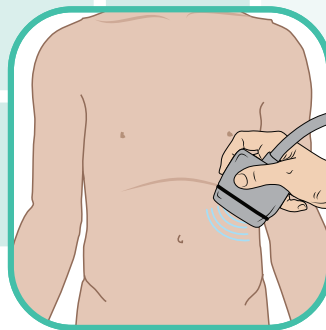
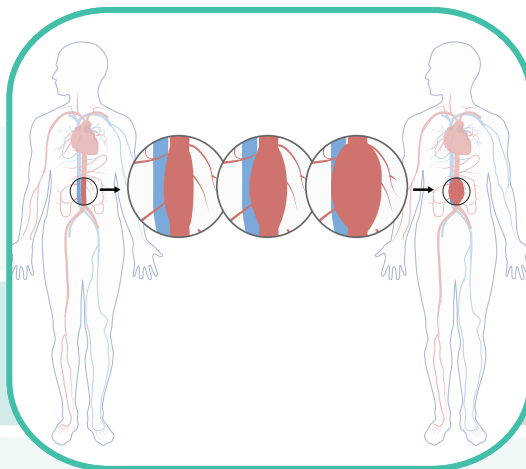


A Guide to

Endovascular Aortic Repair (EVAR)



This booklet was developed by the MUHC Clinical Care Pathway Working Group, Brigitte Castonguay, nurse clinician, Dr. Oren Steinmetz and the vascular nurses at the Royal Victoria Hospital.

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Important

Information provided by this booklet is for educational purposes. It is not intended to replace the advice or instruction of a professional healthcare practitioner, or to substitute medical care. Contact a qualified healthcare practitioner if you have any questions concerning your care.



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Map of Royal Victoria Hospital at the Glen site

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What is a care pathway?

When you are admitted to the hospital for Endovascular Aortic Aneurysm Repair (EVAR), you will be part of a fast recovery program called a Clinical Care Pathway. The goal of this program is to help you recover quickly and safely. Your health care team worked together to create this pathway.

This booklet will:

- Help you understand and prepare for your surgery
- Explain how you can play an active part in your recovery

Research shows that you will recover faster if you do the things explained in this booklet. There are instructions about your diet, physical activity, and controlling your pain. These things will help you to feel better faster and go home sooner.

Please bring this booklet with you on the day of surgery. Use it as a guide during your hospital stay. Hospital staff may refer to it as you recover, and review it with you when you go home.

Having surgery can be stressful for patients and their families. The good news is that you are not alone. We will support you each step of the way. Please ask us if you have questions about your care.

Your MUHC surgery team

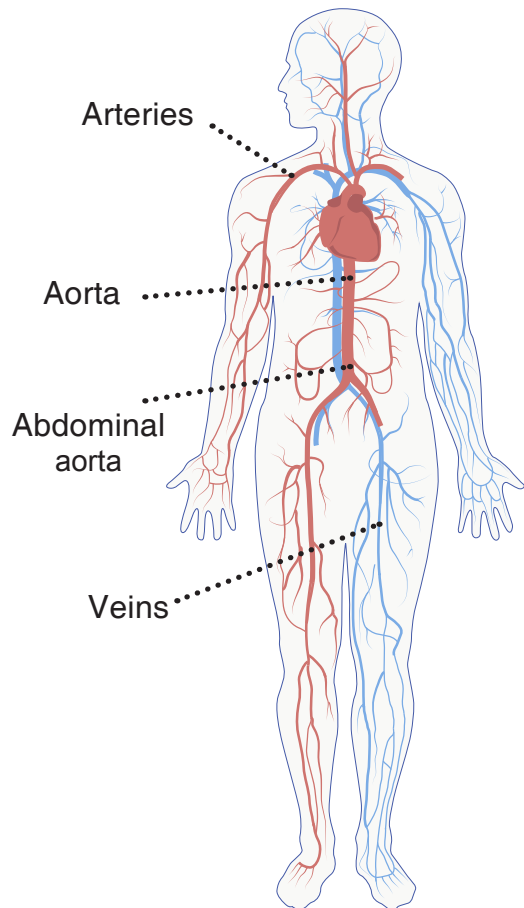
If you do not speak French or English, please bring someone to translate for you.

What is the circulatory system?

The circulatory system is responsible for carrying blood throughout your body.

The circulatory system consists of a system of arteries, veins and capillaries:

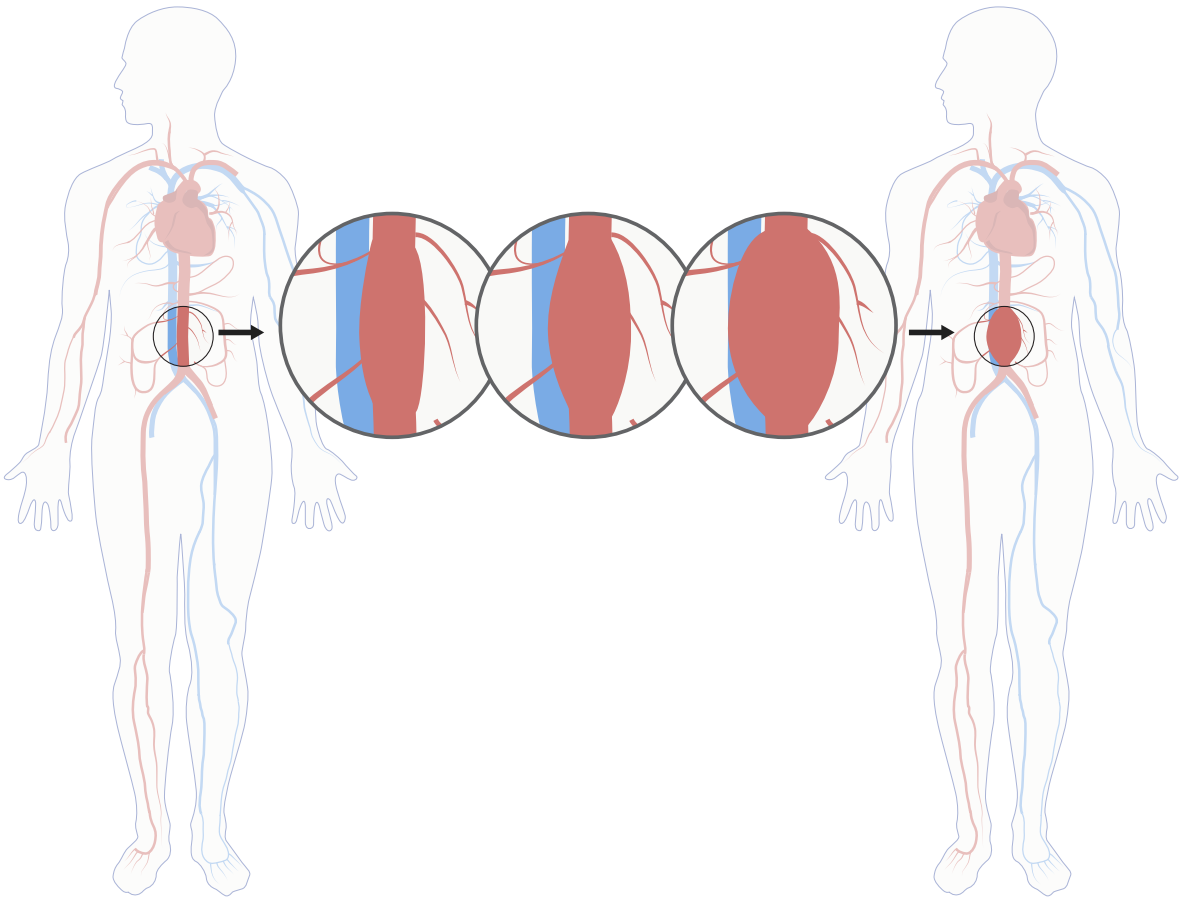
- The **arteries** carry blood rich in oxygen from your heart to all parts of your body. There are many arteries, each supplying a specific part of your body.
- The **aorta** is the main artery of the body leading away from the heart. The **abdominal aorta** is a large artery that lies in the abdomen and supplies blood to the organs in the abdomen, legs and feet
- **Veins** return blood from all parts of the body to the lungs so that blood can be loaded with oxygen.
- **Capillaries** are tiny blood vessels that connect the arteries and veins.



