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Thyroid Cancer

Understanding your diagnosis



Let's Make Cancer History

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Thyroid Cancer

Understanding your diagnosis

When you first hear that you have cancer you may feel alone and afraid. You may be overwhelmed by the large amount of information you will have to take in and the decisions you will need to make.

The introductory information in this brochure can help you and your family take the first step in learning about thyroid cancer. A better understanding may give you a sense of control and help you work with your healthcare team to choose the best care for you.

What is cancer?

Cancer is a disease that starts in our cells. Our bodies are made up of millions of cells, grouped together to form tissues and organs such as muscles and bones, the lungs and the liver. Genes inside each cell order it to grow, work, reproduce and die. Normally, our cells obey these orders and we remain healthy.

But sometimes the instructions in some cells get mixed up, causing them to behave abnormally. These cells grow and divide uncontrollably. After a while, groups of abnormal cells form lumps, or tumours.

Tumours can be either *benign* (non-cancerous) or *malignant* (cancerous). Benign tumour cells stay in one place in the body and are not usually life-threatening.

Malignant tumour cells are able to invade nearby tissues and spread to other parts of the body. Cancer cells that spread to other parts of the body are called *metastases*.

The first sign that a malignant tumour has spread (metastasized) is often swelling of nearby lymph nodes, but cancer can spread to almost any part of the body. It is important to find and treat malignant tumours as early as possible.

Cancers are named after the part of the body where they start. For example, cancer that starts in the thyroid but spreads to the lungs is called thyroid cancer with lung metastases.

What is thyroid cancer?

Thyroid cancer starts in the cells of the thyroid. The thyroid is a small gland at the front of your neck below the voice box (*larynx*). It is shaped like a butterfly. It has two parts, called *lobes*, one on each side of the windpipe (*trachea*). The lobes are connected by a thin piece of tissue called the *isthmus*. Normally you cannot see or feel your thyroid through your skin.

The thyroid makes hormones that help your body work the way it is supposed to.

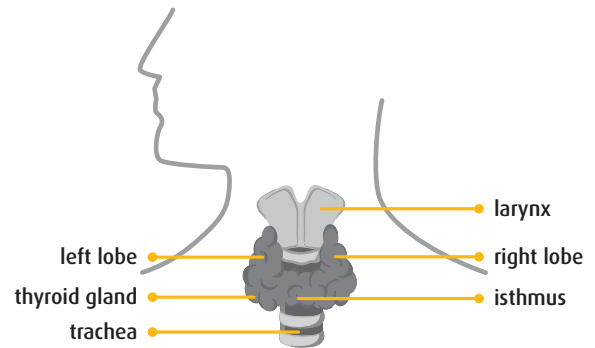
- *Thyroxine* (T₄) and *triiodothyronine* (T₃) are hormones that help control body functions, such as your heart rate, blood pressure, body temperature and weight. To make T₃ and T₄, the thyroid needs iodine. It gets iodine from the water you drink and the food you eat.
- *Calcitonin* helps control the level of calcium and phosphate in your blood.

There are four main types of thyroid cancer.* Each type looks different under a microscope, behaves differently and is treated differently.

- *Papillary carcinoma* is the most common type of thyroid cancer. It grows slowly.
- *Follicular carcinoma* grows slowly, but grows faster than papillary carcinoma.
- *Medullary thyroid cancer* is a rare type of thyroid cancer that grows faster than papillary or follicular carcinomas.

* The information in this brochure is about the most common types of thyroid cancer. For information about rarer types of thyroid cancer (such as thyroid lymphoma and thyroid sarcoma), please contact our Cancer Information Service at 1 888 939-3333.

- *Anaplastic thyroid cancer* is also a rare type of thyroid cancer. It tends to grow and spread very quickly.



Causes of thyroid cancer

Most people who develop thyroid cancer are between 25 and 65. More women than men develop thyroid cancer.

