# Testicular cancer

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, which also contains the vas deferens, and 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 tubules (tiny tubes) and larger tubes into the epididymis (a long coiled tube next to the testicles) where the sperm mature and are stored.

Almost all testicular cancers start in the germ cells. The two main types of testicular germ cell tumours 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.

**Health history can affect the risk of developing testicular cancer.**

Anything that increases the chance of getting a disease is called a risk factor. Having a risk factor does not mean that you will get cancer; not having risk factors doesn't mean that you will not get cancer. People who think they may be at risk should discuss this with their doctor. 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.
- Being white.

**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. A doctor should be consulted if any of the following problems occur:

- 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.

**Tests that examine the testicles and blood are used to detect (find) and diagnose testicular cancer.**

The following tests and procedures may be used:

**Physical examination and history:** An examination of the body to check general signs of health, including checking for signs of disease, such as lumps or anything else that seems unusual. The testicles will be examined to check for lumps, swelling, or pain. A history of the patient's health habits and past illnesses and treatments will also be taken.

**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 tumour 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 tumour cells in the body. Certain substances are linked to specific types of cancer when found in increased levels in the blood.

These are called tumour markers. The following 3 tumour markers are used to detect testicular cancer:

- Alpha-fetoprotein (AFP).
- Beta-human chorionic gonadotropin (Î²-hCG).
- Lactate dehydrogenase (LDH).

Tumour marker levels are measured before radical inguinal orchiectomy and biopsy, to help diagnose testicular cancer.

**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.

**Certain factors affect prognosis (chance of recovery) and treatment options.**

The prognosis (chance of recovery) and treatment options depend on the following:

- Stage of the cancer (whether it is in or near the testicle or has spread to other places in the body, and blood levels of AFP, Î²-hCG, and LDH).
- Type of cancer.
- Size of the tumour.
- Number and size of retroperitoneal lymph nodes.

Testicular cancer is often curable.

**Treatment for testicular cancer can cause infertility.**
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.