



Women's Clinic, Ltd.

Female Pelvic Medicine & Reconstructive Surgery

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Cystoscopy (Cystourethroscopy)

What is cystoscopy?

Cystoscopy is a diagnostic procedure that allows the physician to directly examine the urinary tract, particularly the bladder and the urethra. Cystoscopy can assist in identifying problems with the urinary tract, such as early signs of cancer, infection, strictures (narrowing), obstruction, and bleeding.

A long, flexible, lighted tube, called a cystoscope, is inserted into the urethra (the tube that allows urine to pass outside the body) and advanced into the bladder. In addition to allowing visualization of the internal urethra and bladder, the cystoscope enables the physician to irrigate, suction, inject air, and access these structures with surgical instruments. During a cystoscopy, the physician may remove tissue for further examination and possibly treat any problems that may be detected.

Internally, a healthy urinary tract appears pink and smooth, with a moist mucosal lining. Some medical conditions may change the appearance of the lower urinary tract or cause bleeding. Other conditions may cause narrowing of the urethra, making it difficult for urine to empty from the bladder. Additionally, some diseases of the bladder may cause changes in its size, shape, position and stability. Cystoscopy allows the physician to examine these structures in great detail, take pictures and obtain a biopsy. It may be used to perform therapeutic procedures if necessary.

Other related procedures that may be used to diagnose problems of the urinary tract include kidney, ureters, and bladder (KUB) x-ray, computed tomography (CT scan) of the kidneys, cystometry, cystography, retrograde cystography, and pyelogram (antegrade, intravenous, or retrograde). Please see these procedures for additional information.

How does the urinary system work?

The body takes nutrients from food and converts them to energy. After the body has taken the food that it needs, waste products are left behind in the bowel and in the blood. The urinary system keeps the chemicals, such as potassium and sodium, and water in balance by removing a type of waste, called urea, from the blood. Urea is produced when foods containing protein, such as meat, poultry, and certain vegetables are broken down in the body. Urea is carried in the blood stream to the kidneys.

Urinary system parts and their functions:

- **two kidneys** – a pair of purplish-brown organs located below the ribs towards the middle of the back. Their function is to remove liquid waste from the blood in the form of urine, keep a stable balance of salts and other substances in the blood, and produce erythropoietin, a hormone that aids the formation of red blood cells. The kidneys remove urea from the blood through tiny filtering units called nephrons. Each nephron consists of a ballformed of small blood capillaries, called a glomerulus, and a small tube called a renal tubule. Urea, together with water and other waste substances, forms the urine as it passes through the nephrons and down the renal tubules of the kidney.
- **two ureters** – narrow tubes that carry urine from the kidneys to the bladder. Muscles in the ureter walls continually tighten and relax forcing urine downward, away from the kidneys. If urine backs up, or is allowed to stand still, a kidney infection can develop. About every 10 to 15 seconds, small amounts of urine are emptied into the bladder from the ureters.

- **bladder** – a triangle shaped, hollow organ located in the lower abdomen. It is held in place by ligaments that are attached to other organs and the pelvic bones. The bladder's wall relax and expand to store urine, and contract and flatten to empty urine through the urethra. The typical healthy adult bladder can store up to two cups of urine for two to five hours.
- **two sphincter muscles** – circular muscles that help keep urine from leaking by closing tightly like a rubber band around the opening of the bladder.
- **nerves in the bladder** – alert a person when it is time to urinate or empty the bladder.
- **urethra** – the tube that allows urine to pass outside the body.

Reasons for the Procedure

A cystoscopy may be recommended when a disorder of the urinary tract is suspected. Urinary tract disorders may include structural problems that can lead to a blockage of urine flow or a back flow of urine. If untreated, structural problems may lead to potentially serious complications. Some medical conditions involving the urinary tract include, but are not limited to the following:

- cancer or tumor of the bladder or prostate gland.
- Polyps – an overgrowth of normal tissue or mass (usually benign) that extends from a mucosal lining or diverticula – pouches that form when a mucosal membrane pushes through a muscular membrane.
- Bladder stones – calcium crystals that can lead to infection, inflammation and bleeding in the urinary tract, or other blockages of the urinary tract.
- Benign prostatic hypertrophy (BPH) – a benign enlargement of the prostate gland that usually occurs in men over age 50. Enlargement of the prostate interferes with normal passage of urine from the bladder. If left untreated, the enlarged prostate can obstruct the bladder completely.
- Frequent urinary tract infections (UTI's)
- Blood in the urine.
- Urinary incontinence – involuntary release of urine from the bladder.
- Painful urination.
- Congenital abnormalities of the urinary tract – an abnormality of the urinary tract present at birth that may lead to a backflow of urine or kidney problems.
- Traumatic injury of the urinary tract.

