

PREPARING FOR THE EXAM

An echocardiogram is a non-invasive ultrasound imaging procedure used to assess cardiac function. Echocardiography allows doctors to visualize the anatomy, structure, and function of the heart.

The echocardiogram can show all four chambers of the heart, the heart valves, the blood vessels entering and leaving the heart, and the sack around the heart. It can lead to a quick diagnosis of heart valve problems or abnormal flow within the heart—all without the use of dyes, radiation or exploratory surgery.

During an exam, a sonographer moves a transducer over the part of the body to be imaged. The transducer functions as both a loudspeaker (to create the sounds) and a microphone (to record them).

High-frequency sound waves reflect off internal structures (soft tissue, organs and blood flow), producing echoes that are processed into an image displayed on the ultrasound system monitor.

You should wear comfortable, loose fitting clothing for your exam. Other preparation depends on the type of examination you will have. For some scans, your doctor may instruct you not to eat or drink for as many as 12 hours before your appointment.

Most cardiac ultrasound procedures take 30 minutes or less; others may take longer. Please check with your doctor or radiologic technologist for specific exam times.

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HR We will have your results back to your doctor within 48 hours.

Humboldt General Hospital provides state-of-the-art radiology services to men, women and children of all ages. Ensuring the most accurate diagnostic results is our goal. Services are performed in a timely and compassionate manner; meeting our patients' needs is our top priority.

Every member of Humboldt General Hospital's radiology team has achieved his or her registry through the American Registry of Radiologic Technologists (ARRT). Registration is the one-time process of initially recognizing individuals who have satisfied certain standards within a profession. A person is certified by the ARRT after meeting educational preparation standards, complying with ethics standards, and passing a comprehensive exam.

Clinical excellence is just one part of the department's three-pronged "Promise to the Community." Humboldt General Hospital's Radiology Department also is committed to premium customer service, offering extended evening and weekend hours, as well as the most advanced technology possible for its nine modalities: MRI, CT Scan, X-Ray, Fluoroscopy, Vascular Ultrasound, Obstetrical Ultrasound, Cardiac Ultrasound, Mammography and Bone Densitometry.

We look forward to serving you. Please call Humboldt General Hospital's Radiology Department at (775) 623-5222, ext. 133, with any questions or concerns you may have, or to schedule an appointment.

"OUR PROMISE TO YOU"

- ✓ **CLINICAL EXCELLENCE**
- ✓ **PREMIUM CUSTOMER SERVICE**
- ✓ **ADVANCED TECHNOLOGY**

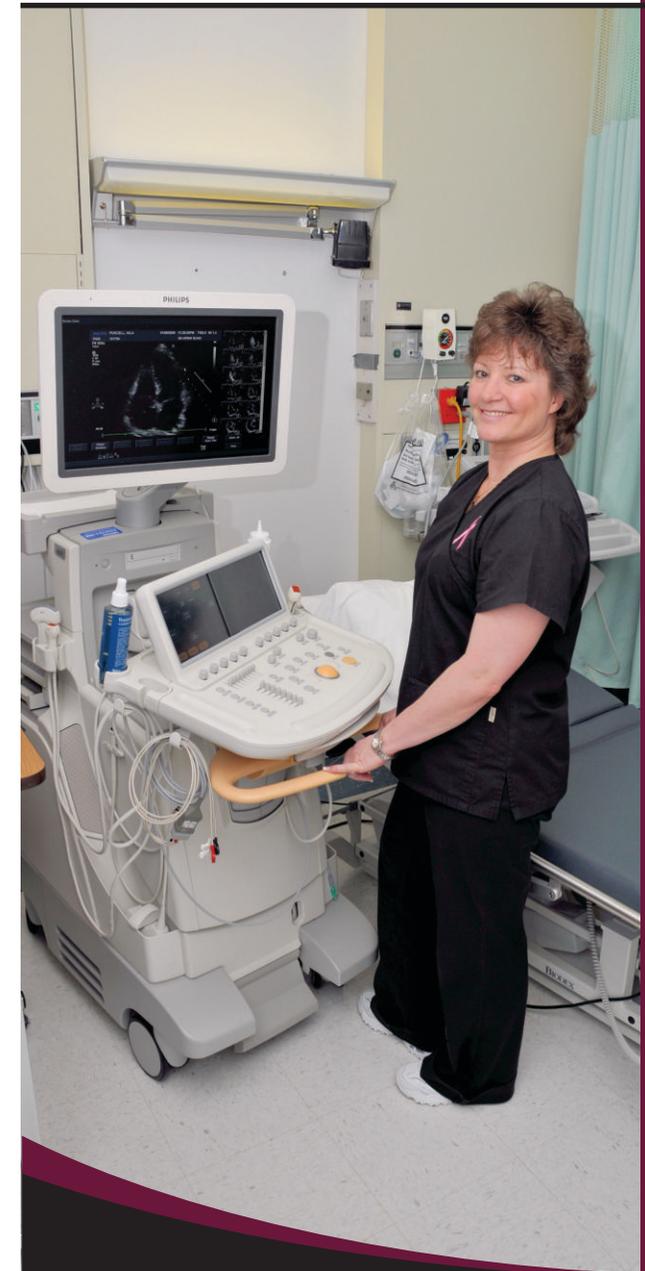
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CARDIAC ULTRASOUND



