

BLOOD PRESSURE INSTRUCTION GUIDE



It is important to manage and monitor your blood pressure while you have the HeartWare™ HVAD™ Pump implanted.

IT IS IMPORTANT TO MANAGE AND MONITOR YOUR BLOOD PRESSURE WHILE YOU HAVE THE HEARTWARE™ HVAD™ PUMP IMPLANTED.

Managing blood pressure may reduce the risk of stroke. Your clinician should teach you how to check your blood pressure and it is important to follow their instructions. Be sure to talk to your clinician to understand what your expected blood pressure is and what to do if your blood pressure is too high or too low.

What is blood pressure and pulse?

Your heart creates pressure to pump blood through your arteries and veins to nourish your body. The pressure in the arteries is called "blood pressure". Your blood pressure can be measured several ways and is normally written as two numbers (e.g. 120/60 or 120 "over" 60). When the heart beats, there is a sudden push of blood which is called your systolic blood pressure (SBP). The SBP is the first number, or 120, as noted in the example. When the heart relaxes, the blood flow decreases and that is what we call your diastolic blood pressure (DBP) and this is the second number, or 60, as noted in the example. In addition to the force of blood flow through your vessels, a heart rate or "pulse" is the number of times the heart beats in a minute. A pulse can be felt in different places on your body, like your wrist. Normal heart rates vary from person to person.

Patients who have a VAD may have trouble feeling a pulse or may not be able to feel a pulse at all - this is normal for VAD patients. The reason for the weaker pulse is that blood being pumped by the VAD is more constant (like the water coming out of a garden hose) than blood being pumped by your heart. When listening to this sound with a stethoscope, it will sound like a constant 'hum'.

You may hear nurses describe your blood pressure as only one number, the Mean Arterial Pressure (MAP). Since it may not be possible to feel or hear your pulse the normal way, you may need to use a doppler to hear it.



Taking your blood pressure with the blood pressure cuff and a doppler.

Find your pulse using a doppler:

- Place conduction gel on the inside of the bend in your elbow. (alternatively, you can place conduction gel on the inside of your wrist).
- Turn on the doppler and remove the wand from the holder. **(see Fig. 1)**
- Place the end of the doppler's wand in the conduction gel on elbow.
- Slowly move the wand back and forth until you hear a "swishing" sound.
 - It will sound like a repeating "swish – swish" or can be a continuous "whooshing" sound.
 - The sound should be distinct and not caused by movement of the wand.

Figure 1



Now, put on the blood pressure cuff. **(see Fig. 2)**

- Place the blood pressure cuff above your elbow on your upper arm.
- The pressure gauge should be facing forward.

Now find your pulse again using the doppler (it's ok to ask for help with holding the equipment) before you blow up the blood pressure cuff.

When you are ready to blow up the blood pressure cuff:

- Turn the silver round valve next to the bulb to close the valve
- Squeeze the bulb till you don't hear the pulse anymore – then squeeze 2 more times
- Now turn silver valve and let air out of cuff slowly
- Watch the needle slowly move from higher numbers to lower numbers
- Listen for the return of the pulse (swishing sound) as the blood pressure cuff deflates
- When you hear the pulse (swish sound) return, the number that the needle is pointing to is the number that you should record in your daily record.
- This number is called the Mean Arterial Pressure (MAP).

Figure 2

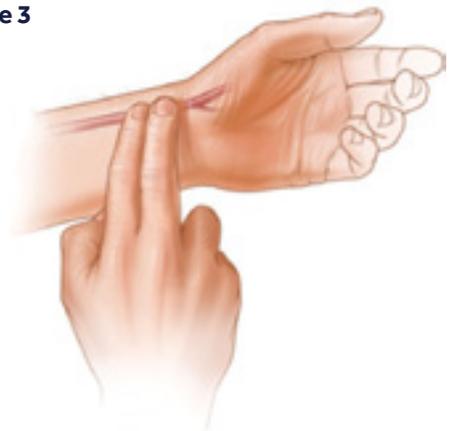


How do you check for a pulse?

Gently place index and middle finger on the inside of your wrist near the base of your thumb as shown. Use a light touch; Do not press down hard or you will lose the ability to feel your pulse. Do not use your thumb to check for a pulse because it has its own pulse. **(see Fig 3)**

- Depending on whether or not you are able to feel a pulse, your clinician will provide instructions on whether you should use only a blood pressure cuff or a cuff and doppler to check your blood pressure.

Figure 3

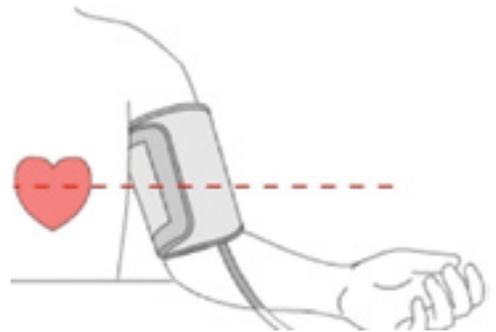


Preparing to take your blood pressure

Take blood pressure around the same time as you take your medicines.

- Gather all of your equipment:
 - blood pressure cuff
 - doppler (when necessary)
 - conduction gel (when necessary)
 - blood pressure record or diary
 - pen or pencil
- Find a quiet place
- Roll up the sleeve on your arm or remove any tight-sleeved clothing
- Rest in a chair next to a table for 5 to 10 minutes prior to taking blood pressure
- Sit up straight with your back against the chair, feet on the floor and legs uncrossed
- Rest your forearm on the table with the palm of your hand facing up. Your upper arm level with your heart (**see Fig 4**)

Figure 4



Brief Statement: HeartWare™ HVAD™ System

Indications for Use

The HeartWare™ HVAD™ System is indicated for hemodynamic support in patients with advanced, refractory left ventricular heart failure; either as a Bridge to Cardiac Transplantation (BTT), myocardial recovery, or as Destination Therapy (DT) in patients for whom subsequent transplantation is not planned.

Warnings/Precautions

Proper use and upkeep of the HeartWare™ HVAD™ System is important to keep the pump working well. This device may cause serious and life threatening events, including stroke. Managing your blood pressure may reduce the risk of stroke. Never remove both power sources at the same time (batteries or power adapters) since this will stop the pump, which could lead to serious injury or death. At least one power source must be connected at all times. Always keep a spare controller and fully charged spare batteries available at all times in case of an emergency. Do not disconnect the driveline from the controller or the pump will stop. Avoid kinking or twisting your driveline. Avoid devices and conditions that may induce strong static discharges as this may cause the VAD to fail to work normally or stop. Magnetic resonance imaging (MRI) should not be used, as it could cause severe harm to you and the pump.

Potential Complications

Implantation of a VAD requires major surgery. There are many risks associated with the surgical procedure as well as after the HVAD has been implanted. These known risks include, but are not limited to, death, stroke, device malfunction, blood clots, bleeding, other types of heart failure, infection, red blood cell destruction, and total body infection.

See the HeartWare HVAD System Patient Manual for detailed information regarding instructions on operating the HeartWare HVAD System and on necessary medical care. If you have any questions after reading the manual, please ask your clinician.

Caution: Federal law (USA) restricts these devices to sale by or on the order of a physician.

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