Having a Heart Catheterization
and Possible Treatment

Royal Columbian Hospital

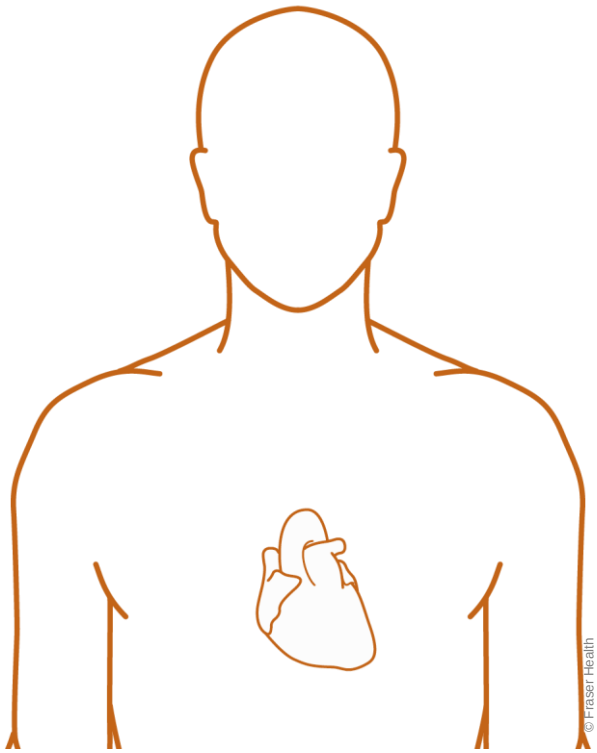


Table of Contents

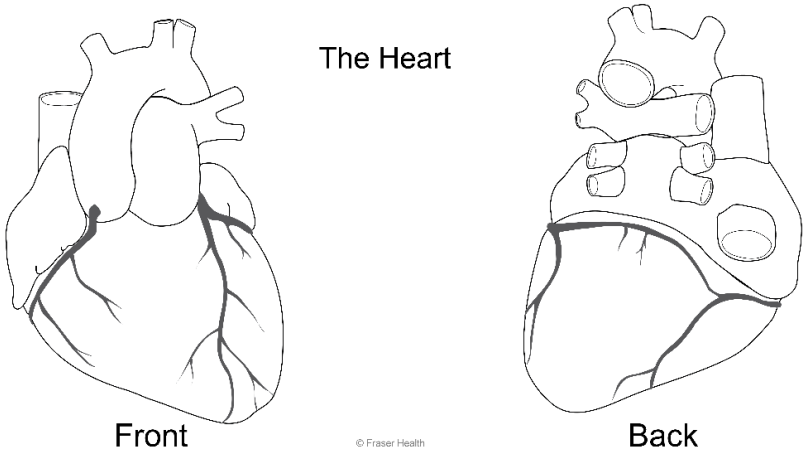
Just a Note

Throughout this booklet, you might come across medical words you have not heard before. See in the APPENDIX for how to say some of the main ones.

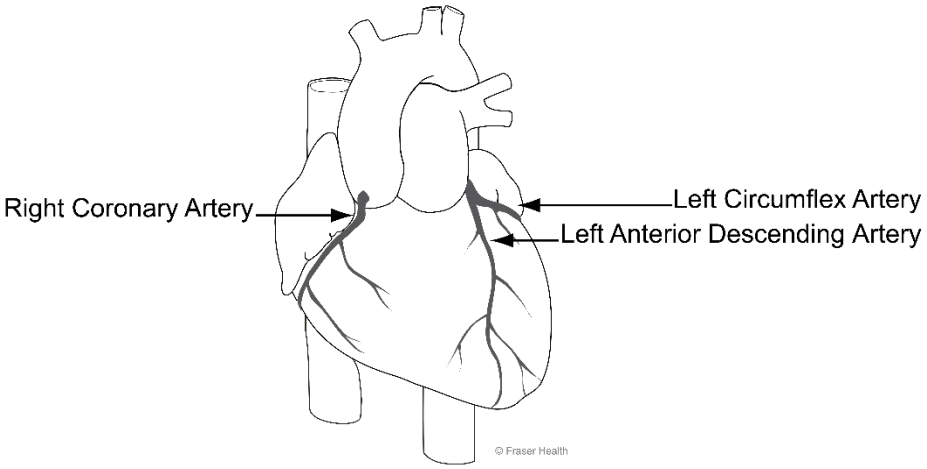
How your heart works

Your heart is a muscle about the size of a large fist. Its only job is to pump blood through your body. Blood carries the oxygen and nutrients that your body needs.

