# Nephrectomy

**What is a nephrectomy?**
*Nephrectomy* (*nephro* = kidney, *ectomy* = removal) is the surgical removal of a kidney. The procedure is done to treat kidney tumors as well as other kidney diseases and injuries. Nephrectomy is also done to remove a healthy kidney from a donor for transplantation. Thousands of nephrectomies are performed every year in the U.S.

**Types of nephrectomy**
There are two types of nephrectomy for a diseased kidney: *partial* and *radical.* In partial nephrectomy, only the diseased or injured portion of the kidney is removed. Radical nephrectomy involves removing the entire kidney, along with a section of the tube leading to the bladder (ureter), the gland that sits atop the kidney (adrenal gland), and the fatty tissue surrounding the kidney.

**How is the surgery done?**
**Laparoscopic Surgery**
Some people who require a nephrectomy are suitable for *laparoscopic surgery* (also called minimally invasive surgery) to remove the kidney. Laparoscopic surgery involves the use of a camera that is passed through a series of small incisions or "ports" in the abdominal wall. It is used to view the abdominal cavity and remove the kidney through a small incision. The procedure is done under general anesthesia (you are asleep and do not feel any pain.

Laparoscopy achieves the same things as traditional surgical techniques and can be used for both radical and partial surgery. The advantages of laparoscopic surgery include:

- Shorter recovery time
- Shorter hospital stay
- Smaller incisions
- Fewer post-operative complications

Whether you can have laparoscopic surgery depends on the size and location of the tumor, your medical condition, and overall health.

**Open Nephrectomy**
Open nephrectomy is rarely required but is also done under general anesthesia. The surgeon makes a cut (incision) in the abdomen or in the side of the abdomen (flank area). A rib may need to be removed to perform the procedure. The ureter (the tube that carries urine from the kidney to the bladder) and the blood vessels are cut away from the kidney and the kidney is removed.

**Aftercare and recovery**
Immediately after surgery, your health care team will carefully watch your blood pressure, electrolytes and fluid balance. These body functions are controlled in part by the kidneys. You will most likely have a urinary catheter (tube to drain urine) in your bladder for a short time during your recovery.

You may have discomfort and numbness (caused by severed nerves) near the incision area. Pain relievers are given after the surgical procedure and during the recovery period as needed. Although deep breathing and coughing may be painful because the incision is close to the diaphragm, breathing exercises are important to prevent pneumonia.

You will probably remain in the hospital for 1 to 2 days, depending on the method of surgery used. You will be encouraged to return to light activities as soon as you feel up to it. Strenuous activity and heavy lifting should be avoided for 6 weeks following the procedure.

Your doctor will give you more detailed instructions about your post-operative activities, restrictions and diet.

**Risks and complications of nephrectomy**
All surgery has certain risks and complications. Possible complications of nephrectomy include:

- Infection
- Bleeding (hemorrhage) requiring blood transfusion
- Post-operative pneumonia
- Rare allergic reactions to anesthesia
- Death

There is also the small risk of kidney failure in a patient with lowered function or disease in the remaining kidney.

**Care of the remaining kidney**
Tests will be done on a regular basis to check how well the remaining kidney is working. A urinalysis (urine test) and blood pressure check should be done every year, and kidney function tests (creatinine, glomerular filtration rate [GFR]) should be checked every few years (or more often if abnormal results are found). Regular urine tests for protein should be performed as well. The presence of protein in the urine may mean that the kidney has some damage.

People with one kidney should avoid sports that involve higher risks of heavy contact or collision. This includes, but is not limited to, boxing, field hockey, football, ice hockey, lacrosse, martial arts, rodeo, soccer and wrestling. Anyone with a single kidney who decides to participate in these sports should be extra careful and wear protective padding. He or she should understand that losing the remaining kidney is a very serious situation.

**Are dietary changes needed?**
In general, special diets are not needed by individuals who have one healthy kidney. Speak to your doctor or a registered dietitian if you have questions about the basic makeup of a healthy diet.