Thyroid Cancer: Types, Symptoms, Causes, and Treatments

By: Katherine George

Even though we can’t see our thyroid and it’s relatively small, it has a really important job. The thyroid produces hormones that regulate important body functions like heart rate, blood pressure, body temperature, and weight. This butterfly-shaped gland is located at the base of the neck, just below the Adam’s apple. While thyroid cancer isn’t all that common in the United States, according to the Mayo Clinic, the number of cases in the U.S. are on the decline, it’s still an important cancer to be wary of.

So let’s take a look at some of the most important things to know about thyroid cancer including the different types, signs and symptoms, causes, and treatments.

1. What is the Thyroid Gland?

We’ve all heard mention of our thyroid gland, but when we stop to think about it…do we actually know what it is? The thyroid gland consists of two lobes that are located on either side of the windpipe. It plays an important role in our overall health as it releases three different types of hormones into the body that effect many different functions of the body.

The three hormones that are released by the thyroid gland include triiodothyronine (T3) and thyroxine (T4) which work to regulate the body’s metabolic rate. It controls how the body processes calories and how quickly they are burnt off. So an excess of these hormones, or lack of, can cause a person to feel sluggish, gain weight, or lose weight. The other hormone is calcitonin which effects our bone strength by controlling calcium levels. This hormone doesn’t have as big of an impact because the body has other ways of controlling calcium.
2. Papillary Carcinoma

Papillary carcinoma is a differentiated form of thyroid cancer (DTC), also sometimes referred to as well-differentiated (WDTC). It is the most common kind of thyroid cancer. The name well-differentiated comes from the fact that these cancerous cells still resemble healthy cells, but originate from the follicular cells of the thyroid, says Thyroid Cancer Canada. It accounts for over half of the cases (about 60-percent, according to NHS), and typically affects women under the age of 40.

WebMD describes it as growing slowly, but that it will eventually spread to the lymph nodes in the neck. The source also says that most people who are diagnosed with this type of thyroid cancer have a good chance at a full recovery.
3. Follicular Carcinoma

Follicular carcinoma is another common type of thyroid cancer, but not nearly as common as the first. It often results from a lack of iodine, so it’s more common in countries where people are more likely to suffer from an iodine deficiency. It affects 3 out of 20 cases which translates to about 15-percent, writes NHS.

This type of cancer tends to target older adults and can spread into the lungs and bones. According to the American Cancer Society, the prognosis of this cancer isn’t as great as papillary carcinoma, but it’s still treatable.

4. Medullary Thyroid Carcinoma

The third type of thyroid cancer is known as medullary thyroid carcinoma (MTC) which accounts for only about 5 to 8-percent of diagnosed cases, says NHS. This is about 5 or 8 out of every 100! Unlike the other cases on this list, this type of thyroid cancer is genetic and tends to run in families. WebMD notes that it tends to be found during the early stages because it produces the calcitonin hormone which will show up in any doctor prescribed blood tests.
The American Cancer Society explains that there are two type of MTC: sporadic MTC and familial MTC. Sporadic is more common as it accounts for about 80-percent of all medullary thyroid carcinoma cases and is not inherited. The source notes that it typically occurs in older adults and will only target one of the thyroid lobes. On the other hand, familial MTC is an inherited cancer and there’s a 20 to 25-percent chance it will occur in each generation of a family. “These cancers often develop during childhood or early adulthood and can spread early. Patients usually have cancer in several areas of both lobes,” says the American Cancer Society.

5. Anaplastic Thyroid Carcinoma

This type of thyroid cancer is extremely rare and the most aggressive. Unfortunately, it’s also the hardest to treat. It is typically seen in older adults who are over the age of 60 and accounts for about 2-percent of all thyroid cancers. "It is thought to sometimes develop from an existing papillary or follicular cancer. This cancer is called undifferentiated because the cancer cells do not look very much like normal thyroid cells under the microscope," writes American Cancer Society.
6. Diagnosis

After a physical exam is performed, the least invasive way to determine what the problem is, is through a blood test. This will measure the level of hormones in the blood and either confirm or rule out whether or not the patient is suffering from other thyroid problems. If nothing is found, the Canadian Cancer Society explains several of the other options including radioactive iodine tests, ultrasound, biopsy, CT scan, MRI, chest x-ray, or even a PET.