Because your heart is a muscle that is constantly working, it needs its own blood supply. The heart's arteries are called coronary arteries.



You have three main arteries that supply the heart: one for the right side of your heart and two for the left. Each branches off into smaller arteries, spreading out over and into the heart muscle.

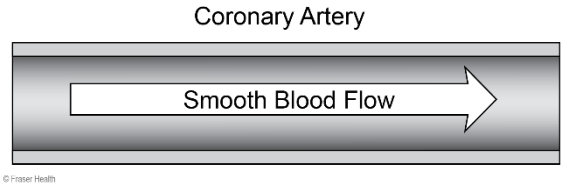


Why you are having a heart catheterization

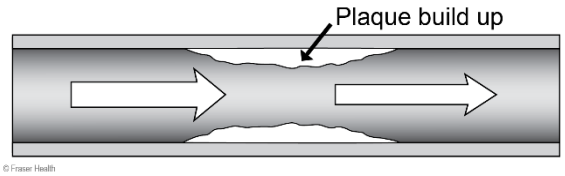
A heart catheterization is a medical procedure that helps doctors to see what treatment you might need. It is most often done to get more information about your heart and coronary arteries. It can also be done to treat the heart condition or find out if you need heart surgery.

The doctor suspects you might have a problem with the blood flow in your coronary arteries. This is called coronary artery disease.

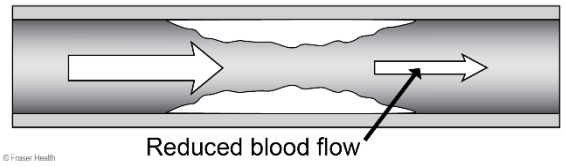
Coronary artery disease is when artery walls become narrow or blocked.



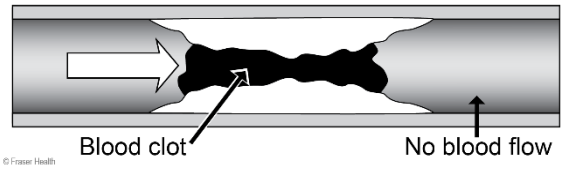
This is usually from a build-up of fat, cholesterol, and other materials. Together, they form plaques.



Over time, the plaques become larger, further narrowing the artery.



The blood flow can become so slow that blood clots form, blocking the artery completely.



Your heart tells you when it is not getting the oxygen it needs.

Commons signs can include:

- Chest pain
- Chest pressure or heaviness
- Arm pain or heaviness
- Tightness in the throat, neck and/or jaw
- Shortness of breath
- Feeling sick to the stomach or feeling of indigestion
- Sweating

You might have experienced other signs than these. Everyone is different.

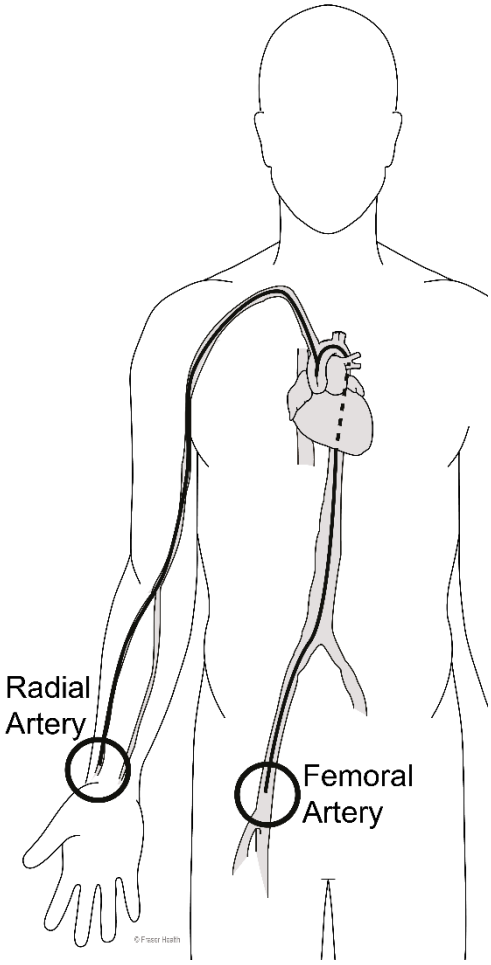
What is a heart catheterization?

