Cardiac Catheterization, Coronary Angiogram, and Percutaneous Coronary Intervention (PCI)
Your doctor has recommended that you have a cardiac catheterization, coronary angiogram, and/or possible percutaneous coronary intervention (angioplasty or stent placement) as part of your continuing medical care. Your procedure is performed in a specialized room, the Cardiac Cath Lab, on the Pacific Campus. Here, a team of cardiologists, registered nurses, and technologists work closely together to provide your care. It is their goal to make your experience as comfortable as possible.

*Note:* Each person is unique and therefore each person’s condition will vary. This booklet contains general information about these procedures. If you have additional questions or concerns, please ask the staff.
What is a Cardiac Catheterization and Coronary Angiogram?

A cardiac catheterization is an invasive, non-surgical procedure done to study the arteries that bring blood to the heart muscle and to check the function of the main pumping chamber of your heart. During a cardiac catheterization, the cardiologist inserts a small, hollow tube (catheter), into an artery or vein, and then guides it into the heart using x-ray. The cardiologist injects contrast (x-ray dye) through the catheter to outline the arteries and to show any blockages or narrowings that may exist. The results of these tests will assist your doctor in making the diagnosis of Coronary Artery Disease (CAD). Most patients have little or no discomfort during a cardiac catheterization. However, you may feel a hot, flushing sensation for several seconds when the contrast is injected into the main pumping chamber of the heart. The nursing and medical staff will give you medication and reassurance throughout the procedure to ensure your comfort.

What is a Percutaneous Coronary Intervention (PCI)?

PCI is a treatment procedure that unblocks narrowed coronary arteries without performing surgery. During this procedure, your cardiologist determines the best treatment for your condition. Treatment will vary from patient to patient.

PCI may include one or more of the following treatments:

**Balloon catheter angioplasty:** During this procedure, the cardiologist inserts a cardiac catheter with a small balloon around it into the coronary artery. The cardiologist then places the balloon in the narrowed area of the artery and expands it with liquid. This pushes the plaque (blockage) to the sides of the artery where it remains. This technique reduces the narrowing in the artery and restores the normal size of the artery. The cardiologist removes the balloon catheter at the end of the procedure.
What is a Percutaneous Coronary Intervention (PCI)?

(continued)

**Stent:** The cardiologist places a small, hollow metal (mesh) tube called a “stent” in the artery to keep it open following a balloon angioplasty. The stent prevents constriction or closing of the artery during and after the procedure. Drug-eluding stents are now used. These stents are coated with medication that helps prevent narrowing of the artery.

*Coronary Artery with Stent*

**Rotational Atherectomy:** During this procedure, the cardiologist uses a specialized instrument to break up rock-hard plaque with calcium build-up from the blood vessel wall into tiny pieces. You may experience some discomfort such as chest pain, pressure or tightness in your chest during this procedure. Medications may be given to ease the discomfort. This procedure may last for 30 seconds to one minute.

What Can I Expect BEFORE the Procedure?

**Consult with your doctor about your medications:**

- Bring a list of all your current medications with you to your appointment, including strength (dose) and frequency (time taken). This includes any over-the-counter medications, herbal preparations or vitamins.
- Ask your doctor about whether or not to take your routine medications with a sip of water before coming to the hospital.
- Usually, aspirin should be taken prior to cardiac catheterization and PCI.
- If you are taking blood-thinning medications such as Coumadin (Warfarin), check with your doctor about when to stop taking these medications prior to the procedure.
- If you are taking medications for diabetes, e.g., Glucophage (Metformin) or Glucovance (Glyburide and Metformin), you may be advised to stop these medications before the procedure and re-start these medications after the procedure, as directed by your doctor.
- Be sure to tell your doctor if you have had an allergic reaction to x-ray dye (contrast), iodine or seafood, or have a history of bleeding problems.

**Prepare the night before:**

- Drink plenty of fluids the evening before the test, unless otherwise directed by your doctor.
- Do not eat or drink anything after midnight, the night before your procedure, unless otherwise directed by your doctor.
- You must arrange for a relative or friend to drive you home. You may not drive for 24 hours following the procedure.
What Can I Expect on the DAY of the Procedure?

❖ Take medications that your doctor has specifically instructed you to take on the day of your procedure with a sip of water.
❖ Arrive at least 2 hours before your scheduled procedure. **Note:** If you are scheduled for a 7 a.m. procedure, please arrive at 6 a.m.
❖ Most scheduled procedures are performed on time. However, your scheduled procedure time may be delayed if there are emergency cases.
❖ Family members and friends are invited to wait in a designated waiting area. The cardiologist will contact them there after the procedure.

