

## WHO IS SUITABLE FOR ROBOTIC-ASSISTED PARTIAL NEPHRECTOMY?

---

Robotic-assisted partial nephrectomy may be an option for patients with:

- A benign or cancerous kidney tumour

- Kidney tumour smaller than 4cm diameter, or multiple small tumours

- A tumour that is 5-7cm diameter may be suitable depending on the position within the kidney

- Severely damaged or diseased kidney tissue that requires removal, where the entire kidney is not affected

## WHAT ARE THE ADVANTAGES OF ROBOTIC-ASSISTED PARTIAL NEPHRECTOMY?

---

If it deemed appropriate, a robotic-assisted partial nephrectomy is advantageous to the patient since it

enables preservation of the healthy kidney tissue, rather than removing the entire kidney. This may result in a lower risk of kidney failure in the long term.

Robotic-assisted partial nephrectomy offers both the surgeon and the patient various benefits when compared to conventional laparoscopic or open surgery.

The patient benefits from:

- Smaller incisions

- Shorter blood cut-off time (ischemia) to the kidney

- Less blood loss

- A shorter hospital stay and faster recovery time

The surgeon benefits from:

- Greatly enhanced, high definition 3D vision inside the body

- Small and precise instruments that allow a greater range of movements than the human hand

HOW IS A ROBOTIC-ASSISTED  
PARTIAL NEPHRECTOMY  
PERFORMED?

---



The patient is placed under general anaesthetic for the duration of the procedure, which lasts around 3 hours

Between 3-5 small keyhole incisions are made in the abdomen, through which the surgical tools and camera are inserted

Carbon dioxide is used to inflate the patient's abdomen, creating space required for the surgeon to view and access the affected kidney in detail

Under the control of the surgeon, the blood flow to the affected kidney is temporarily interrupted (in most cases)

The affected kidney tissue or tumour is carefully removed from the kidney

The incision or cut in the kidney is meticulously sutured back together and blood flow to the kidney is restored

Carbon dioxide is released and the robotic instruments are removed

Incisions are sealed carefully, to reduce the chance of hernia or scarring

WHAT TO EXPECT AFTER A  
ROBOTIC-ASSISTED PARTIAL  
NEPHRECTOMY?

---



You may remain in hospital for 2-3 nights following your procedure

There may be some mild pain or discomfort which will be managed with medication

You will be encouraged to sit out of bed and walk around as well as perform deep-breathing exercises to minimize the chance of pneumonia or blood clots in the legs or lungs (DVT/PE)

Uncommon complications include:

- Leakage of urine into the abdomen from the kidney incision

- Damage to major blood vessels during surgery

- Incisional hernia (usually where there are problems with wound healing)

## PROCEDURE OUTCOMES



---

Robotic-assisted partial nephrectomy offers patients the ability to maintain good kidney function, through preservation of their healthy kidney tissue. Most patients are able to return to their normal activities within 2-3 weeks following a robotic-assisted partial nephrectomy. Strenuous activities and heavy lifting should be avoided for 6 weeks following surgery to minimize the chance of bleeding or hernia.

Written by [Dr. Shekib Shahbaz](#) and [Dr. Tony de Sousa](#)

Rogers, C. G., Singh, A., Blatt, A. M., Linehan, M., Pinto, P. A., (2008), Robotic partial nephrectomy for complex renal tumours: surgical technique, European Urology ,53(3),

[<https://www.sciencedirect.com/science/article/abs/pii/S030>  
accessed 27/02/21.