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A stylized, high-contrast image of a human torso, showing the spine and pelvic region. The image is rendered in shades of blue and purple, with a grainy, artistic texture. It serves as the background for the right-hand page.

UROLOGY SERVICES at New York Methodist Hospital





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The Division of Urology at New York Methodist Hospital offers a broad range of services for the diagnosis and treatment of conditions of the kidneys, bladder and entire genitourinary system. Some of the problems that urologists treat are particular to males or females; others are not gender-specific. Urological care includes treatment for a wide spectrum of diseases, including, urologic cancers (prostate, bladder, kidney, testes, adrenal, etc.), kidney stones, urinary incontinence, urinary tract infections, pain or swelling of the scrotum or testicles and sexual difficulties. Our specialists also offer expertise in complex urological problems, such as treatment for voiding dysfunction with a neurological condition (stroke, spina bifida or spinal cord injury); or laparoscopic surgery, a minimally invasive alternative to open surgery.

Urologists at New York Methodist are committed to offering the most advanced and effective medical and surgical care, while maintaining respect for the dignity of each patient.

Some of the urologists at NYM specialize in the treatment of one or more urological conditions. Others are generalists, who treat a wide range of common urological conditions.

Urinary Tract Infection

The urinary system is composed of the kidneys, ureters, bladder and urethra. A urinary tract infection (UTI), sometimes referred to as cystitis, is an infection that begins in the urinary system. Most infections involve the lower urinary tract, consisting of the urethra and the bladder. Both men and women may get UTIs, but women are at greater risk of developing them. Urinary tract infections are usually treated with antibiotics.

Symptoms

The symptoms of a UTI can develop quickly. They include:

- Pain or burning during urination
- Frequent urge to urinate
- Pressure in the lower belly
- Blood in the urine
- Cloudy urine
- Additional symptoms may be present, depending on which part of the urinary tract is infected.

Diagnosis

A UTI can be diagnosed through analysis of a urine sample.

Treatment

With prompt and appropriate treatment, consisting primarily of medication, urinary tract infections resolve quickly, without complications. However, left untreated, urinary tract infections can lead to acute or chronic kidney infections, so it is important to seek treatment promptly.

Kidney Stones

Kidney stones, one of the most painful disorders of the urinary tract, are also one of the most common. A kidney stone develops within the urinary tract from crystals that separate from the urine. If the crystals remain tiny, they travel through the urinary tract and pass out of the



body in the urine without causing any symptoms. Stones that cause symptoms or complications can be treated in a variety of ways

Symptoms

The first symptom of a kidney stone is usually pain, which begins suddenly when a stone moves in the urinary tract and blocks the flow of urine. A sharp, cramping pain may be felt in the back and side or in the lower abdomen. Sometimes nausea and vomiting occur. Later, the pain may spread to the groin. If the stone does not pass, the pain continues as the muscles in the wall of the narrow ureter try to squeeze it into the bladder and the body tries to push it out. Blood may appear in the urine, and as the stone moves down, closer to the bladder, pressure or a burning sensation may occur. If fever and chills accompany any of these symptoms, an infection may be present.

Diagnosis

Computed tomography (CT) scans or a plain x-ray of the abdomen may be used to diagnose a kidney stone.

Treatment

Often kidney stones need no treatment other than plenty of water—two to three quarts a day—to help move the stone along. However, if this process is ineffective, surgery or—most frequently—shock wave

lithotripsy may be used. In this procedure, shock waves created outside the body travel through the skin and body tissues until they hit the stones. The stones then break down into small particles and are passed through the urine. Lithotripsy is usually performed on an outpatient basis and recovery time is short; most people recover in just a few days.

If a stone is very large or in a location that is not easily reached via lithotripsy or minimally invasive endoscopic procedures, using laser technology to break up the stones is available. This can usually be performed as an outpatient procedure.

Incontinence (Voiding Dysfunction)

Urinary incontinence is the inability to control the release of urine from the bladder. This is a common problem for both sexes, but it can be very embarrassing. Fortunately, it is usually treatable or at least manageable. Incontinence can vary in frequency and severity, depending on its type and cause.

