Cleveland Clinic

Treatment Guide

Genitourinary Reconstruction

Center for Genitourinary Reconstruction

People with difficulties related to voiding, urinary control and sexual function face physical, emotional and social challenges in their daily lives. For some patients, conservative medical or behavioral treatments help manage these issues. However, others will continue to have difficulties despite these maneuvers and require more advanced care.

Cleveland Clinic's Center for Genitourinary Reconstruction specializes in advanced surgical therapies, which have helped hundreds of patients overcome everyday health challenges related to urinary obstruction due to urethral strictures, urinary incontinence, erectile dysfunction, and a variety of other less common lower urinary tract and genital disorders in adults and adolescents.

Cleveland Clinic genitourinary reconstruction specialists tailor surgical approaches to their patients' individual needs. This guide provides an overview of the type of treatment options offered for genitourinary issues.

To make an appointment, please call 800.223.2273 ext.45600.

What is the Center for Genitourinary Reconstruction?

Located on Cleveland Clinic's main campus within the Glickman Urological & Kidney Institute, the Center for Genitourinary Reconstruction offers comprehensive evaluation and individualized surgical treatment for patients with both common and rare lower urinary tract and genital conditions, diseases and anomalies. The population served consists primarily of male adults and adolescents, but also includes some female patients who are born with abnormalities of the genitourinary system and have associated problems persisting into adolescence and adulthood.

The Center for Genitourinary Reconstruction delivers advanced surgical treatment to hundreds of patients each year from across Northeast Ohio, the United States and other countries. It is staffed primarily by three surgeons, a fellow and resident physicians, a nurse specialist, and a physician assistant. When necessary, additional medical and surgical specialists are available within Cleveland Clinic to allow for comprehensive coordination of care. It is one of only a few centers in the United States offering this type of expertise for these often complex problems.

The surgeons within the center are recognized throughout the world and bring decades of successful experience in caring for patients with genitourinary health issues. The center is part of the Glickman Urological & Kidney Institute, which is recognized by *U.S.News & World Report* as the nation's No. 2 urological program.

Problems treated at Cleveland Clinic's Center for Genitourinary Reconstruction include:

- Urethral strictures
- Urinary incontinence
- Erectile dysfunction
- Peyronie's disease
- Congenital erectile curvature
- Rectourethral fistula
- Congenital anomalies of the bladder and genitalia
- Complications related to prior hypospadias repair in adolescents and adults
- Neurogenic bladder due to spinal cord injury or myelomeningocele
- Genital lymphedema
- Penile and urethral cancer.

A visit to the center begins with a thorough physical examination and any necessary diagnostic tests. After this information is obtained, the physician and his or her team will consult with the patient to review treatment options and determine the course of action most likely to provide a favorable long-term result and improve the patient's quality of life. After being treated, many patients have the option of continuing follow-up visits with their urologist or primary care physician closer to home. With the consent of the patient, pertinent notes and records are forwarded to the referring physician at each visit to aid with coordination of care.

If you or a loved one has a genitourinary problem, this resource guide has been produced to provide you with useful information about the disorders and the advanced surgical treatments available within the Center for Genitourinary Reconstruction.

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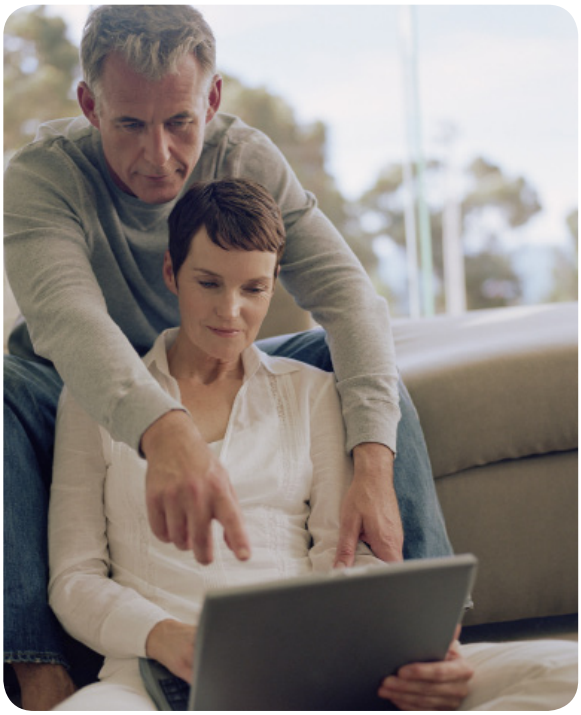
Urethral Strictures and Urinary Fistulas

The Center for Genitourinary Reconstruction specializes in treating urethral strictures and urinary fistulas. Surgeons within the center have advanced training and extensive experience with urethral reconstruction for these difficult problems.

