

Open Repair of Your Aortic Aneurysm

Information for patients who are preparing for surgery

This guide gives you important information about:

- your aneurysm and its repair
- what to expect before, during and after surgery
- what you can do to have a healthy recovery
- your need for follow-up care

Your name: _____

Your Vascular Surgeon: _____

Your Pre-admission visit date: _____

Date of surgery: _____

We welcome your questions at any time. Please tell us your needs and preferences, so that we can better care for you and your family. Our goal is to make your 'journey' as smooth as possible.

This booklet is for information only.
It does not replace the advice of your surgeon and health care team.



Patient Education



Toronto General
Toronto Western
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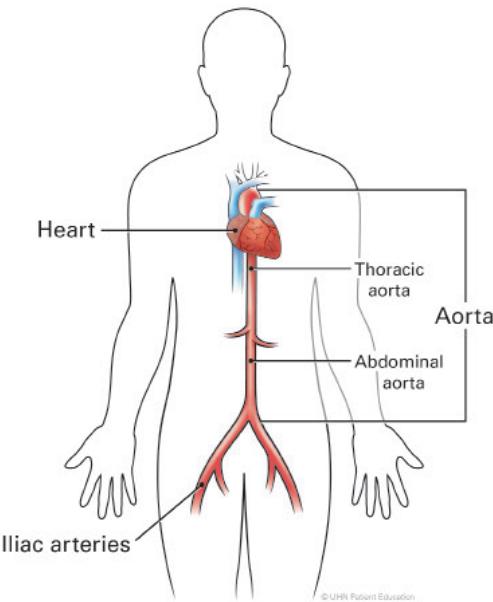
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Aortic Aneurysms

What is the aorta?

The aorta is the largest blood vessel in your body (about 2 cm wide). The aorta carries oxygen-rich blood from your heart to all parts of your body.

- Your aorta runs through your chest and abdomen. The part in your chest is called the thoracic aorta. The part in your abdomen is called the abdominal aorta.
- In your lower abdomen, the aorta splits into two smaller blood vessels (iliac arteries) that carry blood to your legs.

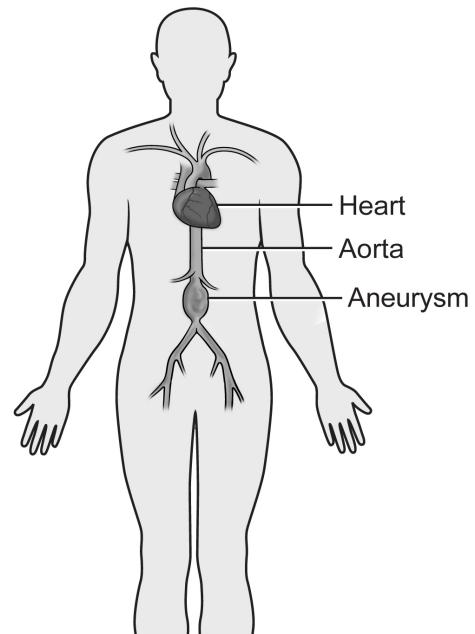


What is an aortic aneurysm?

An aneurysm is a bulge, or balloon-like swelling, on the wall of a blood vessel. When this is found on the aorta, it is called an **aortic aneurysm**.

An aneurysm is diagnosed when the aorta widens by more than 3 cm. Aneurysms are most commonly the result of degenerative aortic disease.

Most people do not know that they have an aneurysm. Aortic aneurysms are called 'silent' because they rarely cause any symptoms until they rupture. Most are found during tests (such as ultrasound, CT scan or MRI) that are done for other reasons.



We recommend that your close relatives be tested for aneurysms.

Aneurysms are named based on their location in your body:

- If the aortic aneurysm is in your chest, it is called a **Thoracic Aortic Aneurysm** (TAA).
- If the aortic aneurysm is in your abdomen, it is called an **Abdominal Aortic Aneurysm** (AAA).
- If the aortic aneurysm begins in your chest and continues into your abdomen, it is called a **Thoraco-Abdominal Aortic Aneurysm** (TAAA).
- If the aortic aneurysm is in iliac arteries it is called an **Aortic Iliac Aneurysm**.

Why is an aortic aneurysm dangerous?

An aortic aneurysm can be dangerous because the walls of the aorta may get so weak or thin that they burst (rupture) and bleed. A ruptured aneurysm causes serious internal bleeding, which can cause death quickly without proper treatment.