This is a procedure where a heart specialist (heart doctor or cardiologist) injects a special dye into your arteries.

This doctor uses an artery in the wrist (radial artery) or groin (femoral artery) to guide a tiny flexible catheter up into the heart.

Dye is injected through the catheter.

An x-ray camera takes movies as the dye flows through your heart and coronary arteries.



The procedure can show:

- Any narrowing or blockages in coronary arteries
- How the heart valves are working
- How well the heart is pumping blood to the rest of the body

You might also hear heart catheterization called:

- Heart ‘cath’
- Cardiac catheterization
- Coronary angiogram or ‘angio’
- Heart or cardiac dye procedure
- Angiography

What can you expect at the Hospital?

When you come to the hospital, please bring your prescription pill bottles from home. Also bring a list of the medicines you normally take at home such as vitamins, herbal supplements, and other medicines you buy at the drugstore.

Expect to spend about 6 to 8 hours at the hospital on the day of your heart catheterization procedure. The time we give you is when you need to be at the hospital. We cannot give you an exact time for your procedure. This is because sometimes our schedule is interrupted for emergencies.

You check in at Patient Registration (Green Zone) on the first floor of Royal Columbian Hospital (see the map in the APPENDIX).

From there, you are directed to the Cardiac Day Care area where we prepare you for the procedure.

> Some people might have their procedure at Vancouver General Hospital or St. Paul's Hospital. Maps for those hospitals are also included in the APPENDIX.

Before the procedure

- You meet the heart specialist (cardiologist) who reviews with you how the procedure is done. The heart specialist checks your health record, including your electrocardiogram (heart tracing or ECG). You might have these procedures done again along with other procedures such as blood tests.
- We ask you about your health history, medical conditions, medications, and allergies.

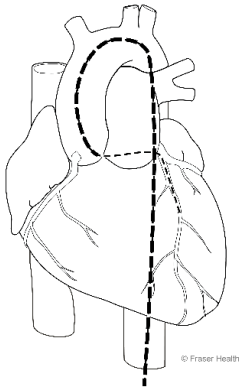
  Tell us if you are allergic to shellfish, iodine, or x-ray dye. For safety reasons, we ask you about allergies a number of times.
- We start an intravenous (I.V.) in one of your arms.
- Because you are awake during the procedure, we might give you medicine to help you relax.
- Just before you go for the procedure, we ask you to empty your bladder (go pee).

In the Cardiac Catheterization Lab

- You lie on an x-ray table.
- Everyone wears operating room clothes. We prepare the equipment around you and connect you to a heart monitor.
- We clean the skin of the wrist or groin with antiseptic. **Do not touch these areas once cleaned.**
- We place sterile (germ-free) sheets over you.

- The heart specialist injects numbing medicine to 'freeze' the area. This will sting for a few moments until the area gets numb.

  The heart specialist decides whether to use the:
  - femoral artery in your groin
  - radial artery in your wrist



Example using the femoral artery

- Once frozen, the heart specialist makes a small cut in the skin (called the puncture site).
- The tiny, flexible, hollow tube (catheter) is inserted through the puncture site into the artery.
- Guide wires and smaller catheters are inserted through the main catheter.

  Using live images on the x-ray screen, they are guided into your coronary arteries.
- Small amounts of x-ray dye are injected into each coronary artery. The dye makes your arteries easier to see.

  As the dye is injected, you might feel a warm sensation through the middle part of your body. This is normal.
- We might ask you to hold your breath a few times and/or ask you to give a deep cough.
- The procedure takes about 45 minutes. While it is normal to feel some discomfort during the procedure, tell them right away if you feel unwell, have any discomfort, or have any chest pain. They will treat it right away.
- Depending on what the heart specialist sees, you may have another procedure (see '**What's next? Possible Treatments'**)

After the procedure

- All the tubes are removed.
- We put pressure over the puncture site to prevent or control any bleeding. We might use a pressure device to do this.
- You return to Cardiac Day Care where nurses continue to monitor your heart beat, blood pressure, pulse, and puncture site.

