



## Hematuria 什麼是血尿？(英文)

### What is hematuria?

Hematuria is blood in the urine, which can be visible or non-visible to our naked eyes. Gross hematuria is when the blood in the urine can be visualized clearly by naked eyes. Microscopic hematuria cannot be identified with naked eyes, and is only detectable by microscope with findings of more than three red blood cells per high-power-field.

### What is the etiology of hematuria? Is it “painful” ?

Many conditions can cause hematuria, such as infection, inflammation, trauma, stones or tumors from kidney, ureter, urinary bladder, and urethra. Hematuria can also be caused by systemic disease such as bleeding tendency. Urinary tract infection is the most common cause of hematuria. Typical symptoms of urinary tract infection are painful urination, increased urinary frequency, and occasionally associated with flank pain, fever and chills. Ureteral stones can typically cause red colored urine with flank pain. Glomerulonephritis usually presented with microscopic hematuria without flank pain. Hematuria due to tumors of genito-urinary system are usually painless though sometimes can be painful. It can result in microscopic or gross hematuria.

### Does “red colored urine” mean hematuria?

The “red colored urine” does not necessarily mean hematuria. It can be due to food intake such as carrot, beet, dragon fruit, or food coloring. Other medical conditions resulting in red colored urine are hemolysis and rhabdomyolysis, which can be serious medical condition. When encountered red colored urine, it is important to seek help with medical doctors for further evaluation and management.

### General examination

Urinalysis is the first step for the assessment of hematuria. Other diagnostic tools such as abdominal X-ray, renal ultrasound, intravenous pyelography, cystoscopy, urinary cytology, and renal biopsy are helpful for doctors to make the right diagnosis.

Abdominal X-ray can help to identify radiopaque stones along the kidney, ureter and urinary bladder. Renal ultrasound can help to identify the presence and degree of hydronephrosis, location of stone formation, and possibly tumor. Intravenous pyelography can give doctors the hint regarding the location and level of urinary tract obstruction. Urine cytology and cystoscopy are used to evaluate possible uroepithelial tumor. Renal biopsy is performed for further assessment of glomerulonephritis. The doctors will request these diagnostic tools according to your clinical presentation.

## Conclusion

Hematuria is a common clinical sign with many different causes. Some are serious life threatening conditions and some are not. It should not be taken lightly. Complete medical history taking, detailed physical examination accompanied by proper and sounding diagnostic tools are quintessential for making the right diagnosis and treatment.

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