

Clinic Procedures

After your heart transplant

We hope your new heart puts you on the road to a productive, healthy, and happy life. To be sure you and your heart are doing as well as possible, your cardiac team will continue to follow your progress.

After you leave the hospital, specialists from many fields will manage your care. These members of your care team are:

- Cardiologists
- Surgeons
- Registered nurses and nurse practitioners
- Pharmacists
- Physical therapists
- Dietitians
- Pathologists
- Social workers



Cardiologists and other specialists will manage your care after you leave the hospital.

But, the most important member of your care team is you! Your team will work with you to make sure you recover from your surgery and help you live a healthy life. This means you will have follow-up tests and appointments to track your progress after the transplant.

Lab Tests

Before clinic visits and most tests, you will need to have blood drawn. We may also ask you to have lab tests done from time to time even if you do not have any other tests scheduled. Blood tests tell us how your liver and kidneys are working, since some of your medicines can affect those organs. We will also check your red and white blood cells for anemia and infections.

Sometimes, we may want to check your blood cholesterol levels. On those days, we ask that you do not eat breakfast before you have your blood drawn.

We will check your levels of your anti-rejection medicines. Your blood work must be done 12 hours after your evening doses from the night before. Do not take your morning doses of anti-rejection medicines until after your blood draw.

You will have blood tests done often after your transplant. The results help us decide the best doses for your medicines. They also can tell us if you have any problems with your kidneys or liver, or if you have any infections.

For example:

- If you plan to have your blood drawn at 9 a.m. on Tuesday, take your tacrolimus (Prograf), cyclosporine, or mycophenolate at 9 p.m. on Monday.
- If you are having blood drawn at 8:30 a.m., take your medicines at 8:30 p.m. the night before.

Bring your pills with you so you can take your morning doses after your blood draw.

If you have labs done at UWMC, go to the Outpatient Blood Draw Lab on the 3rd floor. They are open weekdays from 6:30 a.m. to 6 p.m. If you cannot come in during these hours for “just labs,” you can go to the Evening Blood Draw Lab on the 2nd floor.

You may also go to a local blood draw service closer to home if you wish. If you decide to do this, we will give you paperwork to take with you to each blood draw.

Clinic Visits

After you leave the hospital, you will have regular clinic visits to see how you are doing with your new heart. The clinic is in the Regional Heart Center, on the 3rd floor of UWMC. You will be seen by your transplant cardiologist, a registered nurse, and/or an advanced registered nurse practitioner (ARNP).

You will need to come to clinic often during the first few months after transplant because you are taking high doses of immunosuppressive medicines. You are at risk of infection, and there can be side effects from your medicines that we want to keep track of. As time goes on, you will need fewer clinic visits.

On clinic days, you will usually have lab tests done before you see a provider. If you have time, you may have breakfast after your blood draw and before your clinic visit. During your clinic visit, tell your care team about any changes you have noticed in your health and ask any questions you have. It can help to make list of your questions or concerns before your visit.

Please bring your vital-signs log and medicine list with you. The doctor and nurse will go over them with you to make sure you are taking the correct doses of your medicines. They will also check your blood pressure, weight, and other vital signs.

After your visit, please stop at the check-out desk to schedule your next appointment. After each clinic visit, your transplant nurse will call you with your lab results and will let you know if you need to change any of your medicines.

Heart biopsies are the only sure way to diagnose rejection. Rejection can happen at any time after your transplant, and it can also happen without any symptoms. Because of this, you may need to have biopsies for the rest of your life.

Get medical care **right away** if you have any of these symptoms after your biopsy:

- Shortness of breath
- Chest pain
- Irregular heart beat

Endomyocardial Biopsies

An *endomyocardial biopsy* is a test to see if you are rejecting your new heart. *Endomyocardial* means “muscle from the inside of the heart.” A *biopsy* is when a doctor takes a small piece of tissue from your body to be examined under a microscope. Biopsies are very helpful in diagnosing rejection and letting doctors treat it before any lasting damage is done to your new heart.

