Treatment for thyroid cancer

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The type of treatment your doctor recommends will depend on the type and stage of thyroid cancer that you have.

Surgery

Surgery is the most common treatment for thyroid cancer. There are two main types of thyroid surgery. In some cases lymph nodes may also need to be removed.

**Total thyroidectomy** – the whole thyroid gland (both lobes) including the isthmus, is removed. You will be given a general anaesthetic and a small cut will be made across your neck.

**Partial or hemi-thyroidectomy** – only the affected lobe or section of the thyroid is removed. Sometimes this surgery is also used to diagnose thyroid cancer if a fine needle aspiration biopsy doesn't provide enough tissue, or to treat small cancers if the other side of the thyroid looks normal on the ultrasound.

**Lymph node removal** – with either type of operation nearby lymph nodes may be removed at the same time as the surgery. This is called a neck dissection. It is performed if the lymph nodes become enlarged from the cancer spreading. Occasionally the nodes behind the thyroid are removed as a precautionary measure even if the cancer doesn't appear to have spread.

**Other tissue** – in very rare cases the surgeon removes other tissue (for example, the thymus gland and vascular tissues) near the thyroid that has been affected by the cancer.

After the operation

You will probably stay in hospital for one or two nights to recover from surgery. Your neck wound will be closed with stitches, adhesive strips or small clips.
Managing the side effects of thyroid surgery

**Sore neck**
You will probably feel some pain or discomfort where the cut was made.

The position you are placed in for surgery can sometimes give you a stiff neck and back. This is temporary, and neck massage and physiotherapy may help loosen the muscles in your neck. You can also try using a triangle-shaped pillow to support your neck after surgery and/or ask for pain-relieving medicine.

**Eating and drinking**
Most people are able to eat or drink normally within a few hours after the operation. To help your body recover from surgery, you need to be well nourished. Try to swallow gently, and eat small amounts of healthy, nutritious food.

For more information, call Cancer Council 13 11 20 for a free copy of *Nutrition and Cancer*.

**Painful swallowing**
You will find it painful to swallow for a few days. In some cases, you may be referred to a speech pathologist and/or dietitian.

**Hoarse voice**
Sometimes thyroid surgery affects the nerves to the voice box, which can make your voice sound hoarse or weak. This is often temporary and improves with time. Your singing voice may be affected. This is often temporary, but sometimes it is permanent.
Further treatment after surgery

For some people surgery is the only treatment they need. Others may require further treatment.

Thyroid hormone replacement therapy

After the whole thyroid is removed your body will no longer produce the hormones that maintain your metabolism and you will be prescribed a hormone tablet to replace thyroxine (T4). You will need to take this hormone replacement tablet every day for the rest of your life.

For many people who have a partial thyroidectomy the remaining lobe will continue to make enough thyroid hormone which means they won’t need daily tablets.

Taking thyroid hormone tablets can have two roles:

Keeping your body's metabolism functioning at a normal healthy rate – without hormone replacement medication, you will probably develop the symptoms of hypothyroidism, such as weight gain, constipation, brittle and dry hair and skin, depression, sluggishness and fatigue. In severe cases heart problems could occur.

Reducing the risk of the cancer coming back – taking the T4 hormone in tablet form stops your pituitary glands from producing another hormone called thyroid-stimulating hormone (TSH). It is thought that high...
levels of TSH may cause cancer cells to grow in other parts of the body. For this reason if the doctor thinks
the cancer has a medium to high risk of recurring they will recommend you take a high dose of T4 to reduce
the level of TSH. This is known as TSH suppression.

Finding the right dose

You’ll be carefully monitored when you start taking thyroid hormone replacement therapy. The starting dose
of thyroxine (T4) is calculated based on your weight. You will have blood tests every 6–8 weeks to help your
doctor adjust the dosage until it is right for you. Usually the initial dose is close to the correct dose and
requires only small adjustments.