Symptoms

There are several distinct types of incontinence. The symptoms of each of the main types follow:

- Stress incontinence is characterized by the release of urine on coughing, sneezing, laughing, exercising or lifting. It is caused by a weak sphincter muscle at the bladder. This type of incontinence is often caused in women by changes resulting from pregnancy, childbirth and menopause and in men by removal of the prostate gland.
- Urge incontinence is characterized by a sudden urge to urinate that is so strong that it is almost immediately followed by a loss of urine. The need to urinate very frequently may also be present. This type of incontinence can result from a UTI or from a variety of neurological diseases or medical conditions. Urge incontinence is sometimes called “overactive bladder” because the bladder contracts and expels urine even when it is not full.
- Mixed incontinence is characterized by symptoms of both of the above types.

Diagnosis

Diagnosis of incontinence begins with a physical examination and medical history, including a discussion of incontinence symptoms. This will allow the doctor to determine what type of incontinence the patient has. He or she may then order various tests including urinalysis, blood tests, a bladder diary, a pelvic sonogram, urodynamic testing and cystoscopy.

Treatment

Treatment will depend on the type of incontinence that is diagnosed. Options, which are sometimes used in combination, may include:

- Behavioral techniques: pelvic muscle strengthening exercises, bladder training, timed urination or fluid and diet management.
- Medications: antispasmodic drugs, which help the bladder muscles to relax.
- Devices: may include an electro-stimulator device that helps to suppress an overactive bladder or a pessary, which is a stiff ring inserted into the vagina to help hold up the bladder to prevent urine leakage.
- Surgery: includes removal of a portion of an enlarged prostate gland (in men) bolstering the weakened sphincter muscles or “lifting” a dropped bladder (in women).

Bladder Cancer

The bladder is a balloon-shaped organ that stores urine before it is released through the urethra. Bladder cancer usually begins in the cells that line the inside of the bladder. Most of the time it occurs in older adults, but it can occur at any age. Most bladder cancers are diagnosed early when this disease is very treatable. However, bladder cancer frequently recurs, so follow-up screening tests are necessary following treatment.

Symptoms

The symptoms of bladder cancer include:

- Blood in the urine
- Painful urination
- Abdominal pain
- Back pain

There are several different types of bladder cancer. The most common type in the United States is *transitional cell carcinoma*, which occurs in the cells that line the bladder. *Squamous cell carcinoma*, which appears in response to infection and irritation and *adenocarcinoma*, which begins in mucus-secreting glands in the bladder, are rare in this country.

Diagnosis

A number of tests can be used to diagnose bladder cancer. A urine sample can be analyzed to check for cancer cells. A cystoscopy, during which the doctor inserts a narrow tube (cystoscope) through the urethra, to see the inside of the urethra and bladder will probably be performed. Local anesthesia or light sedation during cystoscopy ensures that you will not be uncomfortable. During a procedure similar to cystoscopy, the doctor may pass a special tool through the urethra and into the bladder to collect a small cell sample (biopsy) for testing. This procedure can also be used to treat bladder cancer and is usually performed with anesthesia.

Other tests may also be performed to provide the doctor with images of the urinary tract. These tests include intravenous pyelograms, which use dye to highlight the kidneys, ureters and bladder, and computed tomography (CT) scans, which provide images of the urinary tract and surrounding tissues.

If tests confirm a diagnosis of bladder cancer, the doctor may order additional tests to determine the stage of the cancer. These tests may include CT scans, magnetic resonance imaging (MRI), bone scans and chest x-rays. Bladder cancer is generally categorized as either superficial, which means that it occurs in the inner lining of the bladder but has not yet reached the muscular bladder wall, or muscle-invasive,

