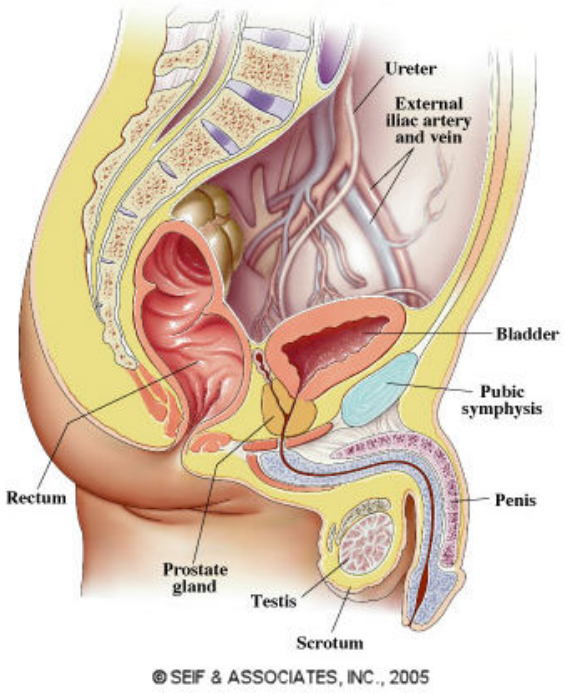
Testicular Cancer, Cancer of the Male Gonads

Testicular cancer is a disease in which *malignant* (cancer) cells form in the tissues of one or both testicles. The testicles are 2 egg-shaped glands located inside the *scrotum* (a sac of loose skin that lies directly below the penis). The testicles are held within the scrotum by the spermatic cord. The scrotum also contains the vas deferens, vessels and nerves of the testicles.



The testicles are the male sex glands and produce testosterone and sperm. Germ cells within the testicles produce immature sperm that travel through a network of tiny tubes (*tubules*) and larger tubes into the *epididymis* (a long coiled tube next to the testicles). This is where the sperm mature and are stored.

Almost all testicular cancers start in the germ cells. The two main types of testicular germ cell tumors are seminomas and nonseminomas. These 2 types grow and spread differently and are treated differently. **Nonseminomas** tend to grow and spread more quickly than seminomas. **Seminomas** are more sensitive to radiation. A testicular tumor that contains both seminoma and nonseminoma cells is treated as a nonseminoma.
Testicular cancer is the most common cancer in men 20 to 35 years old.

RISK FACTORS

Anything that increases the chance of getting a disease is called a risk factor. Risk factors for testicular cancer include:

- Having had an undescended testicle.
- Having had abnormal development of the testicles.
- Having a personal or family history of testicular cancer.
- Having Klinefelter's syndrome.
- Being white.
- Health history can affect the risk of developing testicular cancer.

SYMPTOMS

- Possible signs of testicular cancer include swelling or discomfort in the scrotum.
- These and other symptoms may be caused by testicular cancer.
- Other conditions may cause the same symptoms.

DIAGNOSIS

Tests that examine the testicles and blood are used to find and diagnose testicular cancer. The following tests and procedures may be useful:

- **Physical exam and history:** An exam of the body to check general signs of health, including checking for signs of disease, such as lumps or anything else that seems unusual. A history of the patient's health habits and past illnesses and treatments will also be taken. The testicles will be examined to check for:
  - Lumps.
  - Swelling.
  - Pain.
- **Ultrasound exam:** A procedure in which high-energy sound waves (*ultrasound*) are bounced off internal tissues or organs and make echoes. The echoes form a picture of body tissues called a sonogram.
- **Serum tumor marker test:** A procedure in which a sample of blood is examined to measure the amounts of

certain substances released into the blood by organs, tissues, or tumor cells in the body. Certain substances are linked to specific types of cancer when found in increased levels in the blood. These are called tumor markers. Tumor marker levels are measured before radical inguinal orchiectomy and biopsy, to help diagnose testicular cancer. The following 3 tumor markers are used to detect testicular cancer:

- Alpha-fetoprotein (AFP).
- Beta-human chorionic gonadotropin (ß-hCG).
- Lactate dehydrogenase (LDH).

TREATMENT

Radical inguinal orchiectomy and biopsy: A procedure to remove the entire testicle through an incision in the groin. A tissue sample from the testicle is then viewed under a microscope to check for cancer cells. (The surgeon does not cut through the scrotum into the testicle to remove a sample of tissue for biopsy, because if cancer is present, this procedure could cause it to spread into the scrotum and lymph nodes.) If cancer is found, the cell type (*seminoma or nonseminoma*) is determined in order to help plan treatment.

PROGNOSIS

Certain factors affect *prognosis* (chance of recovery) and treatment options.
The prognosis and treatment options depend on the following:

- Stage of the cancer (whether it is confined to the testicle or has spread to other places in the body, and blood levels of AFP, ß-hCG, and LDH).
- Type of cancer.
- Size of the tumor.
- Number and size of retroperitoneal lymph nodes.
- Testicular cancer is often curable.
- Certain treatments for testicular cancer can cause infertility that may be permanent. Patients who may wish to have children should consider sperm banking before having treatment. Sperm banking is the process of freezing sperm and storing it for later use.

SEEK MEDICAL CARE IF YOU DEVELOP ANY OF THE FOLLOWING PROBLEMS:

- A painless lump or swelling in either testicle.
- A change in how the testicle feels.
- A dull ache in the lower abdomen or the groin.
- A sudden build-up of fluid in the scrotum.
- Pain or discomfort in a testicle or in the scrotum.

This information is courtesy of the National Cancer Institute.

Document Released: 11/10/2006 Document Re-Released: 10/20/2009
ExitCare® Patient Information ©2011 ExitCare, LLC.