Rejection can happen at any time after your transplant, and sometimes it happens without any symptoms. You will most likely need to have biopsies done for the rest of your life. For now, a biopsy is the only way to diagnose rejection.

Right after your transplant, you will have a biopsy once a week. After 4 to 6 weeks, patients usually have a biopsy once every other week for a few months. After that, most patients get a biopsy once a month, and then every 3 months. After several years without any major episodes of rejection, some patients may go to a schedule of 1 or 2 biopsies a year. This is only a general timetable. Each patient has a schedule based on how they are doing.

After you leave the hospital, you will have your biopsies done on an outpatient basis. Biopsies are done in the Cardiac Catheterization Laboratory (Cath Lab) on the 2nd floor. During a biopsy, a special tube is placed into the jugular vein, a large vein in your neck. An instrument called a *bioptome* is run through this tube to the right ventricle of your heart. (See the picture on page 2 in chapter 2, “Cardiac Rejection.”)

The bioptome can remove very tiny pieces of your heart muscle to check for rejection. This test is fairly painless because your heart no longer has any nerves.

How to Prepare for Your Biopsy

- **Do not eat anything for 6 hours before your biopsy.** You can take small sips of juice or water with your medicines.
- **If you have diabetes and:**
 - **You take insulin:** You will need to talk with your diabetes care provider **before** your biopsy. Ask this provider how to adjust your insulin doses the night before and morning of your biopsy.
 - **You manage your diabetes with oral medicine:** Do not take your diabetes pill(s) the morning of your biopsy.
- You **must** have a blood draw before your biopsy. Time your evening doses of anti-rejection medicines so that your blood draw occurs 12 hours after your evening doses.

Along with clinic visits, regular labs, and biopsies, you will also need tests and exams to check on your progress and your overall health. Many of these extra exams are done as part of your yearly check-up.

- Bring your morning doses of anti-rejection medicines with you to take after your blood draw.

When You Arrive at the Hospital for Your Biopsy

- Check in at the Cath Lab on the 2nd floor 1 hour before your cardiac biopsy appointment time.
- Then go to the lab on the 3rd floor for your blood draw.
- Return to the Cath Lab after your blood draw. You will be given a slip for a chest X-ray when you arrive.
- The X-ray will be done in the Radiology clinic after your biopsy. Radiology is also on the 2nd floor.

The transplant nurses get your biopsy results the afternoon of the next day. Your nurse will give you the results of your biopsy and lab tests, and will tell you if you need to make any changes to your medicines.

Follow-up Visits

After your transplant, you will have yearly follow-up visits around the time of your transplant anniversary. These tests are done to check your heart function and to see if you are developing *accelerated graft atherosclerosis* (see Chapter 3). Here are some of the annual tests you may have:

Left Heart Catheterization and Coronary Angiogram

What the test is for: To see if the coronary arteries, which carry blood to your heart muscles, are getting narrow or blocked with plaque.

How the test is done: During a left heart catheterization and coronary angiogram, 2 things are done:

- For the catheterization, a catheter (similar to those used in biopsies) is placed in a blood vessel in your groin or wrist. The catheter is moved through the blood vessel toward your heart. This allows your doctor to see your coronary arteries.
- During an angiogram, a special type of dye is injected into your coronary arteries. Then X-rays are taken to see how well blood is flowing through those arteries.

To prepare: Do not eat after midnight the night before your appointment. An IV will be placed so that you will get plenty of fluids during the test. This will help avoid kidney damage from the dye.

After the test is done, you will be taken to a recovery room to rest.

Some tests require special preparation. For many tests, you will be given a handout ahead of time that explains any special things you need to do before your exam. If you have any questions, you can call your transplant team, or the clinic or lab where the test is being done.

