

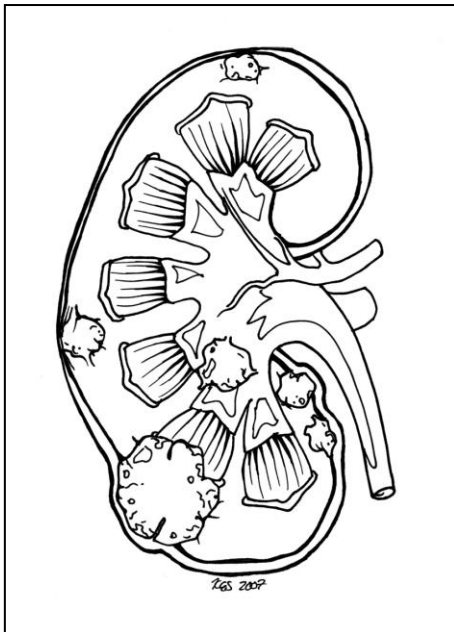
Kidney Health Information

Kidney Cancer

Kidney cancer accounts for almost 3% of cancers in the UK in males and 2% in females, but it seems to be increasing. Over the past 20 years kidney cancer in the UK has increased by around 70%.

Several types of cancer can develop in the kidney. These include:

- **Renal Cell Carcinoma** – the most common form in adults. The average age of diagnosis is 55 years and more than 80% of kidney cancers in the UK are of this type. There are several forms of Renal Carcinoma:
- **Clear Cell Cancer** also known as Hypernephroma – this is the most common form in the UK. There are more than 5,700 new cases each year. It can be difficult to treat as it is often not discovered until well developed
- **Other types** – chromophilic, chromophobic, oncocytic, collecting duct, and sarcomatoid cancers are all rare types of kidney cancer



- **Transitional cell cancer** (carcinoma). This affects the renal pelvis or ureters. It is similar to cancers of the bladder but treatment often involves removing the kidney if it occurs far above the bladder

Wilm's Tumour (Nephroblastoma) – is the most common kidney cancer in children. It affects around 1 in 10,000 children in the first years of life. It arises because normal development of the kidney has been disrupted. Rarely a tendency to develop this type is inherited.

Benign Renal Tumours

Benign tumours are not really cancers, though some of them can change into cancers with time. A major problem with them is that they can be confused with cancers. However benign tumours often require no treatment. They are often found by chance during investigations for other problems, usually by ultrasound, or CT or MRI scans.

Benign renal adenomas seldom cause symptoms but may be difficult to distinguish from a renal cell carcinoma.

Renal Angiomyolipoma An angiomyolipoma is a benign tumour made up of vascular (blood vessel) tissue, fat and smooth muscle tissue. These are more common in women in middle age or later. In those with a condition called Tuberous Sclerosis, the tumours can be multiple and occur in both kidneys so that eventually renal failure can occur.

Symptoms of Kidney Cancer

At first, kidney cancer causes no obvious signs or trouble. Later on, some or any of the following may occur:

- Blood in the urine – not always seen every day. The blood may be visible or sometimes found by urine testing at a surgery or clinic
- A lump or mass may be found in the kidney area
- Pain is not usually present in early cancer