What is an aneurysm?

An aneurysm is a bulge in a blood vessel, much like an inflated balloon.

An aortic aneurysm occurs when the wall of the aorta becomes damaged and weakened. The aneurysm usually occurs in the belly area below the kidneys. This is called an abdominal aortic aneurysm. However, it may occur in the chest area. This is called a thoracic aortic aneurysm.



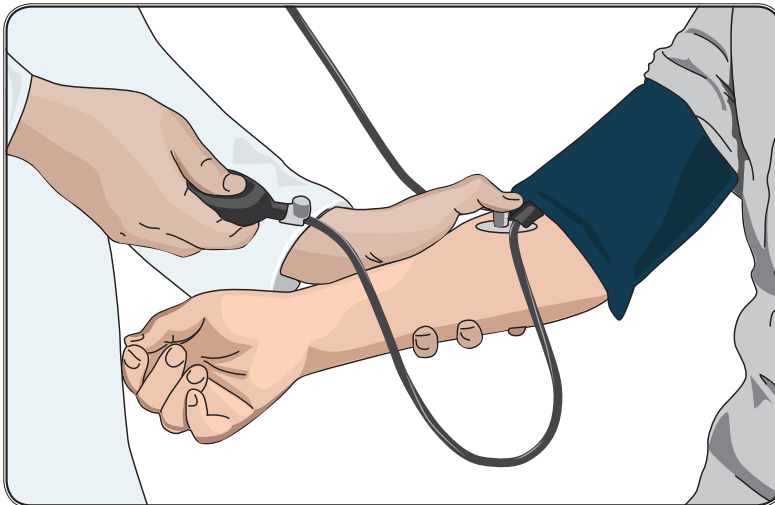
What is an aneurysm?

The main cause of aneurysms is atherosclerosis (hardening of the arteries). This usually gets worse with age, although it may happen at any age.

We cannot always predict who will develop atherosclerosis. However, there are certain factors that increase your risk.

Risk factors that can be modified or controlled:

- Smoking
- High blood pressure
- High levels of bad cholesterol
- Uncontrolled diabetes
- Being overweight
- Stress



Risk factors that cannot be modified:

- Age
- Family history of vascular disease

What are the symptoms?

Most people do not have any symptoms, even if their aneurysm is large. However, an aortic aneurysm that is growing quickly in the belly may cause pressure or pain in your back or side.

An aneurysm may continue to grow larger and there is a chance it may burst. Your doctor has recommended surgery to repair your aneurysm before it bursts.

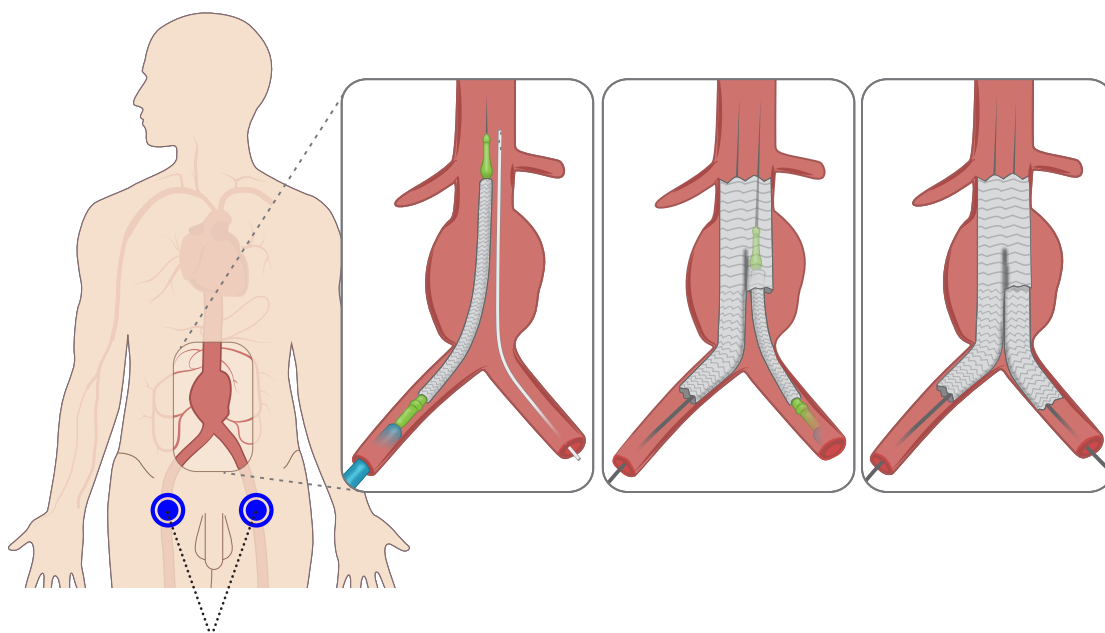


Your doctor will usually recommend surgery if:

- Your aneurysm is bigger than 5.5 cm
- Your aneurysm is growing quickly
- You are having symptoms

What is Endovascular Aortic Repair (EVAR)?

