



PATIENT INFORMATION

**Minimally Invasive
Surgery (MIS) and
Open Nephrectomy
(Partial, Radical
and Donor)**

*Please bring this book to the hospital
on the day of your surgery*

THE OTTAWA HOSPITAL

Disclaimer

This is general information developed by The Ottawa Hospital. It is not intended to replace the advice of a qualified healthcare provider. Please consult your healthcare provider who will be able to determine the appropriateness of the information for your specific situation.

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Introduction

Welcome to The Ottawa Hospital. You are being admitted for nephrectomy surgery. You should expect to be in hospital for two, three or four days, including the day of surgery. This booklet will provide you with information on your care related to your surgery and discharge. Please be sure to read this booklet before you come into hospital for your surgery.

The Health-Care Team

Surgeon

Your Surgeon and team of surgical residents will discuss all aspects of your care including your surgery, recovery, discharge and follow-up. They will answer any questions you might have. Your surgeon will oversee your care with the other health care providers.

Anesthesiologist

The Anesthesiologist will discuss the anesthetic for your surgery and pain control needs after surgery, during your pre-admission appointment.

Registered Nurses

The registered nurses will care for you before, during and after surgery. They will provide emotional support, teaching, medications, and nursing care. You may also receive care from patient-care assistants. They will work with your nurse to assist with your care including bathing, getting out of bed and going to the washroom.

PLEASE BRING YOUR BOOKLET TO THE HOSPITAL as the health-care team members will refer to these instructions throughout your hospital stay.

The Clinical Pathway

The health-care team has put together a clinical pathway to help plan your care. A clinical pathway outlines the usual day-to-day care you'll receive during your hospital stay. This includes tests, treatments, activities and teaching. The outline of the clinical pathway is on the next three pages. It is important for you to review it so you can participate actively in your recovery. If needed, this plan of care can be adjusted based on your condition.

Clinical Pathway – Minimally Invasive Surgery and Open Nephrectomy			
	Pre-Admission	Day of Admission	Post-op on day of admission
Consult	<ul style="list-style-type: none"> • Anesthesiologist • Home Care if necessary 	<ul style="list-style-type: none"> • Home Care if necessary 	<ul style="list-style-type: none"> • Home Care if necessary
Tests	<ul style="list-style-type: none"> • Blood tests • Electrocardiogram if required • Chest x-ray if required 	<ul style="list-style-type: none"> • Blood test if required 	
Medication		<ul style="list-style-type: none"> • Antibiotic • Anti-inflammatory 	<ul style="list-style-type: none"> • Intravenous patient controlled analgesia (IV PCA) • Antibiotic (prevent infection) • Anti-nausea medications • Blood thinner • Patient's own medications if required
Assessment and Treatment			<ul style="list-style-type: none"> • Vital signs and physical exam (blood pressure, heart & respiratory rate, temperature, bowel and breath sounds) • Oxygen saturation • Intravenous • Abdominal dressings • Urine volume
Activity			<ul style="list-style-type: none"> • Sit at side of bed • Deep breathing and coughing • Ankle exercises
Nutrition		<ul style="list-style-type: none"> • Only water up to 3 hours before your surgery 	<ul style="list-style-type: none"> • Liquid diet (after open approach) • Diet as tolerated (after MIS)
Elimination			<ul style="list-style-type: none"> • Urinary catheter
Patient Teaching/	<ul style="list-style-type: none"> • Pre-op instructions • Skin preparation 	<ul style="list-style-type: none"> • Pre-op instructions 	<ul style="list-style-type: none"> • Deep breathing and coughing exercises • Ankle exercises
Discharge Planning	<ul style="list-style-type: none"> • MIS: Plan to stay in hospital for 2 days • Open partial nephrectomy or donor nephrectomy: plan to stay 3 days • Open radical nephrectomy: plan to stay 4 days * Includes day of surgery 		