A urethral stricture is a scar that develops in the urinary channel. The scar narrows the urethral channel leading to urinary symptoms or sometimes a complete inability to void. Most strictures result from trauma, such as a straddle injury, but others may be due to having previous urethral catheters in place, a fracture of the pelvis, or an inflammatory condition of the penile skin known as lichen sclerosis. Some men are born with a condition known as hypospadias and undergo corrective surgery as a child, but may develop urethral strictures later in life. In some cases, a urethral stricture can be managed by dilating the urethra or using a cystoscope to look inside the urethra and cut through the stricture, however a high percentage of strictures recur after such maneuvers and require more advanced surgery for cure.

There are two primary types of urethral reconstructive surgery (also known as urethroplasty). If the stricture is short enough, the surgeon may be able to remove the narrowed section of the urethra and then suture the healthy ends of the urethra directly together. If the stricture is too long for this to be done, then substitution urethroplasty is necessary during which the urethra is rebuilt over a longer distance. This is done most commonly by using buccal mucosa, the inner lining of the cheek, to substitute for and replace the scarred tissues. Penile skin may also be used for this purpose if the stricture is excessively long and there is not enough buccal mucosa to cover the area. The long-term cure rate with these procedures is 85-95 percent and when successful allows the patient to be free of the need for repeated ongoing procedures or self-catheterization.

Urethral reconstruction is also necessary for the small percentage of patients who undergo surgery and/or radiation therapy for prostate or rectal cancer and develop a rectourethral fistula. A rectourethral fistula is an abnormal hole that forms between the urethra and the rectum resulting in passage of urine through the rectum, recurrent infections, and pelvic inflammation and discomfort. Cleveland Clinic's Center for Genitourinary Reconstruction is one of the few places in the United States that performs a significant number of these very challenging surgical repairs. Surgery is usually done through the perineum (the area between the scrotum and the rectum) and therefore patients recover more quickly than after an abdominal operation. The rectum and urethra are carefully separated, the hole on each side is closed, and in complex cases a muscle flap from the inner thigh is rotated to fill the space between and act as a barrier to prevent recurrence of the fistula.



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Urinary Incontinence

About 6-8 percent of men who have had surgery to remove their prostate will develop urinary incontinence. Many physicians prefer to start with behavioral techniques and exercises that train men to control their ability to hold urine. However, when conservative treatments fail, surgery to implant a urethral sling or an artificial urinary sphincter (AUS) may be required.

Urethral Sling

In this procedure, a synthetic mesh tape is positioned around part of the urethra (the descending tube-like structure through which urine passes out of the bladder). The tape elevates the tissues behind the upper part of the urethra resulting in elongation of the continence zone and improved coaptation of the urethra. This procedure is best suited for men with mild to moderate urinary incontinence following a radical prostatectomy and has been shown to help many patients overcome this issue or significantly reduce the episodes of urinary incontinence. It is a minimally invasive procedure that requires only a small incision in the perineum between the base of the scrotum and the anus. Recovery time is fairly short although vigorous activities need to be restricted for approximately six weeks following surgery.

The primary risks related to this procedure include temporary inability to urinate requiring a catheter for a short time, or the possibility of some degree of urinary leakage reoccurring at a later time.

AUS (Artificial Urinary Sphincter)

In patients with moderate to severe urinary incontinence due to more significant sphincter muscle or valve damage following prostate cancer surgery, an AUS may be required to restore urinary continence.