Risks of the Procedure

As with any invasive procedure, complications can occur. Complications related to cystoscopy include, but are not limited to the following:

- infection
- bleeding
- urinary retention
- bladder perforation

If you are pregnant or suspect that you may be pregnant, you should notify your physician. There may be other risks depending upon your specific medical conditions. Be sure to discuss any concerns with your physician prior to the procedure. Urinary tract infection may interfere with a cystoscopy.

Before the Procedure

Your physician will explain the procedure to you and offer you the opportunity to ask any questions that you might have about the procedure.

- You will be asked to sign a consent that gives your physician permission to do the procedure. Read the form carefully and ask questions if something is not clear.

- The type of fasting required before the procedure will depend on the type of anesthesia that is to be used. Your physician will give you specific instructions regarding how to fast for the procedure. You may be given additional instructions about a special diet for one to two days prior to the procedure.
- If you are pregnant or suspect that you are pregnant, you should notify your physician.
- Notify your physician if you are sensitive to or are allergic to any medications, latex, iodine, tape, and anesthetic agents (local and general).
- Notify your physician of all medications (prescribed and over-the-counter) and herbal supplements that you are taking.
- Notify your physician if you have a history of bleeding disorders or if you are taking any anticoagulant (blood-thinning) medications, aspirin, or other medications that affect blood clotting. It may be necessary for you to stop these medications prior to the procedure.
- If local anesthesia is used, you will be awake during the procedure, but a sedative may be given before the procedure. You will need someone to drive you home afterwards.
- If you suspect that you have a urinary tract infection, notify your physician, because this may be a contraindication for cystoscopy. Your physician may require that a urine sample be tested for infection before the procedure.
- Based upon your medical condition, your physician may request other specific preparation.

During the Procedure

A cystoscopy may be performed on an outpatient basis or as part of your stay in the hospital. Procedures may vary, depending on your condition and your physician's practices. Generally, a cystoscopy follows this process:

1. You will be asked to remove any clothing, jewelry, or other objects that may interfere with the procedure.
2. If you are asked to remove clothing, you will be given a gown to wear.
3. An intravenous (IV) line may be inserted in your arm or hand.
4. You may receive an IV sedative or anesthetic, depending upon your specific situation and the type of scope used. If a sedative or anesthetic is given, your heart rate, blood pressure, breathing and blood oxygen level will be continuously monitored during the procedure.
5. You will be positioned on the examination table on your back with your knees up and spread apart. Your feet will be placed in stirrups.
6. A topical anesthesia gel will be inserted into your urethra using a special catheter. This may be mildly uncomfortable until the area is numb.
7. Once the urethra is numb and/or anesthesia has taken effect, the physician will insert the cystoscope into the urethra. You may experience some discomfort during the cystoscope insertion.
8. As the cystoscope is passed through the urethra, the physician will inspect the mucosal layer for any abnormalities or obstructions. The cystoscope will be advanced until it reaches the bladder.
9. Once the cystoscope is in the bladder, the physician may instill sterile water or saline to help expand the bladder for better visualization. While the bladder is being filled, you may have the urge to urinate or feel mild discomfort.
10. The physician will examine the entire bladder for any abnormalities. A small device may be passed through the cystoscope to collect a tissue sample for a biopsy. A urine sample from the bladder may be obtained.
11. The cystoscope will be carefully removed from the urinary tract after the procedure has been completed.

After the Procedure

After the procedure, you may be taken to the recovery room for observation if sedation or anesthesia was used. Your recovery process will vary depending upon the type of sedation that is given. Once your blood pressure, pulse and breathing are stable and you are alert, you will be taken to your hospital room or discharged to your home. Cystoscopy is usually done on an outpatient basis.

You may resume your usual diet and activities unless your physician advises you differently. You will be encouraged to drink extra fluids, which dilutes the urine and reduces urinary discomfort such as burning. Some burning with urination is normal after the procedure but should lessen over time. A warm sitz or tub bath may be recommended to help alleviate urinary discomfort. You may notice blood in your urine for a period of time after the procedure. The

amount of blood reduces gradually over one to two days. Take a pain reliever for soreness as recommended by your physician. Aspirin or certain other pain medications may increase the chance of bleeding. Be sure to take only recommended medications. You may be given an antibiotic to take after the procedure. Be sure to take the antibiotic exactly as ordered.

Notify your physician to report any of the following:

- fever and/or chills
- urinary frequency or urgency
- inability to urinate
- lower back pain
- continued burning with urination or blood in the urine.

Your physician may give you additional or alternate instructions after the procedure, depending on your particular situation.

The content provided here is for informational purposes only, and was not designed to diagnose or treat a health problem or disease, or replace the professional medical advice you receive from your physician. Please consult your physician with any questions or concerns you may have regarding your condition.