what are genitourinary cancers?

Genitourinary cancer refers to abnormal cell growth leading to the formation of tumors in the genital and/or urinary organs. Most genitourinary cancers occur in the prostate (in men), kidneys or bladder.

prostate cancer

Once prostate cancer is found, it is assigned a stage, according to how advanced the cancer is, and a grade, based on how abnormal the cells look. The most frequently used grading system is the combined Gleason score, which ranges from 2-10. The higher the score, the greater the risk that cancer may have spread outside the prostate. This information will be used to plan your treatment.

key technologies and treatments

There are a number of options for treating prostate cancer, including surgery, radiation therapy and hormone therapy.

Surgical options include radical prostatectomy (removal of the prostate gland) and cryosurgery (freezing the prostate). The prostate gland, seminal vesicles and cuff of the bladder neck are removed. Lymph nodes may also be removed.

Radiation therapy is performed by a radiation oncologist and uses high energy X-rays to kill cancer cells. Radiation can be delivered externally from a machine outside the body or through a technique called brachytherapy.

- **Brachytherapy** is the insertion of radioactive seeds directly into the prostate. These radioactive seeds are actually tiny metallic cylinders that contain a radioactive material. This technique allows the delivery of a highly concentrated and locally confined dose of radiation. The radiation helps kill cancer cells while sparing surrounding organs from excessive radiation.
- **Intensity Modulated Radiation Therapy** (IMRT) is the non-invasive delivery of a precise dose of high-energy radiation to shrink or control the growth of a tumor by killing tumor cells or interfering with their ability to grow. The treatment exactly mirrors the shape and size of the patient's tumor. Each beam of radiation conforms to the tumor's exact dimensions, specifically targeting and treating diseased tissue while leaving surrounding healthy tissue unharmed. Two forms of IMRT are available at M. D. Anderson – Orlando: Peacock IMRT and Novalis Shaped Beam Surgery.
- **Helical Tomotherapy** is currently the most advanced method of delivering IMRT to patients. It uses a rotating beam of radiation that is constantly modulated to target the exact size and shape of the tumor. This treatment is completely integrated, so physicians know exactly what took place and where in the patient's previous treatment session.

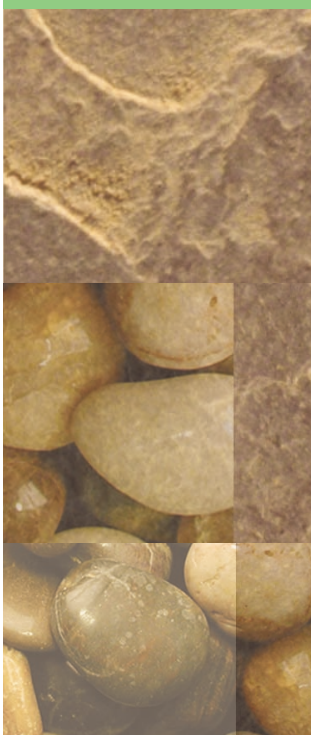
Hormone therapy uses medications to decrease testosterone, a hormone that promotes growth of prostate cancer. This therapy may be done in cases of advanced prostate cancer. Hormones may also be given in conjunction with radiation therapy or surgery.

Watchful waiting is another option that may be recommended, as prostate cancer generally grows slowly. You should talk with your doctor about selecting your treatment and balancing the expected benefits and side effects of your choices.

All treatment methods have side effects and the side effects most often associated with prostate cancer treatment are erectile dysfunction (inability to have an erection) and urinary incontinence (lack of bladder control). Please discuss side effects with your doctor to determine the best way to manage them.

kidney cancer

The most common type of kidney cancer is called renal cell cancer, accounting for about 85 percent of kidney tumors. Risk factors for renal cell carcinoma include smoking, obesity, diet and occupational exposures to substances such as asbestos. Renal cell carcinoma is about twice as common in men as in women and occurs mostly in adults between the ages of 50-70.



key technologies and treatments

Surgery is the main treatment for renal cell carcinoma and the most common surgery is called radical nephrectomy. This surgery removes the whole kidney, the adrenal gland, some nearby fatty tissue and possibly nearby lymph nodes. A partial nephrectomy refers to the removal of only the part of the kidney containing the cancer, an option if the cancer is in both kidneys or if the patient has only one kidney.