If your aneurysm ruptures, you will have one or both of these symptoms:

- New and persistent pain in your chest, back, abdomen or groins
- Feeling dizzy or faint

As you wait for your surgery:



- If you have either of these symptoms, call 911 or go to your nearest hospital Emergency Room.
- Avoid strenuous activities such as heavy lifting. Do not lift anything heavier than 20 kilograms (45 pounds).

Factors that can increase your chance of developing an aneurysm:

- Smoking (now or in the past)
- Getting older
- High blood pressure (hypertension)
- Having a connective tissue disorder such as Marfan syndrome
- Injury (trauma)
- Other members of your family have had an aneurysm

Aneurysms are most common in men and older adults.

When is an aortic aneurysm treated?

Aneurysms usually widen or 'grow' slowly, about 2 to 4 mm a year. When the abdominal aorta reaches a certain size (5.5 cm in men or 5.0 cm in women) your surgeon may recommend surgery to repair the aneurysm.

Aneurysms that grow quickly (over 1 cm in a year) are more likely to rupture and may need to be repaired sooner.

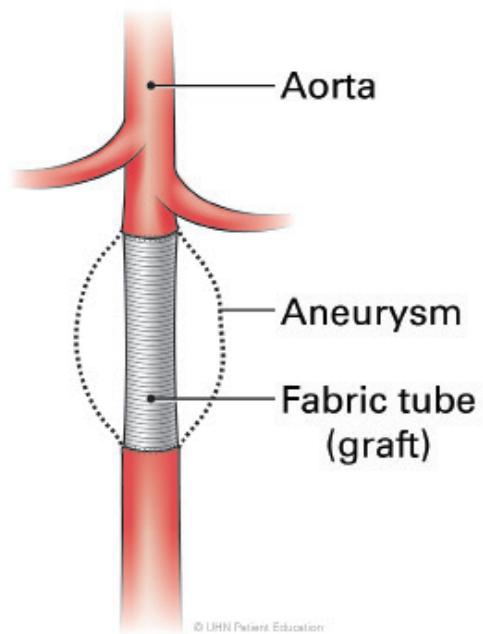
How can aortic aneurysm be treated?

Aortic aneurysms can be treated with open repair or by endovascular stent graft (EVAR). Your surgeon recommended open repair after carefully considering your age, health, as well as the size, location and shape of your aneurysm. Your surgeon will explain in detail the benefits and risks of each repair.

Open Aortic Aneurysm Repair

During an open repair, the surgical team:

- makes an incision in the abdomen and at times in the groins
- gives you an anticoagulant (blood thinning medication) and then stops the blood flow through the aorta
- opens the section of the aorta affected by the aneurysm
- sews a durable, fabric tube (graft) into place, connecting the healthy ends of the aorta



What tests will I need to have?

Before your surgery, you may have:

- A CT scan or an MRI. These tests give your surgeon detailed images of your arteries and adjacent structures.
- Heart tests to see if your heart is strong enough for the surgery
- Blood tests
- A chest x-ray
- An ECG

What type of anesthetic is used?

An anesthetic is a medication that reduces or prevents pain. Before surgery, you will meet with a doctor (Anesthesiologist) who will provide more details.

You will receive a **general anesthetic**. It makes you sleep during surgery and feel nothing. When you are asleep, the doctor will insert a breathing tube in your throat. An epidural catheter may also be inserted at the start of the surgery to help with any pain you have after the surgery.

What are the risks and possible complications of open surgery?

As with any surgery, there are some risks. Your surgeon will discuss risks that are specific to you before your surgery.

Some risks may include:

- heart attack
- stroke
- kidney failure
- wound infection
- bleeding
- spinal cord damage (paralysis)
- bowel ischemia
- death

Your Pre-Admission Clinic visit

You will need to visit the **Pre-Admission Clinic** unless you are going to be admitted to the hospital before your surgery.

Your visit will be about 2 weeks before surgery date and may take from 3 hours up to the entire day, depending on your needs. A family member or friend is welcome to come with you.

If your appointment is less than 1 week before your surgery and you are taking blood thinning medication, please tell your surgeon's office. **You may need to stop taking blood thinners about 5 days before your surgery.**



Unless you are given other instructions, you must come to your Pre-Admission Clinic visit or your surgery may be canceled.

