

## **Nuclear Cardiology**

We offer noninvasive tests to evaluate heart disease using a small amount of radioactive substance. It is injected into a vein and its presence is detected by a gamma camera. Images reveal areas of the heart that are not getting enough blood.

Myocardial perfusion images are combined with exercise to assess the blood flow to the heart muscle. Exercise can be in the form of walking on the treadmill or riding a stationary bicycle. A "chemical" stress test using the drug adenosine or lexiscan may be performed in patients who are not able to exercise maximally, providing similar information about the heart's blood flow.

A small amount of an imaging agent - thallium or sestamibi (Cardiolite) is injected into the blood stream during rest and during exercise or chemical stress. A scanning device (gamma camera) is used to measure the uptake by the heart of the imaging material during (exercise or chemical stress) and at rest. If there is significant blockage of a coronary artery, the heart muscle may not get enough of a blood supply in the setting of exercise or during chemical stress. This decrease in blood flow will be detected by the images.

Myocardial perfusion studies can thus identify areas of the heart muscle that have an inadequate blood supply as well as the areas of heart muscle that are scarred from a heart attack. In addition to the localization of the coronary artery with atherosclerosis, myocardial perfusion studies quantify the extent of the heart muscle with a limited blood flow and can also provide information about the pumping function of the heart. Thus, it is superior to routine exercise stress testing and provides the necessary information to help identify which patients are at an increased risk for a heart attack and may be candidates for invasive procedures such as coronary angiography, angioplasty and heart surgery.