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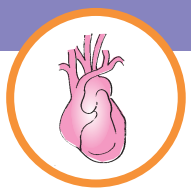
GETTING A NEW HEART

Facts About Heart Transplants



AMERICAN SOCIETY OF TRANSPLANTATION

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Getting A New Heart
Facts About Heart Transplants

The Truth About Heart Transplants

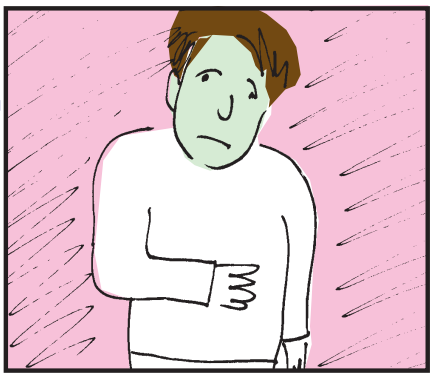
1 The first truth is that the heart transplant involves more than just having an operation. A large portion of the care associated with the transplant comes before and after the surgery.

2 The second truth is that a lot depends on you. You will need to work closely with the transplant team to keep your new heart healthy. How long a new heart lasts depends on many factors—some you can control and others you cannot.

Before the transplant, you will need to work with the transplant team to speed your evaluation. After the transplant, you will need to keep in contact with your transplant team to help maintain lung function and ensure your good health.

A heart transplant is a partnership between the transplant center and you to keep you and your heart healthy.

What Happens When Your Own Heart Fails



What Heart Failure Is and What Causes It

The two most common heart problems are coronary artery disease (the buildup of plaque in the arteries of the heart) and idiopathic cardiomyopathy (disease of the heart muscle without a known cause). As the heart problem gets worse, the heart grows weaker and is less able to pump oxygen-rich blood to the rest of the body. Because the heart must work harder to pump blood through the body, it tries to make up for this extra work by becoming enlarged. In time, the heart works so hard to pump blood that it may simply wear out, overcome by disease and unable to meet even the smallest pumping demands.

You may experience symptoms such as shortness of breath and fatigue with almost any exertion, and sometimes these symptoms may even be experienced while at rest. Swelling of the feet, legs, and abdomen are frequently seen and add to the discomfort of heart failure.

How to Treat Heart Failure

Several options are available to your doctor in treating heart failure.

The first option is medical therapy with drugs. In some instances, medicines alone can be used to treat heart failure.

If your doctor feels it is necessary, there are also several other procedures that can be performed:

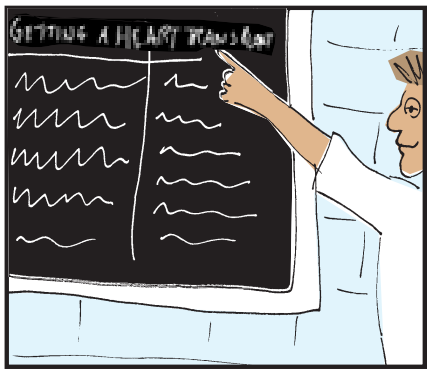
- Coronary artery bypass involves using blood vessels from other places in your body to "bypass" the blockages in your coronary arteries, which can help restore blood flow to your heart muscle.
- Angioplasty is a nonsurgical treatment designed to open clogged arteries.
- Heart valves can be repaired. This often improves heart function dramatically. Other times, the valve must be removed and replaced with a prosthetic, or artificial, valve made of metal or plastic.
- Cardiac size reduction involves removing a piece of living heart muscle from an enlarged heart to reduce the size of the heart, allowing the remaining heart muscle to pump more efficiently and vigorously.
- Pacemakers are used to treat a heart that beats too slowly. In addition, the FDA has recently approved advanced pacemakers that make both the heart's pumping chambers beat in perfect rhythm. Sometimes the natural pacemaker of the heart becomes diseased and does not keep the heart beating regularly.

At this time, there are mechanical devices that can also be surgically implanted to help improve heart function. When these therapies fail, transplantation becomes the only option. Heart transplantation is reserved only for patients with the most advanced forms of heart disease, who have no other available options.