The AUS has three components: (1) an inflatable cuff that is placed around the upper urethra through an incision in the perineum near the bladder, (2) a pump that is inserted into the scrotum, and (3) a small pressure regulating balloon, about the size of a ping-pong ball, placed beneath the abdominal muscles. The pump and balloon are inserted through a second small lower abdominal incision. The balloon maintains fluid under pressure within the urethral cuff to hold the urine back, and the pump controls the opening and closing of the cuff. When the patient feels the need to urinate, he presses on the pump and this opens the cuff to allow urination. Once the patient completes urinating, the cuff automatically closes again. This device is generally recommended for men with moderate to severe urinary incontinence and has significantly improved the quality of life for many men suffering from this problem.

Although uncommon, risks of the procedure requiring further surgery include malfunction of the device (usually due to a fluid leak), erosion of the device into the urethra and infection. Center urologists implant a large number of AUS devices annually. These include not only first time procedures, but also a significant volume of complex cases referred specifically for complications occurring after previous surgery for urinary incontinence or other urethral problems.

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Erectile Dysfunction (ED)

Approximately 30 percent of men will have ED by the time they reach the age of 50. In the majority of cases, ED is not a disease but may be a symptom of underlying health issues such as atherosclerosis, diabetes, nerve disease or even psychological factors such as stress, depression and performance anxiety. ED may also occur following treatment for prostate cancer or in association with certain other conditions such as Peyronie's disease. In most cases, ED is initially treated with oral medication. If oral medication is not effective, remaining treatment options include use of a vacuum erection device, penile injection therapy or placement of a penile implant.

The most commonly used penile implant consists of a pair of inflatable cylinders that are surgically implanted in the erection chambers of the penis. The cylinders are connected via tubing to a reservoir of fluid under the lower abdominal muscles and to a pump that is located within the scrotal sac. To inflate the penile prosthesis, the man compresses the pump a number of times to transfer fluid from the reservoir to the cylinders and this causes the penis to become erect. When inflated, the prosthesis makes the penis stiff and thick, which is very similar to a natural erection. A penile prosthesis does not change the sensation on the skin of the penis or a man's ability to achieve orgasm or ejaculate. Pressing on a deflation valve at the base of the pump returns the fluid to the reservoir, which returns the penis to a flaccid state. The surgical procedure is performed through one or two small incisions that are generally well hidden and other people will be unable to tell that a man has an inflatable penile prosthesis. In other words, most men would not be embarrassed in a locker room or public restroom. Complications following surgery are rare, but primarily include infection and mechanical device failure.

About 95 percent of penile implants surgeries are successful in producing erections that enable men to have sexual intercourse. Moreover, patient satisfaction questionnaires show that up to 90 percent of men who have undergone penile implants say they would choose the surgery again and overall satisfaction ratings are higher than those reported by men using oral medication or penile injection therapy.

Surgeons in the Center for Genitourinary Reconstruction have extensive experience and special expertise in penile prosthesis implantation, not only in first time cases but also in patients who have had complications related to a previously placed device that may lead to difficult reimplantation or the need for reconstructive surgery to allow insertion of a new prosthesis.

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Peyronie's Disease

Peyronie's disease is a fairly common disorder, occurring in about 9-10 percent of middle age men. In this age group and for a variety of reasons, erections tend to become less rigid but are still suitable for sexual intercourse. This decrease in rigidity makes the penis susceptible to bend more during sexual intercourse. In addition, the elastic covering layer of the two erectile chambers or cylinders may become more brittle over time. Together these changes can lead to an injury within the elastic layer of the erectile chambers during intercourse. Most men do not recall hurting the penis, and the injury is felt to be more of a repetitive minor trauma occurring over time. Some men will heal this injury without a noticeable change in the penis, however others develop an noticeable scar or plaque. This scar tissue is inelastic and does not stretch well during erection and may lead to curvature of the penis or sometimes an hourglass deformity during erection.

About 30 percent of men will experience some pain during intercourse at the onset of Peyronie's disease, but the pain resolves in virtually everyone over time. There is often some associated decrease in the length of the erect penis and this change may be permanent. Mild curvatures usually do not require treatment, and since the condition improves in some men on its own, physicians often recommend waiting approximately one year before proceeding with corrective surgery. Surgery is only potentially helpful and considered when there is persistent curvature during erection that is severe and limits or prevents sexual intercourse.

