

# THE KIDNEY

## 2. Haematuria

### A GUIDE FOR PATIENTS

Occasionally, when more blood is present, the urine can change colour and appear red, brown or smoky in colour. Another name for blood in the urine is haematuria.

### 2. Haematuria

#### I have blood in my urine: what does it mean?

The most common way that blood is detected in the urine is by a simple test called a urinalysis. Urinalysis can be done at your doctor's surgery or in a laboratory and can detect microscopic amounts of blood not visible to the naked eye. Occasionally, when more blood is present, urine can change colour and appear red, brown or smoky in colour. Another name for blood in the urine is haematuria.

To have a trace of blood detected on testing the urine is not uncommon. For the majority of people this does not cause serious problems, but it always needs to be investigated.



#### Possible causes of blood in the urine include:

- a urinary tract infection
- a condition known as glomerulonephritis (*glom-air-u-low-nephritis*) or nephritis which is an inflammation (not an infection) of the filtering units of the kidney (see also section 4)
- a kidney stone
- trauma
- in men, a tumour or enlargement of the prostate gland
- a tumour of the kidney or bladder

#### What tests are likely to be required?

The tests that may be required to determine the cause of blood in the urine include the following:

Sending a **sample of urine** to the laboratory for a urine culture to rule out the possibility of urinary tract infection and for a microscopic examination of urine to see how many red blood cells are present and if there are other abnormalities in the urine to indicate the possibility of glomerulonephritis.

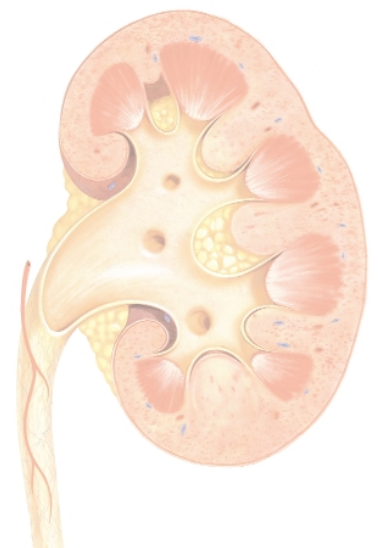
The shape of red blood cells may indicate they have come from the kidneys. A high percentage of abnormally shaped red cells (dysmorphic red cells) may be seen in kidney diseases, including glomerulonephritis.

A 24-hour urine collection may be necessary to determine how much protein is in the urine and how well the kidneys are functioning.

If glomerulonephritis is present there will often be an increased amount of protein in the urine. The amount of protein in the urine is important in determining the prognosis and sometimes helps determine the treatment necessary. Within the 24-hour collection period or immediately at the end of it, the measurement of the amount of a substance called creatinine (a by-product of protein breakdown) in the urine sample, combined with a blood test to measure the amount of creatinine in the blood is performed. This will show how well the kidneys are working and whether there is any kidney damage.

**Blood tests** are often required to determine how well the kidneys are working, to determine if glomerulonephritis is present and what is causing it.

A 24-hour collection of the urine may be necessary to determine how much protein is coming from the kidneys and how well the kidneys are functioning.



## A GUIDE FOR PATIENTS

An ultrasound examination may be carried out. This is painless and involves running a small hand-held monitor over the abdomen using sound waves to scan the kidneys and bladder.

### **Haematuria continued...**

**Imaging of the kidneys and bladder** will usually be required to measure the size of the kidneys and to exclude a tumour or kidney stone. This can be done in the following ways:

#### **Ultrasound**

An **ultrasound** examination may be carried out. This is painless and involves running a small hand-held monitor over the abdomen using sound waves to scan the kidneys and bladder.

#### **Intravenous Pyelogram & Computerised Tomography Scan**

An **IVP** (intravenous pyelogram) or **CT scan** (computerised tomography scan) may be performed to better define and visualise the kidneys, ureters and bladder. An iodine-containing compound, is injected into a vein which is then transported to the kidneys and excreted in such a way that allows a clearer image to be obtained. Following this, a series of X-ray pictures are taken of the kidneys, ureters and bladder (IVP). For a CT scan, after the injection, the patient lies on a table, which slides in and out of the large metallic ring of the scanner.

If a bladder tumour or other pathology is suspected a **cystoscopy** may be recommended. This is carried out by a surgeon (urologist) and involves having an anaesthetic. An instrument like a small telescope is passed into the bladder to look at the lining. If an abnormality is identified, biopsies (small samples of tissue) may be taken for laboratory analysis.

Occasionally, if the tests suggest a more serious form of glomerulonephritis, a **renal biopsy** may be recommended (see also section 16).

#### **What treatment will be required?**

The treatment for haematuria is dependent on the cause.

If an **infection** is present, antibiotics are usually required (see also section 9).

If **glomerulonephritis** is diagnosed there are a number of measures that may be required to protect the kidney function (see also section 4).

A kidney **stone** may require removal by a surgeon, or it may be treated by shattering (breaking the stone using sound waves) with an ultrasonic method known as lithotripsy (see also section 10).

If an enlarged **prostate** is detected or if a **tumour** is found referral to a urologist will be required for further treatment.