The Pre-Admission Clinic is located at Toronto General Hospital, 200 Elizabeth Street, ground floor – Room 400 Eaton Building (Eaton entrance).

If you cannot come to this visit, call 416 340 4800 ext. 3529 to reschedule. You cannot have surgery without a pre-admission visit.

What to bring to your pre-admission visit:

- Ontario health card (OHIP)
- Extended health insurance information, if you have it
- Contact information for your family doctor and pharmacy
- Your 'History and Physical' form, filled out by your family doctor
- All the medications you take in their original containers.
This includes prescription medications, over-the-counter medicines, vitamins, supplements and herbal or 'natural' products.
- Copy of your power of attorney for personal care and/or advanced directives

On the day of your Pre-Admission visit, take your medications and eat as usual, unless you were given other instructions.

What happens at your Pre-Admission Clinic visit?

During this visit:

- You will fill out paperwork so you can be admitted to hospital.
- You may have tests, including blood tests, a chest x-ray and an electrocardiogram (ECG) to check your heart.
- A nurse will ask you questions about your health and help you prepare for surgery and recovery at home. You will learn how to do deep breathing and coughing exercises that keep your lungs clear and prevent infection (such as pneumonia) after surgery.
- **The nurse will tell you when to stop eating and drinking before surgery.** Usually you will have nothing to eat after midnight before surgery.
- A nurse or pharmacist will review your medications. They will tell you which medications to stop before surgery, and which to take on the morning of your surgery with a sip of water.



Preparing for your surgery

Make plans for coming home after surgery

- Arrange for someone to take you home from the hospital on the day you expect to leave. You will not be allowed to go home by yourself after your surgery.
- If you live alone, plan for someone to stay and help you for at least a few days. You may need help with groceries, cooking, laundry, cleaning and rides to medical appointments.
- Make or buy extra meals and freeze meals that will be easy to reheat.

Quit smoking

Stop smoking – for safer surgery, a faster recovery and better health



**Time to be
smoke free!**

- Smoking harms your body. Smokers often have more heart and breathing problems after surgery.
- **If you quit smoking before your surgery, you may have fewer heart and breathing problems, and heal faster after surgery.**
- It is hard to quit smoking, but help is available! Talk to your doctor about programs and products that can help you quit.
- Visit Smoking Cessation at UHN (https://www.uhn.ca/corporate/AboutUHN/Smoking_Cessation) for helpful information and resources.

Make arrangements for out-of-town family

- For a list of places to stay near the hospital, visit www.uhn.ca and click on 'Patients and Families', 'Patient Services' and 'Accommodations and places to stay'. Some places offer a discounted 'hospital rate'.



The day before your surgery

Follow all the instructions you were given at your pre-admission visit.

Important!

- Do not smoke or drink alcohol for 24 hours before your surgery.
- Remove your nail polish, jewelry and any body piercing.
- Make sure you take all medications you were told to with sips of water.



Do not eat or drink ANYTHING after midnight the night before surgery. Do not chew gum. Your surgery may be cancelled if your stomach is not empty.

What to bring to the hospital:

- Ontario health card (OHIP) and any other extended health insurance information, if you have it
- All the medications you take in their original containers. This includes prescription medications, over-the-counter medicines, vitamins, supplements and herbal or 'natural' products that you buy without a prescription.
- Enough comfortable clothes for several days, plus non-slip shoes or slippers.
- Personal care items such as a toothbrush, toothpaste, soap and deodorant. Do not bring scented products such as perfume or cologne.
- Hearing aids, dentures and glasses in their protective cases, labelled with your name.

You are responsible for your belongings.
Please do not bring jewelry or anything valuable.

The day of your surgery

The morning of surgery

- You may take a shower. You may need to use special soap that you were given in Pre-Admission Clinic.
- If you were told to take any medications the morning of your surgery, take them with small sips of water.
- Do not wear perfume, scented lotion, make-up or contact lenses.

Admission to the hospital

Come to Toronto General Hospital at least 2 hours before your surgery

Check in at **Surgical Admission Unit** reception desk:

- Peter Munk Building, 2nd floor – Room # 310
(take Munk or Eaton elevators)
- Phone: 416 340 4800 ext. 3851

You will be taken to the **Pre-Operative Care Unit (POCU)**.

