



Patient & Family Guide
2018

Ventricular Assist Devices (VAD)

Aussi disponible en français : *Dispositifs
d'assistance ventriculaire (DAV)* (FF85-1853)



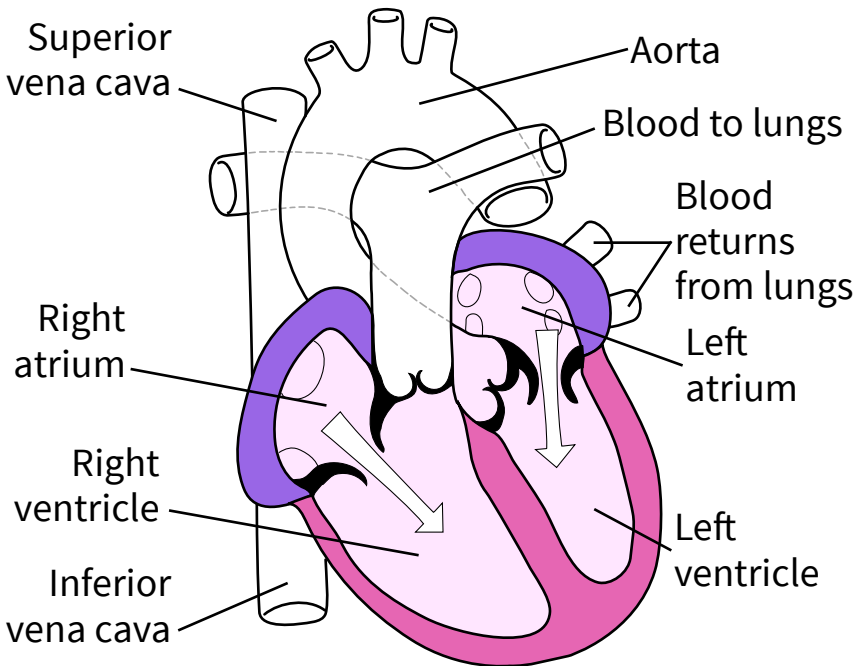
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Ventricular Assist Devices (VAD)

How your heart works

Your heart's job is to pump blood to your organs and around your body. It is a muscle that must work well so you can do your everyday activities.

The heart has a right and a left side. Each side has 2 chambers: an atrium and a ventricle. There are valves between the chambers which keep the blood from flowing backward.



Your blood flows in one direction through your heart. The blood enters the right side of the heart from 2 large blood vessels (called the inferior and superior vena cava). It goes into the right atrium and then to the right ventricle. The blood flows to the lungs where it picks up oxygen. It then returns to the heart into the left atrium and then into the left ventricle. This area is the strongest part of the heart because from here the blood gets pushed out to the rest of the body through the aorta. The aorta is the largest blood vessel in the body. This cycle is happening all the time.

Certain diseases reduce the pumping power of the heart. When the heart does not pump well, the oxygen carried in the blood does not reach all areas of the body. When this happens, a person becomes very tired and not able to do very much. Fluids start to build up in the lungs and other areas of the body. This makes it harder to breathe. There may be puffiness in the hands and feet.

**What are your questions?
Please ask. We are here to help you.**

A healthy lifestyle

Medications and a healthier lifestyle can help the pumping power of the heart. Examples of healthy lifestyle changes include:

- › exercising
- › losing weight
- › lowering cholesterol
- › controlling blood pressure
- › stopping smoking
- › controlling diabetes

Sometimes a valve replacement or a heart bypass operation can help the pumping power of the heart. In some cases, the only way to improve things is to replace the heart with heart transplant surgery.

When is a VAD considered?

In specific cases, a Ventricular Assist Device (VAD) may be recommended. It is a treatment sometimes used for people with end stage heart failure. Sometimes a VAD can help you live a healthier life until you get a heart transplant.