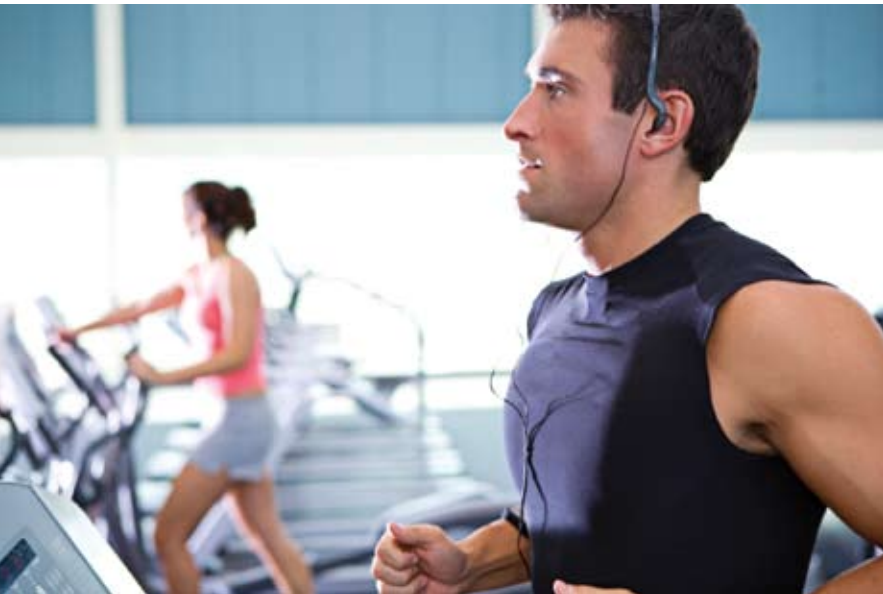
which means that it has spread through the muscle and has a higher potential to spread to the lymph nodes and other organs of the body.

Treatment

Treatment for bladder cancer depends on the type and stage of the cancer, the patient's general health and the patient's lifestyle and preferences. The doctor and patient should jointly decide on the treatment to be followed. Most people with bladder cancer undergo surgery to remove the cancerous cells. If the cancer is in an early stage, transurethral resection of bladder tumor (TURBT) is often used to remove bladder cancers that are confined to the inner layers of the bladder.

If the cancer is more advanced, but limited to an area of the bladder that can be removed without destroying bladder function, a segmental or partial cystectomy may be performed. Through an abdominal incision, while the patient is under general anesthesia, the surgeon removes only the portion of the bladder that contains cancer cells. However, if the cancer has invaded the bladder wall more deeply, surgery to remove the entire bladder (radical cystectomy) may be performed. Radical cystectomy usually also includes removal of the prostate and seminal vesicles in men and removal of the uterus, ovaries and part of the vagina in women. Immediately following a radical cystectomy, surgery to provide a method for the body to expel urine will be performed. There are several types of storage and excretion options that surgeons can provide for this purpose and the choice is made in consultation with the patient.

As an alternative to or, more usually, in addition to surgery, other treatments exist for bladder cancer. *Biological therapy* (immunotherapy) stimulates the body's immune system to help fight cancer cells. It can be given after TURBT to reduce the risk of recurrence or before surgery to shrink a tumor. *Chemotherapy* for bladder cancer may be used prior to surgery or to attack cancer cells remaining afterwards. It is sometimes used in combination with radiation therapy, which uses either external high energy beams or radiated seeds placed inside the bladder.



MALE UROLOGY ISSUES

Prostatitis

The prostate gland, which produces semen, is located just below the bladder in males. Prostatitis is an inflammation or infection of the prostate gland. There are several categories of prostatitis; both acute and chronic, bacterial and non-bacterial.

Symptoms

Prostatitis can cause a variety of symptoms, including a frequent and urgent need to urinate and pain or burning when urinating — often accompanied by pelvic, groin or low back pain. Other symptoms vary, depending on the specific type of prostatitis. They may include fever and chills, flu-like symptoms, inability to empty the bladder, excessive urination at night, blood in the urine or painful ejaculation. Some forms of prostatitis involve symptoms that appear quickly; others

typically have symptoms that develop more slowly or intermittently and are not as severe.

Diagnosis

Prostatitis is sometimes difficult to diagnose because the symptoms are similar to those of many other conditions such as bladder infections, bladder cancer, benign prostatic hypertrophy or prostate cancer. The diagnostic process involves ruling out these conditions and then determining the specific type of prostatitis. A digital rectal examination allows the physician to determine if the prostate gland is enlarged and tender. Laboratory tests are used to determine the presence of bacteria in the urine or prostate gland fluid.

