Thyroid Cancer Treatment

Thyroid cancer overview

Thyroid cancer is cancer that starts in the thyroid. The thyroid is a small, butterfly-shaped gland in the front of the neck that wraps around the windpipe windpipe, or trachea. The thyroid gland uses iodine absorbed from food to produce hormones that control how your body uses energy. Most thyroid cancers can be cured. *See the Thyroid Disease (https://www.radiologyinfo.org/en/info/thyroid-disease) page for more information.*

There are five types of thyroid cancer:

Papillary thyroid cancer: Over 70 percent of patients diagnosed with thyroid cancer have papillary thyroid cancer. This cancer originates in the cells where thyroid hormone is stored. It is slow-growing but 20-50 percent of patients may have cancer spread to the lymph nodes of the neck at the time of diagnosis.

Follicular thyroid cancer: This type of thyroid cancer also starts in the cells where thyroid hormone is stored. It is more aggressive than papillary cancer and often spreads into the bloodstream, lungs or bones. Most patients are over the age of 40.

Hurthle cell cancer: This is a rare type of thyroid cancer. This used to be considered a variant of follicular thyroid cancer but is now classified as a distinct type of thyroid cancer. Hurthle cell cancers are more likely to have spread outside the thyroid at the time of diagnosis

Medullary thyroid cancer: This type of cancer is rare. It develops in the cells of the thyroid that make a hormone that helps the body maintain the right level of calcium. It may run in families.

Anaplastic thyroid cancer: This is the rarest form of thyroid cancer. It is aggressive and hard to treat. Most patients with anaplastic thyroid cancer are over the age of 60.

What are my treatment options?

Treatment options overview

Your treatment options depend on the type of thyroid cancer, the tumor stage, and how far it has spread. Your doctor may order CT scans, CT/PET scans (https://www.radiologyinfo.org/en/info/pet) or a fine needle biopsy (https://www.radiologyinfo.org/en/info/thyroidbiopsy) to help determine the right treatment for you.

Surgery to remove the thyroid gland is the primary treatment for most thyroid cancers. Doctors often use radioactive iodine therapy (https://www.radiologyinfo.org/en/info/radioiodine) after surgery to destroy any remaining thyroid tissue.

Standard options include:

Surgery: Surgical removal of the thyroid is called a thyroidectomy. The surgeon makes an incision at the base of the neck and removes the thyroid gland. If the cancer is limited to one part of the thyroid, the surgeon may remove just that part. This is called a thyroid lobectomy.

The surgeon also may remove lymph nodes in the neck and other tissue, including four small parathyroid (http://www.radiologyinfo.org) glands.

If the surgeon removes your thyroid, you will need to take a daily manmade hormone to replace the hormones no longer produced by the thyroid. If the surgeon removes your parathyroid gland, you will also need to take calcium supplements.

Radioactive iodine: Radioactive iodine (http://www.radiologyinfo.org) (I-131) is an isotope (http://www.radiologyinfo.org) of iodine (http://www.radiologyinfo.org) that emits radiation. Thyroid cells, including most thyroid cancer cells, absorb iodine. When you swallow I-131, it enters the bloodstream and is absorbed by the thyroid cells, where it begins destroying them. This is an effective way to target and treat some thyroid cancers. Patients usually receive this treatment after surgery to destroy any remaining thyroid tissue and cancer cells. Doctors also use I-131 to treat patients with recurring thyroid cancer. *See the Radioactive Iodine (https://www.radiologyinfo.org/en/info/radioiodine) page for more information.*

External beam radiation therapy (EBT): EBT uses radiation to kill cancer cells or keep them from growing. EBT uses a linear accelerator (https://www.radiologyinfo.org/en/info/linac) to deliver high-energy x-ray beams to the tumor. The precise beam targets cancer cells while sparing the surrounding normal tissue. Patients who are unable to undergo surgery or I-131 treatment often receive EBT. Treatment is delivered for short periods of time, five days a week for four to six weeks. *See the External Beam Therapy (https://www.radiologyinfo.org/en/info/ebt) page for more information.*

Chemotherapy (http://www.radiologyinfo.org) : This treatment uses drugs to kill cancer cells or keep them from growing. Anaplastic thyroid cancer patients may receive chemotherapy with EBT. Chemotherapy is usually delivered over a set period with breaks in between to help ease any side effects.

Targeted Therapy (http://www.radiologyinfo.org) : This is a new option for patients with advanced cancer or cancer that resists treatment. Drugs attack a specific target on the cancer cells, slowing down or even reversing cancer cell growth.

