

# Advanced Medullary Thyroid Cancer (aMTC)

## Anatomy Resource

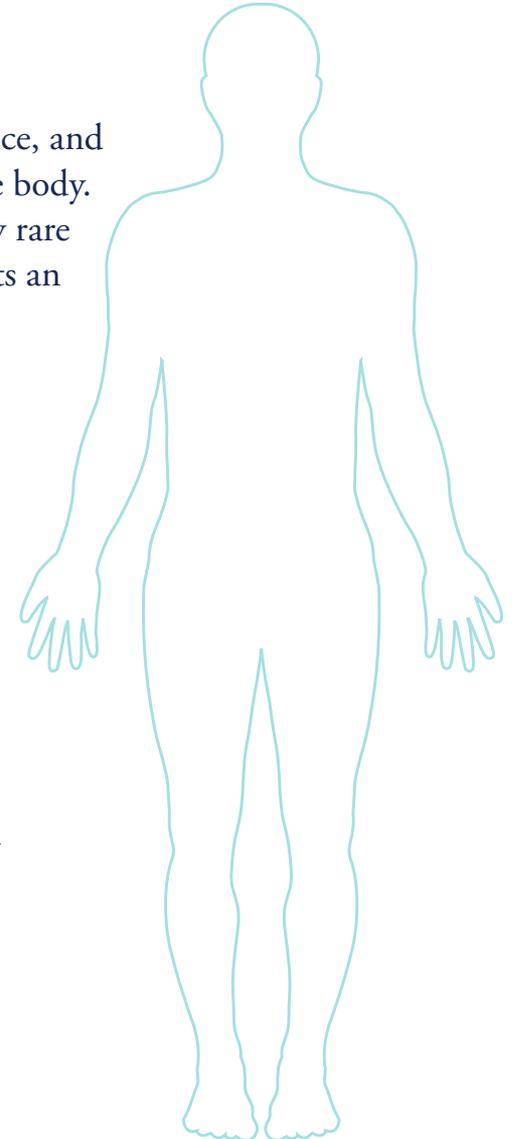
Being diagnosed with a rare disease can be a very overwhelming experience, and it may be difficult to understand the biological changes happening in the body. A diagnosis of advanced medullary thyroid cancer (aMTC), an extremely rare type of thyroid cancer, can be particularly overwhelming because it affects an area of the body that most people are not familiar with.

You may be left struggling to understand basic information about your own body, such as:

- Where the thyroid is located
- What differentiates medullary thyroid cancer from other types of thyroid cancer
- What physical changes may happen if/when the cancer spreads to other parts of the body

If you or someone you know has been recently diagnosed with aMTC, or is at risk to develop the disease, this resource will help you understand the following questions:

- What does the thyroid gland do?
- What is advanced medullary thyroid cancer?
- How the thyroid is affected by aMTC?



# About the thyroid

The thyroid gland is an organ located in the lower front part of the neck. In adults, the thyroid gland has two types of cells that control important bodily functions, such as heart rate, blood pressure and metabolism.

The **thyroid** is shaped like a butterfly with one wing-like structure, or lobe, on each side of the windpipe (trachea).

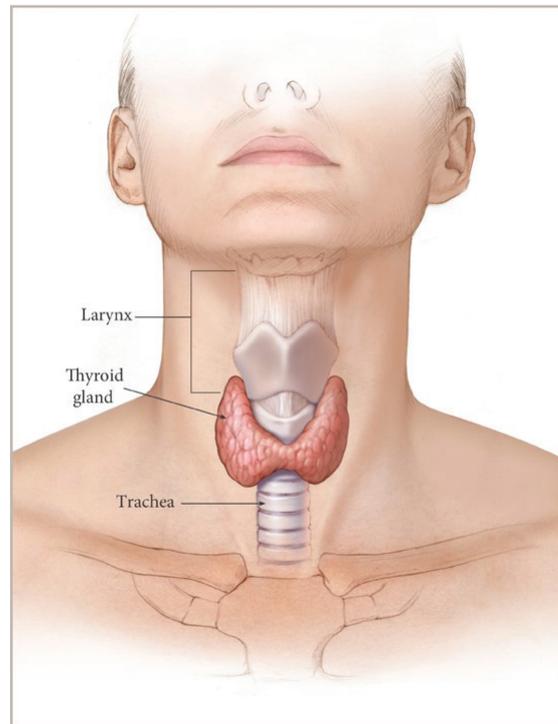


Illustration of the thyroid gland

# About the thyroid (cont'd)

The thyroid gland is an organ located in the lower front part of the neck. In adults, the thyroid gland has two types of cells that control important bodily functions, such as heart rate, blood pressure and metabolism.

**Follicular cells** – make hormones that specifically regulate growth, development, sleep patterns and temperature.

**“C cells” or parafollicular cells** – specialized cells that produce calcitonin (a hormone that helps control how your body uses calcium).