  If your femoral artery is used, we check your pulses and blood flow in your feet.

  If your radial artery is used, we check your pulses and blood flow to your arm and hand.
- You rest in bed or in a chair for at least 2 hours. We will tell you how to safely move in the bed and what position you need to stay in to prevent any bleeding or problems around the puncture site.

  You will need to keep your leg or arm straight for a number of hours.

  Always ask your nurse for help if you want to change your position in the bed or need to go to the bathroom.

- **Tell your nurse right away if** you notice:
  - discomfort or pain in your chest, jaw, or arms
  - shortness of breath
  - back pain
  - dizzy or lightheaded
  - warmth, wetness, pressure or sharp pain around the bandage of the puncture site
  - coldness, numbness, or pain in your leg, arm, or hand

- We tell you when you can drink and eat. Do not drink or eat until then.

  Once we tell you that you can drink, we ask you to drink lots of clear fluids. We do leave your intravenous (I.V.) in place and give I.V. fluids as well. These fluids help clear the x-ray dye out of your body through your kidneys.

- The heart specialist reviews the results of your procedure with you and talks with you about what treatments, if any, are best for you. We give you a heart diagram with the results to take home.

- You stay in the Cardiac Day Care for 2 to 4 hours. We let your family or friend know what time to pick you up.

Most people leave the hospital the same day once they have recovered from the procedure. Sometimes, we keep people in the hospital overnight in the heart unit but this is not the usual.

What next? Possible treatments

Depending on what the procedure shows, you may or may not need treatment.

If your coronary arteries are normal, you might not need any treatment at this time.

If your coronary arteries show signs of plaque or blockages, there are 4 possible treatments.

1. Medication to control your symptoms
2. Opening of blocked arteries
3. Heart surgery
4. A combination of these treatments

1. Medications to control your symptoms

The heart specialist might add, stop, or adjust medications as a way of treating your heart condition.

For **'Common Heart Medications'**, see page 19 in the Appendix of this document.

Take time to learn what medications you need to take, how to take them, and why it is important that you take them.

2. Opening of blocked arteries

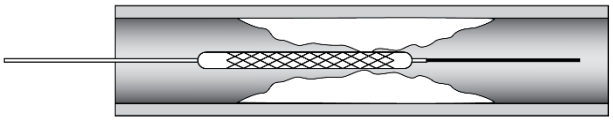
The procedure is called '**percutaneous coronary intervention**'. 'Percutaneous' means through the skin. Narrowed or blocked coronary arteries can be opened using this treatment. No surgery is needed.

If we find narrowed or blocked arteries during your cardiac catheterization, this treatment could be done right then or scheduled for another day.

How it is done

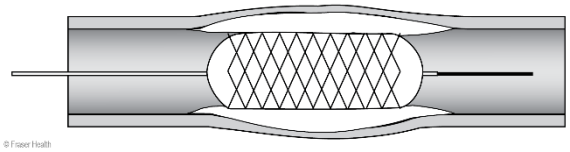
Like the cardiac catheterization, we use an artery in the groin, arm, or wrist (if during your cardiac catheterization, we use the same artery).

A small catheter is guided up into the coronary arteries.

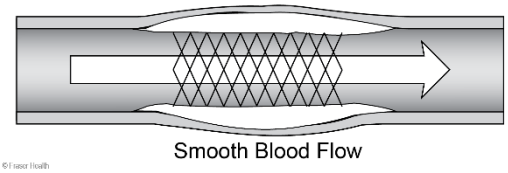


On the end of the catheter, there is a tiny deflated balloon and a collapsed wire mesh tube called a stent.

Once at the narrowed or blocked artery, the balloon is inflated for a few minutes. This compresses the plaque against the wall of the artery, making more room for blood to flow.



The stent stays expanded in the artery after the balloon is deflated and keeps the artery open.



Stents are usually made of stainless steel. Some are coated with medications that are slowly released over time to help keep the artery from blocking again. Your heart specialist inserts the type of stent that is best for you.

Stented arteries can narrow or block again (called stenosis or re-stenosis). You will need to take medication to help prevent this from happening (called antiplatelet medication – see **'Common Heart Medications'** on page 19 in the Appendix).