Treatment

The primary treatment for bacterial prostatitis is usually antibiotic medication. Non-bacterial prostatitis is generally treated with measures that provide relief of symptoms such as alpha blockers to help relax the bladder and make urination easier, pain relievers, muscle relaxants or physical therapy,

Benign Prostatic Hypertrophy

Most men experience a period of prostate growth in their mid- or late 40s. When this occurs, tissues in the area may put pressure on the urethra, cause difficulty urinating and partially block the flow of urine. Benign prostatic hypertrophy (BPH) is the medical term for prostate gland enlargement. Prostate gland enlargement does not indicate the presence of prostate cancer.

Symptoms

For about half of all men, prostate gland enlargement does not represent a medical problem. The other half of men with BPH will experience symptoms that are serious enough for them to seek medical treatment. These may include:

- Weak urine stream and straining while urinating
- Difficulty starting urination and dribbling at the end

- Stopping and starting while urinating
- Frequent or urgent need to urinate, especially at night
- Inability to completely empty the bladder
- Blood in the urine (hematuria)
- Urinary tract infection

Diagnosis

An evaluation for enlarged prostate will likely include questions about the symptoms the patient is experiencing, a digital rectal examination and a urinalysis. The doctor may also want to perform a prostate specific antigen test (PSA) or transrectal ultrasound to rule out prostate cancer. Urodynamic pressure flow studies, cystoscopy or a renal and bladder ultrasound to provide images of urinary tract structures may also be performed.

Treatment

Treatment of prostate gland enlargement depends on the symptoms a patient is experiencing. It may include medication, surgery or other types of therapy. Available medications include alpha-blockers, which relax muscles around the bladder and make urination easier and enzyme inhibitors, which shrink the prostate gland. Sometimes these drugs are taken in combination.

For severe cases of BPH, surgery may be the best option for treatment. Surgery is highly effective, but may produce side effects. The procedures most often performed to treat an enlarged prostate gland are:

- Transurethral resection of the prostate (TURP), in which the surgeon threads a narrow instrument into the urethra in order to cut away excess prostate tissue.
- Transurethral incision of the prostate (TUIP), in which the surgeon cuts into the prostate gland to enlarge the opening of the urethra in order to make urination easier.
- Laser surgery, in which a high-energy laser is used to evaporate prostate tissue.

- Open prostatectomy for very large glands, which requires an incision in the lower abdomen to reach the prostate gland, the inner portion of which is removed.

Other minimally invasive treatments for BPH include transurethral microwave therapy (TUMT) or transurethral needle ablation (TUNA). These are typically performed in an outpatient setting.

Prostate Cancer

Cancer of the prostate gland is common in older men. However, compared to other cancers, prostate cancer tends to grow very slowly and in most cases it remains latent for many years. When prostate cancer is discovered in an early stage, survival rates are excellent. However, as is the case with other forms of cancer, if a malignant prostate tumor advances, it can eventually spread to other organs of the body and become lethal.

Symptoms

Many symptoms of prostate cancer are similar to those of BPH or of other conditions of the urinary tract. It is also possible for prostate cancer to have no noticeable symptoms. Some possible symptoms of prostate cancer include:

- Weak or interrupted flow of urine
- Frequent urination
- Trouble urinating
- Pain or burning on urination
- Painful ejaculation

Diagnosis

Tests to screen for and diagnose prostate cancer include:

- Digital rectal examination, which allows a nurse or doctor to feel lumps on the prostate gland
- Prostate specific antigen (PSA) blood test, which measures the level of a substance that usually increases in amount in men with prostate cancer

- Transrectal ultrasound, which permits sonographic imaging of the prostate.
- Prostate biopsy, which can be performed through a needle in an outpatient setting.

Once the diagnosis is made, additional tests to determine the stage of the cancer will be performed. These may include:

- Bone scan, a nuclear medicine procedure that shows whether cancer has spread to the bone.
- Computed tomography (CT scan), which shows a series of detailed pictures of areas inside the body, taken from different angles. The pictures are made by a computer linked to an x-ray machine.
- Magnetic resonance imaging (MRI), which uses a magnet, radio waves and a computer to show images of organs inside the body.