There is no single cause of thyroid cancer, but some factors increase the risk of developing it:

- radiation exposure
 - > from radiation therapy to the head and neck during childhood
 - > from radioactive fallout (for example, nuclear accidents like the one in Chernobyl)
- history of thyroid conditions, such as goitre (an enlarged thyroid) and thyroid nodules
- family history of some types of thyroid cancer

Most people develop thyroid cancer without any of these risk factors.

Symptoms of thyroid cancer

Thyroid cancer often does not cause any symptoms in its early stages. As the cancer grows, signs and symptoms may include:

- a lump in the front of the neck
- swollen lymph nodes in the neck
- hoarseness or other voice changes
- trouble swallowing or breathing
- pain in the throat or neck that does not go away

Other health problems can cause some of the same symptoms, such as an infection or goitre. Testing is needed to make a diagnosis.

Diagnosing thyroid cancer

After taking your medical history and completing a physical examination, your doctor may suspect you have thyroid cancer. To confirm the diagnosis, your doctor will arrange special tests. These tests may also be used to “stage” the cancer. You may have one or more of the following tests.

Imaging studies: Imaging studies allow tissues, organs and bones to be looked at in more detail. Using ultrasounds, CT scans or MRIs, your healthcare team can get a picture of the size of the tumour and see if it has spread. These tests are usually painless and do not require an anesthetic. Ultrasound is the most common imaging study used to diagnose thyroid cancer.

Another test that may be done is a *radionuclide scan* (sometimes called a

thyroid scan). You will be given a small amount of radioactive substance to drink or as a capsule to swallow. Abnormal cells in the thyroid do not absorb the radioactive liquid as well as normal thyroid cells do. The picture made by the scan shows normal areas as *hot nodules* and abnormal areas as *cold nodules*. Cold nodules may or may not be cancer. The scan is painless and the radioactive substance has no harmful side effects.

Biopsy: A biopsy is usually necessary to make a definite diagnosis of cancer. Cells are removed from the body and checked under a microscope. There are many ways to do a biopsy.

A *fine needle aspiration* (FNA) is the most common type of biopsy for diagnosing thyroid cancer. An FNA uses a thin needle to remove a small amount of tissue from the lump in the thyroid. The doctor may use ultrasound pictures to guide the needle to the suspicious area. A local anesthetic (freezing) may be used to numb the area.

A biopsy may also be done during or after surgery.

Blood tests: A blood test may be done to check for abnormal levels of thyroid-stimulating hormone (TSH) in the blood. TSH is a hormone that makes the thyroid gland release thyroid hormones. Too much or too little TSH may mean the thyroid is not working properly.

Staging

Once a definite diagnosis of cancer has been made and your healthcare team has the information it needs, the cancer will be given a stage.

The cancer stage describes the tumour size and tells whether it has spread beyond the place where it started to grow. Staging is different for each type of thyroid cancer because each behaves and grows differently. Thyroid cancer often behaves differently in people younger than 45 than it does in those older than 45.

Papillary and follicular cancer (under 45)

For papillary and follicular thyroid cancer, there are two stages for people under age 45.

Stage	Description
1	Tumour can be any size and may have spread within the neck or upper chest and/or to nearby lymph nodes, but not to other parts of the body.
2	Tumour can be any size and has spread to other parts of the body, such as the bones or lungs.

Papillary and follicular cancer (over 45) and medullary cancer

For papillary and follicular thyroid cancer, there are four stages for people over age 45. For medullary thyroid cancer, there are four stages. The stages are the same for people of all ages.

Stage	Description
1	Tumour is 2 cm or smaller. It is found only within the thyroid gland.
2	Tumour is between 2 and 4 cm and is found only within the thyroid gland.
3	Tumour is larger than 4 cm, or it may be any size and has spread just outside the thyroid and/or to lymph nodes in the neck.
4	Stage 4A: Tumour can be any size and has spread to the surrounding areas of the neck and/or to lymph nodes in the neck and upper chest. Stage 4B: Tumour can be any size and has spread to neck tissues near the backbone or around blood vessels in the neck or upper chest. Cancer cells may have spread to lymph nodes. Stage 4C: Cancer cells have spread to other parts of the body, such as the lung or bone.

