO), which is a life support system that takes over the function of the patient's heart and lungs. ECMO can support a patient for a period of days while their heart or lungs recover from a serious injury.

### **Total Artificial Heart (TAH)**

The SynCardia™ Total Artificial Heart (TAH) is a therapy used for patients who have severe right and left sided heart failure. Implant of this device requires removal of the heart and placement of two artificial ventricles.



*SynCardia™ Total Artificial Heart*



## What is the process for getting a VAD?

Patients who are potential VAD candidates will be seen by a large team of professionals prior to placement of the pump. The team includes a variety of experts from surgeons, to financial counselors, to palliative care. The patient will also undergo testing such as blood tests, CT scans and ultrasound scans. This ensures the best possible outcome after surgery.

## LVAD Surgery

LVAD surgery traditionally is considered open heart surgery as the sternum bone is opened to access the heart cavity. As the LVAD technology improves, pumps become smaller. This means our team members can implant the device using a minimally invasive method, allowing patients to recover more quickly. They use a sternal sparing method, called a “bilateral mini-thoracotomy.”

### **Research**

As an academic and high VAD volume medical center, we participate in a large amount of research trials. Please ask your cardiologist if you are eligible to enroll in any research trials or studies.

## What are the risks associated with a VAD?

Although there are benefits to getting a VAD, there are also some risks. Your doctor will discuss these risks with you. If you have any questions or concerns, be sure to voice them to your healthcare team.

### **Blood clots**

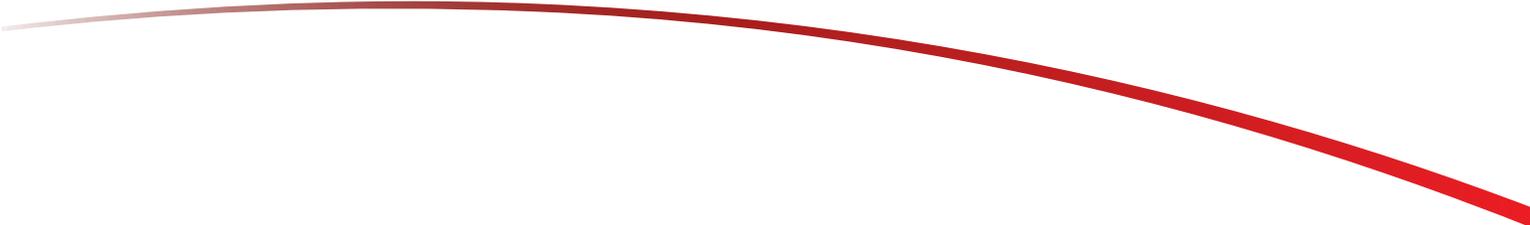
As your blood moves through your VAD, a blood clot may form. Blood clots can slow or block flow through your VAD. This can lead to a stroke if the blood clot travels to your brain. Blood clots can cause the VAD to stop working. There are several medications you will need to take regularly, such as blood thinners, to prevent the formation of blood clots in your VAD or in your heart.

### **Bleeding**

Implanting a VAD requires heart surgery, which can cause bleeding. Bleeding from the intestinal tract and nose bleeds may occur in some VAD patients.

### **Infection**

The part of the VAD that is inside your body is attached to the parts outside of your body through holes in the skin at the driveline site. These holes increase the risk of bacteria getting in and causing an infection.



## Frequently Asked Questions

### **Q: What support will I need during recovery?**

**A:** We require a 24/7 support system of ideally two to four caregivers who will come to training on the VAD system, assist you with recovery post-implant and come to clinic appointments.

### **Q: How long is the recovery process?**

**A:** Most patients are discharged 10 to 14 days after surgery. Recovering and getting back to routine daily activities after your VAD surgery is a gradual process. You may need to attend cardiac rehabilitation as an outpatient.

### **Q: How can I prepare for my VAD?**

**A:** You and your caregiver will be required to view several training videos before your surgery to learn about your VAD. Your primary caregiver will need to plan to be at the hospital during business hours at least three to four days/week after the VAD is implanted to practice skills such as the driveline dressing and changing power sources. The more time the primary caregiver and patient can spend learning the VAD system together during the post-operative period will increase their comfort level at discharge.

### **Q: Can I return to my normal lifestyle after getting a VAD?**

**A:** Depending on your condition, you may be able to return to many of your daily life activities, such as returning to work, driving, participating in hobbies and exercising. Unfortunately, you will not be able to swim or participate in contact sports.

## Lodging for Patients and Families

### **Harbor House**

Harbor House offers lodging for families who are coming from out of town to visit a patient. Harbor House is located two blocks from the hospital and has lodging available for patient families of the Advanced Heart Failure Program. Ask your social worker or nurse about reservations for the Harbor House.

For more information, visit [harborhouseofrochester.org](http://harborhouseofrochester.org) or call (585) 473-1779.

## Contact Us

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## For More Information

For more information or to view videos, visit

**[www.vadresources.urmc.edu](http://www.vadresources.urmc.edu)**