Arterial embolization blocks the artery that feeds the kidney with the cancer. In some instances, this procedure is done before surgery to kill some of the cancer cells and to reduce bleeding during the operation.

Chemotherapy use of medications, given by mouth or into a vein, to kill the cancer cells. Chemotherapy may be given in addition to surgery.

Radiation therapy uses high-energy rays, such as X-rays, to kill or shrink cancer cells. The radiation may come from outside the body or from radioactive materials placed inside the tumor.

Immunotherapy promotes or supports the body's own immune system to better fight or destroy cancer cells.

bladder cancer

The wall of the bladder has several layers and cancer often begins in the lining layer and grows into the bladder wall. Bladder cancer is almost three times more common among men than women.

key technologies and treatments

The main types of treatment for bladder cancer are surgery, radiation therapy, immunotherapy and chemotherapy.

Surgery for bladder cancer in the early stages is called transurethral resection (TUR). In this operation, a cytoscope (an instrument inserted into the body to examine the interior of the bladder) is used to find the tumor which is then removed.

Cystectomy is used when cancer is invasive into the muscle of the bladder. Depending upon the size of the tumor the cystectomy may be partial, with only part of the bladder removed, or radical, with the entire bladder and nearby lymph nodes removed. Reconstructive surgery will be needed to provide a way to store and discharge urine if the whole bladder has been removed. Two types of reconstructive surgery are urostomy and continent diversion. You should discuss with your doctor which type of reconstruction is recommended in your case.

Intravesical immunotherapy uses a bacterium introduced directly into the bladder to stimulate the body's own defenses to fight the cancer cells.

Radiation therapy may be either external beam radiation or local radiation therapy using a small pellet of radioactive material placed directly into the cancer. Following surgery, radiation can kill small areas of cancer cells that may not be visible during the operation.

Chemotherapy for bladder cancer can be either intravesical or systemic. Intravesical chemotherapy means that the anticancer medication is placed directly into the bladder. Systemic chemotherapy uses anticancer medications that are injected into a vein or given by mouth.

clinical trials

M. D. Anderson Cancer Center Orlando is committed to improving the health and quality of life of the individuals and communities we serve. Cancer clinical trials are an important aspect of the care provided at our center. A cancer clinical trial is a research study that is conducted by healthcare professionals with the intent to improve the care and treatment of cancer patients. We conduct clinical trials that test new ways to detect, treat, reduce side effects, and improve the comfort and quality of life for people with cancer. The decision to participate in a clinical trial is very personal and should never be made lightly. To make an informed decision about your treatment, it is important to consider the possible advantages and disadvantages of a clinical trial and how your participation might affect you and your family. Your doctor will talk with you about the option of clinical trials.

m. d. anderson cancer center orlando

The M. D. Anderson name has long been synonymous with excellence and innovation. Our specialized multidisciplinary approach means each patient benefits from the expertise of a team of professionals including medical, radiation and surgical oncologists, pathologists and radiologists, nuclear medicine doctors and advanced practice nurses, along with support staff such as social workers, counselors, dietitians and pharmacists. You can be assured of receiving exceptional attention based upon your individual diagnosis and medical needs.

Our relationship with The University of Texas M. D. Anderson Cancer Center in Houston allows for expert consultation of the pathology and confirmation of diagnoses. We can also present patients in Orlando through our teleconferences with Houston and provide state-of-the-art treatment to diseases that otherwise do not have an established standard of care approach. In addition, unusual cases and atypical presentations can be discussed with experts in Pathology, Medical Oncology and Radiation Oncology.

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