- The nurse and surgical team will review your health information, and do blood tests, if needed.
- An intravenous (IV) line will be put in your arm. The IV will be used to give you fluids and medications during and after your surgery.
- You will change into a hospital gown and wait in holding area until it is time for your surgery.
- Your belongings will be secured in a locker and returned to you after surgery. Send all valuables home with family or friends.

Your family can stay with you in POCU until you are taken to the Operating Room. Once you are taken to surgery, your family can wait in the **Surgical Waiting Room** on the 3rd floor of the Munk Building. The surgeon will come there to speak with your family when your surgery is over.

What happens during surgery

Your surgery will take 3 to 4 hours depending on how complicated your surgery is.

- The surgical team will help you move onto the operating table and connect you to monitors.
- An epidural catheter may be placed in your spinal cord so the anesthetist can give you pain and numbing medicine. You will be asleep and not feel any pain during the surgery.
- The doctor will put a breathing tube in your throat when you are asleep.
- A tube called a urinary catheter will be placed in your bladder to drain and measure your urine.
- When the surgery is over, the surgeon will close your incisions with stitches and staples, and cover them with a dressing.



What happens after surgery

- When the surgery is over, you will be moved to the **Post Anesthetic Care Unit (PACU)** where you will be closely monitored for 1 to 2 hours.
- When you are ready you will be moved to the step-down **Cardiovascular Intensive Care Unit (CVICU)**.

Once you are in step-down unit in CVICU:

- You will be attached to a heart monitor to check your heart beat.
- You may have an oxygen mask over your nose and mouth.
- You will have an intravenous line (IV) through which you will be given medication.
- The nurse will check your heart rate, blood pressure, breathing, and measure the urine from your catheter.
- The nurse will check your incision and blood flow in your legs.
- If you are experiencing a lot of pain, there are special ways to control your pain such as PCA (Patient Controlled Analgesia) or epidural. Your doctors and nurses will talk with you about it.

After you recover in the CVICU, you will be moved to the Inpatient Unit **4A Vascular Ward** to continue your care for the rest of your hospital stay.



Cardiovascular Intensive Care Unit (CVICU):

Phone: 416 340 3550

4A Vascular Ward, 4th floor

Phone: 416 340 4208

What to expect on the 4A Vascular Ward

Your vascular team will see you early each morning. Your team includes doctors, nurse practitioners and nurses. Please talk to them about any concerns or questions you may have.

The team will ask how you are feeling and check:

- The pulses, colour and warmth of your legs, to make sure the blood flow is good
- The pain, feeling and movement of your legs
- Your incision to see that it is healing well

For the next 1 or 2 days:

- You will get fluids and medications through your IV line
- You may have small tubes in your nose to give you oxygen
- You may have a small tube in your stomach to prevent you from vomiting
- Your catheter will drain urine from your bladder
- A bandage will cover your incision until it is dry

Movement and exercises

- Continue to do your deep breathing and coughing exercises to clear your lungs of mucus. This helps to prevent pneumonia.

**It is important to move your legs and walk as soon as you can.
This keeps the blood flowing in your legs.**

- A physiotherapist may visit each day to help you start moving and get ready to walk.
- First, you will sit at the side of the bed and “dangle” your legs.
- Next, you will walk a few steps with help. You will gradually increase your activity until you can walk on your own. As you get stronger, you will spend more time out of bed, walking short distances.

Change your position often to avoid pressure sores



- Do not put pressure on your heel for long, when standing or lying. Pressure on an area with poor blood flow can cause a painful blister that does not heal well.
- Change your position while you are in bed to avoid pressure sores on your lower back and hips. Your nurses can help you with this.

Eating and drinking

- You will not be able to eat or drink for at least 2 or 3 days after the surgery to allow your stomach and bowels time to recover. You will start with fluids, then eat and drink small amounts at a time until you can return to your usual meals.

Showering

- You can have a shower 3 or 4 days after surgery. Gently wash your incision with soap and water. Rinse well and pat dry with a clean towel.
- **Do not take a bath until your incisions are completely healed. Speak to your doctor about this.**

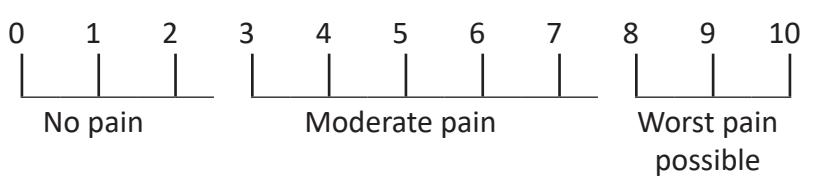
How can I manage my pain?