Anaplastic cancer

Anaplastic thyroid cancer is extremely rare and develops most often in older people. It grows quickly and when it is diagnosed it has usually spread within the neck. It is always diagnosed at stage 4.

It is important to know the stage of the cancer. This information helps you and your healthcare team choose the best treatment for you.

Treatments for thyroid cancer

Your healthcare team will consider your general health and the type and stage of the cancer to recommend what treatments will be best for you. You will work together with your healthcare team to make the final treatment choices. Talk to them if you have questions or concerns.

Treatments affect everyone in different ways. It's hard to predict which side effects you will have. Your healthcare team will tell you what to expect with each treatment. They will also let you know what side effects you should report right away and which ones you can wait to tell them about at your next appointment. If you notice any side effects or symptoms that you did not expect, talk to a member of your healthcare team as soon as possible.

Patients often worry about the side effects of cancer treatment. However, side effects can often be well managed and even prevented with medicine. Be open with your healthcare

team. Tell them your concerns and ask questions. They will help you get the care and information you need.

For thyroid cancer, you might receive one or more of the following treatments.

Surgery: Surgery is the most common treatment for thyroid cancer. During the operation, all or part of the thyroid is removed. Surgery is done under general anesthetic (you will be unconscious) and you will stay in the hospital for several days after the surgery.

There are different types of surgery. The type of surgery you may have depends on your age and the type and stage of thyroid cancer you have. Nearby lymph nodes in the neck may also be removed. If thyroid cancer hasn't yet been diagnosed, surgery may be used to remove tissue for testing (biopsy).

- **Thyroidectomy:** The surgeon removes the entire thyroid. Thyroidectomy can be done for all types of thyroid cancer.
- **Hemithyroidectomy (lobectomy):** The surgeon removes the entire lobe on the side of the thyroid where the growth or cancer is found. If a biopsy of the growth confirms cancer, the surgeon may also remove the other lobe.

After surgery you may have some pain, nausea or hoarseness. You may find it painful to swallow at first and you may need to eat soft food during the recovery period. You may also feel numbness or tingling. These side effects are temporary, and can usually be controlled.

Thyroid hormone treatment: Thyroid hormone therapy is sometimes used to treat papillary or follicular thyroid cancer. It is given as pills. The hormone thyroxine (T₄) slows the growth of thyroid cancer cells that may be left in the body after surgery.

Radioactive iodine therapy: *Radioactive iodine* (also called iodine-131 or I-131) is commonly used to treat thyroid cancer. It is given either as a drink or as a capsule. Thyroid cells and cancer cells absorb the radioactive iodine. It destroys any cancer cells and normal thyroid cells that may still be in your body after surgery. The amount of radiation given, and when and how it is given, is different for each person.

You will usually be given radioactive iodine treatment in isolation (in a private room) at the hospital, where you will stay for 2 to 3 days. The treatment will make you radioactive for a while. The isolation protects others from radiation exposure. During this time, it's important to drink lots of fluid to flush the body of excess radioactive iodine. Any I-131 not absorbed by the thyroid leaves the body through urine, feces, saliva and sweat, so careful hygiene is important. Most of the radiation is gone from the body within a few days. Only traces of I-131 remain in the body after 3 weeks.

Side effects of radioactive iodine treatment include nausea, vomiting and a dry or sore mouth. These side effects are temporary, and can usually be controlled.

After radioactive iodine therapy, you will need to take thyroid hormone replacement therapy to replace the hormone that was made by your thyroid cells.

Radiation therapy: *External beam radiation therapy* is used less often than radioactive iodine therapy. It may be used when medullary, papillary or follicular thyroid cancer is advanced or when anaplastic thyroid cancer can't be removed by surgery.

In external beam radiation therapy, a large machine is used to carefully aim a beam of radiation at the tumour. The radiation damages the cells in the path of the beam – normal cells as well as cancer cells. Radiation for thyroid cancer may irritate your mouth and throat and make them dry and sore, making it difficult for you to swallow.

