

## Cardiac Rejection

### *Recognizing and treating rejection*

*Rejection happens when your immune system sees your new heart as a foreign invader and starts to attack it. Special defender white blood cells called T-cells arrive in your new heart and cause the rejection.*

**Rejection happens most often during the first 6 months after your transplant.** This is when your immune system is most likely to try to attack your transplanted heart. You are given high doses of *immunosuppressive* drugs in these early months to keep your immune system from harming the new organ.

Over time, your immunosuppressive medicine will lessen your immune system response. But, even with a reduced immune response, almost all transplant patients will have rejection at some point.

**There is no immunosuppressive “recipe” that will guarantee that you will not have organ rejection.** Your immunosuppression drugs are set up to fit your unique needs. Our goal is to balance the risk of rejection against the risk of problems caused by infections.

### **Diagnosing Cardiac Rejection**

During the first 6 months after transplant, about 80% (80 out of 100) of patients will have at least some rejection. Your chance of rejection goes down over time, as long as you:

- Take your immunosuppressive drugs as told
- Keep up with your medical follow-up plan
- Tell your transplant team about changes in your health

**But, rejection can happen in any transplant patient, even if drug and follow-up plans are followed exactly.**

There are many symptoms of rejection. **Some patients may not have any symptoms at all.** And, some symptoms of rejection look like the symptoms of other illnesses.



*You will be given high doses of immunosuppressive drugs in the early months after transplant to keep your immune system from harming your new heart.*



**Call the Transplant Office at 206-598-8181 if you have ANY of these symptoms:**

- **Fatigue or lower energy than usual**
- **Shortness of breath**
- **Faster heart rate than usual**
- **Sudden weight gain**
- **Low-grade fever**

*Not all patients who have rejection will have symptoms. The only way to tell if you have rejection is to do a cardiac biopsy.*

**We cannot diagnose rejection based only on how you feel, but these symptoms are more likely to indicate rejection. Call the Transplant Office at 206-598-8181 if you have ANY of these symptoms:**

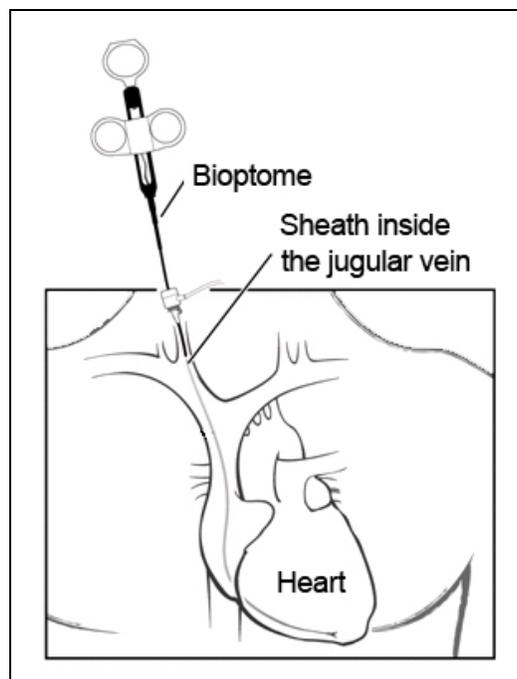
- **Fatigue or lower energy than usual**
- **Shortness of breath**
- **Faster heart rate than usual**
- **Sudden weight gain**
- **Low-grade fever**

## **Cardiac Biopsy**

Cardiac rejection is detected with a *cardiac biopsy*. Cardiac biopsies are done in the Cardiac Catheterization Laboratory (Cath Lab).

After making a tiny cut, the doctor places a sheath (tube) in the *jugular vein*, which is a large vein in your neck. A catheter (called a *Swan Ganz*) passes through the sheath to check how well your new heart is working. Then the Swan Ganz is removed and a tool called a *bioptome* is used to take small pieces of your heart muscle for testing (see drawing below).

Rejection can happen at any time, and symptoms are not a very good way of diagnosing rejection. You will most likely have biopsies for the rest of your life. For the 1st month, they are done once a week. Based on your progress, the time between your biopsies will slowly increase.



*Cardiac rejection is detected with a cardiac biopsy, using a bioptome placed in the jugular vein.*

*Be sure to take your medicines properly, come for your clinic visits and biopsies, and keep your transplant team up to date on any changes in your health. This will make it easier for us to help you lead a healthy life after your transplant.*

Cardiac rejection has different levels of severity. At UWMC, rejection is graded on a scale. These grades are shown in the International Society for Heart and Lung Transplantation (ISHLT) table below.

### **ISHLT Endomyocardial Biopsy Scale**

<b>Grade</b>	<b>Description</b>
<b>0</b>	NSR (no significant rejection)
<b>1A</b>	Mild rejection
<b>1B</b>	Mild to moderate rejection
<b>2</b>	Moderate rejection
<b>3A</b>	Severe rejection
<b>3B</b>	Very severe rejection
<b>4</b>	Widespread rejection

## **Treating Cardiac Rejection**

How your rejection is treated depends on:

- How long it has been since your transplant
- How severe your rejection is
- How well your heart is working
- Your symptoms

Your rejection may be treated by giving you:

- High doses of prednisone pills for a short time. Then, you may slowly go back to your normal dose and we may adjust your tacrolimus or mycophenolate doses.

*Or:*

- Steroids through an IV for 3 days, then tapering your dose back to your usual dose of prednisone.

*Or:*

- Stronger anti-rejection medicine through an IV. **This treatment always involves a hospital stay.**

Our success in treating cardiac rejection depends mainly on 2 things:

- Early diagnosis
- Making sure your medicines are at the right dose

**Rejection does not mean your transplant or your medicines have “failed.”** To help your transplant be a success, take your medicines as told, keep your appointments, and call the transplant team right away if you are having any health problems.

## **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.