Alcohol ablation: This treatment uses ultrasound to guide an injection of alcohol into small thyroid cancer tumors. It treats thyroid tumors that cannot be removed with surgery and thyroid cancer that returns after being treated.

How can I choose from among the options?

In addition to talking with family and friends, you will need a team of doctors to help advise you. This team may include a surgeon, a radiologist, a radiation oncologist, a medical oncologist, and an endocrinologist. Endocrinologists specialize in diseases of the glands. Radiation oncologists treat cancer with radiation. Medical oncologists treat cancer with drugs. You and your care team will create a treatment plan that works best for your cancer.

If I choose surgery, will I need radiation therapy or vice versa?

Surgery is the primary therapy for thyroid cancer and is often effective. If the tumor is large, has spread to lymph nodes, or you are at high risk for the cancer returning after treatment, you will most likely have surgery followed by I-131 treatment. Medullary or anaplastic thyroid cancer patients undergo surgery followed by EBT and chemotherapy or targeted therapy. Treatment for advanced thyroid cancer may consist of all the above.

What happens during radiation treatment?

Doctors use two types of radiation for thyroid cancer patients:

You will swallow a capsule or pill that contains radioactive iodine (I-131). Both healthy and cancerous thyroid cells absorb the I-131, which destroys them. This treatment is usually given in a hospital. You may stay overnight. During the treatment and for a short period after, you will give off radiation. Your doctor will tell you how to protect your family, friends and pets at home. *See the Radioactive Iodine Therapy (https://www.radiologyinfo.org/en/info/radioiodine) page for more information.*

External Beam Therapy (https://www.radiologyinfo.org/en/info/ebt) (EBT): EBT begins with treatment planning using either x-rays or a computed tomography (CT) scan. These exams help plan the type and direction of radiation beams to treat the cancer. Each treatment will last a few minutes each day, although it may take longer to get you set up. Once the radiation starts, you will hear some electrical noise and see warning lights from the machine. Patients do not feel the radiation during treatment.

What are possible side effects of radiation therapy?

Radioactive iodine (I-131): Patients generally tolerate this treatment well. Short-term side effects include tenderness and swelling around the thyroid, nausea, swelling of the salivary glands, dry mouth, and sometimes changes in how things taste. Some patients find they are unable to make tears, leading to dry eyes and problems with contact lenses. Less frequent side effects include a lower sperm count in men and irregular periods in women. Women should avoid becoming pregnant for 6-12 months after treatment. Patients who have had I-131 treatment may have a slightly higher risk of developing leukemia (http://www.radiologyinfo.org) in the future. This is extremely rare.

External beam therapy (EBT): After several EBT sessions, patients may become tired. Getting adequate rest is important. Doctors usually advise patients to try to stay as active as they can. Patients may have skin changes or irritation in the neck area where the radiation has passed through the skin. Other side effects include trouble swallowing, dry mouth, and hoarseness. Most of these side effects are easy to manage and go away once treatment ends.

What kind of treatment follow-up should I expect?

After your thyroid cancer treatment is complete, you and your treatment team will decide on a follow-up plan. You may have an annual whole body iodine scan to monitor for any signs of cancer. All thyroid cancer patients will require thyroid replacement hormones. Your doctor will regularly monitor your thyroid levels, including a protein called thyroglobulin (Tg). Tg is made by normal thyroid tissue and abnormal thyroid cancer cells. Once the thyroid is destroyed or removed, your Tg level will be low or zero. Rising levels of Tg may mean your cancer has returned. Your doctor may also use ultrasound exams to ensure no new nodules are forming. Medullary thyroid cancer patients will also have their blood checked for calcitonin and CEA (carcinoembryonic antigen) levels. These markers may be the first sign that medullary thyroid cancer has returned. Anaplastic thyroid cancer patients will need to continue seeing both a medical and a radiation oncologist. These appointments start soon after treatment to address any side effects and determine next steps. Your doctor may order CT or PET scans at these visits. *See the PET/CT (https://www.radiologyinfo.org/en/info/pet) page for more information.*

Are there any new developments in treating my disease?

Clinical Trials

For information and resources about clinical trials and to learn about current clinical trials being conducted, visit:

- RadiologyInfo's Clinical Trials page (https://www.radiologyinfo.org/en/info/screening-clinical-trials)
- Clinical Trials (http://www.radiologyinfo.org https://www.cancer.gov/pediatric-adult-rare-tumor/participate/featured-clinical-trials) - from the National Cancer Institute's Web site

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