

# TESTfacts

An Educational Health Series From National Jewish Health®



## Cardiac Catheterization (Cardiac Cath)

### What is a cardiac catheterization (cardiac cath) procedure?

Cardiac Catheterization is a special study of the heart and the blood vessels that supply blood to the heart muscle. During a cardiac cath a long thin flexible catheter, is inserted into an artery or vein in the groin or arm. While watching the catheter on x-ray, the catheter is then passed through the artery or vein to the heart

Once the catheter is in place, pressures in the heart are measured. An x-ray angiogram (motion picture x-ray) of the heart and blood vessels is taken. This is done while injecting an iodinated colorless "dye" or contrast material through the catheter. An angiogram of the coronary arteries is obtained by injecting the contrast material into the opening of a coronary artery. X-ray movies are taken during the injection of the contrast material allowing the blood flow through the coronary arteries to be visualized.

The coronary arteries are vital because they supply oxygen and nutrients to the heart muscle. Without blood flow, the muscle would sustain temporary or permanent damage in the form of a myocardial infarction (heart attack).

The catheter can be placed to view the left side or the right side of the heart. The catheter is inserted into a vein to perform a right heart catheterization. The catheter is inserted into an artery to perform a left heart catheterization.

A right heart catheterization is often performed to assess for pulmonary hypertension, congenital heart disease, diseases of the heart valve or certain conditions involving the pericardium (the fluid filled sack surrounding the heart).

A left heart catheterization is often performed to assess for narrowing or blockage of the coronary arteries and assess the function of the heart muscle.

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The cardiac catheterization can help your cardiologist to make a diagnosis and determine the best treatment plan for you.

### How do you get ready for the procedure?

Please follow these instructions closely. If this is not done, we may have to reschedule the test.

### Planning Ahead

- You will be scheduled to see the cardiologist before the procedure. The doctor will give you instructions for preparation and review risks involved with the procedure. Please ask questions if you don't understand.
- **Inform** your doctor of all the medicines you take, including all over the counter medications and vitamin supplements. **Inform** your doctor if you take any oral medicines or insulin for diabetes. **Inform your doctor if you are allergic to iodine or radio contrast ("X-Ray dye").**
- A nurse will call you within 2 days before the scheduled procedure to give you specific instructions and to answer any questions.
- You will be given a hospital gown to wear.

### The day of the procedure:

- Do not eat or drink anything after midnight the night before your scheduled procedure. If you are scheduled for the Cardiac Cath. after 12 noon, you may have clear liquid for breakfast before 7 a.m. on the day of your procedure. Clear liquids include Gatorade, strained fruit juice (no citrus), soda, popsicles without fruit or cream, gelatin without fruit, broth (skim the fat off the top), coffee or tea (without milk). Avoid drinking only water.
- You may be given medicine during the procedure that may make you sleepy. You will not be able to work, drive, or make any decisions for the rest of the day. Ask someone you know and are comfortable with to accompany you to drive you home after the procedure. It is a good idea to have someone with you through the remainder of the day and night, but this is not imperative.
- You will not be allowed to use public transportation unless you are accompanied.
- If you use oxygen at home, please bring a portable oxygen unit with you. This includes oxygen use when you sleep and/or are active. You may need to use the oxygen for your ride home.
- Take your medications as instructed by the cardiologist or the cath lab staff.
- Do bring your inhaled medicine with you.
- If you are diabetic, please bring your glucose meter, test strips, and a source of fast-acting glucose with you (such as glucose tablets or glucose gel).
- Check in at the front desk 30 minutes before your scheduled Cath Prep procedure.
- If you are given lab results and an ECG (electrocardiogram) by your doctor, please give them to the nurse when you arrive.

### What is done during the procedure?

You will check in at the main Check-In Desk at least 30 minutes before your scheduled Cath Prep procedure. You will then go to the Cardiology department desk to check in

with cardiology. If you need additional blood work or an ECG, they will be obtained by the cath lab staff.

