



Hematuria is defined as blood in the urine.

- **Microscopic:** not visible to the naked eye and is identified as ≥ 3 red blood cells (RBCs) per high-power field (HPF) in the urine.
- **Macroscopic:** visible red, pink, or brown-colored urine.

PRESENTATION

History

- **Urination:** colour, dysuria, suprapubic pain, frequency, urgency
- **Hearing loss**
- **Systemic:** fever, rash, abdominal/joint pain, bruising, diarrhea
- **Recent infections:** throat, skin, GI
- **History:** family history of renal disease/ inherited conditions
- **Other:** occupational exposures, smoking, medications
- May be asymptomatic



Physical Exam

- **Vitals + Blood pressure**
- **General:** pallor and edema
- **Skin:** purpura, rash, bruising
- **MSK:** joint tenderness
- **Abdomen:** masses, CVA tenderness
- **Genitourinary:** external inspection for trauma
- **Cardiovascular:** murmur, pulses, signs of fluid overload



ETIOLOGY

Glomerular	Non-Glomerular	
▪ PIGN (most common etiology; usually GAS infections) ▪ IgA nephropathy ▪ Thin basement membrane disease ▪ Alport syndrome ▪ Membranoproliferative glomerulonephritis ▪ Lupus nephritis	Renal ▪ Infection (ex: UTI) ▪ Trauma/structural abnormality ▪ Neoplasm ▪ Nephrolithiasis ▪ Hemolytic uremic syndrome	Non-Renal ▪ Exercise ▪ Menses ▪ Foreign bodies ▪ Sickle cell disease

INVESTIGATIONS

Initial Approach	Etiology Specific Bloodwork and Imaging
Hematuria → Urine Dipstick (-) → Rule out mimics: • Myoglobinuria, hemoglobinuria, food, medications, menses (+) → Urine Microscopy Dysmorphic → Glomerular Normal → Non-Glomerular	▪ Basic labs: CBC with differential, electrolytes, BUN, serum creatinine, PTT, and INR ▪ For non-glomerular etiologies: Urine culture & sensitivity, renal bladder ultrasound for masses, stones, polyps, etc. ▪ For glomerular etiologies: C3/C4, ANA, ASOT, IgA, albumin, ANA, anti-dsDNA ▪ Kidney biopsy may be indicated in select cases Red flags: hypertension, RBC casts, significant proteinuria, renal impairment

MANAGEMENT

Management depends on the underlying cause and overall clinical picture

Supportive	Symptomatic	Referral
▪ Electrolyte and fluid management ▪ Maintain kidney perfusion ▪ Renal replacement therapy	▪ Treat based on the cause ▪ Hypertension control (diuretics, anti-hypertensives)	▪ Nephrology referral: red flags above ▪ Urology referral: stones, mass, clots, trauma, structural/obstructive cause

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