The best treatment for your heart failure will depend on your medical history, health status, and your personal situation. Together, you and your doctors can figure out which treatment is best for you.

Getting a Heart Transplant: What's Involved

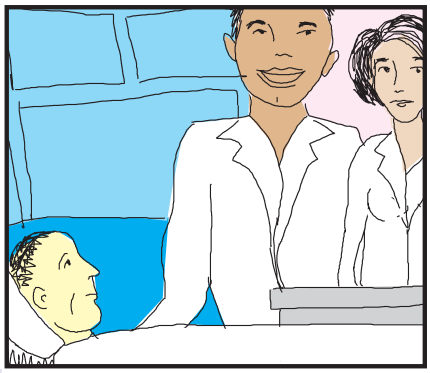
There are five steps involved in getting a heart transplant.



A team of health-care professionals will do the following:

1. Find out if you are healthy enough to **receive** a new heart
2. Find out if you are sick enough to **need** a new heart
3. Prepare you for your operation. This can take a long time, and there is no guarantee that a heart will be found.
4. Perform a heart transplant operation
5. Help you stay healthy after your heart transplant

Step 1. Finding Out If You Are a Good Candidate for Heart Transplant



Before you can have a heart transplant, a team of health-care professionals will want you to think about what is likely to happen if you do get a new heart. This depends on your physical health, your mental health, and your ability to get the transplant medicines you will need.

There are four parts that determine how long this evaluation and preparation phase can take.

1. Visiting a transplant center

- This visit can be arranged by your doctor, a nurse, or a social worker. You can also make the appointment on your own.
- Your doctor or his staff will be asked to send your medical records to the transplant center to make sure you currently do the following:
  - take your medicine properly
  - have no medical conditions that will prevent you from receiving a transplant

2. Having your physical health evaluated

- At the transplant visit, you will have a very thorough evaluation of your medical condition by transplant-team members.
- The transplant team may require further testing to evaluate the following:
  - your heart
  - your kidneys and gallbladder
  - your stomach, esophagus, and intestines
  - your lungs
  - your bladder
  - your teeth and gums
  - your prostate if you are a man
  - your breasts and cervix if you are a woman

  There may be other tests and examinations that the transplant team may need to perform.

3. Having your mental health evaluated

- You may need to see a social worker or psychologist to make sure that you do not have the following:
  - alcohol or drug addiction
  - emotional problems that may interfere with your health

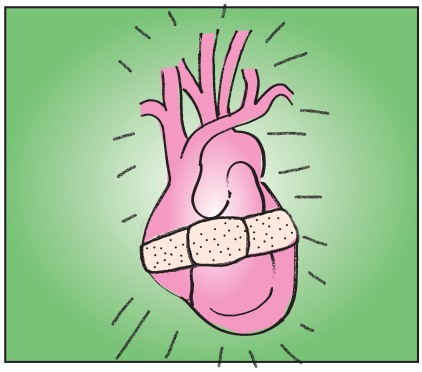
4. You will see an insurance specialist

You will see an insurance specialist to evaluate your insurance to make sure you have enough coverage for medication after transplant.

Once it is determined that you are a good candidate for transplantation (healthy patient), the transplant team will work with you to find the best transplant for you.

Step 2. Finding Out If You Are Sick Enough to Need a Heart Transplant

Because many heart diseases worsen slowly or respond to different therapies, the transplant center may wish to review your treatment options. They will want to determine if you have had the best possible therapy for your condition. Sometimes a new medication or therapy can make a big difference to how you feel and to the worsening of your heart disease. The transplant center does its best to make sure that you have had every chance to get better and live longer with your own heart before they will recommend that you have a heart transplant.



Step 3. Preparing for Your Operation

The next part involves finding a heart for you. This sometimes can take a long time. How long it takes depends on your body size, your blood type, and how sick you are. How long it takes also depends on the type of heart transplant you are able to get.

There are two main types of heart transplants.

