

Leg Bypass Surgery or Repair to an Artery in Your Leg

Information for patients who are preparing for surgery

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Plans for your surgery

Your surgery has been scheduled for:

Date: _____

Time: _____

Come to the hospital at: _____

Your surgery is called:

- Leg bypass
- Femoral Artery to Femoral Artery Bypass Graft
- Femoral Artery Repair
- Other _____

You can expect to stay in the hospital for about:

- 2 to 4 days
- 4 to 7 days

Learning about leg bypass surgery

Why do I need surgery?

A large blood vessel (artery) in your leg has become narrowed or blocked so less blood and oxygen is getting to the tissues in that leg and foot.

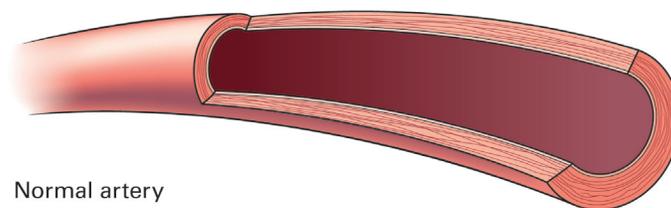
This causes symptoms such as:

- leg muscle pain while walking (claudication)
- pain at night, especially in the feet (rest pain)
- feet and leg sores that won't heal
- dead tissue (gangrene)

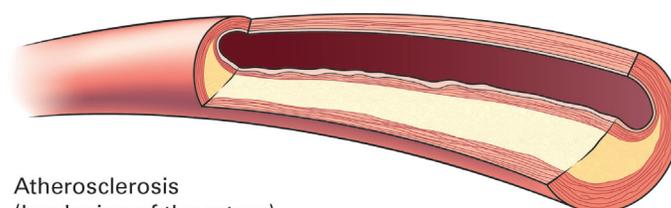
Surgery is needed to restore blood flow to your leg and foot. Without surgery, your symptoms can become worse. Your leg may become numb or weak. You may develop infection or gangrene, and be at risk of losing your leg.

Why did the artery get narrow or blocked?

Over time, a fatty material called plaque has built up inside your arteries. This process is called **atherosclerosis** (hardening of the arteries). Blood flow slows down because plaque is in the way.



Normal artery



Atherosclerosis
(hardening of the artery)

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Why did the plaque build up?

There are risk factors that increase your chance of developing plaque over time. Eating healthy, exercising regularly, and taking medication can help lower your risk.

Smoking

Cigarettes, pipes, cigars and chewing tobacco all cause plaque build up in your arteries. The chemicals damage the inner lining of your arteries and increase your risk for atherosclerosis. If you smoke, quitting is the best thing you can do for your health.

Diet

High cholesterol contributes to plaque build up. Eating foods with less cholesterol and trans fats, and eating foods with more fibre can lower your risk.

High blood pressure

High blood pressure that is not controlled or treated is called hypertension. Hypertension puts stress on your heart, arteries and kidneys. Eating less salt, taking your medications, exercising, and relieving stress can keep your blood pressure in a healthy range.

Diabetes

If you have diabetes, you are at a higher risk for developing plaque in your arteries. High blood sugar levels can damage your heart, blood vessels, kidneys, eyes and nerves. It is important to follow the advice of your health care team about diet, treatment and medications.

What types of surgery can help?

Your femoral artery brings blood to your leg, foot and toes. Two types of surgery on this artery can help improve blood flow in the legs:

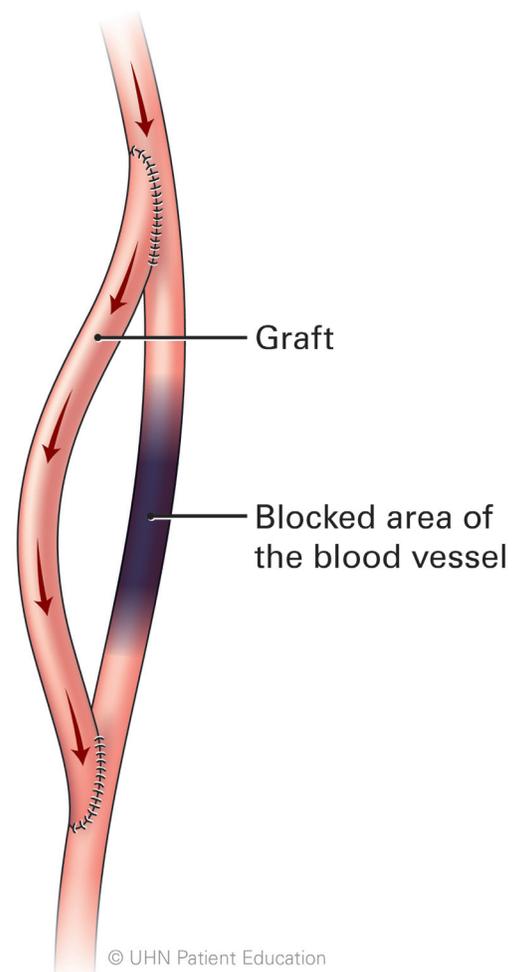
- **Repair:** A narrow or blocked artery in the leg is cleaned out or repaired to improve blood flow. Your surgeon will make a cut in your leg near the blockage in your femoral artery and carefully take the plaque off the walls. This will help your leg, foot and toes get blood. All cuts will be closed with stitches or staples.
- **Bypass:** A new tube is made to make blood go around (bypass) the narrow or blocked section of the artery.

How does leg bypass surgery help?

Leg bypass surgery creates a new tube for blood to flow to your leg and foot, bypassing (avoiding) the section of the artery that is narrow or blocked. The new tube is called a graft. A graft can be a vein from your leg or arm (if suitable) or a flexible, artificial tube.

Leg bypass surgery can be done in 2 ways:

- **Leg bypass:** An incision (cut) is made from your groin area to your knee or further down your leg. One end of the graft is attached to the artery at the top of your leg. The other end is attached to an artery in your lower leg. The blood now flows through the graft, instead of through the section of the artery that was narrow or blocked. Improving the blood flow to your foot can relieve pain and help to heal any open areas (ulcers) on your foot. This surgery usually takes 3 to 4 hours.
- **Femoro-femoral bypass:** Incisions (cuts) are made in your groin area.



One end of the graft is attached to the main artery in your good leg. The other end is attached to the main artery in your bad leg. The blood now flows through the graft from your good leg to your bad leg, bypassing the blocked section of the artery. The artery in your good leg will supply blood to both legs.

How does the surgeon decide which surgery I need?

To decide what type of surgery is best for you, your surgeon will:

- Assess your symptoms
- Do a physical examination
- Review your medical history
- Review the results of your tests

What tests will I have?

Your tests may include:

- A leg ultrasound test called a Doppler. It measures blood flow in the legs compared to the arms.
- Imaging tests to map the blood flow, locate narrow or blocked arteries, and assess the vein that may be used as a graft.

For example, a CT scan. In some tests, a dye is injected to make it easier to see your blood vessels in the images.

- Blood tests
- Tests to make sure your heart is strong enough to have surgery

When will I have surgery?

Your surgeon will explain the surgery that is recommended for you and discuss the risks and benefits. If there is anything you do not understand or you need more information, please ask your surgeon.

If you decide to have surgery, you will sign a consent form. Then, the surgeon's office will schedule:

- ✓ Your surgery
- ✓ Your visit to the Pre-Admission Clinic to help you prepare for surgery

Preparing for surgery

You will have an appointment at the Pre-Admission Clinic within 2 weeks before your surgery. **This visit is very important to assess your health and help you prepare for your surgery and recovery.**

Depending on your needs, this visit may take from 3 hours to the entire day. If possible, bring someone with you to help you remember information and ask questions.