Endovascular aortic repair (EVAR) is a way of repairing your aneurysm from inside your artery. Your surgeon will work through a small opening in an artery in one or both groins. He/she will insert a synthetic (man-made) graft through the opening and use x-rays to place the graft in the right location inside your aneurysm. The surgery can be done with general anesthesia (going to sleep) or regional anesthesia, either spinal or epidural (“freezing” medicine placed in your back).



You may have an incision or puncture site in one or both groins.

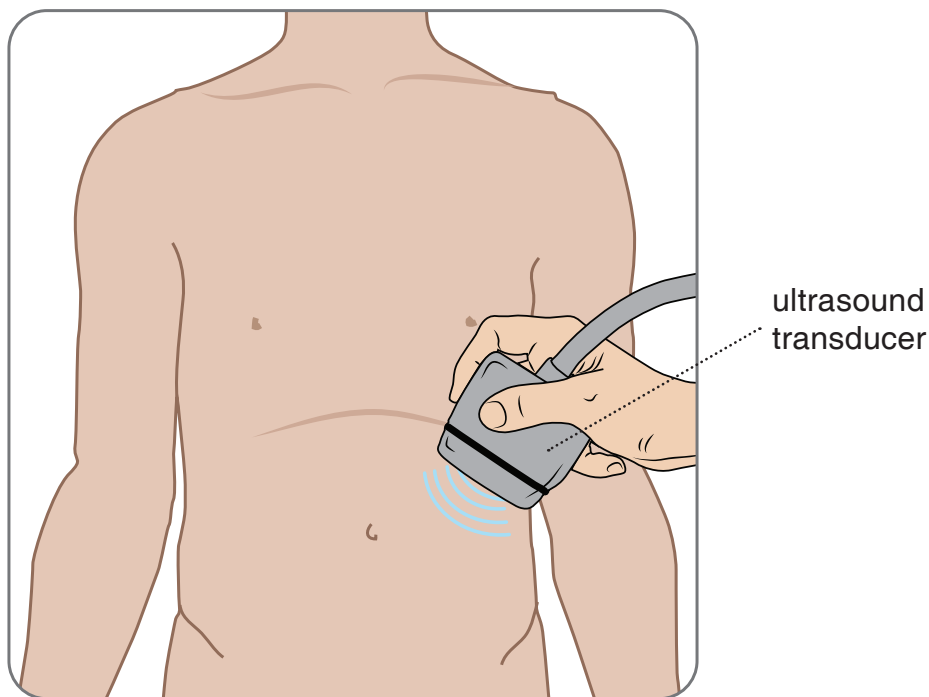
It is important to tell other doctors, dentists and health care providers that you have a graft in place. You may need to take antibiotics before having surgery or dental procedures, to prevent infection of the graft. You may want to buy an alert bracelet to show that you have an “Abdominal Aortic Stent Graft” in place.

Testing

Aneurysms may be found during a routine physical exam or when a doctor examines you. There are a variety of tests used to evaluate an aneurysm.

Ultrasound

During this test, a technologist will apply gel to your skin and guide a probe over your abdomen. This test provides your surgeon with an image of your aneurysm to determine its size. There is no risk to you from this test.



Testing

CT (computed tomography)

CT (computed tomography) is a test that uses special x-rays to view part of your body. Dye may be injected into your vein to make it easier to see your blood vessels. Tell your doctor if you are allergic to iodine.

Before having a CT, you need a blood test to check how well your kidneys are working.

If you are diabetic and take Glucophage® you should not take it on the day of the CT scan. Your doctor will tell you when to stop and restart this medication.



Preparing for your surgery

Be active

Exercise will help your body to be as fit as possible and keep your weight under control. If you are already active, keep up the good work. If you are not, start adding activity into your day. Exercise does not need to be strenuous to make a difference. A 15-minute walk is better than no exercise at all.



Stop smoking

If you smoke, try to stop before your surgery to reduce your risk for lung problems. Your doctor can help you stop smoking by prescribing medication. See page 34 to learn more.



Restrict alcohol

Do not drink alcohol for 24 hours before your surgery. Alcohol can interact with the medicine you will receive in the hospital. Please tell us if you need help decreasing your alcohol use before surgery.

Preparing for your surgery

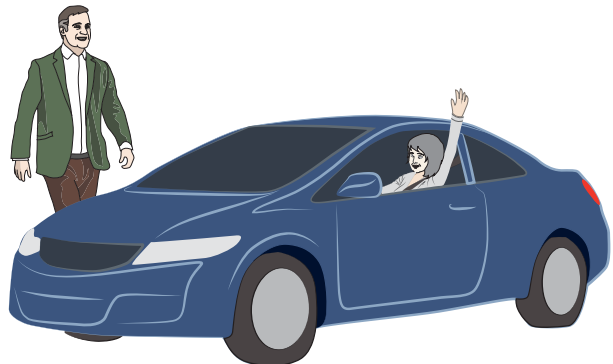
Plan ahead

You may need help with meals, laundry, bathing or cleaning, when you go home from the hospital. Stock your fridge and freezer with food that is easy to reheat. Make plans with your family and friends so you will have the help you need.



Arrange transportation

You will come to the hospital on the morning of your surgery. Some patients will go home the same day. If you go home on the same day as your surgery, you need to have a responsible adult stay with you for the first 24 hours. You may stay overnight in the hospital and go home the following day. Your surgeon will talk with you about what to expect. Remember to arrange a ride, since you will not be able to drive.



Pre-operative Clinic visit

When you visit the Pre-op Clinic, you will:

- Have blood tests
- Have an ECG (electrocardiogram), if you are over the age of 50
- Meet with a nurse who will explain how to get ready for surgery and what to expect while you are in the hospital
- Meet with a doctor who will review your medication and ask you questions about your health. If you have medical problems, you may be referred to another doctor (a specialist) before surgery.

You may need to stop taking some medicines and herbal products before surgery. The Pre-op Clinic doctor will explain which medicines you should stop and which ones you should keep taking.



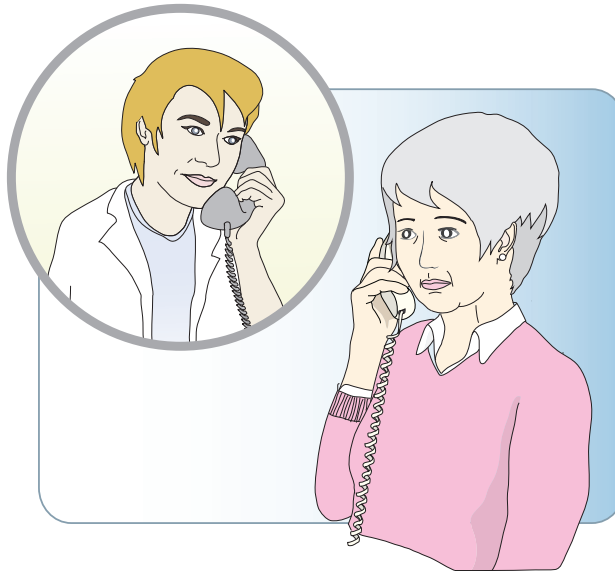
If you have any questions, you may contact the Pre-op Clinic nurses at (514) 934-1934, extension 34916, Monday to Friday from 7:30 am to 3:30 pm.