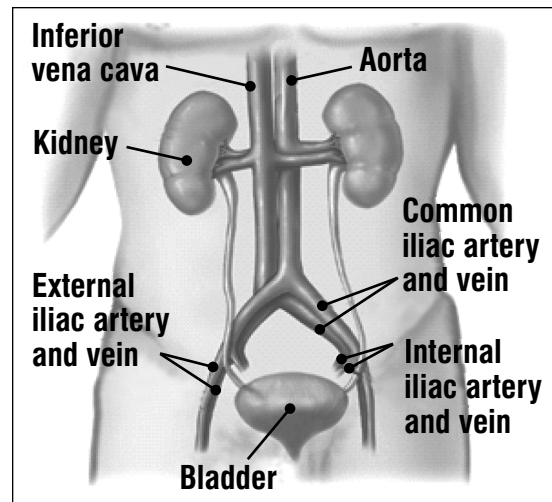
Clinical Pathway – Minimally Invasive Surgery and Open Nephrectomy		
	Post-op Day 1	Post-op Day 2 MIS Discharge Day
Consult	<ul style="list-style-type: none"> • Home Care if necessary 	<ul style="list-style-type: none"> • Home Care if necessary
Tests	<ul style="list-style-type: none"> • Blood test 	<ul style="list-style-type: none"> • Blood test if required
Medication	<ul style="list-style-type: none"> • IV PCA or epidural for pain management or pain medication started by mouth if tolerating fluids • Antibiotic • Patient's own medications if required 	<ul style="list-style-type: none"> • IV PCA or epidural discontinued and pain medication started by mouth • Patient's own medications if required
Assessment and Treatment	<ul style="list-style-type: none"> • Vital signs • Oxygen Saturation • Intravenous discontinued if drinking well • Abdominal dressing 	<ul style="list-style-type: none"> • Vital signs • Oxygen Saturation • Intravenous discontinued if drinking well if not already done • Abdominal dressing removed and left open to air
Activity	<ul style="list-style-type: none"> • Progressive independent ambulation 	<ul style="list-style-type: none"> • Independent ambulation
Nutrition	<ul style="list-style-type: none"> • Post-op Surgery Diet • Eat what you feel you can manage 	<ul style="list-style-type: none"> • Post-op Surgery Diet • Eat what you feel you can manage
Elimination	<ul style="list-style-type: none"> • Urinary catheter may be removed unless ureterectomy performed or you have an epidural for pain control 	<ul style="list-style-type: none"> • Urinary catheter will be removed at 6 a.m. if not already done unless ureterectomy performed • Up to bathroom independently
Patient Teaching/	<ul style="list-style-type: none"> • Deep breathing and coughing exercises • Ankle exercises • Pain management • Activity 	<ul style="list-style-type: none"> • Deep breathing and coughing exercises • Ankle exercises • Pain management • Activity <p>MIS: Review post-op instructions with the nurse:</p> <ul style="list-style-type: none"> • Activity • Medications/prescription • Wound care • Diet • When to call the doctor • Follow-up visit
Discharge Planning	<ul style="list-style-type: none"> • MIS: Confirm plan to be picked up from hospital tomorrow at 10 a.m. (if applicable) 	<ul style="list-style-type: none"> • MIS: discharge before 10 a.m. • Open partial nephrectomy and donor nephrectomy: confirm plan to be picked up from hospital tomorrow at 10 a.m.

Clinical Pathway – Minimally Invasive Surgery and Open Nephrectomy		
	Post-op Day 3 Open partial nephrectomy or donor nephrectomy Discharge Day	Post-op Day 4 Open radical ne-phrectomy Discharge Day
Consult		
Tests	<ul style="list-style-type: none"> • Blood test if required 	<ul style="list-style-type: none"> • Blood test if required
Medication	<ul style="list-style-type: none"> • Oral pain medication if required • Patient’s own medications if required 	<ul style="list-style-type: none"> • Oral pain medication if required • Patient’s own medications if required
Assessment and Treatment	<ul style="list-style-type: none"> • Vital signs 	<ul style="list-style-type: none"> • Vital signs
Activity	<ul style="list-style-type: none"> • Activity as tolerated 	<ul style="list-style-type: none"> • Activity as tolerated
Nutrition	<ul style="list-style-type: none"> • Regular diet 	<ul style="list-style-type: none"> • Regular diet
Elimination	<ul style="list-style-type: none"> • Passing gas per rectum 	<ul style="list-style-type: none"> • Passing gas per rectum
Patient Teaching/	<ul style="list-style-type: none"> • Deep breathing and coughing exercises • Ankle exercises • Pain management • Activity <p>Open partial nephrectomy: Review post-op instructions with the nurse:</p> <ul style="list-style-type: none"> • Activity • Medications/prescription • Wound care • Diet • When to call the doctor • Follow-up visit 	<p>Review post-op instructions with the nurse:</p> <ul style="list-style-type: none"> • Care of urinary catheter if applicable • Activity • Medications/prescription • Wound care • Diet • When to call the doctor • Follow-up visit
Discharge Planning	<ul style="list-style-type: none"> • Open partial nephrectomy and donor nephrectomy: Discharge before 10 a.m. • Open radical nephrectomy: Confirm plan to be picked up from hospital tomorrow at 10 a.m. 	<ul style="list-style-type: none"> • Open radical nephrectomy: Discharge before 10 a.m.

