

THE UROLOGY GROUP

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BLOOD IN URINE TEST

The **urinalysis** is a study of voided urine. There are two parts to a urine study – the chemical dipstick and the microscopic examination of the urine. For the dipstick, a chemical strip with special chemicals is dipped into a sample of voided urine. The chemicals are able to assess for a variety of conditions in the urine, including the presence of red blood cells (blood in the urine, also known as hematuria), protein, sugar, white cells (which can indicate infection) and substances that may indicate impaired liver function.

The **microscopic portion** of the urine study is carried out by inspecting a sample of urine under the microscope, which can allow the visual identification of red blood cells, white blood cells, bacteria and other elements.

In some cases, the dipstick urinalysis may show blood but the microscopic exam does not show red blood cells.

Below are some things that can cause incorrect readings on dipstick urinalysis:

Reasons blood shows on dipstick urinalysis but not on microscopic exam (false positive)	Reasons blood doesn't show on dipstick urinalysis but is present on microscopic exam (false negative)
Exercise Dehydration Hemoglobin (part of red blood cell) Myoglobin (break down product of red blood cell)	Captopril (blood pressure medication) Vitamin C Acidic urine (pH < 1.5) Concentrated urine Protein in the urine

With respect to hematuria, The American Urologic Association says *"evaluation should be based solely on findings from microscopic examination of urine sediment and not on a dipstick reading."*

The primary goal of hematuria evaluation is to determine if there is underlying abnormality that would put the patient's health at risk.

If there are red blood cells on microscopic exam of the urine, evaluation usually begins with a study of the upper part of the urinary system, either a CT urogram or sonogram. A urine culture may be done to check for infection. Urinary cytology may help determine if

there are any cancerous or pre-cancerous cells that are being shed into the urinary system. The lower part of the urinary tract, the bladder and urethra, is usually studied by cystoscopy. Cystoscopy refers to the visual inspection of the bladder and urethra, carried out by inserting a small fiberoptic catheter into the urethra and the bladder which allows direct visualization of these structures.

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References: Barocas DA and Davis R. Evaluation of microscopic hematuria. AUA Update Series 2014, Lesson 24, Volume 33. ©2014 American Urological Association, Education and Research Inc., Linthicum, MD.

Blute ML, Vira MA, Peihong H et al: Urinalysis: Proper methods and interpretation. AUA Update Series 2009, Lesson 24, Volume 28. ©2009 American Urological Association, Education and Research Inc., Linthicum, MD.