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

What should I bring to my Pre-Admission Clinic visit?

Please bring:

- Your Ontario Health Card (OHIP card)
- Any other medical insurance information you need for your hospital stay
- All medications you are taking, in their original bottles. This includes prescription medications, and the medication, supplements, herbs and natural products that you buy without a prescription.
- A 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 my Pre-Admission Clinic visit?

During this visit:

- You will fill out the paperwork for admission to the hospital.
- You will 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.** The general rule is nothing to eat after midnight before surgery. You can drink water or apple juice up to 5 hours before surgery. Do not drink alcohol for 24 hours before your surgery. For surgery to be done safely, your stomach must be empty.
- The anesthesiologist will examine you and discuss what type of anesthetic and pain relief you will be given.
- 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.

How can I prepare for surgery at home?

- Make or buy extra meals and freeze them for after your surgery.
- Arrange for someone look after your family and pets while you are in the hospital.
- Arrange for someone to pick you up at the hospital on the day you expect to go home.
- Arrange for help at home during the first few weeks of your recovery. You may need help with groceries, cooking, laundry, cleaning and rides to medical appointments.
- If you smoke, it is important to stop. See the next page for the benefits of quitting smoking before surgery.

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



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.

Time to be smoke free!

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 for helpful information and resources.

What should I bring to the hospital?

Please bring:

- Your Ontario Health Card (OHIP card)
- Any other medical insurance information you need for your hospital stay
- All medications you are taking, in their original bottles. This includes prescription medications, and the medication, supplements, herbs and natural products that you buy without a prescription.
- Enough comfortable clothes for several days and non-slip shoes or slippers
- Personal care items such as toothbrush, toothpaste, soap and deodorant

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

What special instructions do I follow before my surgery?



On the night before your surgery:

- Stop eating and drinking at the time you were told in the Pre-Admission Clinic. This means no water, candy or gum.
- If you are a smoker, do not smoke after midnight

On the day of your surgery:

- If you have been told to take medication, take it with a small sip of water

What to expect in hospital

Where will I go on the day of my surgery?

Please arrive 2 hours before your surgery. Take the Eaton or Munk Elevators and go to:

Surgical Admission Unit

Peter Munk Cardiac Centre – 2nd floor

What happens before surgery?

When you arrive at the Surgical Admission Unit :

A team of surgical nurses will help you get ready for your surgery

- You will change into a hospital gown
- An intravenous (IV) will be started in your arm. The IV is used to give you fluids and medication during and after surgery.
- You wait in an area called the Holding Area
- When it is time for your surgery, you will go to the operating room



To provide safe care, we will ask the same questions many times, such as your name, what type of surgery you are having, and the name of your surgeon.

Can the time for my surgery change?

Yes. We do our best to do your surgery at the scheduled time. But, we may need to reschedule your surgery if other emergencies come up. If this happens we will tell you as soon as possible.

Where can my family wait while I am in surgery?

Your family can wait in the surgical waiting room. Take the Munk elevators to the 3rd floor of the Peter Munk Building. The volunteer on duty can let your family know when your surgery is over.

Your surgeon will speak to your family when the surgery is done. If your family will not be in the waiting room, tell your surgeon's office how to reach them.

What happens during surgery?

In the operating room:

- The surgical team helps you move onto the operating table and get comfortable. They will connect monitors, clean your skin and cover your body with drapes.
- The anesthetist gives you an anesthetic so you will not feel any pain.
- A thin, flexible tube called a catheter may be put into your bladder to drain the urine.

The surgery is done through small cuts (incisions) in your groin and leg. The length of your surgery depends on what type of repair or bypass you are having.

When the repair or bypass is done, the surgeon will check that you have good blood flow to your lower leg and close the incisions.

What happens after surgery?

You will go to the **Post Anesthetic Care Unit** (recovery room) where the nurses will care for you until you wake up.

When you are ready, you will go to the step-down unit in the **Cardiovascular Intensive Care Unit** (CVICU) on the 2nd floor.