3. Heart surgery

The heart specialist might tell you that the best way to treat your coronary artery disease is to do heart surgery. This type of heart surgery is called '**Coronary Artery Bypass Graft**' surgery. You might hear us call it a 'CABG', which sounds like 'cabbage'.

Open heart surgery is not done at the same time as the heart catheterization. Usually, you have an appointment to see the heart surgeon in their office. The heart surgeon's office gives you a date and time for your heart surgery. If the heart specialist feels the surgery is urgent, you will be kept in the hospital while you wait for the surgery.

The surgery involves rerouting or bypassing the clogged coronary arteries. The heart surgeon takes a healthy blood vessel from another part of your body (such as from your leg) and uses it to make a bypass around the blocked coronary artery.

The surgery is either done by cutting down the middle of your breast bone (sternum) or by cutting between your ribs to get to the heart.

You would be in the hospital for 4 to 6 days.

Caring for yourself at home

Puncture site care

A bandage covers your puncture site when you leave the Cardiac Day Care. Leave it in place for 24 hours after the procedure.

You might have a small lump at the puncture site. This is normal. The lump will slowly get smaller and should go away over the next 2 to 8 weeks.

Gently clean around the puncture site each day with soap and water. Gently pat the area dry.

Keep the area clean and dry, except when showering.

No lotions, creams, powders, or ointments on the puncture site.

Pain

You will have some swelling and bruising around the puncture site. This goes away over the next few weeks.

You might have some tenderness or mild pain at the puncture site for a few days. Before you leave the hospital, we give you instructions for how to manage this pain.

You might have some mild chest discomfort. It is not unusual and can be from the procedure. It should go away within 1 or 2 hours. Take your heart medications as directed.

Bathing

You can take a shower 24 hours after the procedure.

You can take the bandage off before your shower or take it off while in the shower. Moisture helps to loosen the tape.

For the first 5 to 7 days:

- × **No** baths
- × **No** hot tubs or jet tubs
- × **No** swimming

Activity

Rest and take it easy for the first few days after the procedure. Expect to feel tired and weak the first day.

Unless the heart specialist has told you not to, go for easy walks. If you need to climb stairs, go up and down more slowly that you would normally. Take your time. You should be able to return to your normal activity in a couple of days.

For the first 5 days:

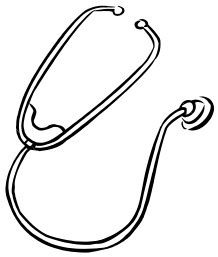
- × **No** heavy lifting (nothing over 10 pounds or 4.5 kilograms)
- × **No** strenuous activity. This includes most sports such as jogging, golfing, and cycling. Check with your doctor before returning to strenuous activity.

If you had a…	***No driving** or **operating machinery** for
☐ cardiac catheterization	…at least 24 hours after the procedure
☐ stent(s) put in place	…at least 48 hours after the procedure
☐ heart attack	…as long as your heart specialist tells you

* If you are a commercial driver, these times are different. Ask your heart specialist or family doctor when you can return to driving.

When you return to work depends on the type of job you have (such as physically demanding). Ask your heart specialist or family doctor.

When to get help



Call your family doctor or heart specialist **right away** if you notice any of the following:

- increased bruising or swelling around the puncture site – signs of blood leaking from the puncture site
- pain, redness, swelling, or drainage from the puncture site, or a fever over 38.5°C (101.3°F) – signs of infection
- coldness, numbness, or 'blue' skin of the foot or hand on the side of the puncture site – signs of blocked blood flow

If you notice any **bleeding from the puncture site**:

- Lie down flat.
- Cover the puncture site with a clean cloth.
- Press down firmly over the puncture site for 5 to 10 minutes.
- If the bleeding has not stopped after 10 minutes, call **9-1-1.**
- If the bleeding stops, remove the wet bandage and put on a clean, dry bandage.

Call 9-1-1 or ask someone take you to the nearest Emergency Department right away if you have any of the following:

- chest pressure or pain that does not go away with rest and heart medication
- pain in one or both arms, the back, or jaw that does not go away with rest and heart medication
- shortness of breath with or without chest discomfort

Never ignore the signs such as chest pressure, chest pain, or any other signs similar to what first brought you to the hospital.