1. Orthotopic heart transplantation

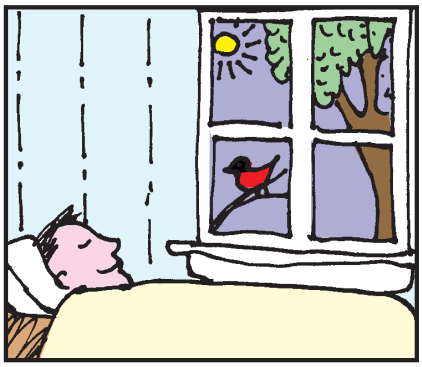
Most heart transplant surgeries are done with a method called "orthotopic." Your heart is removed, and the donor heart is sewn in place. Once the heart is in place, the donor's main arteries—the aorta and pulmonary arteries—are sewn to yours.

2. Heterotopic heart transplantation

Heterotopic, or "piggyback," transplant is when a donor heart is placed inside your chest cavity along with your own heart. The two hearts are attached at the valves and chambers, like Siamese twins, and reside side by side. Whichever heart chamber is strongest pumps blood at that moment. The transplanted heart will cause your own heart to shrink in size since it will no longer have to pump blood so vigorously.

There are a number of reasons that the surgical team may recommend a heterotopic transplant rather than orthotopic. These options will be discussed with you during the evaluation process.

Step 4. The Operation



Heart transplants have been perfected over many years. The following is an example of what will happen:

When an organ that meets your requirements is located, you will be called into the hospital by the nurse coordinator. The transplant doctors will be checking the donor organ while you are being evaluated and started on medications in preparation for transplantation. If the donated organ is good, you will then be taken to the operating room, put to sleep with an anesthetic, and one of the transplant surgeons will begin the process of preparing the chest cavity for removal of your heart. Meanwhile, the new heart will be removed and transported to you. The new heart will be placed in your chest through a cut in your ribcage that exposes the chest cavity. This is called a sternotomy. You will be given medications both before and during the operation to prevent you from rejecting the new heart.

After the operation, you will be taken to a special unit and hospital floor for recovery. You will stay in the hospital until your doctor believes you are ready to go home. How long you stay in the hospital will depend on the following factors:

- Your health
- How well the new heart is working
- Your ability to learn to take care of your new heart transplant

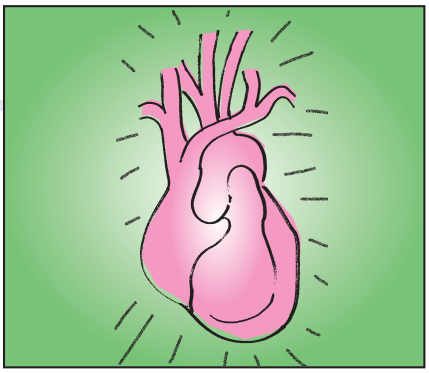
Transplant Medicines After the Operation

After your operation, you will begin to take strong medicines to keep your body from rejecting the new heart.

- Your **immune system** protects you from foreign invaders, and your body will consider the new heart a foreign invader.
- The immune system will try to reject the new heart. This can damage the heart.
- The medicines you will take will help to suppress the immune system enough to keep your heart healthy. That's why these medicines are called immunosuppressants (im-u-no-suh-pres-ants) or antirejection drugs.
- **Because your body will not "forget" that the heart once belonged to someone else, you will have to take immunosuppressive medications for as long as you have the transplant.**

For more information on transplant medications, please visit the Patient Care Section of the AST Web site at www.a-s-t.org.

Step 5. Helping You Stay Healthy After the Heart Transplant



What You Will Need to Do

The most important part of the heart transplant is keeping yourself healthy after the transplant.

You will need to do the following after you are discharged from the hospital:

- Make many visits to the transplant center, and keep all of your appointments. These frequent visits will only last for the first few months.
- Take your medicines properly. This is extremely important.
- Let the staff at the transplant center know about any problems you may have that may prevent you from keeping your appointments or taking your medicines.
- It is up to you to watch your weight and to exercise regularly.

Your health and the health of your new heart transplant is dependent on your doing your part.