In the 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
- The nurse will check your heart rate, blood pressure, breathing, and measure the urine from your catheter
- The nurse will check the pulses and blood flow in your legs
- The nurse will give you medication to control pain and keep you comfortable
- Your family can visit, 1 or 2 at a time

After a day of intensive care, you will go to the **Vascular Ward** on the 4th floor for the rest of your hospital stay.



Cardiovascular Intensive Care Unit (CVICU):

416 340 3550

Vascular Ward: 416 340 4208

What can I expect on the Ward?

Your care

Your vascular team will see you early each morning. This team includes doctors, nurse practitioners and physician assistant. 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, warmth of your leg, to make sure the blood flow is good
- The pain, feeling and movement of your leg
- 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
- You may have small tubes in your nose to give your oxygen
- 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 can expect to drink the evening after your surgery and resume your regular diet the next day. It is normal to not feel hungry. Try to eat a little at each meal. Your body needs healthy food to heal and recover after surgery.

Taking a shower or bath

You can have a shower 2 or 3 days after surgery. Gently wash your incision with soap and water. Rinse well and pat dry with a clean towel.

It is best to have a bath when your incisions have healed. At your follow-up appointment, ask your surgeon when you can have a bath.

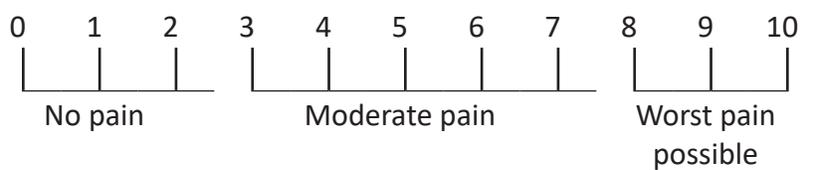
How can I manage my pain?

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

You will have some pain and discomfort after surgery. 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.

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?

How long you stay in hospital will depend on the type of surgery you had and how well you are recovering. 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.

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 will 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 be given a **follow-up appointment** with your vascular surgeon. This is usually 2 weeks after surgery.

Take your prescription to any pharmacy on your way home.

Your recovery at home

You will continue to recover at home over the next few weeks to months. How long it takes to fully recover will depend on your age, health and the type of surgery you had.

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.

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 kg) for 4 to 6 weeks.
- You should only start driving again when you are safe to suddenly apply the brakes in an emergency situation.

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.

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

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.

Care for your leg

- Check your incisions each day. You may notice some bruising at first and they may be tender to touch.
- Keep your incisions clean and dry. Do not put cream, ointment, powder or lotions on your incisions.
- Some swelling in your operated leg is normal. This will gradually get better. For good blood flow, keep your feet up when you are sitting and don't cross your legs.

Stay smoke free

- If you smoke, the most important thing you can do for yourself 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) (https://www.uhn.ca/corporate/AboutUHN/Smoking_Cessation) for helpful information and resources.

Follow-up care

- You will visit the vascular surgeon in 2 to 3 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.**
- This visit is important to check that you are recovering well and there is good blood flow in your legs. Your staples or stitches may be taken out at this time.
- You may have regular checkups and ultrasound scans to make sure the repair or bypass continues to work well.

When should I get help?

Call your doctor as soon as possible or go to the nearest emergency department if you have any of the following:

- Chills or fever greater than 38.5 °C.
- Changes to your wounds (cuts):
 - New bleeding
 - Increasing drainage (fluid) from the wound
 - Increasing redness, warmth and tenderness (pain)
 - Skin at your cut is separating
- Increasing pain in your legs or feet.
- Sudden back or stomach pain.
- Feet or lower legs that are white or blue, or are cold to touch.



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. Forbes	416 340 3274
Dr. K. Howe	416 340 5193
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. M. Witheford	416 340 3868

Cindy Dickson, Vascular Clinic Nurse: 416 340 3857



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