What is a Cardiac Cath?

Cardiac catheterization is a procedure used to diagnose and treat patients who have various forms of heart disease.

One of the most common types of heart disease is coronary artery disease (CAD). This disease affects the arteries that supply blood to the heart. When these arteries are blocked by plaque build-up, blood and oxygen do not reach the muscle of the heart. (See illustration which shows the progressive build-up of plaque within the artery. The build-up is often called stenosis, thrombosis, or lesion). When this happens, a sensation called angina (chest pain) may result. Other symptoms include shortness of breath, sweating and/or muscle aches in
the jaw, arm or shoulder. If the heart muscle does not receive enough blood, it could lead to permanent damage to the heart.

During cardiac catheterization, a physician uses digital images to identify narrowing or blockage in the arteries. This procedure is performed in an area of the hospital called the Cath Lab. The rooms in the Cath Lab have specialized equipment that allows the cardiologist to see instant moving images of the heart.

During the procedure, a thin plastic tube called a catheter is guided through a main artery in the leg or arm and up to the heart. Once the catheter is in the heart, the physician injects a dye, which helps track blood flow on the image.

If the physician identifies arteries that are narrow or blocked, there are several cardiac catheterization techniques, called interventional procedures, which can often be used to improve blood flow.

**Preparing for your Cardiac Catheterization at home:**

If you are scheduled to be admitted/registered on the day of your procedure, follow these specific instructions to prepare:

Don’t eat food or drink (except a few sips of water with medication) after midnight.

Continue to take medications on your prescribed schedule. Medications such as Coumadin, diuretics, insulin and oral diabetic medication will require individual review by your physician. Please do not take diuretics (“water pills”), or oral diabetic medications/pills the evening prior or morning of your test.

Discuss medications, allergies, and any other issues with our staff and doctors prior to the procedure.

The afternoon prior to your procedure, a nurse from the Cath Lab will contact you to provide additional instructions and to let you know when to arrive at the Cath Lab. Please use this opportunity to address any questions or concerns about your procedure.
For your same-day admission, please arrive in the Cath Lab at your designated time. A family member or friend may accompany you. For your convenience, there is a comfortable reception area, with cafeteria services with internet access and public phones nearby.

It is not be necessary to bring anything with you except personal toiletries and medications you may need. Please do not bring any valuables or jewelry. Wear comfortable clothing and walking shoes. Please bring a book or some other diversion to help pass the time in case of delays.

Saratoga Hospital offers free **Valet parking** at the main entrance of the hospital. The company contracted for this service is fully insured with a long history of safety. If you need assistance finding the Cardiac Cath Lab there are volunteers and greeters at the reception desk that can assist you in finding your way.

When you arrive at the Cardiac Cath Lab, located on the ground floor of the hospital, a receptionist will greet you and notify the team that you have arrived. After your registration is complete, a nurse will ask you to change into hospital attire. You are then brought into the pre-procedure holding area.

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**Preparing for your Cardiac Catheterization while in the Hospital:**

For patients in the hospital, a Physician or Physicians Assistant/Nurse Practitioner will visit you the prior to your procedure. At this time, you have an opportunity to discuss the catheterization procedure and to ask any questions that you may have.

Adjustments may be made to your prescribed medication routine and an IV will be inserted. You will not be able to eat or drink (except water with medications) after midnight. Your nurse will ensure that you are properly prepared.

On your scheduled procedure day, the Cath Lab will put you on call which means you are ready to go to the Cath Lab. Pre-procedure medications will be
administered, and you will be brought from your room directly to the pre-procedure holding area in the Cath Lab.

**Immediately Prior to your Procedure:**

During your wait in the pre-procedure area, a nurse will review your medical record and discuss any questions or concerns you may have. The nurse will check your vital signs, assess the circulation to your legs and insert an IV if one is not already present.

Just prior to your procedure one of the Saratoga Cardiology physicians will come and discuss the plan for your catheterization with you and answer any questions you may have. The physician will explain the procedure in greater detail and outline the potential risks. If you have not already done so, you will sign a consent form indicating your willingness to have a catheterization performed.

The nurse will administer any pre-cath medications ordered by the physician. This may consist of a mild sedative to relax you, antihistamines or anti-platelet medications.

**During your Cardiac Cath:**

Once you are in the procedure room, you will be moved to a flat moveable examination table. There will be many monitors visible around the room. The nurse and technologist, who will be with you and assist the physicians during your catheterization, will begin the pre-cath preparation.
Electrodes will be attached to your chest to monitor your heart rate and rhythm. The selected area for insertion of the catheters will be shaved and washed with an antiseptic to ensure that the catheter entry site is clean and sterile. You will be draped with a sterile sheet to provide the most sterile environment for catheter insertion. The most common entry site is the upper area of your thigh.

You will be mildly sedated throughout the procedure. It will be necessary for us to communicate with you, and we need to know if you are experiencing any discomfort. If you are feeling anxious, you may request additional sedation.

A local anesthetic is injected to numb the skin at the insertion point, and you may experience a brief burning or stinging sensation. An introducer sheath is placed in the artery and occasionally in the vein. The sheath acts as the entry tube for the various catheters required during the procedure. Some patients feel pressure or mild discomfort when the sheath is being inserted.

Physicians need to obtain a variety of information relevant to each patient’s clinical situation. Therefore, the sequence and type of measurements collected may vary.

From this point on, the lights will be dimmed periodically for viewing purposes. Typically, pressures are recorded in the various chambers and vessels of your heart. It is important not to talk as pressures are recorded, because measures should reflect a normal resting pressure. You should not experience any discomfort, however, be sure to tell the staff if you feel uncomfortable.

