

# Microscopic hematuria

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## 1 Dipstick urinalysis positive for blood should be repeated, then confirmed with microscopy

Urinalysis must be repeated to rule out transient causes including menstruation, infection, trauma, instrumentation or extreme exercise, and then confirmed by microscopy: 3 or more red blood cells per high power field merits further evaluation.<sup>1</sup> The evaluation of hematuria does not change for patients receiving therapeutic anticoagulation.<sup>2</sup>

## 2 Workup of persistent microscopic hematuria should include kidney ultrasound imaging, serum creatinine and urine cytology

Ultrasound is the recommended kidney imaging modality in Canada.<sup>1</sup> Consideration should be to obtain a spot urine albumin-to-creatinine ratio, especially if dipstick is positive for protein, serum creatinine is elevated or hypertension is present.

## 3 Anyone older than 40 years with confirmed unexplained asymptomatic microscopic hematuria should be referred for cystoscopy

Patients with persistent hematuria and any risk factor for urologic malignancy should undergo cystoscopy. Risk factors include age older than 40 years, tobacco use, irradiation, cyclophosphamide or alkylating agent exposure, and occupational exposure to dyes, benzenes or aromatic amines.<sup>2</sup>

## 4 In most patients with asymptomatic microscopic hematuria, there is no identified cause

If nephrology and urology workups are negative, urinalysis should be repeated annually for at least 3 years.<sup>2</sup> In cases with persistent hematuria, repeat workup may be considered.

## 5 Persistent unexplained hematuria may be a sign of a genetic kidney disease

Mutations in type IV collagen genes can cause microscopic hematuria and are associated with increased risk of chronic and end-stage kidney disease.<sup>3,4</sup> Nephrology referral should be considered for patients with persistent microscopic hematuria and dysmorphic red blood cells in the urine, elevated serum creatinine or elevated urine albumin-to-creatinine ratio, especially if they have a family history of kidney disease.<sup>4</sup>

## References

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