Treatment

There are many good treatment modalities for prostate cancer. The choice of treatment involves an understanding of the stage of the cancer (whether it is local to the prostate or has spread), the age and general health of the patient and whether it is newly diagnosed or has recurred after previous treatment. The final choice is ideally decided as a result of discussion between the doctor and the patient.

Watchful Waiting (Active Surveillance)

In cases where there are no symptoms, or the symptoms are very mild and where men are in their late 70s or older, regular monitoring of the tumor to see if it progresses may be all that is needed. If there is no progression, further treatment may be unnecessary.

Surgery (Radical Prostatectomy)

Surgery to remove the prostate gland is considered an effective treatment for cancer that is localized in the prostate gland. There is a high potential for the cancer to be considered entirely cured after surgery. Men who are in good health with a life expectancy of over 10 years are good candidates for surgery. However, there may be side effects, including impotence and incontinence.



Radiation Therapy

Radiation therapy is also considered effective in the treatment of localized prostate cancer. Five-year survival rates are similar to those for surgery. Men who are older or have other medical problems, or men who wish to avoid surgery may opt for this treatment, which uses high-energy x-rays or other types of radiation to kill or contain cancer cells. Two types of radiation therapy are used in the treatment of prostate cancer. *External radiation therapy* uses a machine outside the body to send beams toward the cancer. *Internal radiation therapy (brachytherapy)* uses radioactive seeds that are implanted directly into or near the cancer. The risk of incontinence is lower than for surgery; however, some patients may experience side effects from the radiation spreading to other organs. Impotence rates after radiation therapy are about the same as for surgery.

Cryosurgery

Cryosurgery, an alternative to standard radical prostatectomy, may be used for early stage cancer that is localized to the prostate or for cancer

that has recurred after radiation treatments. This technique uses an instrument to freeze and destroy prostate cancer cells. The possible side effects are similar to those that may occur with the standard surgery; however, rates of incontinence are lower and impotence rates are higher.

Hormone therapy

Hormone (androgen deprivation) therapy is used for advanced and metastatic cancer or for localized prostate cancer that has recurred after radiation or surgery. Male sex hormones can stimulate the growth of cancer cells. Hormone therapy, in the form of either surgery or drugs, is used to reduce the production of these hormones, thereby blocking the growth of cancer cells. Side effects of hormone surgery may include decreased bone density and muscle mass, hot flashes, impaired sexual function, loss of desire for sex, depression, fatigue, weight gain, enlarged breasts and high cholesterol levels.

Chemotherapy

Chemotherapy may be used as a treatment to extend life and enhance the quality of life in late stage cancer that has spread to the bones and/or other organs. The development of chemotherapy to treat prostate cancer is relatively new. Chemotherapy uses drugs to stop the growth of cancer cells. It may involve taking medicine by mouth or having it injected into a vein or muscle. The side effects of chemotherapy can include gastrointestinal problems such as nausea, vomiting, diarrhea or constipation, fatigue, low red or white blood cell counts and an increased risk of blood clots.

Testicular Cancer

The testicles (testes) produce male sex hormones and sperm. They are located inside the scrotum, a loose bag of skin underneath the penis. Testicular cancer is relatively rare but it is the most common cancer in American males between the ages of 15 and 34. Testicular cancer is highly treatable, with the greatest chance for success when it is identified at an early stage. Therefore, regular self-examinations are important so that growths can be treated quickly.

Symptoms

Most men discover a testicular cancer lump or enlargement—the major symptom—themselves. The cancer usually involves only one testicle. Additional symptoms may include:

- A feeling of heaviness or a sudden collection of fluid in the scrotum
- A dull ache in the abdomen or groin.
- Pain in a testicle or the scrotum
- Enlargement or tenderness in the breasts
- Fatigue or other vague feelings of illness

Diagnosis

If testicular cancer is suspected, blood tests and ultrasound tests are used to determine whether a lump is cancerous. Once this is determined, the testicle will be removed in order to determine the type of cancer present. There are two major types of testicular cancer: *seminoma* and *nonseminoma*. In some cases both types are present in the same tumor.