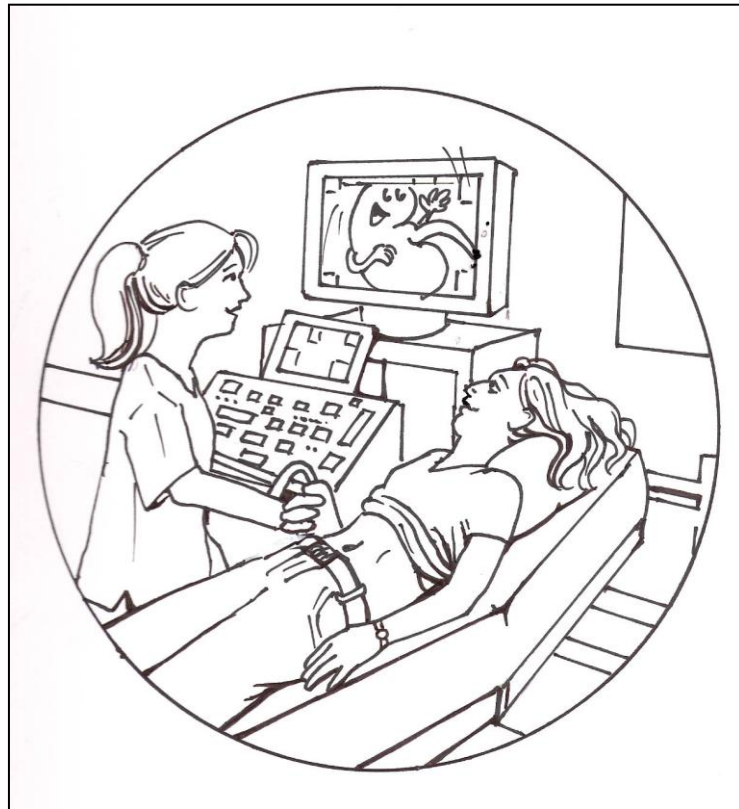
Less commonly there may be...

- Fatigue
- Loss of appetite
- Weight loss
- Recurrent fevers
- A persistent pain in the side
- A general feeling of poor health
- High blood pressure
- Anaemia

Of course most of these symptoms could have other less serious causes. The earlier diagnosis is made and treatment started, the better the chances of a full recovery.

Diagnosis

- Imaging tests – usually ultrasound, CT or MRI scans, are often enough to make the diagnosis certain.
- Sometimes a biopsy may be taken. During the test a tissue sample is taken from the tumour. The tissue sample is examined microscopically by a pathologist to see whether any cancer cells are present.



Scanning - one method of diagnosis

Patients will have many questions and concerns:

- Does a biopsy hurt?
- How long will it take?
- Will I be awake?
- How soon will I know the result?
- If it is cancer, how soon will my treatment start?

Once kidney cancer has been diagnosed, the doctor will want to know whether it has spread and if so the extent. This involves further X-rays or other tests.

The information gained will be used to plan the patient's treatment.

Treatments

Treatments depend on the stage or extent of the disease, and the patient's general health. A treatment plan is designed to fit in with each patient's needs.

People with kidney cancer are treated by a team of specialists, which may include:

- A Urologist
- An Oncologist
- A Radiation Oncologist

Kidney cancer can be treated with all or some combination of the following:

- Surgery
- Radiation Therapy
- Biological Therapy
- Chemotherapy
- Hormone Therapy

Surgery

Various surgical methods can be used:

Radical Nephrectomy – Is the removal of a kidney and tissue surrounding the kidney. The adrenal gland is sometimes also taken out.

Partial Nephrectomy – just the part of the kidney that contains the tumour is removed.

Laparoscopic (Keyhole) surgery can be used to remove a part or even a whole kidney without the need for major or open surgery. The Laparoscope comprises small instruments and a camera that is passed

through a small opening a couple of centimetres long. There are several advantages:

- The operation site is smaller, so there is a smaller scar
- There is less discomfort after surgery, so less need for pain killers
- Healing and recovery time is usually shorter, so people are home from hospital sooner

The main disadvantage of this method is that surgery can take longer, and it can make some operations more difficult.

Surgery and arterial embolisation are local therapies; they affect cancer cells only in the treated area.

Biological, chemotherapy, and hormone therapy are systemic treatments because they travel through the bloodstream and can reach cells throughout the body.

Some people take part in a clinical trial (research study). Such studies are designed to improve cancer treatments.

As patients prepare for treatment, it is natural that there are feelings of concern. Once patients begin to recover from this, many want to be active in the planning of their treatment.

