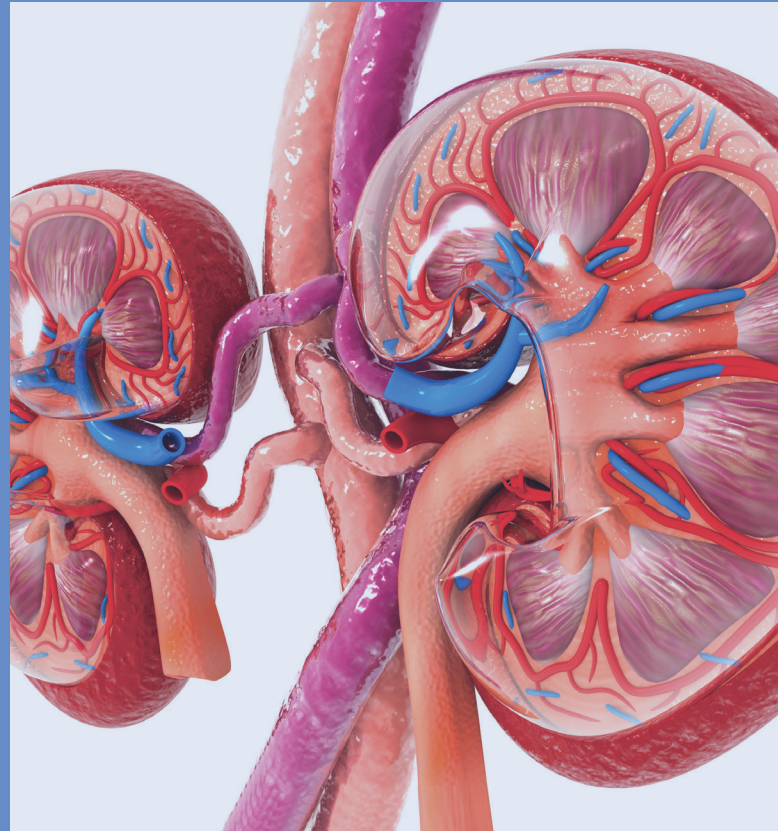


Nephrectomy Surgery

A PATIENT'S GUIDE TO SURGERY,
HEALING, AND RECOVERY



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WELCOME TO COLORADO UROLOGY

At Colorado Urology, our focus is on your recovery and well-being before, during, and following nephrectomy surgery. Our urology specialists are here to help you return to your daily routine as quickly as possible while promoting healing, pain management, and safe and effective care. This booklet will help you prepare for nephrectomy surgery and guide you through what to expect.

WHAT IS THE FUNCTION OF THE KIDNEYS?

The kidneys perform multiple important functions including:

- Remove waste products from the body
- Remove drugs from the body
- Balance the body's fluids
- Release hormones that regulate blood pressure
- Control the production of red blood cells
- Produce an active form of vitamin D which promotes strong, healthy bones

*Source: National Kidney Foundation

REASONS YOU MAY NEED A NEPHRECTOMY

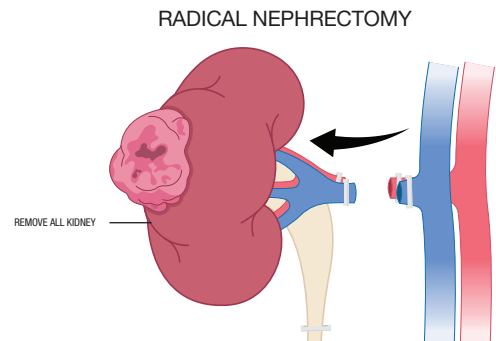
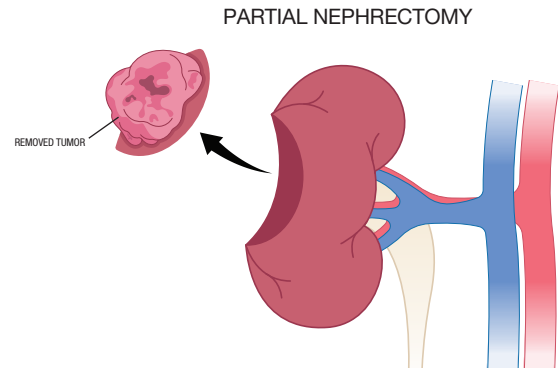
- Kidney tumor
- Infection
- Injury
- Non-functioning kidney
- Kidney deformity

WHAT IS A NEPHRECTOMY?

