

Testicular Cancer

Testicular cancer accounts for only 1 percent of all cancers in men in the United States, with approximately 8,000 new cases diagnosed each year. However, although it is an uncommon type of cancer overall, it is the most frequently diagnosed form of cancer in men between the ages of 20 and 35 years old.

What is testicular cancer?

The testicles contain several types of cells, each of which may develop into one or more types of cancer. It is important to distinguish these types of cancers from one another, because they differ in their prognosis and in the ways they are treated. The different types of testicular cancer are classified by the type of cells in which the cancer develops.

Two main categories of cancer

- **Germ cell tumors** occur in the cells that make sperm. These account for about 95% of all cases of testicular cancer. Some of the main tumor types in this category include:
 - **Seminomas:** This is the most common type of testicular tumor, accounting for about 50% of all cases. Seminomas are typically slow-growing and responsive to radiation therapy.
 - **Non-seminomas:** These grow and spread more quickly than seminomas and respond better to chemotherapy.
- **Stromal tumors:** These tumors arise in the cells that make hormones. Some of the main tumor types in this category include:
 - **Sertoli cell tumors:** These develop in cells that make substances to nourish germ cells.
 - **Leydig cell tumors:** These develop in cells that make male sex hormones.

Who gets testicular cancer?

Although we don't know exactly what causes testicular cancer, certain factors increase a man's chances of developing:

- **Cryptorchidism:** Men who were born with a testicle that did not descend into the scrotum have a higher risk of developing testicular cancer, even if they have had surgery to correct the problem.
- **Personal history of testicular cancer:** Men who have already had cancer in one testicle are at risk for it developing in the other testicle.
- **Family history**
- **Race and Ethnicity:** Testicular cancer is more common in non-Hispanic white men than men of other races and ethnicities
- **Small or abnormally-shaped testicles**

How is testicular cancer diagnosed at the lab?

Tissue from a biopsy is sent to a pathology lab. There the tissue is prepared on glass slides and reviewed by a pathologist, a clinician who has specialized in the diagnosis of disease.

The pathologist looks for abnormal cellular changes under a microscope. He or she interprets the findings under the microscope in the context of the clinical information provided by the healthcare provider. Some cases require additional special analysis to evaluate proteins, RNA and/or DNA.

The pathologist creates a pathology report with all the important findings, including critical information to help guide treatment and assess prognosis, which is sent back to the healthcare provider.

How is testicular cancer treated?

After a diagnosis of testicular cancer, the healthcare professional will order tests to determine the cancer stage, to see how much it has grown, or if it has spread throughout the body.

These tests may involve CT scans as well as blood tests to look for evidence of substances that represent tumor markers.

Cancer stages

- **Stage 1:** This is early cancer that is only present in the testicle.



Although testicular cancer is relatively uncommon, it is unusual because it typically affects younger men. If caught early, it is usually curable.

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- **Stage 2:** The cancer has grown, and has spread to nearby lymph nodes.
- **Stage 3:** The cancer has now also spread throughout the body, most commonly to the lungs, liver, bones, and brain.

Determining the type and stage is important to help the healthcare professional determine the appropriate treatment plan.

Treatment and care

Treatment will depend on the type of testicular cancer, as well as its stage. The good news, however, is that most cases of testicular cancer are detected early and can be cured. Types of standard treatment include the following:

- **Surgery** to remove the testicle and some of the lymph nodes is called a radical inguinal orchiectomy. All patients with suspected testis cancer typically undergo surgery to remove the testicle. After determining the stage of cancer, some patients may need removal of lymph nodes from the area behind the peritoneum.
- **Chemotherapy** is a cancer treatment that uses drugs to stop the growth of cancer cells, either by killing the cells or by stopping them from dividing. In some cases, patients receive chemotherapy after surgery to kill any cancer cells that are left. Treatment given after surgery is called adjuvant therapy.

- **Radiation treatment** uses high-energy X-rays or other types of radiation to kill cancer cells or keep them from growing. There are two types of radiation:
 - External radiation therapy uses a machine outside the body to send radiation toward the cancer.
 - Internal radiation therapy uses a radioactive substance sealed in needles, seeds, wires or catheters that are placed directly into or near the cancer.

The way the radiation treatment is given depends on the type and stage of the cancer. New types of treatment are tested in clinical trials. After treatment, the patient will be carefully monitored for changes in their condition. Regular follow-up examinations may involve CT scans as well as blood tests to evaluate tumor marker levels. Both of these tests will help the healthcare professional check for return or spread of cancer.

Learn More

www.cancer.org/cancer/testicularcancer/

www.nlm.nih.gov/medlineplus/testicularcancer.html

www.webmd.com/cancer/tc/testicular-cancer-topic-overview

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