

**RELEVANCE OF MODERN EXAMINATION METHODS IN UROLOGY AND  
THEIR IMPORTANCE IN TREATMENT****Salokhiddinov Eldor Shukhratjon ugli**

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**Annotation**

In the realm of healthcare, urology plays a vital role in diagnosing and treating conditions related to the urinary tract and male reproductive system. From routine check-ups to more complex diagnostic procedures, urologic tests are essential tools that healthcare professionals use to assess the health and functioning of these critical systems. Urologic tests and exams are not just limited to blood and urine. Other analyses may become necessary as well. This article explores different types of tests a urologist may use and how they help diagnose urological problems.

**Key words:** urinary tract, genital infections, blood test, Prostata specific antigen (PSA).

During the urological examination, all the components of the urinary system (kidneys, ureters, bladder, urethra) are examined and their proper functioning is assessed. It is therefore possible to diagnose certain diseases of these organs, such as bladder incontinence, urinary tract infections, stones obstructing the outflow of urine, neoplasms, genital infections and disorders (especially in men), cystitis and prostatitis in men.

Patients are referred to a urologist when they experience symptoms such as:

burning;

pain or difficulty urinating;

involuntary leakage of urine;

erection difficulties for men that can be traced to prostate disease.

Like all medical examinations, the first phase of the urological examination consists of a conversation between the doctor and the patient. In this step, called anamnesis, the doctor asks the patient why he/she was referred to him/her, what symptoms he/she is experiencing, nutrition and lifestyle habits (smoking, alcohol, sedentary lifestyle). It is advisable to tell the doctor if taking any particular medication or if there are any associated diseases. This conversation is essential to place the patient and the symptoms in a clinical context and to direct the specialist towards a diagnosis. The second part consists in a physical examination: a series of procedures the doctor

carries out to assess the state of the organs. This part of the examination differs according to the gender of the patient:

In men, an assessment of the lower abdomen and external genitalia is carried out, and sometimes the doctor may perform a digital rectal examination to assess the prostate (especially in older men reporting a constant need to urinate);

In women, the examination is like the gynaecological examination: the health of the urinary system is assessed by abdominal or trans vaginal ultrasound, to check for prolapses (i.e., excessive muscle relaxation) of the bladder or uterus that could be associated with incontinence.

At the doctor's discretion and depending on the data obtained during the examination, the patient may then be subjected to other diagnostic tests such as: urine examination, uroflowmetry (an examination that allows the dynamic assessment of urination to check the functioning of the muscles that empty the bladder), other ultrasound scans for further information. There are different types of urological examination:

#### Physical Exam

Similar to physical exams administered by other doctors, this exam is typical with most visits to the urologist's office. In a physical exam conducted by a urologist, you can expect an examination of whatever is causing the issue, whether it be the urinary tract, the testicles, or the penis. Physical examination focuses on the costovertebral angle, abdomen, rectum, groin, and genitals. In women with urinary symptoms, pelvic examination is usually done.

#### Costovertebral angle

Pain elicited by blunt striking of the back, flanks, and angle formed by the 12th rib and lumbar spine with a fist (costovertebral tenderness) may indicate pyelonephritis, calculi, or urinary tract obstruction.

#### Abdomen

Visual fullness of the upper abdomen is an extremely rare and nonspecific finding of a kidney or abdominal mass. Dullness to percussion in the lower abdomen suggests bladder distention; normally, even a full bladder cannot be percussed above the symphysis pubis. Bladder palpation can be used to confirm distention and urinary retention.

#### Rectum

During digital rectal examination, prostatitis may be detected as a boggy, tender prostate. Focal nodules and less discrete hard areas must be distinguished from prostate cancer. The prostate may be symmetrically enlarged, rubbery, and nontender with benign prostatic hyperplasia.

