

Cardiology Testing

What is an *echocardiogram* (“echo”)?

An echo is an ultrasound test used to evaluate the heart’s anatomy/blood vessels, blood flow, heart muscle function and pressures within the heart. It is similar to a “sonogram” during pregnancy.

What should I expect if my child needs an echo?

- ❖ Your child will be required to lie still and quiet on an exam bed for 30-60 minutes in order to obtain the highest quality images. For young patients or patients with developmental disabilities who are unable to cooperate, a light sedation medication may be required. Special “sedation instructions” will be provided prior to your appointment. Physician supervision is required for sedation therefore sedation will not be available for “echo only” visits.
- ❖ The echo room is darkened and equipped with TV/DVD player/toys to occupy your child but, feel free to bring items that you think will assist your child in cooperating with the study.
- ❖ The exam will be performed by a cardiac sonographer specially trained and registered in pediatric/congenital echocardiography.
- ❖ The upper body will need to be undressed. Gowns are available to maintain privacy.
- ❖ 3 electrodes (stickers) will be placed on the chest with wires attached to the ultrasound machine.
- ❖ The ultrasound transducer (camera/wand) with ultrasound gel will be placed in 5 different spots on the stomach, chest and neck to view the heart from different angles.
- ❖ The test is not painful but some light pressure will be applied to each of the camera positions.



What is an *electrocardiogram (EKG)*?

An EKG helps to identify heart rhythm abnormalities. It can also provide information about the size and thickness of the heart chambers and position of the heart within the chest.

What should I expect if my child needs an EKG?

- ❖ Your child will be required to lie still on his/her back on an exam table for about 5 minutes.
- ❖ 12 small electrodes (stickers) will be placed on the chest and abdomen. Wires will be attached to connect the electrodes to the EKG machine.
- ❖ The technician will then print a paper copy of the electrical activity of the heart.



- ❖ The wires and electrodes will then be removed. Removal of the electrodes may feel like “taking off a bandaid.”

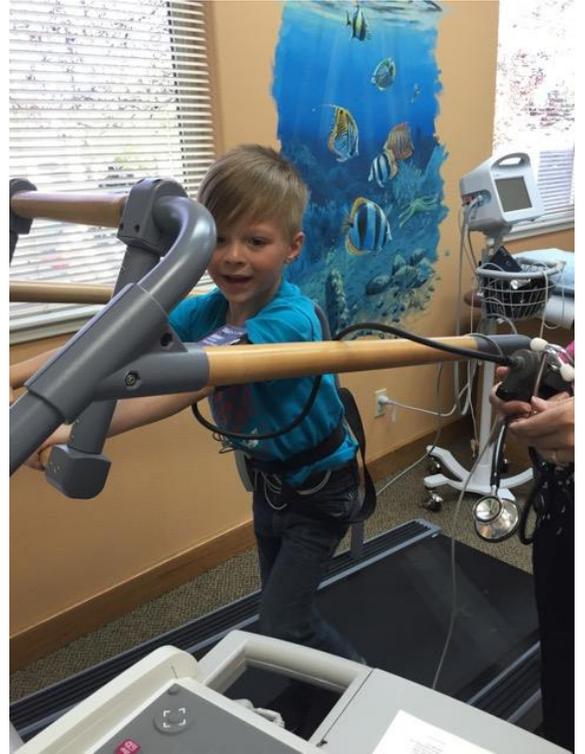


What is an exercise stress test?

An exercise stress test is performed to assess the heart's response to stress or exercise. The test is used to evaluate symptoms such as shortness of breath, lightheadedness, palpitations and chest pain.

What should I expect if my child needs a stress test?

- ❖ Your child should dress in comfortable exercise clothing and shoes.
- ❖ Electrodes and wires will be hooked up like an EKG (above).
- ❖ Your child will then walk on a treadmill starting slow and flat. The speed and incline will then be increased every three minutes until a target heart rate is reached. The exercise portion will last 10-20 minutes depending upon the fitness level of the child.
- ❖ Sometimes, especially if the test is being done in conjunction with PFT's (pulmonary function testing, see below), your child will be running at an incline for the duration of the test, instead of gradually increasing the speed/incline.
- ❖ EKG's will be printed periodically during the test, and blood pressure and heart rate will be recorded.
- ❖ In order to get the best information from the test, the child will be encouraged to work as hard as they can/go for as long as they can as well as keep the technician informed of any symptoms they may be experiencing.
- ❖ When the target heart rate is reached, there will be a cool down period of slow walking followed by resting on an exam table.
- ❖ When finished, the wires and electrodes will be removed.



What is a Holter monitor?

A Holter monitor is a 24/48 hour recording of the electrical activity of the heart. It is used to detect irregularities such as bradycardia (slow rate), tachycardia (fast rate) and abnormal rhythms. Since irregularities can be intermittent, the continuous 24/48 hour recording has a greater chance of detecting abnormalities.

What should I expect if my child needs a Holter monitor?

- ❖ Electrodes will be placed on your child's chest (similar to an EKG above). Wires will be attached connected to a small recorder that can be placed on a belt or shoulder harness. It can be worn under or on top of clothing.
- ❖ Your child may participate in regularly scheduled activities except swimming.
- ❖ Your child will keep this attached for the designated time, then remove when finished.
- ❖ You will then bring the monitor back to the cardiologists's office for interpretation.
- ❖ Your child may be asked to keep a log of symptoms during this period so that they can be correlated with the findings.
- ❖ Your child will not be able to shower or swim while the monitor is attached.



What is a ZIO patch ?

The ZIO patch is an EKG recording device (like a Holter monitor, above) that can be worn for up to two weeks.

What should I expect if my child needs a ZIO?

- ❖ The ZIO is a 5 inch long patch with a recording device attached that is applied to your chest like a bandaid. There are no external wires or recorders.
- ❖ The device will stay on the skin for the whole 2 weeks.
- ❖ Your child may participate in all regularly scheduled activities except swimming.
- ❖ At the end of 2 weeks, you will then remove it (like a bandaid) and mail it off in the packaging supplied to you.
- ❖ Your child may shower, but with no direct water stream or submersion.



What is an Event monitor?

An event monitor is an EKG recording device that can be worn for up to 30 days for patients whose symptoms are experienced infrequently and therefore difficult to document with either a Holter monitor or ZIO patch.

What should I expect if my child needs an event monitor?

- ❖ 3 electrodes (stickers) are placed on the chest with wires attached to a small recording device.
- ❖ The device will remain attached for the 30 days. It can be removed for showering and replaced with new electrodes after showering.
- ❖ If your child has symptoms, he/she will push a button on the recorder to activate it to capture the EKG during the symptomatic period.
- ❖ Your child may participate in regularly scheduled activities except swimming.
- ❖ After 30 days, you will remove the device and mail it off in the packaging supplied.

What is a Pulmonary Function Test (PFT)

A PFT is a test that determines how well your lungs work and diagnose lung diseases. It will determine how much air your lungs can hold and how quickly you can move air in and out of your lungs.

What should I expect if my child needs a PFT?

- ❖ Your child will sit in a chair and be instructed to breathe in and out through a tube. At times, your child will be asked to take a deep breath and exhale as forcefully as possible through the tube. This will be repeated several times as the technician records the information in a computer.
- ❖ If PFT's are performed in conjunction with an exercise (stress) test, your child will be asked to perform the test before exercise, and again several times after exercise.
- ❖ Sometimes, your child may be given an inhaler to see if this improves testing results.