Clinical treatment trials: Clinical treatment trials investigate new approaches to treating cancer, such as new drugs, new types of treatments or combinations of existing treatments. They are closely monitored to make sure that they are safe for the participants. Ask your doctor if there is a clinical trial suitable as a treatment option for you. You may benefit and so may future cancer patients.

Complementary therapies: Complementary therapies are used *together with* conventional treatments. More research is needed to understand if these therapies are effective and how they work.

Alternative therapies are used *instead of* conventional treatments. Alternative therapies haven't been tested for safety or effectiveness. It is still unknown whether they will harm you or be effective in the treatment of cancer.

If you are thinking about using a complementary or alternative therapy, it is important to find out as much as you can about the therapy and talk to your healthcare team. It's possible that the therapy might interfere with test results or regular treatments.

After treatment

Follow-up care helps you and your healthcare team monitor your progress and your recovery from treatment. At first, your follow-up care may be managed by one of the specialists from your healthcare team. Later on it may be managed by your family doctor.

The schedule of follow-up visits is different for each person. You might see your doctor more often in the first year after treatment, and less often after that.

The end of cancer treatment may bring mixed emotions. You may be glad the treatments are over and look forward to returning to your normal activities. But you could feel anxious as well. If you are worried about your treatment ending, talk to your healthcare team. They are there to help you through this transition period.

Thyroid hormone replacement therapy: After surgery and other treatments for thyroid cancer, you will likely need to take thyroid hormone pills for the rest of your life to replace the natural hormones made by your thyroid gland. Thyroid hormone replacement therapy rarely causes side effects. Your blood will be tested to make sure you're getting the right dose of thyroid hormone. Too much thyroid hormone may cause you to lose weight and feel hot and sweaty. Not enough thyroid hormone may cause you to gain weight and feel cold and tired.

If you have side effects, your doctor will adjust your dose of thyroid hormone. It may take several months to find the dose that is right for you.

Living with cancer

There are many sources of help available for people with cancer and for their caregivers.

Your healthcare team: If you need practical help or emotional support, members of your healthcare team may be able to suggest services in your community or refer you to cancer centre staff or mental health professionals.

Family and friends: Those closest to you can be very supportive. Accept offers of help. When someone says "Let me know how I can help," tell them what they can do. Maybe they can run errands, cook a meal or give you a ride to your doctor's office.

People who have had a similar experience:

Consider visiting a support group or talking with a cancer survivor in person, over the telephone or online. Talking with and learning from others who have had similar experiences can be helpful. Try more than one option to see which one suits you best.

Yourself: Try to stay positive. Staying positive is about figuring out how to deal with cancer in the best way that you can – and everyone will do this their own way. It doesn't mean that you must seem happy or cheerful all the time or avoid talking or thinking about the difficulties of having cancer. But it can mean looking after yourself by finding relaxing, enjoyable activities that refresh you mentally, spiritually or physically.

The Canadian Cancer Society

Helping you understand cancer

Now that you have been introduced to the basics of thyroid cancer, you may want to learn more. Please contact the Canadian Cancer Society for more detailed information on thyroid cancer. Our services are free and confidential.

To contact the Canadian Cancer Society:

- Call an information specialist toll-free at **1 888 939-3333** Monday to Friday 9 a.m. to 6 p.m.
- E-mail us at **info@cis.cancer.ca**.
- Visit our website at **www.cancer.ca**.
- Contact your local Canadian Cancer Society office.



What we do

Thanks to the work of our volunteers and staff, and the generosity of our donors, the Canadian Cancer Society is leading the way in the fight against cancer. The Canadian Cancer Society:

- funds excellent research for all types of cancer
- advocates for healthy public policy
- promotes healthy lifestyles to help reduce cancer risk
- provides information about cancer
- supports people living with cancer

Contact us for up-to-date information about cancer, our services, or to make a donation.



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