

**[Peace of mind]**



State-of-the-Art Cardiac Imaging:  
**64-Slice CT Scanner**

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**St. Francis Hospital**  
The Heart Center®



## Introduction

St. Francis Hospital, The Heart Center® is pleased to introduce the latest and most exciting imaging technology to help diagnose and guide the treatment of heart disease: the 64-slice MultiDetector Computed Tomography Scanner for CT coronary angiography and other applications.

This new technology provides a noninvasive method to directly visualize the coronary arteries. Using a small dose of contrast, 64-slice CT angiography provides previously unobtainable visualization of the coronary arteries. Faster scanning also significantly increases patient comfort.





## **MultiDetector Computed Tomography**

Computed tomography (CT) is a radiological technique used to visualize regions of the human body slice-by-slice. In the past decade, this technology has advanced to provide better speed and resolution and is now an important non-invasive method of examining the human body.

The new 64-slice multidetector CT scanner allows physicians to analyze coronary artery lesions and blockages that were previously impossible to visualize adequately.



## How CT Works

CT produces images of the internal tissues of the human body as the x-ray beam rotates in a spiral fashion around the patient. x-ray beams originating from the scanner go through the body and are then picked up by the detectors.



CT continuously gathers multiple images, thus acquiring a greater amount of diagnostic information in less time. Unlike traditional x-ray imaging that produces a two-dimensional projection, CT takes thin x-ray scans, or slices, from multiple direc-

tions. The multiple scans can be combined to form a 3-D image "set," or volume. CT is used for 3-D volume imaging of the heart, chest, abdomen, urinary tract, liver, pancreas, spine and brain.

## Benefits of the New Technology

Heart disease is the leading cause of death for both men and women in the United States. More than 1.5 million heart attacks occur in the United States annually, resulting in up to 500,000 deaths each year. In up to 50 percent of all heart attacks, the heart attack itself is the first symptom of heart disease. Thus early detection and intervention is the single best defense.

CT angiography (CTA) is an application of CT that visualizes the coronary arteries noninvasively with unprecedented clarity and accuracy. The results of this examination provide the physician with information about the condition of the patient's coronary vessels.

## Risk Factors for Heart Disease

One in four adults have some form of cardiovascular disease. You belong to a higher-risk group if you have any of the following risk factors: high blood pressure, elevated cholesterol level, history of smoking, family history of heart attack or coronary disease at an early age, or diabetes.

If one or more of these risk factors apply to you, talk to your physician about CT for early diagnosis of heart disease.



## Frequently Asked Questions

### What is the difference between CT angiography and traditional coronary angiography?

CT angiography (CTA) is a noninvasive heart-imaging test that can determine the extent of narrowing in the coronary arteries.

Traditional invasive coronary angiography, also known as cardiac catheterization, uses a catheter inserted into an artery in the upper thigh and threaded up to the coronary arteries to inject x-ray dye and make two dimensional x-ray movies of the coronary arteries. CTA is a non invasive diagnostic scan that uses x-rays and intravenous x-ray dye to create 3-D images of the coronary arteries on a computer screen.

### What is the difference between calcium scoring and CT angiography?

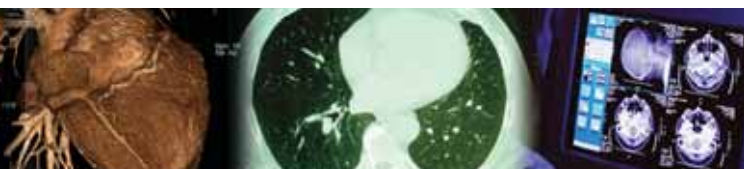
Calcium scoring is a screening test used to detect calcification in the coronary arteries and determine future risk of coronary artery disease before symptoms develop. More coronary calcium suggests a greater likelihood of significant narrowing and a higher risk for future events.



CTA is indicated for patients with symptoms suggestive of heart disease or abnormal test results that may be due to coronary disease that has not previously been diagnosed and for some patients with known coronary disease who may be having symptoms or have had abnormal stress test results. CTA is especially useful for patients not previously diagnosed who may be having symptoms suggestive of coronary artery disease or who demonstrate abnormalities on stress testing. When a patient undergoes CTA at St. Francis, three tests and three reports are produced at once – a calcium scoring report, a chest CT report on the presence or absence of noncardiac abnormalities in the chest and a CT coronary angiogram report.

### Is the CT scan covered by insurance? How expensive is it?

CTA is covered by regular Medicare for appropriate indications. With prior authorization, CTA is covered by some, but not all commercial insurance companies, mainly for PPO products. However, calcium scoring without CTA is considered preventive



care and is an out-of-pocket cost, not currently covered by Medicare or commercial insurers.