A nephrectomy is surgery to remove all or part of your kidney. There are different types of nephrectomies including:

- Radical nephrectomy – Removes the entire kidney and some of the surrounding tissues. This procedure is usually performed as a treatment for kidney cancer.
- Simple nephrectomy – Removal of only the kidney (not surrounding tissues) and is typically performed for conditions other than cancer.
- Partial nephrectomy – Removal of only the unhealthy portion of the kidney.
- Nephroureterectomy (nephro-ureter-ectomy) – Removes the kidney and the tube that connects the kidney to the bladder (ureter).

After removing all or part of the unhealthy kidney, the remaining kidney tissue will continue to make urine and remove waste from the body.



TYPES OF KIDNEY SURGERY:

Your urologist will perform the nephrectomy as a minimally invasive laparoscopic or robotic surgery, or as an open procedure. Robotic and minimally invasive procedures are the most common as they have smaller incisions, provide greater precision, utilize specialized instruments, display 3-D images (robotic surgery), and have a greater magnification of the surgical site. This results in less blood loss, and typically a quicker recovery and return to daily activities.

The length of the surgery depends on each patient. Most surgeries take 3 to 6 hours.



Did You Know?

A nephrectomy, the surgical removal or partial removal of a kidney, is the standard treatment for renal cell carcinoma (kidney cancer). While you are born with two kidneys, one healthy kidney can work just as well as two kidneys.



YOUR SURGICAL TEAM

We have assembled a multidisciplinary team to care for you before, during, and after your nephrectomy surgery. In addition to the urologic specialists at Colorado Urology, you may also see specialists such as a medical oncologist, radiation oncologist, and/or a nutritionist.

Your team includes:

A urologist who performs the surgery and oversees your surgical care.

Anesthesia providers are specially trained healthcare providers who administer medications before and during surgery to put you under sedation and prevent you from experiencing pain during the procedure.

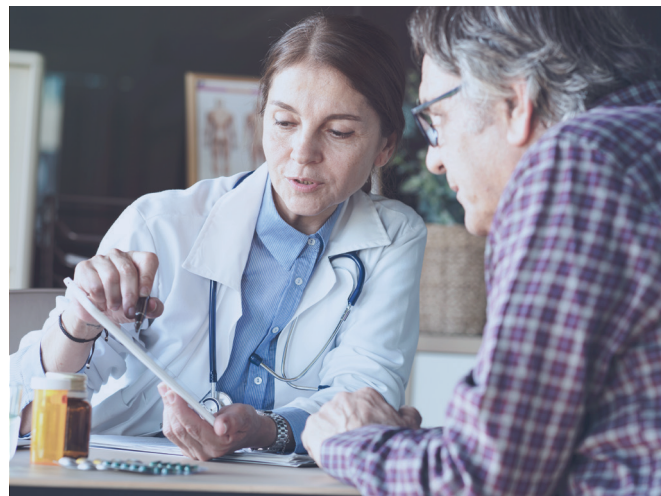
A surgical first assistant is a trained individual who actively assists the surgeon in completing the operation safely and expeditiously.

Advanced practice providers (APPs) are nurse practitioners and physician assistants who provide care during your hospital stay and office follow-up visits.

Registered nurses take care of you throughout your hospital stay.

PREPARING FOR SURGERY

- Eat a well-balanced diet that includes protein, fruits, and vegetables.
- Exercise to stay physically fit before surgery. Walking is a great low-impact exercise that you should do each day for at least 30 minutes.
- Stop nicotine products (cigarettes, nicotine gums, patches, chewing tobacco, etc.) before your surgery to help the healing process and prevent breathing issues after surgery.
- Limit or stop drinking alcohol one week before your surgery.
- Stop using marijuana and CBD products including edible, vapes, and smokable cannabis.
- Medications may need to be stopped before surgery. Your provider team will instruct you on stopping medications such as blood thinners to reduce the risk of bleeding. Follow all instructions provided by your medical team on stopping and restarting medications.