Nephrectomy Surgery

The Kidneys

The kidneys are fist-sized organs about 10 cm (4 inches) long. They are located in your back above your waistline and are protected by your ribs. The kidneys remove excess fluid and waste material from the blood. They play a role in the production of red blood cells, the formation of bones and the control of blood pressure. Their most important role is producing urine. Urine collects in the middle of each kidney in an area called the renal pelvis. Urine then drains from the kidney through a long tube called the ureter, to the bladder where it is stored. A kidney can be removed for various reasons including trauma and cancer. A healthy single kidney is capable of maintaining normal urine production.



Nephrectomy Surgery

There are 3 types of nephrectomy surgery:

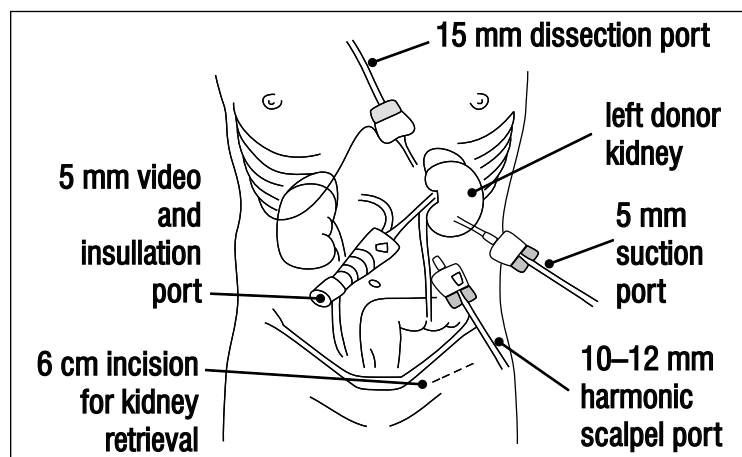
- simple (total removal of the kidney)
- partial (removal of only a portion of the kidney)
- radical (removal of the entire kidney, the adrenal gland, the fat around the kidney and nearby lymph nodes)

Nephrectomy surgery can be performed two ways:

1. Laparoscopic Nephrectomy Surgery

Laparoscopic nephrectomy is the removal of the kidney using a laparoscopic technique.

The laparoscopic nephrectomy is done using the laparoscopic instruments.

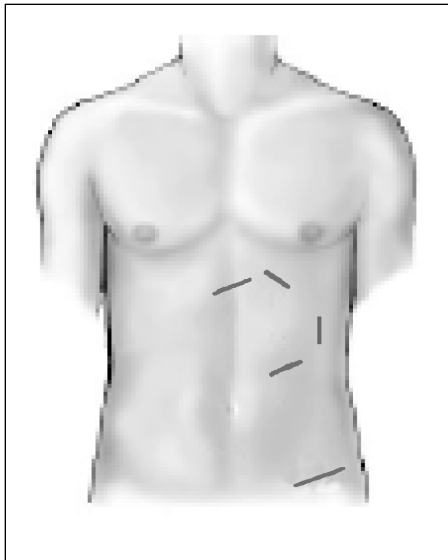


This technique uses a telescope, a video camera, and specially designed instruments. Using the laparoscope, the surgeon only needs to make three or four small incisions in the abdomen. The kidney is then removed through a very small incision in the lower part of the abdomen.

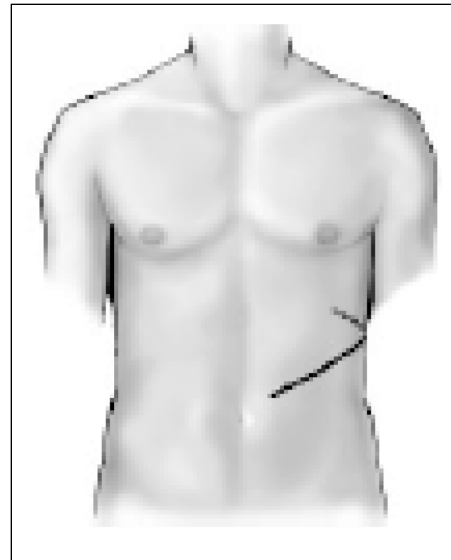
The incisions are usually closed with clips (like staples). The surgery is performed under a general anesthetic and takes up to four hours. After surgery, you will awaken in the Post-Anesthetic Care Unit (PACU). After a couple of hours in the PACU you will be transferred to a hospital room.