Once the cancer diagnosis is confirmed, further testing will be done to determine the stage of the cancer. A CT scan can be used to provide images of the abdomen in order to determine if the cancer has spread to the lymph nodes. A chest x-ray can show whether the cancer has spread to the lungs. Blood tests will indicate whether there is still cancer present in your body after the testicle has been removed.

Treatment

The initial treatment for testicular cancer of all types is surgical removal of the testicle. This is followed by either additional surgery, chemotherapy or radiation depending on the stage and type of cancer.

Erectile Dysfunction

Nearly all men have problems maintaining a firm erection from time to time. When the problem is ongoing, it can be the cause of stress for the individual and for relationships. Erectile dysfunction (ED) is more common in older men, but it can occur at any age. ED, also known as

impotence, is more frequently caused by physical problems than by psychological ones. In either case, it is frequently treatable and sexual function can be restored in most men.

Diagnosis

While taking a medical history, the doctor will have a particular interest in knowing when symptoms developed, what medications the patient takes and other physical conditions or diseases the patient is known to have. If a physical cause for ED is suspected, some of the tests performed may include:

- Blood work to check the male hormone level and to test for medical problems like diabetes.
- Elimination or replacement of prescription drugs to see if this affects the condition.
- Neurological evaluation to assess possible nerve damage in the genital area.

Treatment

The treatment option chosen for ED is largely dependent on what is determined to be its cause. Possible treatments range from medications and simple mechanical devices, to surgery and psychological counseling. Oral medications work by relaxing the muscles in the penis, thus increasing the amount of blood flow, which allows for an erection to occur in response to sexual stimulation. The medications work effectively for many men, regardless of what has caused them to experience ED. However, they are contraindicated by some medical conditions.

Other medical treatments include a drug that is injected into the penis or a drug that is inserted at the tip of the penis. These medications relax the blood vessels in the penis, thus enhancing the blood flow that is needed for an erection.

Various mechanical devices such as penile pumps may be used to stimulate an erection.

If testosterone deficiency is determined to be the cause of ED, hormone replacement therapy may be an excellent option.

If the above options fail, the insertion of a penile implant becomes the best option. This is inserted surgically and is an excellent option in the treatment of ED.

When stress or depression is the cause of erectile dysfunction, a recommendation for psychological counseling may be made. Counseling may help even if the main cause of ED is physical, since this condition can cause tension which, in turn, may exacerbate the condition.

Premature Ejaculation

Premature ejaculation is considered a problem when a man *consistently* ejaculates before he (and his partner) expects or wishes this to occur. (Nearly all men experience this occasionally, but in these cases it is not a cause for concern.) This is a common and treatable disorder. Both psychological and biological factors are involved in this condition. In some men, it may be related to erectile dysfunction.

Symptoms

If a man's sexual encounters have always ended with premature ejaculations, he is considered to have primary premature ejaculation. If the problem has developed at some point after having satisfying sexual encounters, the condition is considered to be secondary premature ejaculation.

Diagnosis

Diagnosis will include a physical examination and a thorough discussion about the patient's sexual history. The doctor may also ask questions related to the patient's psychosocial background. If the patient has symptoms of erectile dysfunction as well as premature ejaculation, blood tests may also be ordered.