Appendix

Checklist for when you leave the Hospital

	Yes	No
I have a plan for how I will get home from the Heart Centre Hospital.	☐	☐
I have a copy of my heart diagram.	☐	☐
I have a copy of the instructions for how to look after myself and my puncture site.	☐	☐
I know what medications I am to take, how to take them, and why it is important for me to take them.	☐	☐
If given any, I have a copy of my prescriptions.	☐	☐
I know I need to make an appointment to see my family doctor within the next week.	☐	☐
I know I need to make an appointment to see a heart specialist.	☐	☐
I have been registered for Cardiac Rehabilitation Program.	☐	☐
I have had all my questions answered before I leave the hospital.	☐	☐

If ‘No’, I will ask my nurse or doctor these questions before I leave.

Appendix

Common Heart Medications

Drug Name	Uses
ASA (Aspirin®) **enteric coated**	**Antiplatelet:** reduces chances of a heart attack, prevents clots in stents and blood vessels **Do not stop** taking without asking your heart specialist or family doctor.
Clopidogrel (Plavix®) **Ticegrelor** (Brilinta®) **Apixaban** (Eliquis®)	**Antiplatelet:** reduces chances of a heart attack, prevents clots in stents and blood vessels **Do not stop** taking without asking your heart specialist or family doctor.
Nitroglycerin	**Vasodilator:** treats heart pain (angina) by opening or dilating coronary arteries
Ramipril (Altace®) **Perindopril** (Coversyl®) **Trandolapril** (Mavik®)	**Ace Inhibitor:** reduces chances of a heart attack, improves heart pumping function, protects the kidneys, decreases blood pressure
Valsartan (Diovan®) **Candesartan** (Atacand®) **Telmisartan** (Micardis®) **Losartan** (Cozaar®)	**ARB:** reduces chances of a heart attack, improves heart pumping function, protects the kidneys, decreases blood pressure
Metoprolol (Lopressor®) **Bisoprolol** (Monocor®) **Carvedilol** (Coreg®)	**Beta Blocker:** reduces chances of a heart attack, improves heart pumping function, decreases blood pressure decreases, slows heartbeat, prevents angina
Atorvastatin (Lipitor®) **Simvastatin** (Zocor®) **Rosuvastatin** (Crestor®)	**Statin:** reduces cholesterol level, reduces chances of a heart attack
Furosemide (Lasix®)	**Diuretic** (water pill): Removes extra fluid from the body, decreases swelling in feet and legs, and reduces fluid in lungs
Amlodipine (Norvasc®)	**Calcium Channel Blocker:** decreases blood pressure, slows heartbeat, prevents angina

Appendix

What to bring with you

- ☐ BC Services Card **or**
  - BC CareCard and photo identification such as a driver's license
- ☐ Health Benefits card(s) such as, Extended Health, Veterans Affairs, Band Card
- ☐ Personal medications in their original packaging
- ☐ A list of all the medicines taken at home
- ☐ Glasses or contact lenses and case
- ☐ Hearing aid(s) and spare batteries
- ☐ Dentures and case
- ☐ Mobility aids such as cane or walker
- ☐ _____
- ☐ _____

Label bag and cases with your name

Do not bring other valuables, jewelry, cell phone, or cash.

