

# Haematuria - microscopic

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Microscopic haematuria need not be abnormal. Over 12,500 rbc/ml is abnormal, and the detection limit for dipstick testing is approx 15-20,000 rbc/ml. Note that [macroscopic haematuria](#) carries different connotations.

## **Establish that the result is a true positive:**

Exclude the following:

- Menstruation
- Urine infection
- Exercise-induced haematuria
- Trauma
- Colouring from drugs, dyes, food stuffs

Establish also that the finding is **consistent**.

## **Investigate according to associated features and age:**

### **Urinary tract malignancy?**

For patients over 40 years, **investigations to exclude urinary tract malignancy** or other physical lesions, including renal stones, should usually be first. These are likely to include at least renal tract ultrasound and cystoscopy. For patients under 40, usually only investigate further if there other pointers to intrinsic renal disease:

### **Intrinsic renal disease?**

The presence of the following increase the likelihood of significant renal disease, and may indicate that nephrological investigations are more appropriate:

## **Factors increasing likelihood of renal disease**

- Proteinuria. Measurement of microalbuminuria is additionally useful if proteinuria is low level or absent. A lower referral threshold for proteinuria (AGR>30, PCR>50) is suggested in the presence of microscopic haematuria
- Impaired renal function (if it is deteriorating, investigation is urgent)

- hypertension (less suggestive with increasing age)
- history suggestive of systemic disorder (eg new onset of arthralgia, malaise, acute phase response, weight loss)
- family history of renal disease

Nephrological investigations will include assessment of predisposing factors, an ultrasound examination of the urinary tract, and a variety of immunological investigations seeking evidence for intrinsic renal disease. Where there is a significant likelihood of intrinsic renal disease, or particular personal reasons (eg maximum prognostic information required to assess fitness for work), a renal biopsy may be undertaken. The chance of discovering a significant lesion in the absence of any of the above findings is low.

### **If no serious cause is found**

In the absence of urological abnormalities, and if there is a low risk of renal disease as defined [above](#), a policy of observation with urine testing, blood pressure and serum creatinine every 6-24 months is safe. This can be undertaken in primary care.

#### ***What are the possible causes in these circumstances?***

Large studies have shown a low rate of detection of significant abnormalities in long-term follow-up. The most common of these are

- [renal stones](#)
- [IgA nephropathy](#) (hypertension may develop later, renal impairment later still)
  - other inflammatory renal disease
- benign glomerular haematuria (eg [thin GBM disease](#), [benign familial haematuria](#))

Patients with sickle trait or sickle cell disease may have longstanding microscopic haematuria, presumed to be from (usually minor) ischaemic lesions in the renal pyramids or medulla.

Patients on anticoagulants are more likely to have microscopic haematuria. This should be assessed in the usual way, if persistent despite coagulation tests being in the normal range.

#### ***When should patients be referred back for further investigation?***

The appearance of macroscopic haematuria or other urinary symptoms usually suggest a need for further urological assessment.

The development or worsening of any of the [risk factors for intrinsic renal disease](#) indicates that nephrological assessment is appropriate.

## **SUMMARY of regular monitoring for low-risk patients**

**Every 6 months, extending to 12-24 months if all is unchanged, check:**

- Blood pressure
- Urine test for protein (PCR or ACR) as well as blood
- Serum creatinine

### **Macroscopic haematuria**

Is dealt with in a separate guideline on [macroscopic haematuria](#).

### **Further information**

Patient information on [haematuria](#) is available from [EdRenINFO](#), our web pages containing information about kidney diseases for patients, doctors and all medical staff.

The [EdRenHANDBOOK](#) contains information aimed primarily at hospital doctors about immediate management of renal problems.