2. Open Nephrectomy Surgery

In the open technique, the surgeon removes the kidney through a standard incision (surgical cut), which measures between 20 to 30 cm (8 to 12 inches) long. This incision is made in the side of the body (flank) to allow the surgeon access to the kidney while only minimally disturbing the other abdominal organs.



*Incisions for
laparoscopic technique*



*Incision for
open technique*

Ureterectomy

Sometime your surgeon will also do a ureterectomy. This ureterectomy is the removal of the tube that connects the kidney to the bladder. If you have this procedure, you will be discharged home with a catheter. Your nurse will teach you how to care for your catheter at home.

Preparing for Surgery

How do I prepare for my surgery?

Pre-admission:

You will be called by the hospital for a pre-admission assessment and to arrange for any tests required before your surgery.

Preparing your body:

Stop smoking.

Tobacco in any form should be avoided. This includes pipes, cigars, regular and low-tar cigarettes and chewing tobacco. Even one or two cigarettes a day are harmful. Smoking damages the lining of the arteries, and therefore increases the risk of arteriosclerosis. Smokers should know that it is never too late to benefit from quitting. Smoking places you at risk for lung complications after surgery. **Smoking cessation programs are available to assist you to stop smoking.** Contact the University of Ottawa Heart Institute's Prevention and Rehabilitation Centre Heart Check Smoking Cessation Program at 613-761-4753 or www.ottawaheart.ca

Refer to your clinical pathway (pages three to five) so you and your family know what is to be expected on a daily basis.

After Surgery

After your surgery you will awaken in the Post-Anesthetic Care Unit (PACU), where you will stay until your condition is stable. You will then be transferred to your room. **Visitors are not permitted in the PACU.**

Assessments

The nurse will check you often to ensure that you are comfortable and progressing well. Your temperature, heart rate, blood pressure, and abdominal dressing will be checked. The nurse will also listen to your lungs to check breathing sounds, and your abdomen to check bowel sounds. You will also be asked about "passing gas" and bowel movements.

Intravenous

You will have an intravenous (IV) to replace your fluids until you are able to drink and eat well. Do not pull on the IV tubing. When you are walking, use your hand that does not have the IV to push the pole.

Oxygen

Extra oxygen is sometimes given through a mask placed over your nose and mouth, or by small tubes placed into your nostrils. A small clip on your finger measures the amount of oxygen in your blood. This is called pulse oximetry. The measurement is used to determine if you are getting the sufficient oxygen. The nurses will increase or decrease the amount of oxygen based on their assessment. The oxygen will be discontinued when appropriate.

Pain Management after Surgery

Your comfort is our concern. It is important that you have effective pain relief. Pain is personal. The amount of pain you feel may not be the same as what others feel, even for the same surgery. Our goal is to help you be comfortable enough to participate in the healing process. Your pain should be controlled enough that you can rest comfortably and that it does not prevent you from breathing deeply, coughing, turning, getting out of bed or walking.

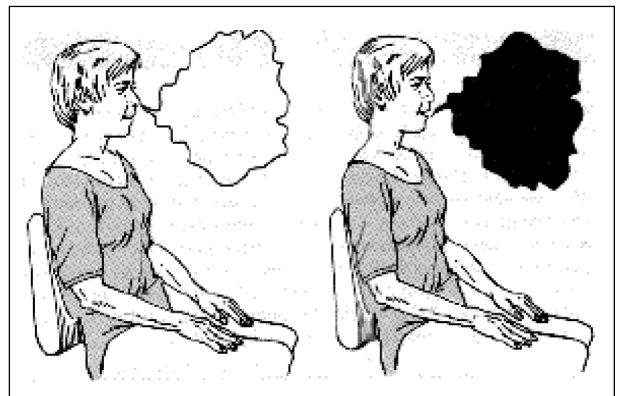
Both drug and non-drug treatments can be successful in helping prevent and control pain. The most common pain-control treatments given after surgery are described in the *Pain Management after Surgery* booklet. You, your doctors and nurses will decide which ones are right for you to manage your pain. Please read the booklet before your surgery and bring it to the hospital on the day of your surgery.