There are two procedures used for men who have disabling erectile curvature, but are still able to obtain adequate rigidity or firmness. When erect, the penis can be thought of as having a long side and a short side due to the curvature. One procedure, called plication, involves operating on the side of the penis opposite the scar or plaque to shorten the long side of the erect penis. This is usually done without actually removing any tissue. The procedure is done as an outpatient with a fairly quick recovery period. It is successful in more than 90 percent of men in terms of adequately straightening the erection and maintaining erectile firmness, but will result in some further shortening of the erection. Before surgery, one can estimate the length of the erection following the plication operation by having the patient lie down and then manually stretching the penis upward while it is soft. This is demonstrated to the patient and his partner to provide appropriate expectations about the outcome.

In fewer cases, another surgical procedure is performed during which the plaque or scar tissue is incised or removed to allow expansion of the short side of the penis to achieve straightening. This results in a defect in the covering layer of the erectile chambers that must then be filled with a graft, which may be obtained from a commercial source or harvested from elsewhere on the patient's body. This procedure is designed to result in better preservation of remaining penile length, but still will not restore erection length back to what it was before the onset of Peyronie's disease. It is used most commonly in men with the most severe erectile curvature, approximately 75-90 degrees in severity. Although lengthening the short side of the erection sounds desirable, this procedure has a somewhat higher risk of side effects compared to plication including weak erections or ED that may then require pills or a penile implant, a temporary change in sensation of the penis, and longer postoperative recovery. In about 75 percent of cases, the procedure results in correction of curvature and an adequately firm erection for sexual intercourse.

Transitional Urology for Adolescents and Adults

The genitourinary tract is the system most often affected by congenital defects (problems present at the time of birth). Such problems may occur alone such as in hypospadias where the urinary opening is located in an abnormal spot along the bottom side of the penis, or involve multiple organ systems like in myelodysplasia or spina bifida where there may be bowel and bone problems as well. In the past, preservation of kidney function and urinary control have been the main focus of care provided by pediatric urologists for these patients. However, many of these children are now surviving to adolescence and adulthood with excellent health and therefore issues of sexuality, genital appearance and function, urinary and bowel incontinence and fertility are becoming important health and quality of life issues for them. In addition, patients who are born with these problems later experience typical age-related urological problems such as prostate enlargement and prostate cancer that are then more difficult to treat as a result of their previous condition or prior surgeries.

Our Transitional Urology program works with patients to balance multiple complex and sometimes competing urological and personal needs. We combine our medical plan with the patient's own personal health objectives to develop an individualized treatment plan to address the patient's needs. The initial visit to our center typically involves a detailed review of the patient's medical and surgical history and assessment of his/her current urological status. Information about kidney function, urinary and bowel control, sexual health, and age related cancer screening is obtained. Sometimes additional testing with highly specialized X-rays, diagnostic procedures, or additional lab work is necessary to thoroughly assess the patient. After all of this information is obtained and evaluated, we map out a plan with each patient to fix the genitourinary problems they are currently experiencing and address future needs. For patients with congenital defects affecting multiple organ systems, we work closely with Transitional Medicine specialists in other departments to provide comprehensive care for this unique and challenging patient population.

To make an appointment, please call 800.223.2273 ext.45600.

Contacting Cleveland Clinic

If you would like to set up a consultation with a Cleveland Clinic specialist, please call 800.223.2273 ext.45600 or request an appointment online at clevelandclinic.org/appointments

For more information, visit clevelandclinic.org/urology.

Services for Patients

Genitourinary Reconstruction Specialists

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Hadley M. Wood, MD

For more information about our staff, including complete profiles, visit clevelandclinic.org/staff.

Medical Concierge

Complimentary assistance for out-of-state patients and families. Call 800.223.2273, ext. 55580, or email medicalconcierge@ccf.or

Global Patient Services

Complimentary assistance for national and international patients and families. Call 001.216.444.8184 or visit clevelandclinic.org/gps

Remote Consults

Request a remote medical second opinion from Cleveland Clinic. My**Consult** is particularly valuable for patients who wish to avoid the time and expense of travel. Visit clevelandclinic.org/myconsult, email eclevelandclinic@ccf.org or call 800.223.2273, ext.43223.

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