RVH Preop Clinic: Located near the cafeteria at D S1.2428 (Block D, level S1).

Phone call from Admitting

The day before your surgery, the Admitting Department will call you to tell you when to come to the hospital. They will ask you to arrive 2 hours before your planned surgery time. **Exception:** If your surgery is planned for 7:30 am, they will ask you to arrive at 6:30 am.

The time of surgery is not exact. It may happen earlier or later than planned.



Date of surgery:

Time of arrival at the hospital:

Room: **Registration, Surgery and Intervention Centre**, Block C, level 3 (C 03.7055). Enter the building through the Royal Victoria Hospital main entrance. Take the first bank of elevators (North) and go to the 3rd floor.



If you do not receive a call from Admitting by 2:00 pm, you may call them at (514) 934-1934, ext. 31557.

Cancelling your surgery

If you get sick, please call your surgeon's office as soon as possible. If you cannot reach your surgeon, call the Admitting Department:

(514) 934-1934 ext. 31557

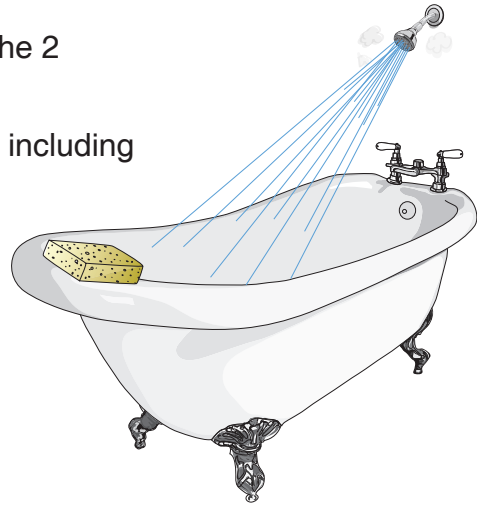


The Royal Victoria Hospital is a Transplant and Cardiac Centre. This means your surgery may be delayed or cancelled because of an emergency. If this happens, your surgeon will rebook your surgery as soon as possible.

Washing

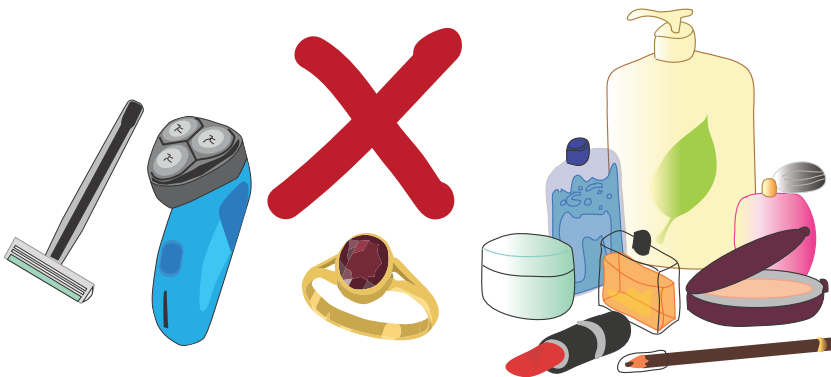
The night before surgery:

1. Use regular soap and shampoo for your face and hair
2. Take a shower or bath by using 1 of the 2 bacterial sponges you were given
3. Wash your body from the neck down, including your belly button
4. Wear clean clothes to bed



The morning of surgery:

1. Take a shower or bath using the 2nd sponge
2. Do not wear lotion, perfume, makeup, nail polish, jewelry or piercings
3. Do not shave the area where the operation will be done
4. Put on clean clothes



Diet

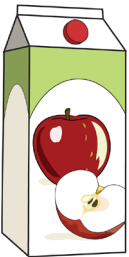
The nurse in the Pre-op Clinic will explain what to eat and drink before your surgery to give you the energy and nutrients you need to recover quickly.

A small number of people should not drink at all on the day of surgery. Your nurse will tell you if you need to stop drinking at midnight. Most people should drink clear liquids until 2 hours before surgery.

The morning of surgery:

- Do not eat any food
- Drink a carbohydrate drink (clear juice) 2 hours before surgery (see below)
- Do not have any dairy products or juice with pulp
- Stop drinking 2 hours before your surgery. This is usually the same time as you are asked to arrive at the hospital. **Exception:** If you are asked to arrive at 6:30 am, stop drinking at 5:30 am

Carbohydrate drinks: Choose only 1



Apple juice
425 ml



Orange juice
without pulp
500 ml



Commercial
iced tea
550 ml



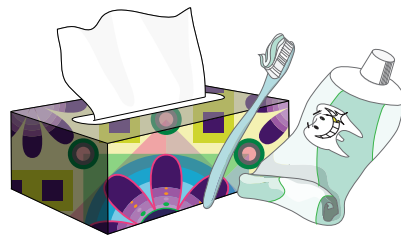
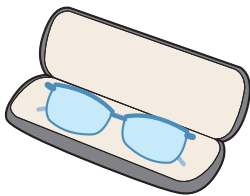
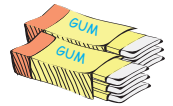
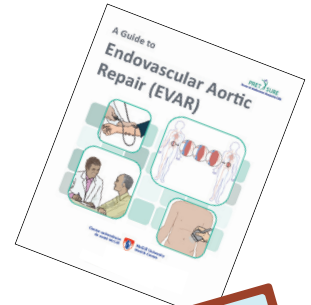
Cranberry
cocktail
325 ml



Lemonade
without pulp
500 ml

What to bring to the hospital

- This booklet
- Medicare card
- Private insurance information, if you have any
- Your medications in their original containers
- 1 package of your favourite gum
- Bathrobe, slippers, loose comfortable clothing
- Toothbrush, toothpaste, mouthwash, comb, deodorant, soap, shaving supplies, tissues
- Glasses, contact lenses, hearing aids, dentures, and their storage containers labeled with your name
- Cane, crutches, walker, labeled with your name (if you have any)



Please do not bring anything of value, including credit cards and jewelry. The hospital is not responsible for lost or stolen items.

At the hospital

Admitting area

Report to Registration, Surgery and Intervention Centre, Block C, level 3 (C 03. 7055), at the time you were given.

