Heart Rhythm Services

When it’s time for a change of heart

Oregon Heart & Vascular Institute

Sacred Heart Medical Center PeaceHealth
Welcome

Oregon Heart & Vascular Institute at Sacred Heart Medical Center provides comprehensive electrophysiology services for patients with heart rhythm disorders. Our board-certified, specially trained electrophysiologists offer complete care, from diagnosis to catheter ablation to innovative surgical options such as minimaze for atrial fibrillation.

We are the only comprehensive electrophysiology team in our region to offer the full range of arrhythmia services.
What is Arrhythmia?

Arrhythmia (uh-rith-mee-uh)—also called abnormal heart rhythm or heart rhythm disorder—is an irregular heartbeat, heart rate or rhythm.

Your heart is a powerful muscle that pumps a continuous supply of blood, oxygen and other nutrients through the body. To accomplish this task, your heart needs to regulate the timing of its beats, or rhythm. Your heart's electrical system controls the rhythm.

At some time in life, many adults experience a racing heart, an extra heartbeat or a skipped beat. Many of these rhythm changes are passing and harmless. Certain arrhythmias, however, are serious and can be fatal. A serious arrhythmia may be a sign of coronary artery disease, heart muscle disease, heart valve disease or other heart problems.
COMMON ABNORMAL HEART RHYTHMS

- **Atrial fibrillation**: The most common type of arrhythmia. A problem with the heart’s electrical system causes the heart’s upper chambers (atria) to quiver, or fibrillate, which upsets the rhythm between the atria and the lower parts (ventricles) of the heart.

- **Atrial flutter**: Atria beat excessively fast (250 to 300 beats per minute) due to abnormal conduction circuit. Caught and treated early, can often be completely cured.

- **Tachycardia**: Fast heart rhythm with rate above 100 beats per minute.

- **Bradycardia**: Slow heart rhythm with rate below 60 beats per minute.

- **Ventricular arrhythmia**: Arrhythmia that begins in the ventricles of the heart.

- **Bradyarrhythmia**: Slow heart rhythms that may be caused by disease in the heart’s conduction system.
How are Arrhythmias Diagnosed?

The heart’s electrical system is complex, so diagnosing problems such as arrhythmia may require special equipment along with skilled medical professionals.

Your doctor may request certain early, non-invasive tests, including:

- **Echocardiogram**
  An ultrasound exam that uses sound waves to evaluate the size, pumping strength and valves of the heart.

- **Electrocardiogram (EKG)**
  A recording on graph paper of the electrical impulses generated by the heart.

- **Exercise Stress Test**
  A test used to assess the effect of stress on the heart brought on by exercise.

- **Holter Monitoring**
  A one- or two-day EKG that helps determine how the heart responds to normal activities and heart medications.

- **Event Monitoring**
  A small, portable recording device that captures fleeting episodes of abnormal heart rhythm for up to a month.

- **Nuclear Medicine Test**
  A test that uses low-dose radiation to create images that show blood flow to the heart.

- **Tilt Table Testing**
  A simple, non-invasive test to evaluate the cause of unexplained fainting (syncope).

For more information on heart rhythm and how arrhythmias are diagnosed, please visit our comprehensive website at www.peacehealth.org/ohvi.
How are Arrhythmias Treated?

Treatment is highly individualized and based on severity and symptoms. In many cases, your primary care physician can initiate and monitor treatment such as medication management. More advanced options require a referral to a cardiologist or electrophysiologist.

**MEDICATION**

Your primary care or internal medicine doctor may prescribe medications such as blood thinners (Coumadin) to help prevent stroke, heart rate control medicine to regulate heart rate, or a combination of both.

**CARDIOVERSION**

Patients with persistent arrhythmias, such as atrial fibrillation, may not be able to achieve a normal heart rhythm with drug therapy alone. If appropriate, your cardiologist can perform cardioversion, a procedure in which an electrical charge is delivered to the heart so that it beats regularly again.

**HEART RHYTHM DEVICES**

Pacemakers send small electrical impulses to the heart muscle to maintain a normal heart rate. Pacemakers are mostly used to prevent the heart from beating too slowly. Newer pacemakers have sophisticated features designed to help manage arrhythmia, optimize heart rate-related functions and improve synchronization. For appropriate patients, we now offer MRI-compatible pacemakers, which allow recipients to undergo magnetic resonance imaging (MRI)—the gold standard diagnostic tool for soft-tissue imaging—without worrying about device interference or failure.
Meet Our Electrophysiologists

An electrophysiologist is a cardiologist with additional education and board certification in the diagnosis and treatment of abnormal heart rhythms. We are fortunate to have a team of experienced electrophysiologists capable of providing advanced care for heart rhythm patients, including minimally invasive procedures.

Our three electrophysiologists work in a dedicated electrophysiology lab with specialized equipment and a specially trained staff. Close collaboration is important between electrophysiologists and other doctors who treat patients with heart disease.

James McClelland, MD
Cardiologist/ Electrophysiologist
Oregon Heart & Vascular Institute

Ramakota Reddy, MD
Cardiologist/ Electrophysiologist
Oregon Heart & Vascular Institute

Frances Munkenbeck, MD
Cardiologist/ Electrophysiologist
Oregon Heart & Vascular Institute
Advanced Diagnosis and Treatment Options

Should other options fail, our electrophysiologists have the experience, training and technology to offer patients advanced diagnosis and treatment options for complex heart rhythm disorders. These life-changing studies and procedures often can be done in an outpatient setting, with quick recovery. In many cases, patients are able to discontinue long-term drug therapy.