Some frequently asked questions are:

- What type of kidney cancer do I have?
- Has it spread and by how much?
- What choices treatments are there?
- Can I go o a clinical trial?
- Are there any risks and side effects?
- How good are the chances of successful treatment?
- How long will treatment last?
- Will I have to stay in the hospital?
- How will my lifestyle be affected, will I have to make changes?
- How soon will I recover?

Arterial embolisation

Can be used to make surgery easier when removal of the kidney is not possible. In this technique a blood supply to the tumour is reduced, so that the tumour starves and shrinks.

Radiation therapy (radiotherapy)

- Uses X-rays to kill the cancer
- It is sometimes used to relieve pain (palliative therapy) if kidney cancer has spread to the bone
- Treatment usually given on an outpatient basis at hospital
- Usually this is scheduled for five days a week, for several weeks

Biological Therapy (immunotherapy)

Uses the body's natural ability (immune system) to fight cancer. Interlukin-2 and interferon are types of biological therapy used to treat advanced kidney cancer. These therapies are usually given in hospital.

Chemotherapy uses drugs to kill cancer cells. Chemotherapy has shown limited effectiveness against kidney cancer. However, researchers continue to study new drugs and new drug combinations that may prove to be more useful.

Hormone therapy Some kidney cancers may be treated with hormones to control the growth of cancer cells.

Current and recent research focuses on 'patterns' of occurrence in the general population in order to look for common factors. Such studies help to determine the 'risk' factors.

Some groups of people have a greater risk:

- The incidence of kidney cancer increases with age
- It is more common between the ages of 50 and 70
- Twice as many men as women are affected
- It is more common in Afro-Caribbean men than in white men

Smokers -Smoking increases the risk of transitional cell cancer. There are theories that cancer also increases the risk of other renal carcinomas occurring.

Obesity - There are theories that being obese also increases the risk of renal cell carcinoma.

Radiation therapy

Where this treatment has been used close to the kidneys, there may be an increased risk.

Dialysis: In the long term, this treatment has a slightly increased risk of kidney cysts and cancer

Finding out more

NHS Choices on [Kidney Cancer](#)

[Medicine Guides](#) for Kidney Cancer – from NHS Choices

The website of Patient UK - [Kidney Cancer](#)

Merk Medicus, USA – [Kidney Cancer](#) Go to cancers of the kidney and urinary tract

[Kidney Cancer UK](#)

Occupational Exposure. Some workers may have a greater chance of developing kidney cancer. See the [Health and Safety Executive](#) website for further details

Our Funded Research

Clear cell cancer

In 2005 Kidney Research UK with the Royal College of surgeons funded a joint two-year research fellowship at Imperial College, London. This aims to improve the understanding of Clear Cell Cancer as well make possible earlier diagnosis, so more effective treatments can be offered.

The role of calcium in the development of the kidney (2005). This study considers the development of the normal kidney, and the development of Wilms' Tumour by investigating the development of proteins in the normal kidney as well as in Wilm's Tumour.

Targeting a growth-promoting protein as treatment for kidney cancer (2004)

Some kidney tumours make a growth-promoting protein: *insulin-like growth factor receptor (IGFR)* This study considers whether IGFR responds to immunotherapy by inhibiting cancer growth in improving the benefits of chemotherapy.

The role of Wilms' Tumour 1 (WT1) protein isoforms in the kidney (2003)

The WT1 gene causes childhood kidney cancer as well as kidney disease. By studying genetically engineered mice with the WT1 Gene the study has been able to identify new genes that may be involved in the disease process. This study also provides evidence, that 'sclerotic' kidney diseases all progress in the same way, despite having different causes.

Please be aware that we have made every effort to ensure this information is accurate, however we cannot guarantee that there are no mistakes. Also, the best management plans for individual patients may vary from those outlined here. Only the doctors caring for the patient will be able to advise on this. Please consult your own doctor.

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Illustration produced by Beth Shortt (www.bethshortt.com)

Kidney Research UK, Kings Chambers, Priestgate, Peterborough PE1 1FG

Kidney health Information telephone number: 0845 300 1499

Or email: kidneyhealth@kidneyresearchuk.org

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