Robotic Kidney Surgery

Pre-Operative Patient Guide: Partial Nephrectomy, Simple Nephrectomy, and Radical Nephrectomy

Purpose of this guide

This handout explains what surgery is planned, how recovery usually starts in the hospital, and which risks are most important to understand before surgery. Your anesthesia and pre-surgery testing team will give separate instructions about food, drink, medications, blood thinners, and arrival time.

What type of kidney surgery am I having?

Robotic Partial Nephrectomy	Robotic Simple / Radical Nephrectomy
A kidney mass is removed while trying to preserve as much normal kidney as possible. This is used when the mass appears suitable for focal removal. After the mass is removed, the kidney is repaired. This repair is called a renorrhaphy and is typically done in two layers.	The kidney is removed. From a patient recovery standpoint, simple nephrectomy and radical nephrectomy are very similar. This may be done for a kidney mass, a nonfunctional kidney, chronic infection, inflammation, obstruction, or severe kidney damage.

How the surgery is performed

The operation is performed with a minimally invasive robotic approach through several small abdominal incisions. The surgery is done through the abdominal cavity, called a transperitoneal approach. Because the surgery goes through the abdomen, some recovery symptoms are related to the intestines and abdominal healing, such as bloating, gas discomfort, nausea, constipation, and decreased appetite.

The kidney mass or kidney is removed through one of the incisions, which may need to be slightly enlarged.

Recovery expectation

Most patients are walking and improving within days, but it is common to feel bloated, tired, and not fully back to normal for about 2-3 weeks. Full internal healing and return to strenuous activity takes longer, usually about 4-6 weeks or more depending on the operation and your recovery.

The surgical plan can change

Partial may become radical	Robotic may become open	Why this happens
A planned partial nephrectomy may become removal of the whole kidney if that is the safest choice.	A robotic operation may need to be converted to an open incision if that is safer.	Conversion is a safety decision, not a failure. It may be needed for bleeding, anatomy, inflammation, scar tissue, infection, or tumor complexity.

Examples include difficult bleeding, unclear or unsafe anatomy, a mass that is more complex than expected, an unsafe kidney repair, severe inflammation or infection, or the need to prioritize cancer control and patient safety.

Tubes, Hospital Stay, and Risks

Most patients stay in the hospital at least overnight. The exact timing depends on your recovery and labs.

Foley catheter	Drain after partial nephrectomy	Drain after simple/radical nephrectomy
A Foley catheter drains urine from the bladder. It is placed while you are asleep and is usually removed the morning after surgery.	A drain is usually left temporarily after partial nephrectomy to monitor and remove fluid. It is usually removed before discharge.	A drain is not always needed. It may be used if there is infection, inflammation, spillage, significant irrigation/fluid, or if your surgeon wants extra fluid to drain out.

Hospital stay

Discharge depends on pain control, walking ability, nausea, bowel function, blood count, kidney function labs, urination after catheter removal, drain output if a drain was placed, and the complexity of surgery.

Main risks of surgery

General surgical risks	Abdominal / nearby organ risks	Kidney-specific risks
• Bleeding or transfusion • Infection • Blood clots • Pneumonia • Heart or anesthesia complications • Need for another procedure	• Injury to bowel, blood vessels, spleen, liver, pancreas, diaphragm, or surrounding organs • Hernia at an incision • Ileus, nausea, bloating, or constipation • Conversion to open surgery	• Temporary or permanent kidney function decline • Rare risk of dialysis, especially with limited baseline kidney function or a solitary kidney • Need for long-term kidney monitoring

Partial nephrectomy-specific risks

Partial nephrectomy has additional risks because part of the kidney is removed and the remaining kidney tissue is repaired. These include urine leak, bleeding from the kidney repair, delayed bleeding days to weeks after surgery, longer drain time, need for a stent or embolization procedure, or conversion to radical nephrectomy if partial removal is not safe.

Kidney Function and Surgery Checklist

Kidney function is monitored with blood tests before and after surgery.

After partial nephrectomy	After simple / radical nephrectomy
The goal is to remove the mass while preserving as much kidney function as possible. Blood tests are used to monitor kidney function after surgery.	The remaining kidney usually takes over more of the body's filtering work. Many people live normally with one kidney, but long-term monitoring is important.

Long-term kidney health usually includes blood pressure control, kidney function blood tests, urine testing when appropriate, avoiding unnecessary kidney-stressing medications when advised, and follow-up imaging if surgery was done for a kidney mass or cancer concern.

Before surgery: practical checklist

Medication planning	Home planning	Day-of-surgery planning
• Bring an updated medication list • Make sure the team knows about blood thinners, aspirin, NSAIDs, diabetes medicines, and supplements • Ask when to stop and restart blood thinners	• Arrange a responsible adult to drive you home • Plan help at home for the first few days • Try to avoid constipation before surgery • Do not shave the surgical area unless told to	• Follow anesthesia instructions about eating and drinking • Arrive at the instructed time • Bring requested imaging discs or records • Expect to meet nursing, anesthesia, and surgical teams

Questions to ask before surgery

Surgical plan	Hospital recovery	Follow-up
• Am I planned for partial nephrectomy or kidney removal? • What would make you remove the whole kidney? • What would make you convert to open surgery?	• Is a drain expected? • How long will the catheter stay in? • How long do you expect me to stay in the hospital?	• What is my baseline kidney function? • When should pathology results be available? • What labs or imaging will I need after surgery?

Key takeaways

Partial nephrectomy	Simple / radical nephrectomy	Recovery
Removes the kidney mass while trying to preserve kidney tissue. A drain is usually placed. Rare delayed bleeding or urine leak can occur.	Removes the kidney. Recovery is similar from the patient standpoint whether the kidney is removed for cancer, function loss, infection, or inflammation.	This is minimally invasive surgery, but still a major abdominal operation. Walking early, preventing constipation, and following lifting restrictions are important.

Patient education guide - follow your surgeon and anesthesia team instructions if they differ from this handout.