Enter the building through the Royal Victoria Hospital main entrance. Take the first bank of elevators on your right or left (North) and go to the 3rd floor.

Pre-operative area

The nurse will ask you to change into a hospital gown and will complete a preoperative checklist with you.



Operating room

An orderly will take you to the operating room. You will meet your anesthetist (the doctor who will put you to sleep) and other members of your surgical team. You will be asleep and pain-free during your surgery.

At the hospital

Waiting room

Family or friends may wait for you in the registration area in Block C, level 3. It will be several hours before they will be able to visit you in your room. There are no visitors in the Post-Anesthesia Care Unit (PACU) unless you are staying there overnight.

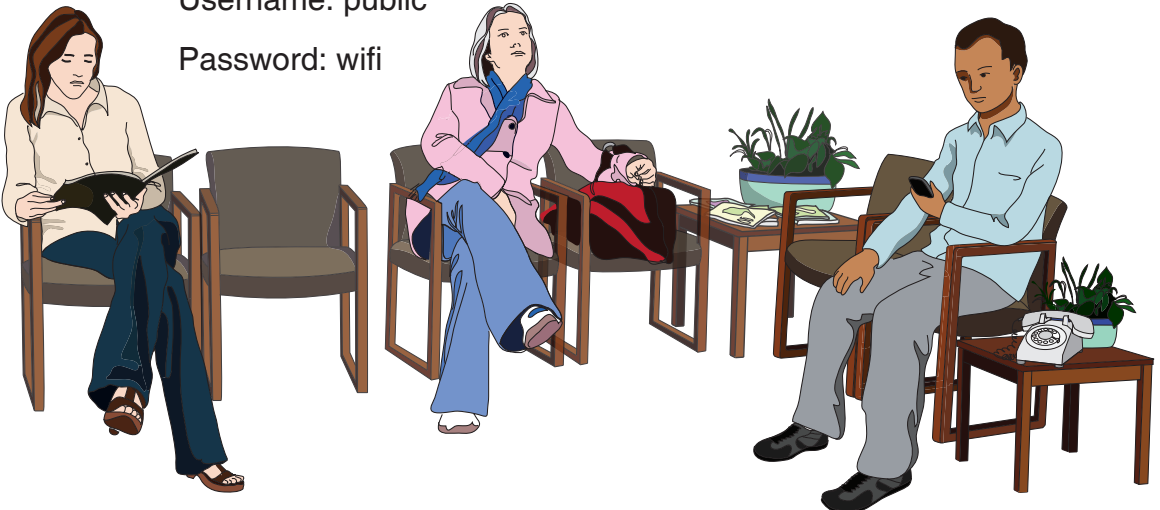
Other resources

- Cafeteria – Located off the Adult Atrium on the level S1
- Vending machines – Block C, level S1
- Stores – Galleria, Rez-de-chausée level & Atrium, level S1
- Bank machines – Blocks C & D, Rez-de-chausée level
- Adult Resource Centre (library) – Block B, Rez-de-chausée level
- Prayer and meditation room – Between blocks C & D, level 2, Room 1178
- Internet access

Network: CUSM-MUHC-PUBLIC

Username: public

Password: wifi

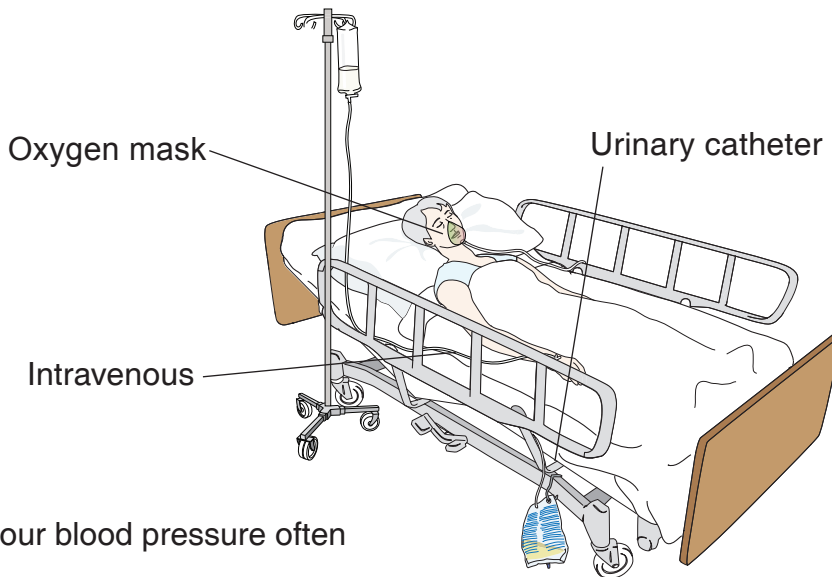


In the Post Anesthesia Care Unit (PACU)

After your surgery, you will wake up in the Post-Anesthesia Care Unit. This is a quiet area where patients are watched closely. You will be there for several hours.

You will have:

- A mask, giving you oxygen
- An intravenous (IV), giving you fluids
- A urinary catheter (tube), draining urine out of your bladder. This will be removed before you leave the PACU.
- A pressure bandage on your groin(s) that will stay on for 4 hours



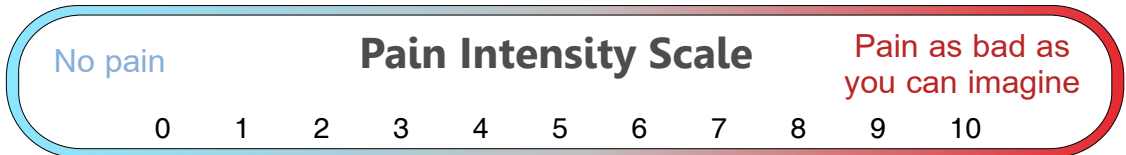
A nurse will:

- Check your blood pressure often
- Check your bandage(s)
- Make sure you are comfortable

If you are having Day Surgery, you may go home from the PACU after 5 hours. If you are staying overnight, you may go to a room on the ward after 5 hours, or you may stay in the PACU overnight. Your family may visit you once you are in your room.

