

General Nephrectomy

What Is A Nephrectomy?

A nephrectomy is a surgical procedure to remove all or part of a kidney. This operation is used to treat kidney cancer as well as benign kidney disease and injuries and to remove a healthy kidney from a donor for transplant.

Why Is A Nephrectomy Performed?

A nephrectomy is used to treat several conditions, including:

- Kidney cancer
- Congenital kidney disease
- Non-functioning or severely damaged kidneys due to:
 - Chronic kidney disease
 - Chronic kidney infections
 - Kidney stones
- Severe kidney trauma
- Polycystic kidney disease
- Kidney donation for transplant

The surgical removal of a diseased or damaged kidney can alleviate symptoms, prevent further complications, and, in the case of kidney cancer, potentially save lives.

Types Of Nephrectomy

The surgery can be performed in different ways, depending on the reason for the procedure and your overall health:

- **Simple nephrectomy** for benign (non-cancerous) conditions, this involves removal of the kidney only.
- **Radical nephrectomy:** This is for treatment of kidney cancer, where the whole kidney and surrounding tissue is removed. Nearby lymph nodes and the adrenal gland may also be removed.
- **Partial nephrectomy:** Involves removing only the diseased or injured part of the kidney containing the tumour. This may be for benign conditions or for selected small kidney cancer. It is ideal for preserving kidney function. This kind of surgery might also be recommended if your body can't cope with losing a whole kidney.
- **Nephroureterectomy:** For treatment of transitional cell cancer (TCC) of the kidney. Because TCC can affect any part of the urinary tract, when removing the kidney, your urologist will also recommend removing the ureter.

Nephrectomy may also be performed when kidney cancer has spread (metastatic kidney cancer). The kidney is removed to reduce the tumour burden, even though the cancer has spread to other parts of the body. This surgery is often followed by systemic therapy.

Surgical Approaches

Simple, radical, partial nephrectomy and nephroureterectomy can be performed as a robotic, laparoscopic or open procedure:

- **Robotic assisted laparoscopic nephrectomy:** This is a minimally invasive surgery where the surgeon uses robotic instruments to remove the kidney through small incisions. The robotic system provides enhanced precision, flexibility, and control.
- **Laparoscopic nephrectomy:** A minimally invasive technique. Laparoscopic nephrectomy is performed through several small incisions. A laparoscope (a thin tube with a light and camera on the end) is then inserted through one of the incisions. The camera sends pictures to a TV screen so the urologist can see the kidney and surrounding tissue. One of the incisions will be enlarged enough to enable the kidney to pass through once it has been disconnected from the surrounding tissues and blood vessels.
- **Open nephrectomy:** In this traditional approach, the surgeon makes a larger incision in the abdomen or the side of the abdomen (flank) to access and remove the kidney. This method may be necessary for larger tumours or more complex cases.

What To Expect If You're Having A Nephrectomy

Before Surgery:

- **Consultation:** Includes detailed discussions about the risks and benefits of the surgery, and an assessment to determine the most suitable surgical approach.
- **Investigations:** May include blood tests, additional imaging studies, and other functional tests to ensure your readiness for surgery.
- **Medication:** Inform your doctor about all medications you are taking. You may need to stop certain medications, especially blood thinners, before surgery.
- **Fasting:** Typically, you may need to fast for at least 8 hours prior to the surgery.

The procedure:

- **Anaesthesia:** General or regional, depending on the extent of the surgery.
- **Surgery:**
 - Depending on whether the surgery is open or laparoscopic, your surgeon will make one or several incisions below your ribs.

- Part or all of the kidney is carefully removed, along with some surrounding tissue, the adrenal gland and lymph nodes if necessary.
- Your surgeon will then close your incisions with stitches or staples.
- Duration: 2-4 hours for an open nephrectomy and 3-4 hours for a robotic or laparoscopic nephrectomy.

After surgery:

Hospital recovery:

- **Monitoring:** Post-operative care includes regular monitoring for complications and management of pain. You may have a urinary catheter temporarily.
- **Hospital stay:** May vary from a few days to a week, depending on the type of surgery and your recovery speed. Robotic or laparoscopic nephrectomy often means a shorter hospital stay compared to open nephrectomy.

Home Recovery:

- **Instructions:** You will be given advice regarding for wound care, pain relief and signs of complications to watch for at home.
- **Breathing exercises:** Deep breathing and coughing may be painful because the incision is close to the diaphragm. Breathing exercises are important to prevent pneumonia.
- **Catheter:** You will usually have a catheter initially to help you urinate.
- **Activity** You may feel very tired for one or two weeks after surgery. Gradually increase your activity level as recommended by your healthcare team. Stick to light activities for at least six weeks. It may be between 1-3 months before you can return to work. Full recovery is typically expected after 3 months.
- **Follow-up:** Regular follow-up appointments will be made to ensure proper healing and to monitor kidney function.

Benefits Of Robotic Or Laparoscopic Surgery Compared To Open Surgery

- Less invasive procedure
- Lower risk of bleeding, infection and complications
- Shorter hospital stay
- Faster recovery

Disadvantages Of Robotic Or Laparoscopic Surgery

- The procedure may take longer, so you may be under anaesthetic for longer.
- Your urologist may have switch to open surgery during the operation - for example, if a cancer is difficult to reach or there is difficulty controlling bleeding.

What Are The Risks Of Having A Nephrectomy?

Like any surgery, having a nephrectomy carries certain risks, including:

- Bleeding
- Infection
- Injury to surrounding organs
- Reaction to the anaesthetic
- Impaired kidney function, especially if the remaining kidney's health is compromised. The risks of reduced kidney function include high blood pressure, chronic kidney disease, or even kidney failure.

Kidney Function After Surgery

The following tests will be done on a regular basis to check how well the remaining kidney is working:

- Urinalysis (urine test) to check for protein. Protein in the urine may indicate reduced kidney function.
- Blood pressure check: Annually.
- Blood tests to check kidney function (creatinine, glomerular filtration rate [GFR]) every few years (more often if abnormal results are found).

People with one kidney should avoid sports that involve higher risks of heavy contact or collision.

Why Choose Birmingham Urology Centre?

Our team is equipped with advanced technology and expertise in the latest surgical techniques for kidney cancer and kidney disease, including state-of-the-art robotic-assisted laparoscopic nephrectomy. Our experienced surgeons are leaders in the field of urology, committed to delivering the highest quality personalised care and ensuring the best possible outcomes for our patients while minimising risks.

Contact us

If you have been diagnosed with kidney cancer or benign kidney disease and you are considering surgical options, contact us to book an appointment. Our dedicated team is here to support you through each step of your treatment journey.