

Assessment of Haematuria (presence of red blood cells in urine)

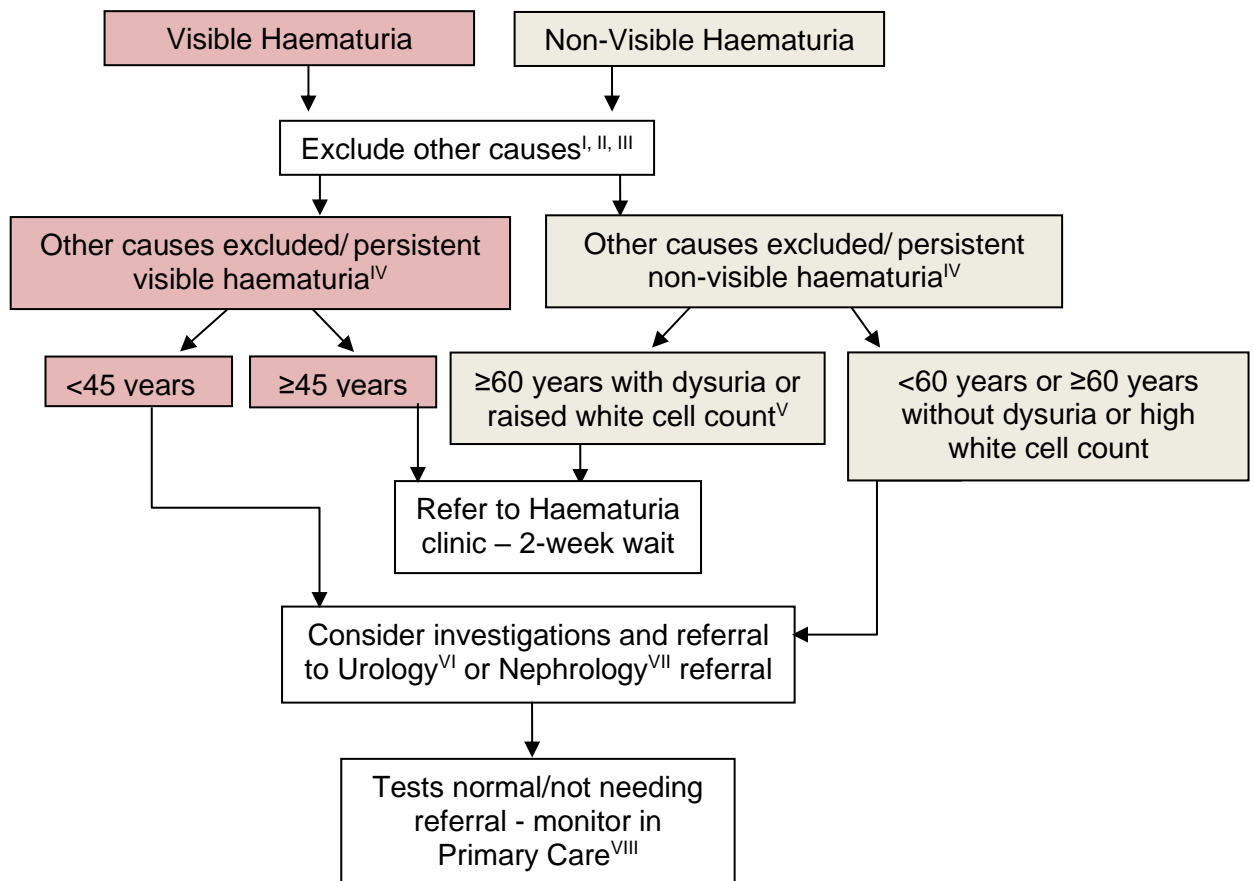
Scope

This policy covers the assessment of patients with haematuria (red blood cells in urine). It covers haematuria that is visible (seen in the urine), or non-visible (identified by dipstick urinalysis).

Note: Urgent 2-week wait referrals should be referred using the East of England Strategic Clinical Networks Urology Suspected Cancer Referral Form available on the GP clinical system or [here](#).

Policy

It is the responsibility of referring and treating clinicians to ensure compliance with this policy. Referral proforma should be attached to the patient notes to aid the clinical audit process and provide evidence of compliance with the policy. For patients not meeting the policy criteria, clinicians can apply for funding to the Exceptional Cases Panel by completing the exceptional funding section of the [referral proforma](#).



Notes:

- I Exclude other causes - such as urinary tract infection; exercise-induced haematuria; myoglobinuria; haemoglobinuria; beeturia; menstruation (non-visible haematuria may be present up to 3 days before or 5 days after); intercourse (non-visible haematuria may be present up to 3 days after) or drug discolouration. If needed, treat UTI and check dipstick after 1 week.
- II Consider a prostate-specific antigen test and digital rectal examination to assess for prostate cancer in men with any lower urinary tract symptoms, such as nocturia, urinary frequency, hesitancy, urgency, retention, erectile dysfunction or visible haematuria.²

III Renal investigations: BP, eGFR; creatinine and electrolytes.