ELECTROPHYSIOLOGY DIAGNOSTIC STUDY

An electrophysiology study is a diagnostic test that records the electrical activity and electrical pathways of your heart to determine the cause of your heart rhythm disturbance. During the test, your electrophysiologist will safely reproduce your abnormal heart rhythm to determine the appropriate advanced treatment options for you.

ADVANCED HEART RHYTHM DEVICES

Implantable cardioverter defibrillators (ICD) are sophisticated electronic devices used primarily to treat ventricular tachycardia and ventricular fibrillation—two life-threatening abnormal heart rhythms. Implanted by a specially trained cardiologist, typically an electrophysiologist, the ICD constantly monitors heart rhythm. When it detects an abnormally fast rhythm, it delivers energy to the heart muscle that causes it to beat normally again.

CATHETER ABLATION

During ablation, an electrophysiologist inserts a catheter into the heart. A special machine delivers energy through the catheter to tiny areas of the
heart muscle that cause abnormal heart rhythm. The energy interrupts or disconnects the pathway of the abnormal rhythm. Catheter ablation can be used to treat atrial fibrillation and flutter, ventricular tachycardia, and AV nodal reentrant tachycardia. In most cases, ablation can completely resolve atrial flutter, so early referral is key.

**MINIMAZE**

Minimaze is a relatively new, minimally invasive surgical technique used to cure specific types of atrial fibrillation. An electrophysiologist and a surgeon collaborate to perform the procedure, in which a very precise instrument destroys a small amount of tissue near the origin of the irregular electrical signal. The damaged tissue can no longer conduct electrical impulses. Transmission of the abnormal signal is interrupted, and the heart resumes beating normally.

**FUTURE TREATMENT OPTIONS**

We stay abreast of the latest developments in arrhythmia treatment, such as the Cox-Maze IV, an innovative treatment for atrial fibrillation. The approach combines the proven techniques of open surgery with the benefits of minimally invasive ablation technology, and leverages collaboration between cardiac surgeons and electrophysiologists to provide expanded treatment options to patients.
THE DEVICE CLINIC: FOLLOW-UP CARE

Pacemakers and ICDs need regular check-ups, just like you. The Device Clinic at OHVI is staffed by a team of highly trained, specialized nurses and technicians who provide follow up care to patients with pacemakers and defibrillators. The Device Clinic can monitor some patient devices remotely. This technology sends device data from your home to our nurses, meaning fewer hospital visits for you.

Your care is a partnership between your doctor and our cardiology and electrophysiology specialists. Together, they work to ensure your heart’s return to a steady beat.
Laser Lead Extraction

In rare instances, cardiac leads (the wire that connects a cardiac device to the heart) may need to be removed due to infection or damage.

Historically, lead removal was difficult, with significant risk to the patient. We are fortunate to have the technology and equipment to perform laser lead extraction, a minimally invasive, highly effective procedure that uses low temperature ultraviolet light to safely, effectively and efficiently free the lead from surrounding scar tissue, allowing the doctor to safely remove the lead with little risk of damaging the heart.

OHVI at Sacred Heart is one of only three medical centers in the state performing the procedure. Cardiologist Matthew Trojan, MD, leads our specialized team in our Hybrid Operating Room, a state-of-the-art operating room with a fixed, high-end imaging system that allows for minimally invasive and open surgery to be performed in the same room.

Matthew Trojan, MD
Laser Lead Extraction Program Director
Oregon Heart & Vascular Institute
In 2004, Central Point recreational pilot Albert Dietz was grounded by a serious heart condition. “My first thought was, I’m going to have to sell my airplane,” Dietz recalled of the initial diagnosis of atrial flutter following a Federal Aviation Administration (FAA) flight physical. Thus began years of unsuccessful treatments and medications, including one that slowed his heart rate to the extent that a pacemaker was implanted. His pilot’s license was suspended, so he sold his airplane and gave up his life’s passion.

Then he heard about electrophysiologist Dr. James McClelland, medical director of heart rhythm services at Oregon Heart & Vascular Institute, who performs a relatively new, minimally invasive procedure to halt atrial fibrillation—the minimaze. During the procedure, a cardiac surgeon destroys a small amount of abnormal tissue in the heart, preventing it from conducting irregular electrical impulses. Once the abnormal signal is disrupted, the heart resumes its normal rhythm. At OHVI, the entire procedure is monitored by Dr. McClelland.
“My only surprise was that it worked so well,” Dietz said of the procedure. “I was impressed.” Eighteen months after the heart surgery that cured his a-fib, Dietz got his pilot’s license back. Once grounded, he’s flying again.

Minimaze patient Albert Dietz

A RESOUNDING SUCCESS

“The minimaze procedure was a resounding success. I have been episode-free for nearly three years. I have resumed my hard-core bow hunting, completed the P90X workout program, and have been freed of the life-altering episodes of atrial fibrillation. To say the minimaze procedure was a life-altering event for me is a gross understatement.”

Minimaze patient Jim Marks

AN ATTITUDE OF CARING

“I cannot say enough about the staff. To a person, there is an attitude of caring. Little things, like having the door lightly knocked prior to entering, always finding the water glass full, having someone to chat with as they did their rounds at some ungodly hour of the morning. For that I wanted to say ‘thank you’ to you and your staff.”

Minimaze patient Dave Cole

NOT BAD AT ALL

“After years of holding myself back and keeping my heart rate down for fear of triggering an episode, I can comfortably engage in strenuous activities and push myself and my heart rate toward much better conditioning. Not bad at all.”

Minimaze patient John Stacy, PhD
Locations and Contact Information

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