Why You Will Need to Keep Your Appointments

- Your body may begin to reject your new heart, and YOU may not be able to tell. Although the signs of rejection are experienced by some patients, most patients are not able to tell when their bodies are starting to reject their new hearts.
- If your body is rejecting the new heart, your doctors and nurses CAN tell.
- Your doctors and nurses will watch you closely looking for signs of heart rejection and side effects of the medications that you are taking.

How Your Doctor and Transplant Team Can Help You

Your doctors will only be able to tell whether you have rejection by examining you and taking blood tests. Your doctor and transplant staff will be watching for the following:

1. **Rejection**

   The risk of rejection never goes away. You will always need to stay on your antirejection medications. The dose of the medications will be decreased, but you should never skip or stop your medications. A biopsy of the heart is the best way to diagnose rejection. This will be done frequently for the first year after your transplant and then will decrease in frequency.

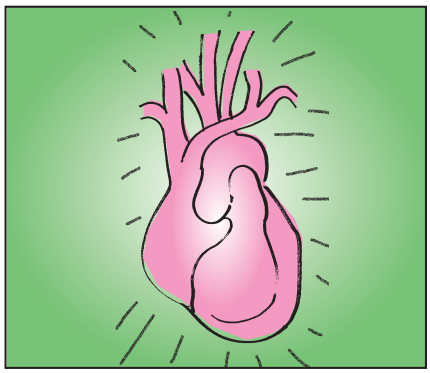
2. **Infection**

   Immunosuppressant medications can increase your chances of certain types of infections. These infections can be treated but you will need to be aware of fevers, unusual pains, or any other new feelings. As the doses of the antirejection medications are decreased, the risk of infections will also decrease.

3. **High Blood Pressure**

   High blood pressure is a common problem after transplant. The treatment of high blood pressure is important because high blood pressure can damage your kidneys and cause strokes and heart attacks.

Step 5. Helping You Stay Healthy After the Heart Transplant (cont'd)



4. **Diabetes Mellitus**

   Even if you've never had diabetes, the antirejection medications used to suppress your immune system can cause diabetes. If you had diabetes before the transplant, the control of your blood sugar may be more difficult.

5. **High Cholesterol**

   Just like diabetes, the medication used to suppress the immune system can cause the blood cholesterol to go up. High cholesterol is not entirely due to diet high in fatty foods. Your physician may prescribe medication to help control the cholesterol.

6. **Reappearance of Heart Disease**

   Some forms of heart disease can come back in the transplanted heart. Your doctor and transplant staff will monitor you for signs of this problem.

7. **Cancer**

   Antirejection medications may increase the risk of cancer. In addition, the antirejection drugs increase the likelihood of skin cancer and blood cancer. The blood cancer, called lymphoma, occurs because of the transplant medications and can cause death. Often, this condition resolves by decreasing your doses of antirejection medicines.

8. **Osteoporosis**

   This is thinning of the bones due to being ill, poor diet, poor activity, or prednisone and other antirejection medicines. Your doctor will monitor your bones (with a study called a bone density test). You may be placed on medications to help prevent or reduce the possibility of bone thinning.

9. **Cataracts**

   Prednisone and perhaps some of the other medications that you will be on, or were on, can increase the possibility of cataracts in the eyes. These are spots of tissue within the eyeball that block sight. They can be surgically removed. They cannot really be prevented. Your doctor will ask you to see an ophthalmologist (eye specialist) at least once a year to check for cataracts and for glaucoma (high pressures in the eyeball that can damage your vision).

10. **Kidney Disease**

    The main medicines used for rejection and many of the medicines used to treat infection can hurt your kidneys. Your doctors will try to make sure you have enough medicine to prevent rejection of your new heart but not so much that it hurts the kidneys. Sometimes this is hard to do. If you are older or if your kidneys have already been injured by illness or medications, permanent kidney damage may occur. This can cause swelling in your feet, fluid retention in your body, and a feeling of fatigue and of being unwell. This can be a very serious problem, so it is very important to have the regular blood tests your doctor may order to check that the levels of your rejection medications are not too high or too low.