THINGS TO DO:

One Week Before Surgery

- Complete your pre-operative testing. You must have pre-operative testing completed to receive IV sedation or general anesthesia. See your primary care provider or other recommended specialists such as a cardiologist for surgical clearance. This pre-surgical appointment will include a health history review and physical exam to ensure you are fit for surgery.
- Bring a complete list of all your medicines, including vitamins and other over-the-counter medicines to your appointment.
- You may be scheduled to have an X-ray, blood work, an electrocardiogram (EKG), or other tests, depending on your situation.
- Your hospital facility may contact you with specific instructions related to eating and drinking around the time of surgery. You may be given a special carbohydrate drink for the day of surgery. You may also be provided with a special medicated soap to shower with the night before and the morning of your surgery.

The Day Before Surgery

- Hydrate.** Staying well-hydrated is very important before surgery. Drink at least 10 - 8 oz. glasses of water the day before your procedure.
- Pack.** Prepare a bag of essentials to have with you in the hospital including:
 - Photo ID
 - Insurance and prescription cards
 - Medication list – Include all medications you are taking as well as vitamins and over-the-counter medications.
 - Personal items – Pack eyeglasses, hearing aids, dentures, toiletries, CPAP machine, phone charger, and any other essential personal items. Please leave all jewelry and valuables at home.
- Take medication as directed.** Do not take any other medications unless directed by your provider.
- Do not eat or drink anything eight (8) hours prior to your procedure.** This includes water, gum, mints, or chewing tobacco. You may take any prescribed blood pressure, gastric reflux/heartburn, or antibiotic medications as directed by your primary care doctor with a sip of water on the morning of your procedure.
 - The facility where your procedure is being performed may contact you with different or more specific instructions related to eating, drinking and/or medications. ***Please follow their specific recommendations.***
- Prep as directed.** If you have been provided medicated soap (two sponges with medicine on them), shower using one sponge as directed the night before surgery.

The Day of Your Surgery

- Prep as directed.**
 - If you have been provided medicated soap, shower using one sponge as directed on the morning of your surgery to help prevent infection.
- Check-in at the hospital.** Upon your arrival at the hospital, you will fill out your admission paperwork.
 - Once in the pre-operative area, a staff member will ask for your identification and confirm the surgery you will be having.
 - The pre-operative nurses will prepare you for surgery including placing an IV in your arm or hand to administer fluids, pain medicine, or other required medications. Once you have been prepped for surgery, a loved one can stay with you until it is time for your surgery (visitation rules vary by facility).
 - The anesthesia provider will visit with you to discuss pain management during your surgery.
 - Your surgeon will mark the area(s) on your body where they will be operating.
 - When it is time for your surgery, you will be taken to the operating room.
 - A member of the surgical team will provide periodic updates to your loved one(s) and a final update once your procedure has been completed and you are moved to recovery.

The Post Anesthesia Care Unit (PACU)

After surgery you will be taken to the recovery room, also called the Post Anesthesia Care Unit (PACU), where you will begin to wake up from the anesthesia.

What to expect while you are in the PACU:

- Nurses will monitor your heart rate and check your blood pressure as you slowly wake. Once you are awake, the nurse will bring your loved one to be with you.
- Your nurse will ask about your pain level on a scale of 0–10, with 0 being no pain and 10 being a high level of pain.
- Your nurse will ask you to take deep breaths. This helps rid the body of the anesthesia and also helps to prevent pneumonia.
- You may have compression wraps put on your legs to help prevent blood clots while you are in bed.
- A urinary catheter to drain urine from your bladder may be in place.



DURING YOUR HOSPITAL STAY

In the Hospital Room

- Once a bed is ready and you have recovered from the anesthesia, you will be transferred to a hospital room for the duration of your stay. Generally, you will be admitted for one to four days.
- If you have a urinary catheter, it will generally be left in place for one to two days.
- You will be encouraged to take deep breaths and cough. This is very important to prevent pneumonia during your recovery. You may also be provided with an instrument called an incentive spirometer. Your nurse will instruct you on proper use.

How Much Pain Will I Experience?

Some degree of post-operative pain is expected. Our goal is for your pain to be controlled well enough for you to be able to participate in the activities necessary to expedite your recovery such as getting out of bed and performing the recommended breathing exercises.