**While you are in the Ambulatory Care Unit (ACU) and Cath Lab holding area:**

❖ Your nurse places a small intravenous (IV) catheter (tube) in your arm. The IV is needed to give you medications to help you relax and make sure that you are comfortable throughout the procedure.
❖ You will be asked to sign several consent forms stating that you understand the procedure. These forms may include consent for cardiac catheterization, coronary angiogram, PCI, emergency coronary bypass surgery, and blood product transfusion, if needed.
❖ The nurse shaves either your groin and/or arm area (the insertion site for the cardiac catheter) to remove hair and prevent infection.
❖ Then, the nurse may insert a small tube (urinary catheter) into your bladder to drain your urine. The catheter will be removed after your procedure.

What Can I Expect DURING the Procedure?

❖ The nurse or technologist brings you into the Cardiac Cath Lab procedure room.
❖ The nurse gives you medication through your IV to help you relax and to ensure your comfort throughout the procedure.
❖ The nurse cleans your groin/arm area with a special anti-bacterial soap, and covers you with sterile drapes to prevent infection.
❖ The cardiologist injects a numbing medication (local anesthesia) into the groin/arm area. This may feel like a mild sting which lasts only a few seconds and will keep the area pain free.
❖ Next, the cardiologist places a small plastic tube called a sheath through the skin and into the artery. You may feel a slight pressure at that moment.
❖ Immediately report any chest pain or discomfort during the procedure.
❖ Once the sheath is in place, the cardiologist inserts a catheter into the sheath and advances it toward the heart. Then, x-ray pictures are taken as the contrast is injected. You may feel a “hot flash” or a flushing sensation during contrast injection.
What Can I Expect AFTER the Procedure?

After the procedure, you will return to the holding area for a recovery period before you go home.

❖ The sheath will be removed. The timing of the sheath removal depends upon the results of your blood tests (bleeding time) and other considerations.

❖ Manual pressure, a compression device, or a “closure device” may be used to seal the artery puncture site. Closure devices may include a collagen plug, a compression device (Femostop®, or a surgical stitch (Perclose®).

❖ If the insertion site was in your arm, you will have a compression band placed around the puncture site. The nurse will slowly release the compression band and place a dressing over the puncture site.

❖ If you have had a PCI, you will be transferred to a special cardiac care unit for an overnight stay. There, nurses will continue to monitor your condition closely. Most patients go home the following day after a PCI.

❖ **After the procedure, you will remain flat in bed for 6 or more hours to prevent bleeding from the catheter/sheath insertion site. You may not sit up until several hours after the sheath is removed and the blood vessel is sealed by manual pressure or a closure device has been placed.** Your nurse may raise the head of your bed slightly to allow you to eat and drink beginning one hour or more after your procedure.

❖ Call your nurse immediately if you are experiencing any chest pain, lightheadedness, bleeding, or severe back pain.

❖ The nursing staff will give you detailed instructions about what to expect when you go home. This will include symptoms to watch for and when to call your doctor.

❖ If you experience pain, moisture or any unusual sensation at the cath site, call your nurse.

❖ If you have to cough or sneeze, apply gentle pressure at the site with your hand.

What Can I Expect AFTER the Procedure? (continued)

❖ You may experience a backache after the procedure. Report any backache to your nurse. Your nurse will give you medication if needed.

Notes and Questions to Ask My Doctor

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When Do I Get My Results?

Your cardiologist will notify you, your family member(s) or friend(s) of the test results after the procedure.

Frequently Asked Questions

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<td>Your cardiologist will give you and your family member the results of your test after the procedure.</td>
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More Ways to Learn

- Go to [www.cPMC.org](http://www.cPMC.org), click on “Learning About Your Health” and then “Patient Education.” Select the broad health topic “Heart & Circulation.”
- Cardiac Rehabilitation is a program offered at California Pacific on the referral of your doctor. For more information about this service, call (415) 600-3361, or go to [www.cPMC.org/services/cardiac/card-rehab.html](http://www.cPMC.org/services/cardiac/card-rehab.html).
- Visit the American Heart Association Web site at [www.americanheart.org](http://www.americanheart.org).

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Note: The information provided in this material is intended to provide readers with accurate and timely information. It is not intended to substitute for information and personal medical advice, which you need to obtain directly from your doctors. If you have any additional questions related to treatment or the risks and benefits of treatment mentioned in this work, please direct these questions to your doctors.