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CARDIAC ULTRASOUND

at Humboldt General Hospital



CARDIAC PROCEDURES

Echocardiogram. An ultrasound examination of the heart that yields such information as overall size of the heart, sizes of individual heart chambers, thickness of heart walls, how well the heart walls "squeeze" as the heart beats, and how well the heart valves function.

Exam time: Approximately 20-30 minutes

Patient preparation: None

Stress Echocardiogram. Combines cardiac imaging (echocardiography) with treadmill exercise electrocardiography (EKG) to enhance accuracy of the stress test.

Ten EKG monitoring electrodes and wires are placed on the patient's chest, with the wires leading to an EKG monitor and printer, which will permit continuous display of the patient's heart rate and rhythm, and print an EKG each minute during exercise. The testing physician also will check the patient's blood pressure periodically during treadmill exercise.

Before exercise, an echocardiogram will be done, to assess heart function. Exercise is continued until a target heart rate is achieved, the patient needs to stop, or the testing physician observes an abnormal response to exercise. When exercise is completed, the patient is assisted back to the bed, and the

echocardiogram is repeated while the patient's heart is still beating rapidly from exercise.

Exam time: Approximately 60 minutes

Patient preparation: The patient should not eat or drink anything for 4 hours prior to the test. Patients may take medications with water. Diabetic patients may have dry toast, black coffee and water.

Dobutamine Stress Echo. Combines cardiac imaging (echocardiography) with a chemically-induced heart response simulating exercise to diagnose or evaluate coronary artery disease.

Ten EKG monitoring electrodes and wires are placed on the patient's chest, with the wires leading to an EKG monitor and printer, which will permit continuous display of the patient's heart rate and rhythm, and print an EKG each minute during the test. Blood pressure will be checked at one-minute intervals during the test. An intravenous line (IV) is



placed to permit infusion of dobutamine.

A baseline echocardiogram is performed. With a physician present, dobutamine is infused at progressively increasing doses until a target heart rate is achieved or an abnormal response is noted by the testing physician.

Echo images are obtained and stored intermittently during medication infusion. A second medication, atropine, may be used along with dobutamine to achieve a target heart rate. Metoprolol (or a similar medication) is typically used to slow the heart rate at the conclusion of the study.

Exam time: Approximately 60 minutes

Patient preparation: The patient should not eat or drink anything for 4 hours prior to the test. Patients may take medications with water. Diabetic patients may have dry toast, black coffee and water.

Transesophageal Echocardiogram. Used in cases where there is a need to acquire images not obtainable by a routine echo. For this study, after the patient is sedated using intravenous medications and the back of the throat is sprayed with a topical anesthetic, a flexible probe is passed into the mouth, across the tongue, and into the esophagus; for some views, the tip of the probe with the ultrasound transducer is actually in the stomach.

Because the esophagus and stomach are in close proximity to the heart, without intervening air or bone, very high resolution images of the heart can be obtained, including areas not typically seen by a routine echo.

Exam time: Approximately 60 minutes

Patient preparation: The patient should not eat or drink anything for 4 hours prior to the test. Patients may take medications with water. Diabetic patients may have dry toast, black coffee and water.