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Thyroid Cancer

What is thyroid cancer?

Thyroid cancer is an abnormal, invasive (malignant) growth of cells in the thyroid gland. The thyroid gland is a small gland at the lower front of the neck. It makes hormones that control your metabolism (the process of turning the food you eat into energy).

How does it occur?

The cause of most thyroid cancers is not known. However, as many as 1 in 10 cases of thyroid cancer are caused by radiation exposure. Examples of 2 ways that radiation exposure could increase your risk of this cancer are:

- X-ray treatments to the head and neck when you were a child
- radioactive fallout from atomic weapons testing, as happened in the US in the 1950s.

Also, you may have an increased risk if you have a family history of a type of thyroid cancer called medullary cancer or a history of a hormone problem that causes high blood levels of calcium (parathyroid adenoma). Tell your healthcare provider if you think this may apply to you or a member of your family.

What are the symptoms?

Early thyroid cancer does not cause symptoms. As the cancer grows, the first symptom is a lump (nodule) in the front of the neck.

Late symptoms of thyroid cancer are:

- swollen lymph nodes
- hoarseness or trouble speaking in a normal voice
- trouble swallowing or breathing
- pain in the throat or neck.

These symptoms do not always mean thyroid cancer. Most growths or lumps in the thyroid gland are benign; that is, not malignant. Other problems such as an infection could cause similar symptoms. If you have these symptoms, you should see your healthcare provider as soon as possible to diagnose the problem.

How is it diagnosed?

Your healthcare provider will ask about your symptoms and your personal and family medical history. Your provider will examine you. You may also have one or more of the following tests:

- blood tests
- ultrasound scans of the thyroid gland so your provider can see how many nodules you have, how big they are, and whether they are solid or filled with fluid
- radioactive iodide scan, which uses a very small amount of radioactive material to make thyroid nodules show up on a picture
- biopsy, which is the removal of tissue to look for cancer cells.

A biopsy is the only sure way to know whether a thyroid nodule is cancerous. Your provider may be able to remove tissue in the office with a needle biopsy, also called needle aspiration. Or you may need to have your lump completely removed with surgery in the operating room. The tissue removed with either of these procedures is then examined in the lab for cancer cells.

What are the types of thyroid cancer?

There are 4 main types of thyroid cancer. The type of cancer is determined by looking at tissue samples under a microscope. Some types of thyroid cancer grow faster than others. The 4 types are:

- papillary
- follicular
- medullary
- anaplastic.

Papillary and follicular cancers are called well-differentiated cancers and are the most common. Medullary thyroid cancer may be hereditary. Anaplastic thyroid cancer is the most malignant type, but fortunately it is the least common.

How is it treated?

The treatment depends on the type of thyroid cancer, whether it is in the thyroid gland only or has spread to other parts of the body--that is, the stage of the cancer--and your age and overall health. One or more of the following treatments may be used:

- surgery
- radiation therapy, usually with large doses of radioactive iodine
- hormone therapy, which uses hormone medicines to stop cancer cells from growing
- chemotherapy (anticancer drugs) along with radiation if you have anaplastic cancer.

Surgery is the most common treatment. Part or all of the thyroid gland may be removed, as well as any lymph nodes in the area that have cancer.

Radiation therapy for thyroid cancer may be done in different ways. For the common types of thyroid cancer, usually radioactive iodine is given by mouth. Because the thyroid gland takes up iodine, the radioactive iodine collects in thyroid tissue and kills the cancer cells and any thyroid tissue remaining after surgery. Sometimes a radiation machine outside the body may be used to send high-energy X-rays to the neck to treat certain types of cancer. This is called external radiation therapy.

Thyroid hormones can be used to stop the body from making another hormone that stimulates the thyroid gland (thyroid stimulating hormone). This can help prevent thyroid cancer cells from growing. Thyroid hormones are usually given as pills.

Chemotherapy may be taken by pill, or it may be put into your body by a needle in a vein or muscle. Chemotherapy drugs go into the bloodstream and travel through the body. This allows the drugs to kill cancer cells outside the thyroid gland.

How long will the effects last?

The chance of recovery depends on the type and stage of cancer, as well as your age and overall health.

If part or all of your thyroid gland is removed, you will usually need to take thyroid hormone pills after the surgery. The thyroid medicine will replace the natural hormone that was made by the thyroid gland and prevent any remaining thyroid tissue from functioning.

How can I take care of myself?

- Follow the full course of treatment prescribed by your healthcare provider.
- Keep all appointments with your provider. You will need regular checkups to check your thyroid hormone levels and to make adjustments to your thyroid medicine.
- Ask your provider any questions you have about the disease, treatments, side effects of the treatments, support groups, and anything else that concerns you.
- Let your provider know if you have any new symptoms so they can be checked as soon as possible.
- Eat a healthy diet, especially fruits and vegetables because they can help fight cancer.
- Recognize that having the cancer is an added stress in your life. Take more time for your important relationships and for rest.
- Find a counselor to help you deal with difficult issues.
- Spend time with people and activities you enjoy.

For more information, contact:

- American Cancer Society
  Phone: 800-ACS-2345 (800-227-2345)
  Web site: http://www.cancer.org

- AMC Cancer Research Center and Foundation
  Phone: 800-525-3777
  Web site: http://www.amc.org
- National Cancer Institute
  Phone: 800-4-CANCER (800-422-6237)
  Web sites: http://cis.nci.nih.gov and
  http://www.cancer.gov

How can I help prevent thyroid cancer?

Healthcare providers do not know how to prevent most types of thyroid cancer because they do not fully understand what causes it. However, scientists have found that the medullary type of thyroid cancer can be caused by a change in a gene called RET. This changed gene can be passed from parent to child. Nearly everyone with the altered RET gene will develop medullary thyroid cancer. If the changed RET gene is found in a member of your family, your provider may suggest that other family members have blood tests for the gene. For people who carry the altered RET gene, frequent lab tests or surgery to remove the thyroid gland before cancer develops may be recommended.

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