Treatment

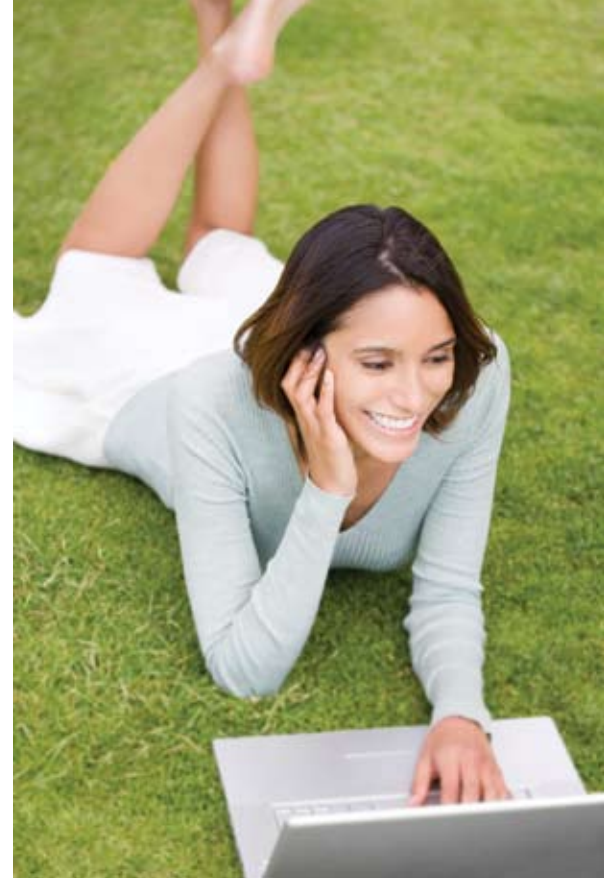
There are several treatment options for premature ejaculation, some of which may be used in combination. These include sexual therapy, oral or topical medications and psychotherapy.

Vasectomy and Vasectomy Reversal

Vasectomy is a birth control option that results in permanent birth control for a man. Pregnancy is prevented because sperm is no longer able to travel out of the testes. The procedure is performed in the office as an outpatient service, under local anesthesia, by urologist with special training in this procedure. The “no scalpel technique” allows for fast healing and short recovery time. The vas deferens is tied, cauterized and blocked with surgical clips.

The advantages of a vasectomy are that it is 99 percent effective, does not interfere with the enjoyment of sex, has minimal side effects and has a relatively short recovery time. However, patients should be aware that it may cause temporary pain, does not provide immediate contraception (it takes about three months before sperm disappear permanently from the semen) and it does not prevent HIV or other sexually transmitted diseases as do some barrier forms of contraception.

Vasectomy should not be performed unless a man is sure that he does not want to father any children, or any more children. While it is possible to reverse a vasectomy, the procedure to do so is complicated and must be performed under general anesthesia.



FEMALE UROLOGY ISSUES

Pelvic Organ Prolapse

If the pelvic floor muscles and ligaments lose tone, they may stretch and weaken, causing a protrusion with one organ bulging or descending into another. This condition may be the result of excessive straining during childbirth, chronic constipation or heavy lifting, or it may occur as a result of a decrease in estrogen after childbirth.

A *cystocele*, or prolapsed bladder, occurs when the wall between the bladder and the vagina weakens and stretches, so that the bladder bulges into the vagina. An *enterocele* (vaginal hernia) occurs when the small intestine drops into the lower pelvic cavity and protrudes into the vagina, creating a bulge. A *rectocele*, occurs when the rectum bulges into the vagina. When the uterus descends into the vagina, it is referred to as a uterine prolapse.

Diagnosis

Diagnosis of a pelvic organ prolapse will include a pelvic examination and medical history. Imaging tests such as pelvic ultrasound may be used to provide additional information.

Symptoms

Symptoms may include a feeling of fullness in the pelvis and vagina, increased discomfort when straining, lifting or coughing, a bulge of tissue that protrudes through the vaginal opening, feeling as though the bladder is never fully emptied, stress incontinence, recurrent bladder infections, vaginal discharge and bleeding and pain or leakage during intercourse.

Treatment

In very mild cases, no treatment is required, though the condition may progress. In some cases, losing weight or stopping smoking may help, or simple self-care measures like exercises to strengthen the pelvic floor muscles may be all that is necessary. In more pronounced cases, treatment may include a vaginal pessary or other device to support the bladder.

In severe cases where the prolapse causes discomfort, surgery may be necessary to put the prolapsed organ back into place and/or tighten the pelvic muscles. Minimally invasive surgical options are available that allow for quick healing and short hospitalizations, in many cases less than 24 hours.

**TO MAKE AN APPOINTMENT
with a Urologist at
New York Methodist Hospital:**

Contact NYM's Physician Referral Service at 718.499.CARE or on the "Find a Doctor" section of our website, www.nym.org. You may request a urologist with a particular specialty or a generalist and you can specify neighborhood, languages spoken and/or insurance affiliation.

Or, call the Division of Urology at 718.780.5403.