Every patient's experience with post-surgical pain is different and controlling your pain is very important in your recovery. Your nurse will ask you often to rate your pain on a scale of 0 to 10.

- In many cases, pain can be effectively managed without narcotics. If necessary, a narcotic pain medication may be offered if other medications do not effectively control your pain.
- Pain medicine does not control all discomfort after surgery. For example, if you had a robotic procedure, you may have soreness or bloating due to the gases used to fill your abdomen during surgery. Walking and heating pads are effective at relieving this type of post-surgical discomfort.

When Can I Eat and Drink?

Nutrition is an important part of the recovery process following your surgery.

- You may be started on a limited diet that will gradually be advanced to your regular diet once you have a return to normal bowel function.
- You will be encouraged to chew mint gum or have hard candy. This helps get your stomach and bowels functioning again after surgery. Mint can also help settle your stomach.
- Let your nurse know if you have any nausea. You will be offered anti-nausea medication.

When Can I Start Walking?

Walking is vital for the body's healing process. You will be encouraged to get up and start walking almost immediately after you wake from surgery.

- Walking helps prevent blood clots and helps improve breathing function following surgery.
- Your nurse will have you walk the halls once you get to your hospital room.
- You will be encouraged to walk the halls at least four to six times per day for up to 30 minutes each walk.



Side Effects and Potential Complications

There are several possible side effects and/or complications that can arise after surgery including:

- **Constipation and Ileus.** This is common as your bowels recover from the anesthesia and any narcotic pain medications. Walking and staying hydrated can provide relief. If you experience severe abdominal pain, bloating, or vomiting call your provider right away.
- **Bladder spasms.** Bladder spasms resulting from a catheter may cause you to feel a sudden urge to urinate or cause urine leakage around the catheter. Leakage around the catheter is acceptable as long as the majority of the urine routinely drains through the catheter tubing. Bladder spasms should subside once the catheter is removed. Your provider may prescribe medications to control bladder spasms.
- **Deep vein thrombosis (DVT)/blood clot.** Several steps can be taken to prevent blood clots after surgery including compression stockings, sequential compression devices, and/or administration of blood thinners. A blood clot, or DVT, occurs when blood pools in the lower legs causing swelling, redness, and pain, and is typically caused by lack of movement. This is why walking immediately after surgery is recommended. A DVT is a medical emergency and must be addressed immediately.
- **Infection.** If the incision becomes very red, has foul-smelling drainage, or opens, your provider will need to assess for and treat a possible infection.

At Colorado Urology, we take an integrated approach to urologic care, providing patients with access to experienced specialists and a support team of healthcare professionals to deliver comprehensive care before, during, and after your nephrectomy.

GOING HOME

Your Going Home Checklist

You will be discharged from the hospital when:

- Your pain is well managed with oral pain medication. Narcotic medication can be carefully prescribed if your pain is so severe that you cannot walk, sleep, eat, or drink. Take all medications exactly as directed.
- You are provided with instructions on how to care for your incision.
- You are eating and drinking regularly.
- You are walking without assistance. Walking is a great way to promote healing!
- You or your caregiver knows how to care for your urinary catheter, if necessary.
- You are provided instructions on the gradual return to normal activities. Refraining from lifting anything heavy is important to avoid straining or pulling at the incision site. You should be able to return to full activity in 6 to 8 weeks.



Time for a Follow-Up Appointment

You will have a follow-up appointment with your urologist or an advanced practice provider (physician assistant or nurse practitioner) 1-3 weeks after your surgery.

During this appointment, the provider will assess your pain level, mobility, bowel function, and check your incision site to ensure it is healing properly. Your provider will also review your follow-up plan of care.

CALL US

If you experience any of the following, please contact your provider:

- A fever of 101 degrees Fahrenheit or higher
- Foul-smelling drainage or increased redness at the incision site (minor redness at the edges of the incision is normal)
- An incision that opens
- Uncontrolled pain, nausea, or vomiting
- Swelling, redness, or pain in the legs

If you have sudden shortness of breath, chest pain, severe abdominal pain, loss of consciousness, or vision call 9-1-1 or go to your nearest emergency room.