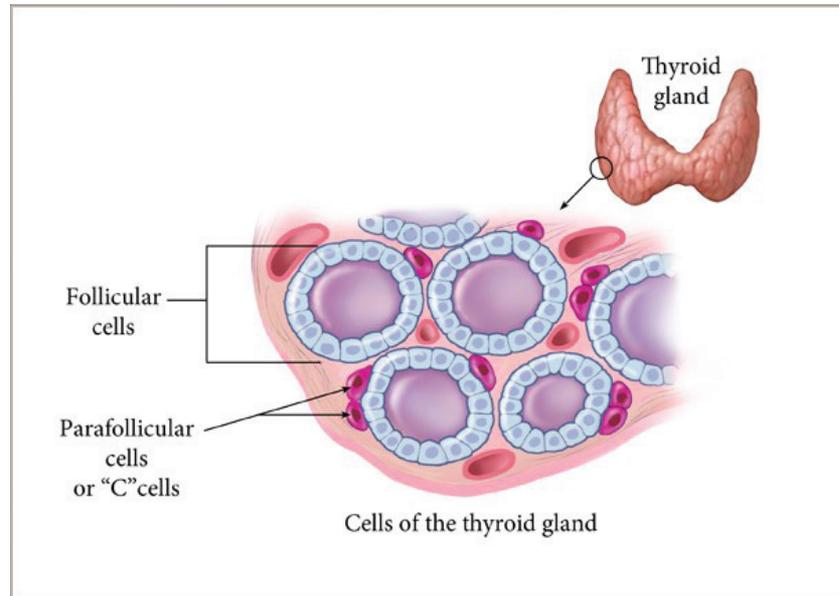


Illustration of the thyroid gland, follicular and parafollicular “C cells”

# About medullary thyroid cancer

While all thyroid cancers initially develop in the thyroid gland, medullary thyroid cancer (MTC) is different from other thyroid cancers because it specifically starts in the C cells of the thyroid. Medullary thyroid cancer is also a neuroendocrine tumor, which means that it affects cells that function similar to the nervous system. Typically, people with MTC develop a lump, or nodule, on their thyroid, but may or may not develop additional symptoms, such as:

- hoarseness
- difficulty swallowing and/or breathing
- choking sensations
- swelling in the neck

**Medullary thyroid cancer** most often develops randomly (sporadic MTC), but may also be inherited genetically from family members.

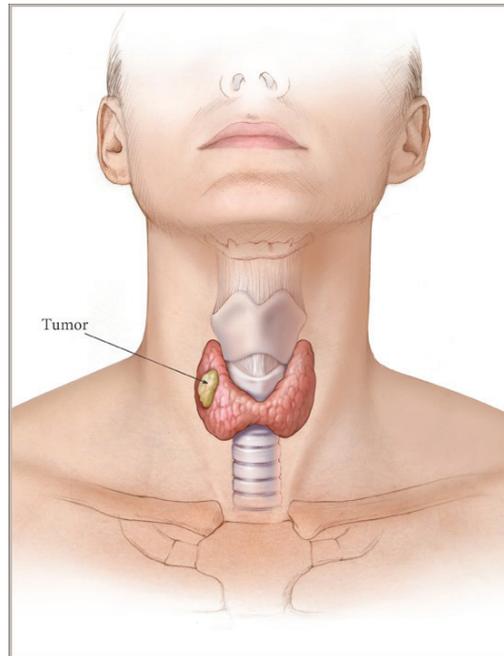


Illustration of the thyroid gland with a tumor

# About medullary thyroid cancer (cont'd)

In addition to the physical exam, your health care provider may have ordered any of the following tests to confirm that you have medullary thyroid cancer:

- calcitonin blood test
- carcinoembryonic antigen (CEA) blood test
- thyroid biopsy

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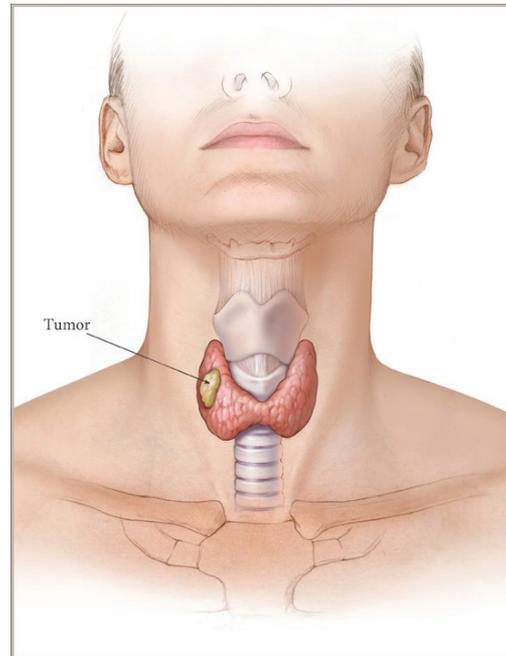


Illustration of the thyroid gland with a tumor

# About locally advanced medullary thyroid cancer

If the cancer spreads, or metastasizes, to nearby tissue or lymph nodes,\* it is referred to as locally advanced cancer. This means that the cancer has grown outside the thyroid but has not yet spread to other parts of the body.

