Diagnostic Tests
For patients at the Regional Heart Center

This section of the Congenital Heart Conditions notebook describes some of the diagnostic tests that are done at University of Washington Medical Center. When you come for your clinic visit, your doctor may order one or more of the diagnostic tests listed here.

**Electrocardiogram (EKG)**

The EKG (or ECG) test uses *leads*, which are like stickers. They are placed on your arms, legs, and chest. This test shows the electrical activity of your heart and can help detect abnormalities in the rhythm and structure of your heart.

**Echocardiogram**

This test uses *ultrasound* to produce a picture from the sound waves that reflect from your heart. A hand-held wand is moved around on your chest to produce pictures of the different parts of your heart. This test is useful in checking the structure and function of your heart chambers and valves.

**Holter Monitor**

A Holter monitor has 5 leads that attach to your chest. It records your heart rhythms over a 24-hour period. You will wear the monitor and keep a logbook of your activities and when you did them. Your doctor will then compare this log with the heart rhythms the monitor records.

**Event Monitor**

An event monitor records your heart rhythms when you push a button while you are wearing the monitor. You keep a logbook of your activities and the times that symptoms occurred. Your doctor then compares this log with the heart rhythms the monitor records. An event monitor is usually worn for up to 1 month to record heart rhythms when you feel *palpitations* (racing heart beat), dizziness, shortness of breath, or chest pain.
Stress Testing and Pulmonary Diagnostics

The stress test assesses your heart’s response to physical stress. It shows how the heart muscle responds to increased oxygen needs and the blood flow to the heart. Your heart rate, electrical activity, blood pressure, and respiratory rate are all monitored during the test. An electrocardiogram (EKG) is done before, during, and after the test.

Stress testing can be done with physical exercise on a treadmill or a stationary bike. It can also be done with an echocardiogram before and during stress (stress echo). You may also have a cardiopulmonary exercise test (CPET) or a pulmonary function test (PFT) to evaluate your lungs.

Computed Tomography (CT) Scan

This test uses special X-ray equipment to produce many pictures of your heart and large blood vessels. This test may require an IV for contrast dye to be injected.

Magnetic Resonance Imaging (MRI)

An MRI uses non-X-ray magnetic waves to form pictures of the heart from many different angles. This test may require an IV for contrast dye or sedation. An MRI should not be done for patients with pacemakers, implantable cardioverter defibrillators (ICDs), or certain other implanted medical devices.

Cardiac Catheterization

This procedure uses a small catheter that is advanced from an artery or vein in the top of your leg or in your neck, through a blood vessel, and into your heart. Through this catheter, the doctor measures heart pressures and takes an X-ray video of injected contrast dye as it pumps through your heart.

Electrophysiology Study (EP study)

This test measures your heart’s electrical activity from inside your heart. Narrow catheters are placed into one of the big veins in your leg or your neck and are advanced through the blood vessels into the chambers of your heart to find exact sites of abnormal rhythms. Electrocardiograms (EKGs) and computers monitor your heart’s electrical responses.

An EP study helps us diagnose and treat difficult arrhythmias (abnormal heart beats) and conduction (electrical activity in your heart) problems. These can often be treated with a catheter-based procedure called ablation.