Post-Operative Exercises

Deep Breathing and Coughing

After surgery, we tend to take smaller breaths. This can be because of pain, anesthesia given during our surgery, or not moving around as much after surgery. Doing deep breathing and coughing exercises post-operatively will help keep your lungs healthy by getting rid of extra secretions.

Deep breathing exercises work best when you are sitting up in a chair or on the side of the bed.



Follow these instructions:

- Support your incision with a small blanket or pillow.
- Take a deep breath in through your nose. Hold for five seconds.
- Breathe out through your mouth.
- Repeat this exercise 10 times each hour while you are awake and until your activity level increases.

Coughing exercises help to loosen any secretion that may be in your lungs and should be done after your first five deep breaths.

To produce an effective cough:

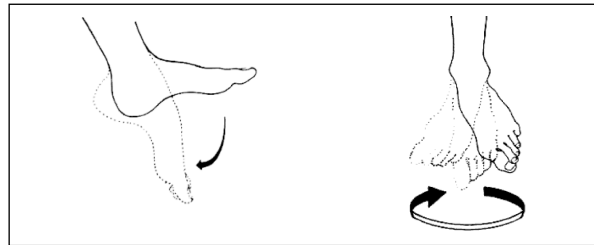
- Support your incision with a small blanket or pillow.
- Take a deep breath and cough.

Ankle Exercises

Ankle exercises help the blood circulate in your legs while you are less mobile. Do these 10 times each hour, while you are awake and until your activity level increases.

With your legs flat on the bed:

- Point your toes towards the ceiling.
- Point your toes towards the foot of the bed.
- Move your ankles in a circle clockwise and counter-clockwise.



Moving and Positioning

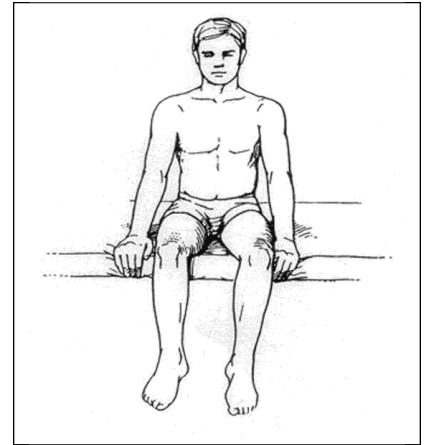
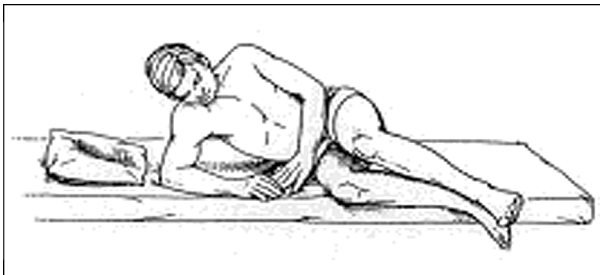
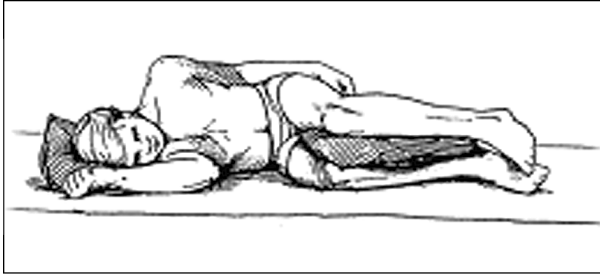
While in bed, it is important to move and reposition yourself. You should reposition yourself every 2 hours while awake.

- Support your abdomen with a pillow or small blanket.
- Bend your knees and roll from your side to your back.

Getting out of Bed

- Roll onto your side and bring your knees up towards your abdomen.
- Place your upper hand on the bed below your elbow.
- Raise your upper body off the bed by pushing down on the bed with your hand.
- Swing your feet and legs over the edge of the bed and bring your body to a sitting position.

- Once in the sitting position, take a few breaths and ensure your balance is good before attempting to stand.
- Slide your bottom to the edge of the bed.
- Stand up keeping your back as straight as possible.
- When getting back into the bed, reverse the process.