IV Persistent or recurs after treatment of UTI.

V This is serum white cell count defined as above the upper reference range (usually 11,000 WBCs/ml).

VI **Considering Urology referrals:** The average risk of bladder or renal cancer in these groups is very low (<2% for visible and <1% for non-visible haematuria). If there is concern over diagnosis and patients have high numbers of risk factors (see Table 1) GPs may choose to refer to Urology.

VII **Consider nephrology referral if:**

- Stage 3B, 4 or 5 CKD (chronic kidney disease): Estimated Glomerular filtration rate (eGFR) less than 45 ml/min.
- Evidence of declining GFR: by more than 10ml/min at any stage within the last 5 years or by more than 5ml/min within the last year.
- Proteinuria: Albumin Creatinine Ratio (ACR) >40 mg/mmol or Protein Creatinine ratio (PCR) more than 50mg/mmol (Note: 24-hour urine collections for protein are rarely required)
- Isolated haematuria (ie in the absence of significant proteinuria) with hypertension in those aged younger than 40 years.
- Visible haematuria coinciding with intercurrent (usually upper respiratory) infection.

VIII **Monitor in Primary Care** on a twelve-monthly basis for development of:

- Lower urinary tract symptoms.
- Visible haematuria.
- Significant or increasing proteinuria (monitor by dipstick, with ACR if dipstick positive. Refer to nephrology if ACR >40 mg/mmol).
- Progressive renal impairment (falling eGFR by >5ml/min/year or to <45 ml/min, CKD 3B).
- Hypertension (in older people consider nephrology referral if BP above target with three drugs).

Request advice and guidance if any of these symptoms develop.

Rationale and Evidence

Visible haematuria may be a sign of serious underlying disease, including malignancy, and is a common presentation in patients with cancers of the bladder or kidney. NICE guidance (NG12, 2015)¹ recommends urgent referral of patients with visible haematuria aged ≥ 45 years where other indications have been ruled out, including urinary tract infections (UTIs). Where UTIs have been treated, but haematuria persists or recurs, NICE also recommend urgent referral in patients aged ≥ 45 years. For non-visible haematuria, NICE recommends urgent referral for patients aged ≥ 60 years in the presence of either dysuria or a raised white cell count.

NICE guidance makes no recommendation about the referral of patients <45 years with visible haematuria. Studies have shown ~2% risk of bladder and 0.7% risk of renal cancer in patients presenting with visible haematuria aged 40-59 years³ (insufficient information on younger patients) and referral may, therefore, be appropriate in some patients <45 years with visible haematuria where other causes have been excluded.

NICE guidance makes no recommendation about the referral of patients <60 years with non-visible haematuria. In patients aged 40-59 years presenting with non-visible haematuria, a 0.8% risk of bladder cancer has been observed (1.6% in patients aged ≥ 60 years).³ For any urinary tract cancer, a 1.5% risk has been associated with non-visible haematuria in people aged 50-59 and of 0.4% in those aged <50 years.⁴ Due to the particularly low risk in younger people, referrals for non-visible haematuria should only be made for people ≥ 60 years where there is an increased risk of malignancy (presence of dysuria or a raised white cell count).

Table 1: Relative risks of different factors for urinary tract cancers

Risk Factor		Bladder Cancer		Kidney Cancer	
		Male	Female	Male	Female
Gender	Male vs female	3.4	-	1.9	-
Age	65-74 vs <65	17.3	13.7	7.5	7.0
	>75 vs <65	37.8	31.9	10.6	9.5
Smoking	>35 yr old smoker vs never smoked	3.0	2.4	2.5	1.5
Obesity	Overweight vs normal weight	-	-	1.3	
	Obese vs normal weight	-	-	1.7	

Source: Consultant Urologists

References

1. National Institute for Health and Care Excellence. NICE Guidance 12. Suspected cancer: recognition and referral, June 2015.
2. National Institute for Health and Care Excellence Clinical Guidance 175. Prostate cancer: diagnosis and management, January 2014.
3. Schmidt-Hansen M, Berendse S and Hamilton W. The association between symptoms and bladder or renal tract cancer in primary care: a systematic review. British Journal of General Practice 2015; e769-775.
4. Loo R K, Lieberman S F, Slezak J M. Stratifying risk of urinary tract malignant tumours in patients with asymptomatic microscopic hematuria.

Glossary

Beeturia:	Urine that is discoloured red or pink after eating beetroot or food coloured with beetroot extract.
Dysuria:	Painful urination.
Haematuria:	The presence of red blood cells in the urine.
Haemoglobinuria:	The presence of blood in the urine caused by the destruction of blood cells in the blood vessels or in the urinary passages that turns urine a dark red or brown colour.
Myoglobinuria:	The presence of myoglobin in the urine due to muscle destruction.
Proteinuria:	The presence of an excess of serum proteins in the urine.

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Policy to be reviewed:	August 2022
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