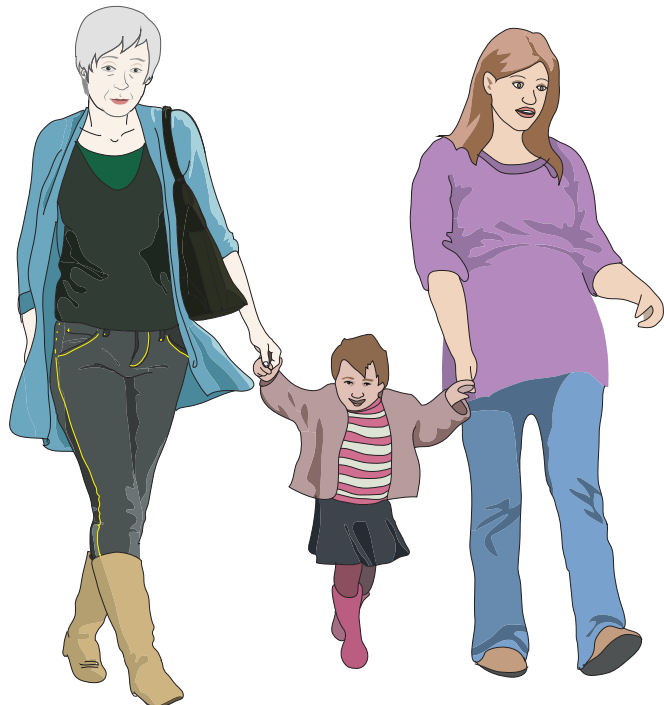
Pain control

Your nurse may ask you to describe your pain using a number between 0 and 10. 0 means no pain and 10 is the worst pain you can imagine. We want to keep your pain below 4/10. Please tell us if you have pain. We will help you.



It is important to control your pain because it will help you to:

- Take deep breaths
- Move more easily
- Eat better
- Sleep well
- Recover faster



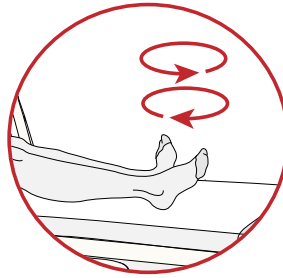
Exercises

After your surgery, you will lie flat for 4 hours with your legs straight. You may drink sips of water or juice through a straw. The nurse will remove your pressure bandage after 4 hours.

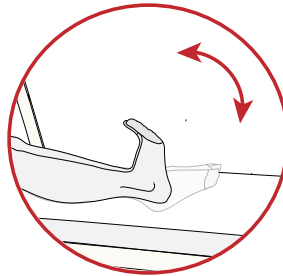
It is important to move around in bed to prevent pneumonia, blood clots, and muscle weakness. Start these exercises when you wake up and continue them while you are in the hospital.

Leg exercises

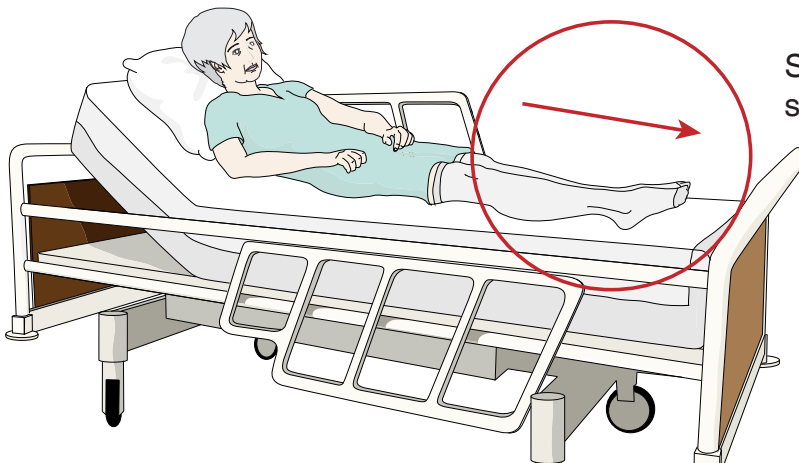
These exercises help your blood to circulate in your legs. Repeat each exercise 4 to 5 times every half hour while you are awake.



Rotate your feet to the right and left.



Wiggle your toes and bend your feet up and down.



Stretch your legs out straight.

Exercises

Deep breathing and coughing exercises

An inspirimeter is a device that helps you breathe deeply to prevent lung problems.



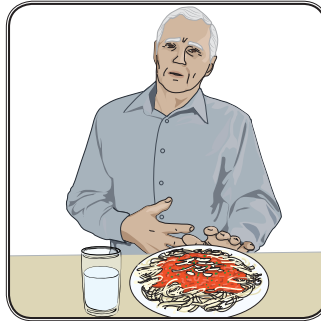
To use your inspirimeter:

- Put your lips around the mouthpiece, breathe in deeply, and try to keep the red ball up for 2 to 4 seconds.
- Remove the mouthpiece, breathe out, and rest for a few seconds
- Repeat this exercise 10 times every hour while you are awake
- Take a deep breath and cough. If you have some secretions, cough them up.

Effects of your surgery



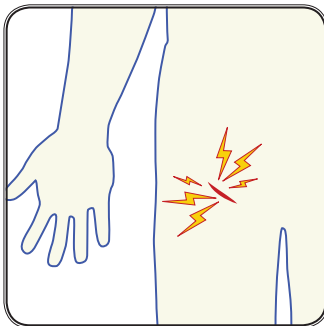
Feeling groggy from the anesthesia or medications.



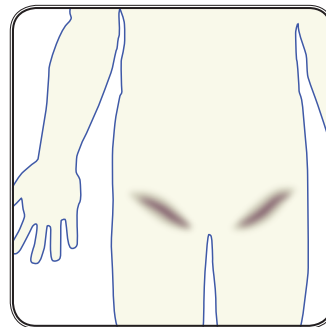
Loss of appetite



Fever without any signs or symptoms of infection



Soreness at the puncture site



Bruising in one or both groin areas

Going home

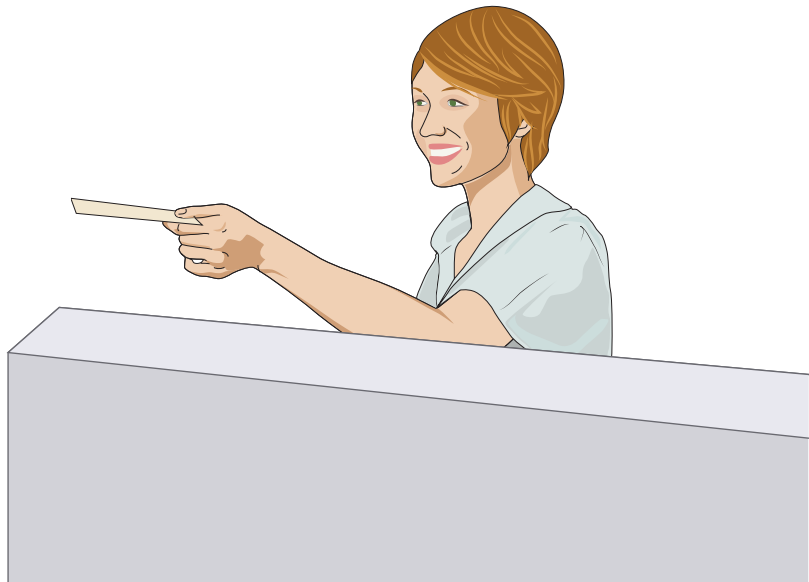
You may go home from the hospital on the same day as your surgery, or you may stay overnight. Your surgeon will talk with you about this when you are booked for surgery. You will not be able to drive yourself, so plan to have someone pick you up.

