

Microscopic Haematuria

Practical bedside approach • Adults

01 CONFIRM THE FINDING

- Microscopic haematuria: **≥ 3 red blood cells per high-power field** in a properly collected urine specimen; urine may look normal.
- **A positive dipstick alone is insufficient.** Confirm red blood cells by microscopy. Dipstick blood without red cells may reflect haemoglobin or myoglobin.
- Use a clean-catch midstream sample. Exclude menstrual contamination, recent strenuous exercise, trauma and instrumentation; repeat after transient causes resolve.

02 INITIAL ASSESSMENT

- Ask about dysuria, frequency, fever, flank pain, visible haematuria, smoking, occupational exposures, medications and family history of kidney disease.
- Measure blood pressure; check **creatinine and urine albumin-to-creatinine ratio (ACR)**. Add full blood count when indicated.
- Obtain urine culture if infection is suspected. After treating UTI, repeat microscopy to confirm that haematuria has resolved.
- **Anticoagulant or antiplatelet use does not remove the need for evaluation.**

03 GLOMERULAR OR NON-GLOMERULAR?

- **Glomerular clues:** dysmorphic red cells, especially acanthocytes, red cell casts, albuminuria/proteinuria, reduced kidney function and hypertension.
- Consider IgA nephropathy, other glomerulonephritides and COL4A3/COL4A4/COL4A5-related disease; ask about hearing loss and familial kidney failure.
- **Non-glomerular clues:** urinary symptoms, colic, clots or predominantly isomorphic red cells. Consider UTI, stones, prostatic disease and urinary tract malignancy.
- Red cell morphology supports localisation but does not reliably exclude either pathway.

04 SELECT FURTHER INVESTIGATIONS

- **Refer to nephrology** for suspected glomerular disease, significant proteinuria, impaired kidney function or red cell casts.
- Order serology selectively when GN is suspected: C3/C4, ANA/anti-dsDNA, MPO-/PR3-ANCA and anti-GBM antibodies according to presentation.
- Kidney biopsy depends on proteinuria, kidney function, systemic features and whether the result will change management; it is not routine for isolated low-risk haematuria.
- **Assess urological cancer risk** using age, sex, smoking, degree/persistence of haematuria, prior visible haematuria and other risk factors.
- AUA/SUFU: low/negligible risk - repeat urinalysis within 6 months; intermediate risk - cystoscopy and renal ultrasound; high risk - cystoscopy and upper tract imaging, usually CT urography if appropriate.
- **Nephrology referral does not replace indicated urological evaluation.**

05 RED FLAGS AND FOLLOW-UP

- **Haematuria with rapidly rising creatinine, oliguria, red cell casts or pulmonary symptoms** requires urgent assessment for glomerulonephritis.
- Visible bleeding with clots/retention, haemodynamic instability, or fever with suspected urinary obstruction requires urgent hospital evaluation.
- Persistent haematuria needs reassessment. After a negative evaluation, agree follow-up individually; new visible haematuria or urinary symptoms warrants renewed investigation.

KEY MESSAGE

Confirm haematuria by microscopy, then assess both kidney disease and urological risk. Proteinuria and impaired kidney function favour nephrology assessment; malignancy risk guides urological investigation.

REFERENCE

AUA/SUFU. Microhematuria Guideline (2020, amended 2025). [auanet.org](https://www.auanet.org). KDIGO 2021 Clinical Practice Guideline for the Management of Glomerular Diseases. Kidney Int. 2021;100(Suppl):S1-S276.