Understanding Thyroid Cancer

ThyCa: Thyroid Cancer Survivors' Association, Inc.
www.thyca.org

1. About Thyroid Cancer

- Thyroid cancer is a cancer that starts in a person's thyroid gland.
- Thyroid cancer is the **most common** endocrine cancer.[1] Until recently, thyroid cancer was also the most rapidly increasing cancer in the U.S., mainly due to increased detection.[2]
- The American Cancer Society estimates that in 2020, there will be:[2]

ABOUT **52,890** **new cases** of thyroid cancer in the U.S.

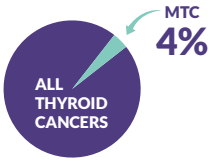
ABOUT **2,180** **deaths** from thyroid cancer in the U.S.

- Thyroid cancer is usually diagnosed at a **younger age** than most other adult cancers.[2]

- **Women are 3 times** more likely to develop thyroid cancer than men.[2]

2. Types of Thyroid Cancer

There are several types of thyroid cancer: papillary, follicular, medullary, anaplastic, and variants. The most common types of thyroid cancer are papillary and follicular accounting for over 95% of all thyroid cancers.

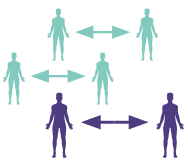


Medullary thyroid cancer (MTC) accounts for about 4% of all thyroid cancers. Anaplastic thyroid cancer (ATC) is the least common.[3]

ABOUT MEDULLARY THYROID CANCER

MTC develops from the C cells of the thyroid gland, which produce calcitonin, a hormone that helps control the amount of calcium in blood. There are two types of MTC: [3]

- Sporadic MTC accounts for about 75% of MTC and is not inherited (does not run in families). This cancer occurs mostly in older adults and usually affects only one thyroid lobe.



- Familial MTC accounts for about 25% of MTC and is inherited (runs in families). This cancer often develops during childhood or early adulthood and affects several areas of both thyroid lobes.

METASTATIC RET-DRIVEN THYROID CANCERS

While thyroid cancer begins in the thyroid gland, it can metastasize to other parts of the body, including lungs, bones and occasionally the brain.

Metastatic thyroid cancer can be driven by a gene in your body. One of these genes is a biomarker called RET. Everyone has two copies of the RET gene, which are randomly inherited from each parent. Mutations or fusions in one copy of the RET gene can increase the chance for you to develop certain types of cancer in your lifetime.[11]

RET MUTATIONS

RET FUSIONS

- RET mutations are found in about 60% of sporadic MTC and over 90% of familial MTC.[6,7,8]
- RET fusions can occur in thyroid cancers such as papillary thyroid cancer (PTC), Hurthle cell cancer, and anaplastic (undifferentiated) thyroid cancer (ATC).[4,5]
  - RET fusions are found in approximately 10%-20% of PTC.[9,10]

3. Risk Factors

The exact cause of thyroid cancer is unknown. Research has shown that people with certain risk factors are more likely than others to develop thyroid cancer. The following characteristics are associated with an increased chance of being diagnosed with the disease:

GENDER & AGE

HEREDITARY CONDITIONS

FAMILY HISTORY

BODY WEIGHT

RADIATION (particularly to the head and neck)

IODINE-DEFICIENT DIET

4. Signs & Symptoms

Many patients, especially in the early stages of thyroid cancer, do not experience symptoms. However, as the cancer develops, symptoms can include:

- A lump or nodule in the front of the neck
- Hoarseness or difficulty speaking
- Swollen lymph nodes
- Difficulty swallowing or breathing
- Pain in the throat or neck

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5. Diagnosis

Tools for Diagnosis Include:

- Physical examination and medical history
- Neck ultrasound
- Thyroid function lab tests (including calcitonin testing for MTC)
- Fine needle aspiration (FNA)
- Chest X-ray
- Computerized tomography (CT)

GENOMIC TESTING

Increasingly, cancer is being approached as a disease of the genome, with precision medicine focused on matching the most effective treatment to each individual cancer patient based on the genomic profile of the cancer. Various forms of genetic testing can look for actionable genomic alterations.

A genomic test may help you and your doctor find a targeted therapy that is designed to block the primary driver of your cancer. It is important to speak with your doctor about testing for all treatable biomarkers. Knowing all you can about what is driving your cancer will help you and your doctor choose a treatment that's right for your type of cancer.

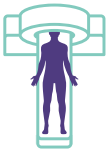
6. Treatment

Your treatment can be tailored to your own circumstances, including your type of thyroid cancer, whether it has spread to local lymph nodes or distant sites, your age at diagnosis, as well as other factors. Treatments can include:

SURGERY

RADIOACTIVE IODINE FOR PAPILLARY OR FOLLICULAR THYROID CANCER

THYROID HORMONE REPLACEMENT THERAPY FOR PATIENTS WHO HAVE HAD A PARTIAL OR TOTAL THYROIDECTOMY



EXTERNAL BEAM RADIATION

CHEMOTHERAPY

5. Learn More

Visit the Lilly/ThyCa landing page: http://bit.ly/StoriesofStrength or the ThyCa: Thyroid Cancer Survivors' Association, Inc. website: www.thyca.org at any time to learn more about thyroid cancer and to see what educational resources and support may be available.

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