#### Groin and genitals

Inguinal and genital examination should be done with patients standing. Inguinal hernia or adenopathy may explain scrotal or groin pain. Gross asymmetry, swelling, erythema, or discoloration of the testes may indicate infection, torsion, tumor, or other mass. Horizontal testicular lie (bell-clapper deformity) indicates increased risk of testicular torsion. Elevation of one testis (normally the left is lower) may be a sign of testicular torsion. The penis is examined with and without retracting the foreskin. Inspection of the penis can detect

Hypospadias or epispadias in young boys

Peyronie disease in men

Priapism, ulcers, and discharge in either group

Palpation may reveal an inguinal hernia.

Cremasteric reflex may be absent with testicular torsion. Location of masses in relation to the testis and the degree and location of tenderness may help differentiate among testicular masses (eg, spermatoceles, epididymitis, hydroceles, tumors). If swelling is present, the area can be transilluminated to help determine whether the swelling is cystic or solid.

Digital Rectal Exam

To examine the prostate, urologists will typically administer a digital rectal exam. This exam is a screening exam that can help identify problems in the rectum's walls and prostate.

Blood Tests

Prostate Specific Antigen (PSA)

A PSA blood test can help detect the underlying cause of prostate inflammation. While these tests cannot diagnose prostate cancer, they can be indicative of high levels of inflammation associated with a risk of prostate cancer. If high levels of inflammation are found, additional tests will likely become necessary.

Creatinine and Blood Urea Nitrogen (BUN)

If the cause of the urologic problem is associated with the kidneys, a creatinine, and blood urea nitrogen test can help assess how the kidneys are functioning through the measurement of creatinine. High levels of creatinine are often indicative of kidney dysfunction, though depending on the ratios of creatinine to blood urea nitrogen, your urologist can likely make a diagnosis.

Testosterone Blood Tests

When men face issues relating to erectile dysfunction, testosterone blood tests can help reveal testosterone levels. Low testosterone levels are a common cause of erectile dysfunction, and urologic tests can help identify this.

Urine Tests

Urine tests can help urologists gather more information before a diagnosis and, in some cases, may be necessary in place of a blood test.

#### Urinalysis

A urinalysis is the most common urine test and is used to test for bacteria, foreign materials, and blood cells. This test can also help to determine urinary tract infections, diabetes, and early stages of diseases. While it is common to have a urinalysis at a urologist's office, it's also typical for general physicians to administer this test as well.

#### Urine Cultures

Urine cultures allow for a more intensive look to determine the presence of bacteria in the urine. Not only does this test allow for a closer look, but it also allows for antibiotic testing to help determine the best treatment.

#### 24-Hour Urine Test

To help determine kidney health, you may be instructed to carry out a 24-hour urine test. In these urologic tests, you will need to collect all urine you eliminate in a 24-hour period. This collection will then be analyzed to check for normal levels of specific substances within the urine.

#### Imaging Techniques

In addition to ultrasounds, urologists may use specific types of X-rays to help check for issues in the urinary tract. For abdominal pain associated with the urinary system, a kidney, ureter, and bladder x-ray may be able to determine the cause. An intravenous pyelogram x-ray uses a dye to help pinpoint problems within the urinary tract. A voiding cystourethrogram can be used to identify problems with the bladder.

#### Cystoscopy

A cystoscopy is the insertion of a small telescope through the urethra and into the bladder to search for and diagnose abnormalities and problems. This test is more invasive than the others and requires local anesthesia.

#### Semen Analysis

#### Seminogram

Seminograms can help shed light on any problems associated with infertility. During this analysis, the strength of a male's sperm, including motility and quality, can be determined. Seminograms are also used following a vasectomy to ensure the success of the procedure. If you are experiencing any urologic problems or if you have any questions about applicable urologic tests, schedule an appointment with one of our providers.

All in all, the most common urological complaints that need referral to a primary care doctor or urological surgeon can be divided into those referable to the lower urinary tract and those referable to the upper urinary tract. Although a careful history may be diagnostic in patients with, for example, renal colic or testicular torsion, often non-specific features are more difficult to unravel.

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