Appendix

Royal Columbian Hospital
Map Level 1

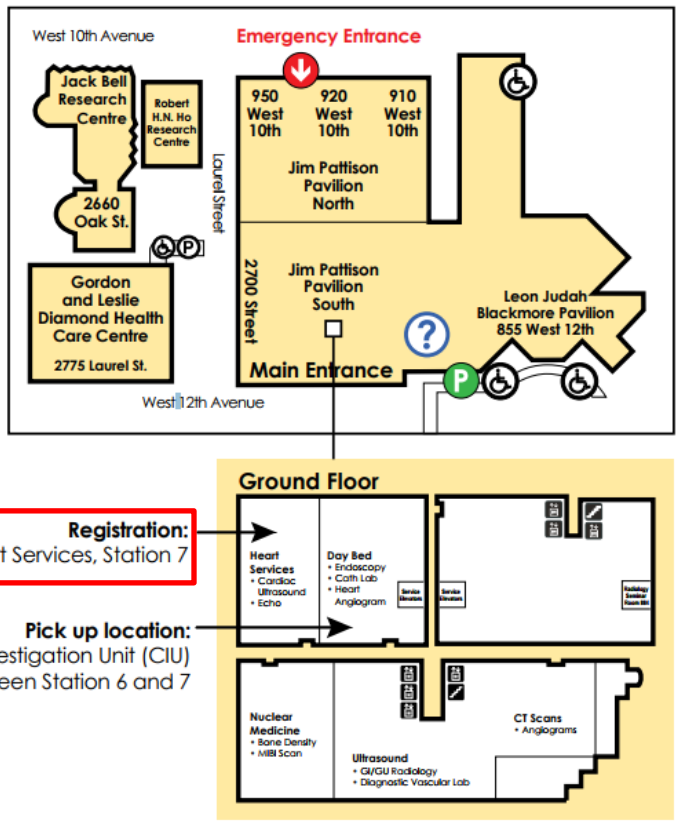
Patient Registration is just off the main lobby (located in the **Health Care Centre** or **Green Zone**).

Appendix

Vancouver General Hospital

Register at Heart Services on the Ground floor of the hospital.

Map

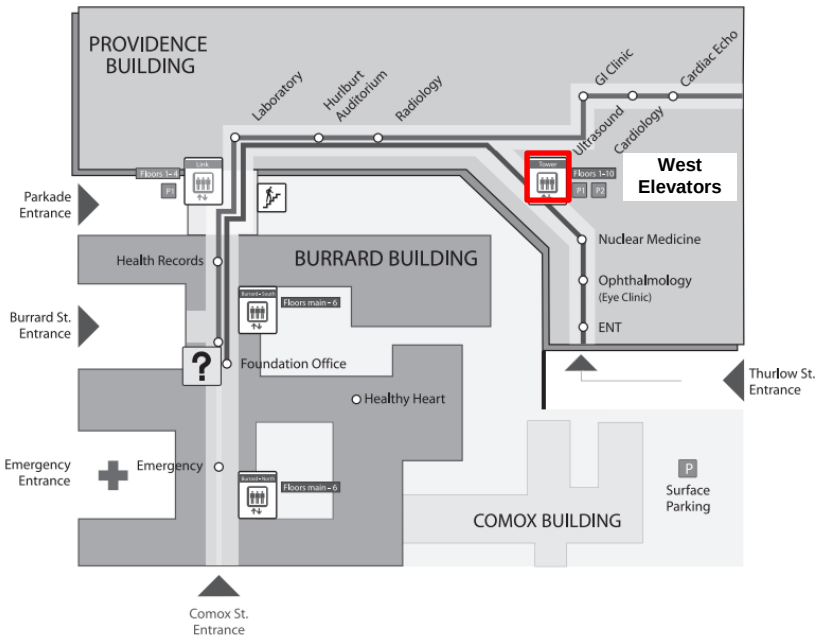


St. Paul's Hospital

Follow the blue line on the main floor to the West Elevator (in the Providence Building) or take the elevators straight from the parkade.

Take the West Elevators to the 5th floor (5C)

Report to the Reception at the Cardiac Short Stay and Outpatient Clinic.



Appendix

Say what? Medical words and how to say them

Medical word	Sounds like…
angina	ann-ji-nah
angiogram	ann-jee-oh-gram
angiography	ann-jee-aw-graf-ee
antiplatelet	ann-tee-plate-let
cardiac	kar-dee-ak
cardiologist	kar-dee-all-oh-jist
catheterization	kath-eh-ter-eye-zay-shun
circumflex	sir-kum-flex
coronary	kor-on-air-ee
diuretic	di-yur-et-ick
femoral	fem-or-al
oxygen	ox-eh-jin
percutaneous	per-kew-tay-nee-us
plaques	plaks
radial	ray-dee-al
stenosis	sten-oh-sis
vasodilator	vay-zo-di-late-or

Hear us use any other words you are not familiar with?
Just ask us to explain.

My Notes

Adapted with permission from Cardiac Services, Northern Health Authority

www.fraserhealth.ca

This information does not replace the advice given to you by your healthcare provider.

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To order: patienteduc.fraserhealth.ca