**Everyone feels pain and discomfort differently after surgery.
We will work with you to manage your pain.**

We will ask you to rate your pain on a scale of 0 to 10 (0 means you have no pain and 10 means that you have the worst pain possible). This number helps us understand how much pain you are having and how well the pain medication is working.

How to use the pain scale:

Pick a number that tells how much pain you are having.



You will have medication to control your pain.

- You can expect to need pain medication every 3 to 4 hours for the first few days after surgery.
- Take your pain medication regularly. This is the best way to control pain. You need to feel comfortable enough to walk, do your breathing and coughing exercises and other activities. These activities help you recover.
- As you heal, you will feel less pain and will not need the medication as often.

Pain medication can be given in different ways.

Intravenous (IV) Patient Controlled Analgesic or PCA

A PCA pump delivers pain medication through your IV when you press a button. **Only you should press the button.**

Press the button:

- when you start to feel pain
- before you do something that brings on pain
- before you do deep breathing and coughing exercises
- before you start to move or turn

You should feel the effects of the medication within 2 to 3 minutes. If you do not feel any pain relief, tell your nurse.

The pump is set to give you a certain amount of medication every 4 hours. To make sure you cannot get too much medication, the PCA pump has a safety timer called a lockout. If you press the button during the lockout time, you will not get more medication.

Epidural PCA

Epidural is small tube placed in your back. This is the same way that women are given pain medicine when they give birth.

A pump is attached to the epidural tubing to give pain medication in a continuous controlled dose. You may have the option of pressing a button to receive more pain medication if you feel it is needed. The epidural can provide excellent pain control for up to 5 days as needed.

Follow the same instructions as for intravenous PCA.

Intravenous (IV) medication

Your nurse can give you pain medication through your IV. Tell your nurse when you have pain. Do not wait for the pain to get worse.

After you get pain medication, tell the nurse if it helped relieve your pain.

Medication by mouth

When you are drinking well, you may be given pain medication tablets to swallow. Tell your nurse when you have pain.

Do not wait for the pain to get worse.

After you get pain medication, tell the nurse if it helped relieve your pain.

How long will I stay in the hospital?

The average hospital stay is 7 to 10 days. Length of stay depends on many factors including your overall health and how quickly you recover. The vascular team will discuss your recovery each day and help you prepare to go home.

What will happen before I leave the hospital?

During your hospital stay, the health care team will teach you how to care for yourself. Before you go home, you should know:

- how to take care of your incisions
- what exercises to do
- how to manage your pain
- when you can drive, return to work and resume your usual activities, such as housework, gardening, exercise and sex
- what warning signs to watch for and when to call the doctor

Your nurse, nurse practitioner or pharmacist will review your medications. Some may have changed during your hospital stay. You will get a prescription for medications that are new or changed.

You can pick up your medication at our Pharmacy (1st floor, University entrance). Open Monday to Friday, 8:00 am to 6:00 pm.

Phone: 416 340 4800 ext. 4075.

If you need care or services at home or in your community, the health care team will make these arrangements before you go home.

The team will tell you what day you are going home. This is called your **day of discharge**. You will usually know a day or two before.

Going home from the hospital

You should be ready to go home by 11:00 am on your day of discharge. Please arrange for your ride to pick you up by this time.

The vascular team will give you a **discharge letter** to take home. This letter is for you and your family doctor. It contains important information, including:

- details of your hospital stay
- test results
- treatments you received
- changes to your medication
- follow-up instructions

You will need a **follow-up appointment** with your vascular surgeon. This appointment is usually made before you leave the hospital.

If you do not have an appointment, please call your vascular surgeon's office.

Your recovery at home

What you can expect

You will continue to recover at home over the next few weeks to months.

Your total recovery time will depend on your age and overall health. It may take up to 6 to 12 weeks for a full recovery.

There are many things you can do to help your recovery. If you have any questions, write them down so you can ask them at your follow-up appointment.

Driving

You will not be able to drive for 4 to 6 weeks after your surgery.

Returning to work

- Depending on the job you do, you may be able to return to work 6 weeks after surgery.
- If your job involves physical labour, you may need to wait at least 8 weeks before returning to work. This will depend on your overall health and your recovery. Please talk with your surgeon.