This illustration highlights some of the most common areas in which locally advanced MTC may be found, including:

- lymph nodes in the chest or behind the throat
- vertebrae of the neck, and
- into the casings of arteries or blood vessels in the neck

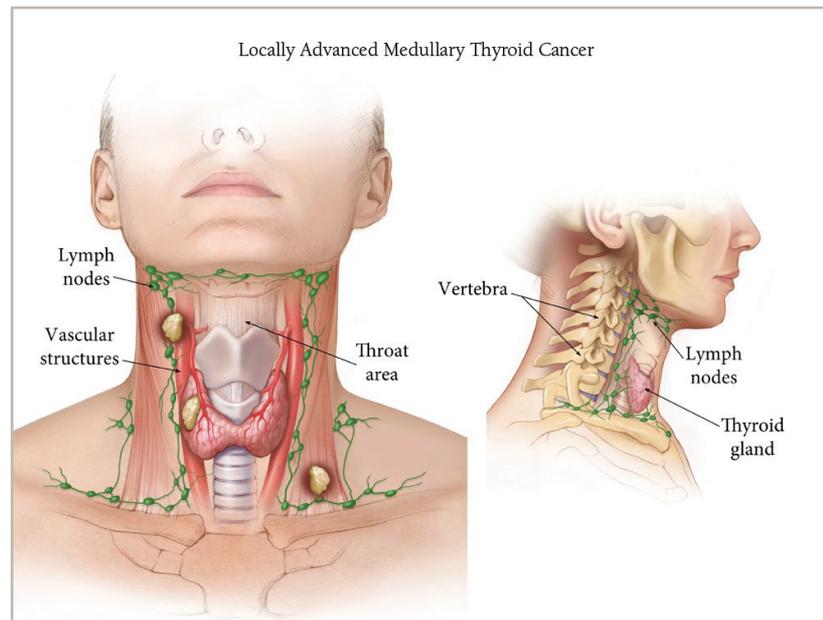


Image of common areas of metastasis in someone living with locally advanced MTC

\* Lymph nodes are small structures that can help fight infection in the body by filtering harmful substances in lymph fluid. If lymph nodes are removed during surgery, the body can be left without a way to drain the lymph fluid, which may lead to swelling (lymphedema). While damage to the lymph system cannot be repaired, your doctor can help you prevent, identify and treat lymphedema.

# About advanced medullary thyroid cancer

When cancer spreads beyond the thyroid to other parts of the body, it is described as advanced medullary thyroid cancer, or aMTC. Patients with aMTC may experience additional symptoms, such as bone pain, difficulty breathing, and diarrhea, depending on where the cancer has spread.

If you or someone you know have been diagnosed with aMTC, talk to your doctor to learn more about the disease and options available to you.

Some of the most frequent locations where cancer may spread to in someone living with aMTC include:

- the liver
- bones
- lungs

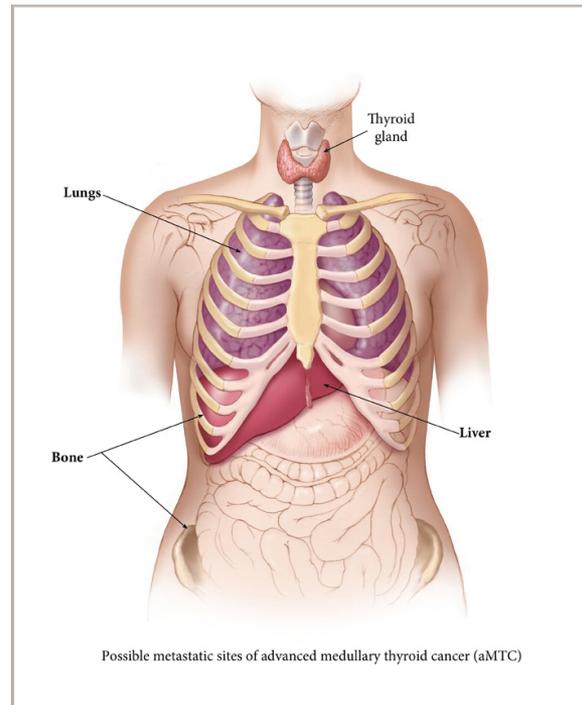


Image of common areas of metastasis in someone living with locally advanced MTC