The physicians will take pictures of your arteries and the main pumping chamber of your heart. To accomplish this, the doctor will manually inject dye through a catheter into the artery that supplies blood to the heart muscle. You may feel pressure in your in chest when the dye is injected, and it is important for you to tell us if this happens. Cameras will move around your chest, and the table will move so the dye can be followed as it travels through the vessels. Many pictures will be taken from different angles to thoroughly understand the blood flow through your arteries.

A catheter will be placed into the left pumping chamber of your heart. This time, dye will be injected by a machine. Moving pictures will evaluate the left ventricle, main pumping chamber functions. This causes a momentary hot and flushed feeling throughout your body. These feelings should pass quickly.

After all measures are taken, the physician will discuss the findings with you and present options for further treatment. Your options may include:

- no treatment
- a change in medications
- another type of catheterization called an interventional procedure
- Cardiac surgery.
After Your Cardiac Catheterization Procedure:

If no other tests or treatment are required, the cardiac staff will prepare to bring you to the post-procedure area for recovery. A nurse may administer additional medication, drapes will be removed and monitoring equipment will be disconnected. You will need to keep your leg straight, particularly as you are moving from the table to a stretcher.

When the staff remove the sheaths from the artery/vein this may cause pressure or discomfort at the entry site. Immediately after the sheath is removed, the staff will apply firm and direct pressure by hand. In most cases a collagen plug is used to assist in hemostasis (healing the artery/vein). Pressure is typically maintained for as little as 5 minutes or as long as 30 minutes to help stop bleeding and to allow the puncture site to heal. A nurse will continue to monitor your blood pressure, heart rate, the entry site, and your circulation. Once the staff is sure that the entry site is stable, a clear bandage will be applied.

The four to six hours following your catheterization are very important and we ask that you carefully follow these instructions about your care. A nurse will frequently check your vital signs and make sure your entry site is healing properly.

Please tell the staff immediately if you experience the following:

- Chest, neck, jaw, or arm pain, or any pain similar to your heart pain
- Shortness of breath
- Weakness or dizziness
- Pain at the entry site
- Numbness, tingling or any discomfort below the entry site
- A warm or wet sensation around the entry site area
- Any other discomfort
Bed rest is essential to ensure that the puncture site heals. You will need to lie flat, and you may only raise your head slightly (30 degrees). You should not turn from side to side. You may bend your foot or wiggle your toes, but do not bend your knee. If you have to cough or sneeze, apply firm, direct pressure over the clear bandage on your groin.

You will need to drink extra fluid to help your kidneys eliminate the X-ray dye. Since you will not be able to get out of bed, a nurse will assist you in the use of a urinal or bedpan.

Back discomfort may occur. Please let us know if you are concerned about your back. We will try to alleviate your discomfort.

Following your resting period, a nurse will help you get out of bed. This should be done slowly and carefully. We recommend that your initial activity be limited to short trips (i.e. possibly to a nearby bathroom). The following day you may resume light activity.

If you are going home the evening of your procedure, you will be given additional written instructions before you are discharged. Please be prepared for the following:

- Plan to stay in the hospital for 6 to 8 hours after your procedure is finished.
- Have an escort or family member pick you up and drive you home from the hospital.
- You cannot spend the night following your catheterization home alone. Please plan to have a companion with you.
- Limit your activity to your trip home.
- Resume light activity (around home) the next day.

Before you leave, discuss these important points with your physician:

- The findings of your catheterization
- Your activity level
- Your medications
- Who to contact in the case of an emergency
- Any other details specific to your care
Treatment Options and Other Procedures:

When cardiac catheterization is used to treat heart disease, it is often referred to as an *interventional procedure*. These procedures use similar catheterization techniques described in the diagnostic section.

After the diagnostic test is complete, your cardiologist will review all images taken during the procedure to determine if there is narrowing or blockage requiring further treatment. He or she will discuss the findings with you and present options for further treatment based on your medical history, individual anatomy and personal needs. No treatment may be necessary, or you may need a change in medications, a therapeutic interventional procedure or surgery.

These procedures are not currently done on cardiac patients here at Saratoga Hospital however all our physicians are affiliated with both Ellis and St Peters Hospitals and would plan your interventional procedure accordingly. In most cases patients may choose to pre-schedule their intervention for a day when their specific cardiologist can perform the procedure.
Balloon Angioplasty

Also known as Percutaneous Transluminal Coronary Angioplasty (PTCA) uses a small balloon that is positioned at the narrowing or blockage in the coronary artery and inflated to reduce obstruction.

Stenting

Stenting involves the permanent placement of a coronary stent inside the blocked artery. The stent is a small, tube-shaped device that holds the walls of the arteries open so that blood can flow through. Medications are attached to these stents.

Your physicians may recommend other treatments including:

Medication

Your physician may prescribe medication alone or in conjunction with other treatment. Cardiac medications can accomplish the following: relax and dilate the blood vessels, slow or regulate the heart beat, strengthen the pumping action of the heart, take excess fluid from the blood or lungs, replace minerals, reduce blood pressure, decrease the pressure inside your heart, and thin your blood.

Bypass surgery

Depending on the number of blockages and where they are located, coronary artery bypass surgery (CABG) may be necessary. A portion of a leg vein or an artery from your chest will be removed and placed to bypass the blocked portion of your blocked or narrowed area.

Valve Surgery

Sometimes it is necessary to replace a valve in your heart. A valve surgery uses mechanical or porcine valves to replace your failing valve.