The cath lab staff will explain what will be done before, during and after the procedure. If you have any questions, please ask. Your health care provider will answer any questions you have. Once your questions are answered you will be asked to sign an informed consent for the procedure. This may be done during your first meeting with the cardiologist in the clinic setting.

The cath lab staff will ask you questions about your medical history including medicines you currently take and allergies. Please be sure to notify the cath lab staff if you have an allergy to iodine and shellfish, or have had prior problems during an x-ray procedure or cardiac catheterization.

You will then change into a hospital gown. You will be given an opportunity to empty your bladder prior to being taken to the cath lab.

The nurse will check your pulses and blood pressure and connect you to several monitors:

- **Electrocardiogram (ECG):** Electrodes (small, flat, sticky patches) will be placed on your chest. The electrodes are attached to an electrocardiograph monitor (ECG) that records your heart's electrical activity. Hair on your chest may need to be shaved before the electrodes are applied to improve the contact between the skin and electrode.
- **Blood pressure monitor:** A blood pressure cuff will be placed on your arm to monitor your blood pressure often throughout and after the procedure.
- **Oximeter:** A small clip is placed on your finger. The device monitors the oxygen saturation level of your blood. You will be given oxygen during the procedure.

One or two intravenous (IV) lines will be inserted into a vein in your arm or hand so medicine and fluids can be delivered when needed.

You may be given medicine by mouth or in your IV to help you relax and feel as comfortable as possible during the procedure. You may also feel drowsy, but you will be awake enough to follow directions during the procedure.

You will be monitored at all times by trained medical staff before, during and after the procedure.

You will lie on a narrow exam table during the cardiac catheterization. Numbing medicine will be applied where the catheter will be inserted. This may be the groin or arm area. The catheter will be inserted and threaded toward your heart. Once the catheter is in place, contrast dye is injected to view the coronary arteries and/or pressures within your heart are measured.

You will be monitored by a nurse after the procedure. When the catheter is removed, pressure will be applied where the catheter was inserted to prevent bleeding.

You will be required to lie flat for 3 or 4 hours if the groin area is used to insert the catheter. If the arm area is used to insert the catheter you may be allowed to sit upright. Your nurse will give you specific instructions.

A little soreness and a Band-Aid are often the only traces of the procedure. Some people may have a bruise at the catheter site.

### How long will the procedure take?

Plan to be at National Jewish Health at least 6 hours, although sometimes people stay longer. The length of time for the cardiac cath and recovery can vary.

A typical cardiac catheterization procedure often takes 1 – 1 ½ hours. However, it may take longer if unusual anatomy of the cardiac arteries is seen. Extra time may be needed if there has been prior bypass surgery since extra pictures of the bypass vessels are needed. This can add another 10 to 20 minutes to the procedure time.

### What should you do after the procedure?

The medicine you receive during the cardiac cath may make you sleepy so plan to have someone drive you home when you are done. Do not drive or resume normal activities until 24 hours after the procedure.

A cath lab staff member from National Jewish Health will call you to see how you are doing about 24 hours after your procedure.

Following discharge, the mild soreness and slight bruising should resolve. However, some people may experience tenderness and mild pain that can last a few days. If there was bruising at the time of discharge, the area of discoloration may increase in size. This does not mean extra bleeding and may be due to the spread of blood pigments under the skin.

**Call 303-270-2670, (8am-5pm) or 303-388-4461, option # 4, then 0 (5pm-8am and on weekends) right away if you have:**

- Increased swelling at the site, especially if it pulsates,
- Increased bleeding at the site,
- Persistent fever,
- Increased pain at the site or
- Numbness or tingling or pain in the limb involved with the vascular access.

You may be instructed to drink plenty of fluids on the night of the procedure to assist in flushing the contrast material out of your body.

If you have any questions you may call Cardiology at 303-270-2670. Please notify us if you have to cancel the procedure. Call Cardiology at 303-270-2670.

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