After surgery, it is important to monitor your aortic repair. You will have:

- Regular visits with your surgeon
- Regular CT scans or ultrasounds

We will mail appointments to you for your first CT scan or ultrasound and for your first surgeon visit.

After that, you will be scheduled for surgeon visits and CT scans or ultrasounds every 6 months.



At Home

Pain

If you have pain at the puncture site in your groin, take acetaminophen (Tylenol®) to relieve your pain.

If your pain is not controlled by acetaminophen (Tylenol®), take the narcotic (Oxycodone) that your doctor ordered.



Puncture sites

If you go home from the hospital on the same day as your surgery, you may remove your bandage the next morning.

If you stay in the hospital overnight, your nurse will remove your bandage in the morning, before you go home.

You may shower, but do not bathe for 2 weeks. Clean the puncture sites gently with mild non-perfumed soap and rinse well with clean water. Do not use alcohol or peroxide.

Activities

Ask your family or friends to help you when you go home. If you live alone, consider household help, or stay with someone until you are stronger.

Most people return to their normal activities within 2 weeks after surgery. Increase your activities gradually and take time to rest.

Do not lift, push or pull more than 5 lbs (2.5 kg.) for 2 weeks.

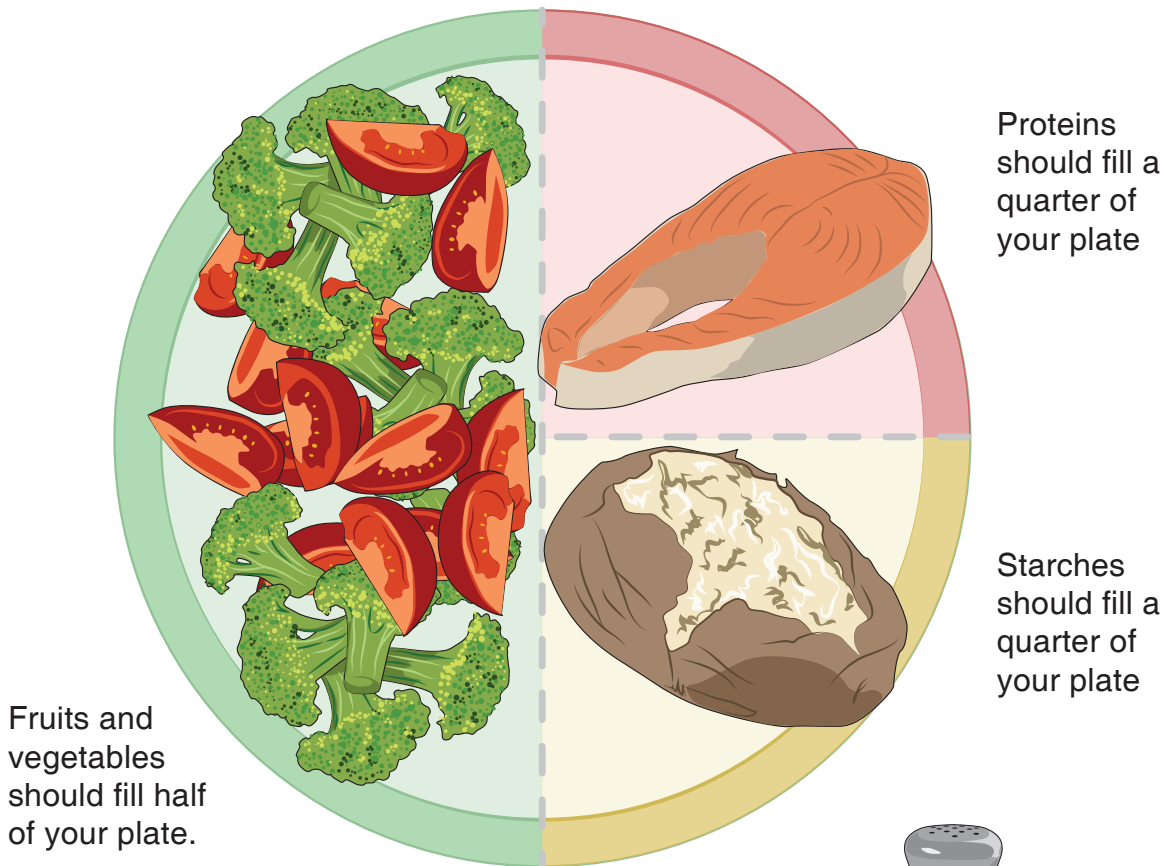
Do not drive your car for at least 2 weeks after your operation, or until you have permission from your surgeon.



Diet

Eat plenty of fruits and vegetables and drink fluids to prevent constipation.

Choose foods low in total fat and saturated fat. Too much fat and cholesterol may damage the walls of your arteries.



Your doctor may ask you to eat less salt, eat fewer calories, or follow a diabetic diet.



Controlling your blood pressure

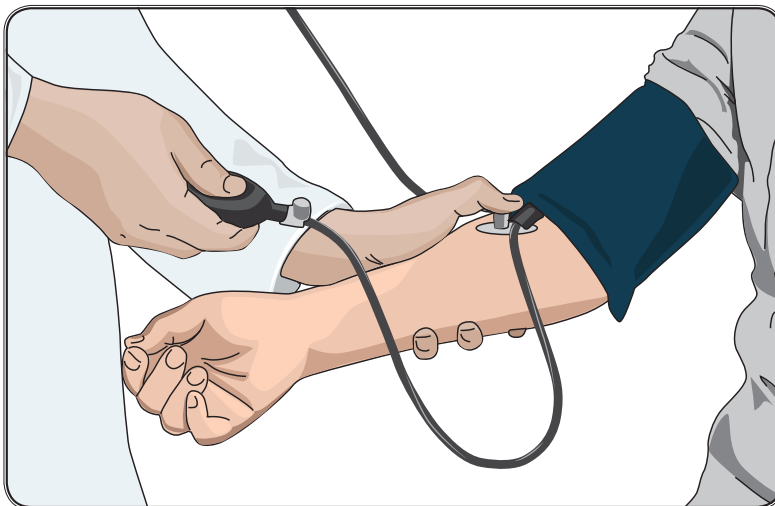
High blood pressure makes your heart work harder and may damage your arteries. Control your blood pressure by taking the pills your doctor prescribes, even if you feel well.