The most likely next step would be to do an ultrasound and then possibly a biopsy of the lump. This will be performed by fine needle aspiration (FNA) where a thin needle is used to remove a small amount of fluid or cells from the lump, or a doctor could perform a core biopsy which is similar, but uses a hollow needle to probe and remove a piece of tissue to be examined under a microscope.

7. Signs and Symptoms

Thyroid cancer is tricky because it doesn’t always present many signs or symptoms right away, so it often goes undetected in the early stages. As it grows it will begin to show more symptoms. WebMD lists the following as the most common: “neck, throat pain, lump in your neck, difficulty swallowing, vocal changes, hoarseness, and cough.”
The American Cancer Society says any person who is showcasing these signs should seek medical attention right away. The source notes that the symptoms above “can also be caused by non-cancerous conditions or even other cancers of the neck area.” While lumps in the thyroid are usually benign, if it is accompanied by any of the listed symptoms, it’s better to be safe than sorry.

8. Cause: Gender and Age / Hereditary Genetics

While there aren’t any clear or definitive causes for thyroid cancer, in some cases the cancer can be traced back to a person’s DNA which means it was inherited from their parents. WebMD points out that the medullary thyroid cancer is as a result of an abnormal gene that is passed down through family genetics.

Thyroid cancer is also more common in women than it is in men, especially females who are in the age range of their 40s and 50s. Men on the other hand are more at risk in their 60s. “Follicular thyroid cancer happens more often in whites than blacks and in more women than men. You can still get thyroid cancer if you’re younger. Papillary thyroid cancer, for example, happens most often in people between ages 30 and 50,” writes WebMD.
9. Cause: Iodine Diet

Another risk factor for thyroid problems is a lack of iodine or an iodine deficiency. People who do not get enough iodine could be more at risk for developing certain types of thyroid cancer. This cause is extremely rare because most people in America get plenty of salt in their diet since it is added to many processed foods.
10. Cause: Radiation Exposure

Someone who was previously exposed to radiation treatment near their head or neck could be at a higher risk for developing thyroid cancer, says WebMD. According to the Mayo Clinic, an example of exposure to radiation would be “radiation treatments to the head and neck and fallout from sources such as nuclear power plant accidents or weapons testing.”

11. Treatment: Surgery

As with many other cancers, the form of treatment depends on how advanced the cancer is, so what stage it’s at and what type of cancer it is. One of the most common forms of treatment is surgery. People who are suffering from thyroid cancer will undergo surgery to remove part of or most of their thyroid. Most cases are a complete thyroidectomy so that the doctor can assure all the cancer is gone. This will leave a small incision at the base of the neck. The surgeon could also choose to remove the lymph nodes in the neck to test them for cancer, says the Mayo Clinic.

If the cancer is very small the doctor might choose to only remove part of the thyroid (thyroid lobectomy). This would result in the surgeon removing only one side of the thyroid.
12. Treatment: Therapy

There are several forms of “therapy” when it comes to treating thyroid cancer. The first is hormonal therapy which is used after a lobectomy. This will ensure the body still receives the hormones it would normally get if the thyroid hadn’t been removed. It also suppresses the production of the thyroid-stimulating hormone (TSH) which could encourage more cancer growth.

Other forms of therapy are radiation therapy, the most common being radioactive iodine therapy. Radiation is used after surgery to “kill any cancer cells and normal thyroid tissue that remain in the body and treat cancer that has spread to lymph nodes or other parts of the body,” says the Canadian Cancer Society. There is also targeted therapy which can be used “to treat advanced or metastatic differentiated thyroid cancer when radioactive iodine therapy hasn’t worked” and chemotherapy which isn’t often used for thyroid cancer, but can be used to relieve symptoms or treat anaplastic carcinoma.