Echocardiogram (or “Echo”)

What the test is for: To see how your heart muscles are moving, and to make sure blood is being pumped out of your heart properly.

How the test is done: An echo is a type of scan using a sensor that emits sound waves. It is like an ultrasound that a doctor might use to look at a baby in a pregnant woman’s belly. But, during an echo the sound waves go through your chest wall to your heart. This test is done in the Echocardiology Lab in the Regional Heart Center on the 3rd floor.

You will need to lie on your left side for most of the exam. At the start of the test, we will put a small amount of clear gel on your chest. The gel makes it easier for the sensor to glide over your skin.

A computer then turns the sound waves into an image that the doctor can examine to see if there are any problems with the way your heart is moving. The sound waves are not harmful or painful. But, to get a good image, we may need to press firmly on the sensor or we may ask you to hold your breath briefly. If you wish, you may watch the images on the monitor during the test.

After the test, we will give you a washcloth to wipe off the gel.

To prepare: There are no special preparations for this test, but please bring a list of your medicines with you. Also, you will need to undress from the waist up.

Dobutamine Stress Echocardiogram (“DSE” or “Stress Echo”)

What the test is for: This test is done to see how your heart works when it is working hard or “under stress.”

How the test is done: A DSE is like a regular echocardiogram, except that you will be given a medicine called *dobutamine* through an IV. This medicine makes your heart pump faster, as if you were exercising. By looking at the images of your heart, your doctor can tell how well the muscles move, or if there are any problems with the blood supply from your coronary arteries.

After the medicine is stopped, it will take 10 to 20 minutes for your heart rate to go back to normal. **If you feel any discomfort or pain, or if you feel short of breath or lightheaded, let us know right away.**

As with a regular echo, a clear gel will be put on your skin to help the sensor move more easily. We may also make marks with a washable pen to mark the best areas to view your heart.

To prepare: Do not drink any caffeine or alcohol for 24 hours before the test. It is best if you do not eat anything after midnight the night before your exam.

If you must eat (for example, if you have diabetes), limit your food to a **very** light meal, such as a slice of toast with some juice up to 2 hours before the test. Do not eat or drink anything for 2 hours before your test.

Annual Blood and Urine Tests

What these tests are for: These labs are similar to the regular lab tests that you have done, except we will do several more tests.

How the tests are done: As with your usual labs, the paperwork for annual lab tests will be done at the Outpatient Blood Draw Lab on the 3rd floor. We will check your kidney and liver function, cholesterol, blood counts, and levels of anti-rejection medicines. We will also check your thyroid levels and a substance called *prothrombin*, which will tell us if your blood clots properly.

For male patients, we will check your blood PSA (prostate specific antigen). This will tell us if you are at risk for prostate cancer.

Because you are at risk of infection, we will check for cytomegalovirus (CMV), Epstein-Barr virus, and hepatitis. We will also ask you for a urine sample. This sample tells us more about your kidneys and whether you have any type of infection.

To prepare for these tests:

- Do **not** take your anti-rejection medicines until after your blood draw.
- Remember to have labs 12 hours **after** your evening doses of anti-rejection medicines.
- Because we are checking your cholesterol, do **not** eat after midnight the night before these tests.

Other Tests

You may need to have other tests if health problems occur. Not all patients will have these. These may include:

- **Bone density scan (DEXA):** This is a special X-ray that will tell us if your bones are getting brittle or thin from prednisone use.
- **Nuclear studies (MUGA exam):** In this test, a tiny amount of radioactive material is injected into your blood. A special camera then takes pictures of your heart. If any part of your heart muscle is damaged, this test helps find the area of damage.

Questions?

Your questions are important. Call your doctor or health care provider if you have questions or concerns.

Cardiology Clinic:
Weekdays 8 a.m. to 5 p.m.,
call 206-598-4300.

After hours and on weekends and holidays, call 206-744-2500. Say you are a heart transplant patient. A nurse will assess your problem and help you.