Incision

If your surgery was done only by laparoscopy, you will have small incisions in your abdomen that will be covered by tapes called steri-strips. The steri-strips will eventually fall off. If you had a nephrectomy by open surgery, then a dressing will cover the incision. The nurse will remove the dressing after a couple of days. In either case, if your incisions are dry, you may shower. If there is any drainage, the nurse will apply a light dressing and you should avoid showering.

Urinary Catheter (Foley)

You will have a urinary catheter to drain urine from your bladder. The nurse will clean the insertion site of the catheter until it is removed. The nurse will remove the catheter on post-op day one unless an ureterectomy was performed. In this case, you will go home with the catheter and the nurse will teach you how to care for your catheter at home.

Diet

After your surgery you will progress from drinking just fluids to returning to your regular diet. Unless your surgeon has given you specific diet instructions, you should be able to resume a **regular diet with no restrictions in a few days**. The following are suggestions for the early days after your surgery.

- Try to eat three small meals plus two to three snacks daily until your appetite is back to normal.
- Eat slowly and chew your food well.
 - It is important to drink plenty of fluids.
- Your body needs more energy and protein when recovering from surgery and during illness. Try to eat a protein-rich food in each meal and snack (milk, yogurt, cheese, eggs, meat, fish or poultry).

Activity While in Hospital

- Once you are in your room, you will be helped to sit on the side of the bed. If you are feeling strong, you may get out of bed for a short period of time.
- On post-op day one you will be assisted in taking short walks in the hall at least three times.
- On post-op day two, three and four, you should be walking often in the hall. You will continue to increase your endurance. You should aim to be up and out of bed for a total of approximately eight hours.

Discharge Planning

When you are discharge from hospital, you may need some help at home. It would be best to arrange for this before being admitted to the hospital. Arrange for someone to pick you up at 10:00 am on the day of discharge. If you think you will have problems at home, discuss them with your nurse or social worker. You will receive a follow up doctor appointment and a prescription for medication.

Be sure you understand:

- Medication
- Exercise program
- Diet
- Any restrictions regarding your surgery
- When to call the doctor for symptoms
- Follow-up appointments
- Preventing falls at home

Arrange for someone to pick you up by 10 a.m. on the day of discharge.

Going Home

Activity

- Take frequent rest periods as necessary. Let your body be your guide.
- Do light activities for two weeks. Avoid strenuous exercise including heavy lifting, lifting grocery bags, shovelling snow, or pushing a lawn mower until you have seen your doctor on your follow-up visit.
- Increase your walking distance each day.
- Resume your usual activities gradually over three to four weeks if your surgery was by laparoscopy and six weeks if your surgeon used the open technique. Discuss any specific concerns with your doctor including when to resume sexual activity.
- Do not drive a vehicle for at least two weeks. You may resume driving after two weeks if you are comfortable with this.

Medications

- Take your pain medication as required. It is normal to experience some wound discomfort for a period of time after discharge.
- To avoid constipation (a side effect of many pain medication) add water-soluble fibre to your diet (e.g. bran, whole grains, fruit). If constipation is a problem, you may take a mild laxative.
- Do not drive a vehicle if you are taking narcotics. (e.g. Tylenol 3, Hydromorphone, Percocet).

Wound Care

- You may take a shower. Clean your incision with mild soapy water. Dry well.
- You may tub bath once your incisions have fully healed.
- Observe the incision for redness, tenderness, or drainage. Contact your surgeon if problems with your incision develop.
- Swelling or bruising around the incision is common and will go away with time.

Call your surgeon if you have any of the following:

- Chills or fever (temperature greater than 38.5°C/101°F)
- Increased discomfort, redness, swelling, drainage or separation of the incision
- Nausea, vomiting, constipation, abdominal swelling
- Difficulty/discomfort passing urine
- Chest pain, or difficulty breathing
- New or unexplained symptoms

If unable to reach your doctor, please go to the Emergency Department.

Follow-up Appointment

Expect to return to hospital to see your urologist in four to eight weeks. If you are unable to keep your appointment, please telephone in advance.

We hope this booklet has helped in providing you with important information regarding your bowel resection surgery.

– *Surgical Program, The Ottawa Hospital* –

The Ottawa Hospital Learning Services

Do you need help finding more information about your disease?
Please email Learning Services at learningservices@toh.on.ca.