Having a VAD or a heart transplant is a lifelong commitment to various medications and lifestyle changes. You will have to return to the hospital for frequent check-ups for the rest of your life. This is something you should put a lot of thought into before agreeing to any surgery. The VAD/transplant team will go over this with you in detail.

Types of VADs

There are several types of VADs, but they all work in a similar way. The blood leaves the heart's ventricle through a tube that carries it to the VAD pump. The pump moves blood through another tube to the rest of the body. The pump has an external (outside of your body) power source that keeps this cycle going.

The external power source is powered by batteries when you are up and about during the day. You plug the device into the wall while you sleep at night. The outside parts are usually worn in a fanny pack or a backpack. The VAD weighs about 5 pounds and can never be disconnected.

VADs are named after the part of the heart that they assist. The 3 types of VADs are:

1. LVAD – left ventricular assist device to help the left ventricle of the heart.
2. RVAD – right ventricular assist device to help the right ventricle of the heart.
3. BiVAD – biventricular assist device to help both sides of the heart.

**Failure to power the VAD
will result in death.**

Implanting a VAD

Implanting a VAD is a kind of open heart surgery. It happens under general anesthesia. This means that you will get a medication to make you sleep and you will not feel any pain during surgery.

The surgery can be quite long. It usually takes 6-8 hours, but may be longer. The surgery has these steps:

- The heart surgeons make an incision (cut) down the front of the chest and open the breast bone so they can reach the heart.
- The blood is re-routed from the heart to a heart-lung bypass machine to take over the heart's job during surgery.
- The VAD is placed below the heart and connected to the heart and the power source by various tubes. The blood will then pump through the VAD to the rest of the body.
- The breast bone and incision are closed.
- Your doctor will decide which type of device is best for you based on your size and your medical condition.

Risks of surgery

There are many risks to having this surgery. We will talk about these risks with you and your family before your operation. You should talk about all risks and benefits with your family before agreeing to any surgery.

These are risks in any surgery that requires that you be put to sleep, including:

- › blood clots
- › abnormal heart beats
- › infections
- › pneumonia
- › bleeding

These risks are specific to VAD surgery:

- › neurological problems (such as a stroke)
- › kidney failure
- › liver failure
- › right heart failure
- › abnormal heart beats
- › VAD device failure
- › death

After surgery

- We will take you from the OR (operating room) to the Cardiovascular Intensive Care area (ICU) where you begin your recovery.
- You will have a number of intravenous (IV) lines giving medications directly into your body.
- You will have a tube in your bladder so your nurses can carefully measure your amount of urine (pee).
- There will be a tube in your mouth that goes down your throat. It will be connected to a respirator which will help you breathe. You will not be able to talk, drink, or eat.
- You will also have tubes coming from your chest and stomach that drain old blood out of your body into bottles by your bed.
- You will be connected to a heart monitor so that your nurses can watch you closely.
- You will have an incision (cut) in your chest which will be sore. Your nurse will give you medication to keep you comfortable.
- You will have tubes coming out of your belly that contain the electrical wires to support your VAD. They connect the internal pump to the external power source.
- You will have the outside parts of your VAD attached to your body (usually in a fanny pack).

As you get better, the respirator will be taken away. You will need to wear a device to give you oxygen for a few days.

As you get better, you won't need as many IVs.

When you are well enough, the nurses and physiotherapists will work with you to get out of bed and walk around.

When you no longer need one-on-one nursing care, you will be moved to Unit 7.1. We will teach you about how to care for and live with your VAD.

During your time on the VAD, you will feel better. We encourage you to eat well and stay active.

The time spent in ICU and on Unit 7.1 can be different for each patient. You will be connected to your VAD 24 hours a day, 7 days a week until you get a transplant.

If getting a heart transplant is not an option for you, you will stay on your VAD for the rest of your life. It is very rare to recover from heart failure and be healthy enough to have a VAD removed.

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Learn about other programs and services in your community: call 211 or visit <http://ns.211.ca>

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The information in this pamphlet is to be updated every 3 years or as needed.