Taking care of your incisions

- You will have staples (metal clips) on your abdominal incision. You may have stitches or staples in your groin incisions.
- Keep your incisions dry and open to air unless they are leaking.
- Check your incisions each day for any new changes. It is normal for your incisions to be slightly red, swollen or painful for 2 to 3 weeks after your surgery. If you experience new pain, redness, lumps or more leaking than usual, see your family doctor.
- **DO NOT scrub or use any creams, powders or ointments on your incisions.**

Your personal hygiene

- When showering, let the soap and water run over your incisions. Pat your incisions dry with a clean towel. If there is any leaking coming from your incisions, cover the incisions with clean gauze right after you shower.
- **Do not swim, use hot tubs or take baths until your incisions are totally healed and no longer leaking.**

Tips for healthy living

Activity and exercise

- Regular physical activity can help you recover and return to your usual activities as soon as possible. Being active also has long-lasting benefits for your health.
- Start slowly. Take short walks around your house, with rest periods in between. Gradually walk a little farther and a little faster. You are likely to feel tired at first, but this will slowly get better.
- Plan time to rest during the day.
- As you get stronger, you can gradually take on your usual activities.
- **Do not do strenuous activities or lift anything heavy (over 10 pounds or 4.5 kilograms) for 4 to 6 weeks.**

Help at home

- Plan to have someone help you at home for at least 1 to 2 weeks after your surgery. You may need help with laundry, cleaning, cooking and grocery shopping and drives to medical appointments.

Healthy eating

Eating well helps your body heal and recover. Eat a variety of foods from the four food groups. Choose foods that are low in fat, cholesterol and salt. See Canada's Food Guide for more information about healthy eating.

- Some pain medications can cause constipation. To prevent constipation, drink lots of fluids and eat foods that are high in fibre such as fruits, vegetables, whole grain breads and cereals.

Stay smoke free

- If you smoke, the most important thing you can do is to stop smoking.
- Quitting smoking helps protect your graft and prevent further narrowing of your blood vessels.
- If you need help to quit, talk with your doctor. Help is available with medications, and support (online and in person).
- Visit Smoking Cessation at UHN (https://www.uhn.ca/corporate/AboutUHN/Smoking_Cessation) for helpful information and resources.

Follow up care

See your family doctor within 1 or 2 week of going home. This is important so you can have general checkup and any other follow up care that you may need.

Your staples and stitches will be removed about 2 weeks after your surgery by either your family doctor or your surgeon.

You will visit the vascular surgeon a few weeks after your surgery. This appointment is usually made before you leave the hospital.

If you do not have an appointment, please call your vascular surgeon's office.

When to get medical help

**If you have new symptoms and don't know what to do, do not wait.
Get medical advice or help if you are concerned.**

Visit your family doctor or go to a walk in clinic if you have non-urgent concerns such as

- Leg swelling that doesn't go away
- New mild pain, redness or swelling around your incisions
- Drainage or leaking from your incision that is increasing or smells bad
- New lump around your incision site
- Diarrhea (loose stools)
- Not passing any gas or feeling constipated for more than a few days
- Vomiting (throwing up) and not able to eat or drink
- Chills and a fever above 38.5 °C (100.4 °F) for at least 24 hours



Call 911 or go to the hospital emergency department if you have an emergency such as:

- Numbness in your arms, feet or legs, or they become cold or painful, or you have trouble moving them
- New pain in your groin, back, chest or abdomen
- Severe pain or swelling at your incisions site
- New shortness of breath
- Feeling dizzy or faint
- You lose control of your bladder or bowels
- You are no longer able to pass urine



Important contact information

Who to call if you have questions

If you have questions while you are in hospital, please ask your nurse or nurse practitioner, or the doctors on the vascular team.

If you have questions before or after your surgery or need to book your follow up appointment, please call your surgeon's office:

Dr. T. Lindsay 416 340 4620

Dr. G. Oreopoulos 416 340 3275

Dr. G. Roche-Nagle 416 340 5332

Dr. B. Rubin 416 340 3645

Dr. T. Forbes 416 340 3274

Dr. J. Byrne 416 340 3996

Dr. K. Howe 416 340 5193

If you have health related concerns while you are recovering at home please contact:

Vascular Clinic Nurse Cindy Dickson 416 340 3857 or

Vascular Coordinator Dyo Ramcharan 416 340 4800 ext. 5202

This guide has been reviewed by the Patient Education and Engagement



Patient Education



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