### **Is a prescription required?**

Both CTA and calcium scoring require a prescription.

### **How much radiation do I get from a Calcium Score or Coronary CTA?**

Although CT is an x-ray technique, the amount of x-rays used is minimized by advanced detector and computer technology to achieve the best image quality at the lowest possible radiation dose. The radiation exposure for a calcium score is equivalent to a one-way coast-to-coast airline flight. The exposure for a CTA is less than exposure to a Thallium Stress Test.

### **How do I prepare for a Calcium Score or Coronary CTA scan?**

Calcium score CT requires no special preparation. For coronary CTA, a recent blood test for kidney function, EKG and responses to a screening form must be obtained prior to scheduling. Patients with kidney malfunction, asthma, diabetes, allergies to x-ray contrast, irregular heart rhythms or a pacemaker or implantable defibrillator will be given further individualized evaluation and special instructions. To obtain high quality images with CTA many individuals require administration of a beta-blocker prior to the test to keep their heart rates under 70 beats per minute.

### **What can I expect during the scan?**

During a CT scan, you will be lying on a comfortable couch as it slowly moves through an opening in the examination unit, commonly referred to as the 'gantry.' All you have to do is follow the instructions given by the CT technologist or radiologist. For example, you may be asked to briefly hold your breath or not to move certain regions of your body.

### **Will I feel anything?**

CT itself is a quick, painless procedure. For CTA, an IV is required for injection of x-ray contrast (dye).

### **How long will my CT exam take?**

The CT scan itself usually takes 10 to 15 minutes. However CTA requires additional screening, pre-medication, insertion of an IV and an hour of observation after the test, so plan to spend approximately two-and-one-half hours.



## A Message from our Director

As New York State's only specialty heart center, St. Francis Hospital, The Heart Center® is committed to providing our patients with the latest advances in the prevention, diagnosis and treatment of heart disease. The cornerstone of cardiac care is diagnostic imaging, and in recent years, we have seen rapid advances in noninvasive imaging technology. St. Francis Hospital is

### Expertise



**Nathaniel Reichel, M.D., FACC, FAHA**  
Director of Research  
DeMatteis Center for Cardiac Research  
and Education  
St. Francis Hospital, The Heart Center®

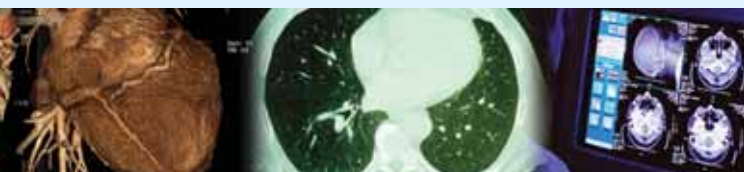
proud to be the first medical facility on Long Island to offer 64-slice CT for diagnostic cardiac imaging and other applications.

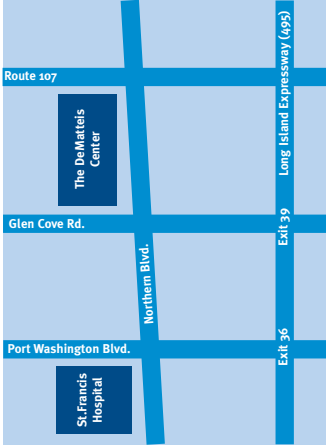
Research shows that early detection of heart disease improves the likelihood of effective treatment. CT, which allows the three-dimensional visualization of the heart, is a noninvasive method of acquiring images of the coronary arteries with unprecedented image quality. Faster

scanning also increases patient comfort by reducing breath holds to as little as 10 seconds. Importantly, the shorter scanning time also improves the ability to diagnose and treat disease earlier.

With the addition of CT, St. Francis continues its commitment to providing the latest and best imaging technology in one place, with the most experienced physicians to interpret the results and guide treatment.

**For more information on CT, consult your physician or contact us at (516) 629-2000.**





## St. Francis Hospital

The Heart Center®

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<http://stfrancisheartcenter.chsli.org>

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We are located at The DeMatteis Center for Cardiac Research and Education on Northern Boulevard in Old Brookville.

**Directions** Take the Long Island Expressway (495) to Exit 39 (Glen Cove Road). Go North on Glen Cove Road to Northern Blvd. (Rte. 25-A). Make a right onto Northern Blvd. and proceed approx. 3/4 mile to the second traffic light. At the light make a left into the Center's parking lot.

*Most health plans accepted*

Hours: Monday through Friday 8 a.m. to 4:30 p.m.

Telephone: (516) 629-2000 Fax: (516) 629-2055

Visit: [www.stfrancisheartcenter.chsli.org](http://www.stfrancisheartcenter.chsli.org)