If your high blood pressure is caused by stress:

- Talk with your family and friends
- Take time to relax
- Ask for professional help, if you need it

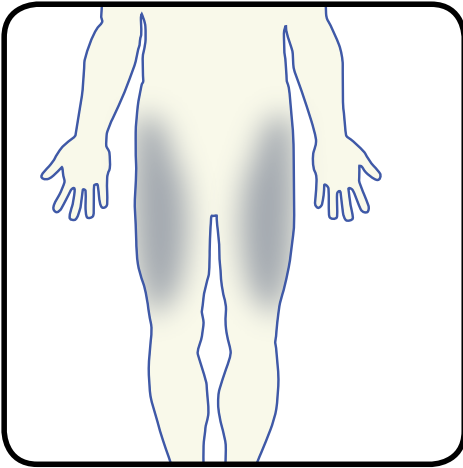
If your high blood pressure is caused by being overweight:

- Eat healthy foods to control your weight
- Ask for help from a dietitian, if you need it

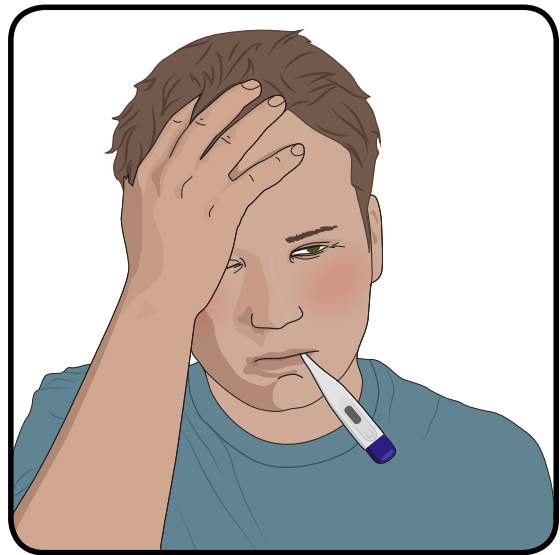


When to call your doctor

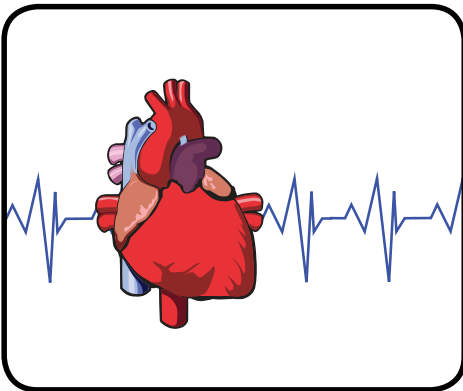
Call your surgeon or go to the nearest Emergency department if you have:



Severe pain, numbness, coldness and/or weakness in your legs or buttocks.



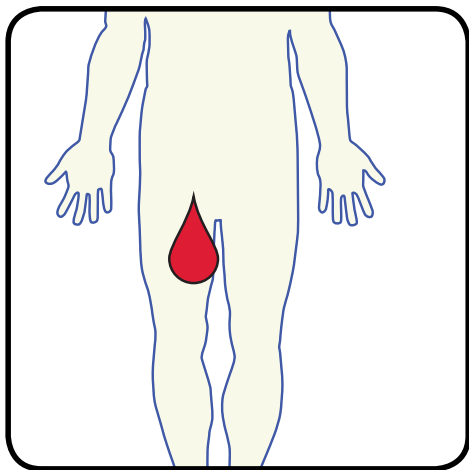
A fever of 38.5°C / 101.3°F or more with signs and symptoms of infection like coughing, burning sensation when you urinate, redness of wounds, or if the fever lasts for more than a week



Rapid heartbeat or chest pain

When to call your doctor

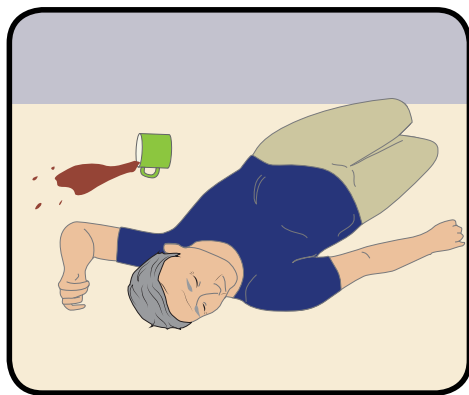
Call your surgeon or go to the nearest Emergency department if you have:



Bleeding from the puncture site. Apply direct pressure and call an ambulance.



Sudden weakness



Fainting



Persistent (lasting)
Dizziness

Resources



If you have questions or concerns, please call contact:

Vascular surgery nurse clinician coordinator: (514) 934-1934, # 43564

Surgical outpatient clinic nurse clinician: (514) 934-1934, # 35264

Your surgeon: 514-843-1524



Your family doctor

Your pharmacist

Your local CLSC

If you do not know the name or the telephone number of the CLSC in your area, call 811, a telephone medical information service known as Info-Santé available 24 hours a day, 7 days a week.

Montreal Chest Institute Smoking Cessation Program 514-843-2080

Canadian Lung Association (www.pq.poumon.ca) 1-888-566-5864

Nicotine anonymous (www.nicotine-anonymous.org) 514-849-0131

Canadian Diabetes (www.diabete.qc.ca/en/index.html) 1-800-226-8464

Quit smoking Centres(www.jarrete.qc.ca/en/default.html) 1-866-527-7383

Vascular Disease Foundation www.vdf.org

Suggestions to help you stop smoking

Tobacco damages the wall of your arteries and increases your risk for atherosclerosis. Even smoking 1 or 2 cigarettes is harmful. It decreases the amount of oxygen in your blood and makes your blood clot more easily.

Suggestions:

- Make a list of the pros and cons of smoking
- Throw out all your cigarettes and tobacco products
- Ask your doctor about options to help you quit, such as the nicotine patch
- Ask your family and friends not to smoke around you
- Replace smoking with an activity you enjoy
- Join a non-smoking group such as the Montreal Chest Institute Smoking Cessation Group or Nicotine Anonymous



Get more information from:

Montreal Chest Hospital
(514) 934-1934 extension 32503
www.muhc.ca

Quebec Lung Association
(514) 287-7400 or 1-800-295-8111
www.pq.lung.ca



Hôpital Royal Victoria Hospital at the Glen site

Centre universitaire
de santé McGill



McGill University
Health Centre

1001 Decarie Blvd. Montreal, QC H4A 3J1

Registration, Surgery
and Intervention Centre:
D 03.7055

Cafeteria:
Located off the Adult
Atrium on the level S1

Pre-op Clinic:
D S1.2428