A small number of people may experience hypothyroidism or hyperthyroidism during the adjustment period.
However, once you are taking the right dose you should not experience side effects.

Radioactive iodine treatment

Radioactive iodine (RAI) is a type of radioisotope treatment. Radioisotopes are radioactive substances given
as capsules. Cancer cells absorb more radioisotope than normal cells which causes the cancer cells to die.
Radioactive iodine is also known as I131 or radioactive iodine ablation treatment. RAI is usually given to
destroy tiny amounts of remaining cancer cells or healthy thyroid tissue left behind after surgery.

Radioactive iodine treatment is suitable for people diagnosed with papillary or follicular thyroid cancer. RAI
doesn’t work for medullary or anaplastic thyroid cancer because these types do not take up iodine. The
radioactive iodine treatment often starts 4 weeks or more after surgery.

If you are pregnant you can’t have radioactive iodine treatment. If you are breastfeeding you will have to stop
nursing before starting treatment.

Preparing for radioactive iodine treatment

Limiting foods high in iodine – a diet high in iodine makes RAI treatment less effective. You will need to
start avoiding high-iodine foods two weeks before treatment. This includes foods such as seafood, iodised
table salt, some dairy products, eggs, soy beans or soy-containing products and foods with E127 colouring.
Your health care team can give you more information.

Raising TSH levels – for RAI treatment to work you need a high level of TSH. There are two ways to
increase the TSH level in your body and the option recommended for you will depend on availability at your
hospital and what is suitable for you.

- **Recombinant human thyroid-stimulating hormone (rhTSH) injections** – you will be prescribed
  an injection of a man-made type of thyroid-stimulating hormone called recombinant human thyroid-
  stimulating hormone (rhTSH) or Thyrogen®. You will need an injection once a day for the two days
  before you start RAI treatment.

- **Thyroid hormone replacement** – you stop taking your thyroid hormone replacement medicine for a
  few weeks. This often causes the side effects of hypothyroidism and some people find it difficult to
  cope with this, while others don’t notice any side effects.

Having radioactive iodine treatment

You will usually be admitted to hospital on the day of the radioactive iodine treatment. RAI treatment will
make you radioactive for a few days and you may have to stay in hospital for all or part of this time. See
below for an outline of the safety measures that will be in place while you are having treatment.

Once the radiation has dropped to a safe level you will be able to go home. If you are taking Thyrogen®, this
is usually within 36–48 hours.

After radioactive iodine treatment

You will have a full body radioisotope scan. There is often a small amount of normal thyroid in your neck
after surgery which will be destroyed by the RAI. The scan can also help detect if any cancer cells are left in
the body. It may also show if the cancer has spread to your lymph nodes or other areas of your body such
as your lungs or bones.
Safety measures

Your medical team, family members and friends will have to take precautions to limit their exposure to radiation. The safety measures vary for each hospital but usually include:

- keeping you in an isolated, shielded room
- restricting visitors to the room particularly children and pregnant women
- asking any visitors to stay two to three metres away from you
- limiting the time visitors can stay in the room
- measuring your radiation levels with an instrument called a Geiger counter usually done daily
- wearing gloves to clean up body fluids (e.g. urine, sweat, saliva and blood) and leftover food and drink.

Following these safety measures may make you feel frightened and lonely. It's a good idea to take a book or something to do. Discuss any concerns you have with your doctors, nurses or a counsellor.

Safety measures at home

When you go home you may have to continue following some safety measures. For example you may have to sleep alone, wash your clothing separately, prepare your own food and take care with body fluids for a certain period of time. It's usually required that you sit to urinate and you put the lid down and flush the toilet several times after use.

If these precautions are necessary your medical team will discuss them with you before treatment.

Side effects

Usually being temporarily radioactive is the only major side effect of RAI treatment. Other side effects are often caused by thyroid hormone withdrawal. This may cause you to feel thirsty, tired, nauseated or breathless. You may also have a dry mouth or have taste and smell changes for about 24 hours after treatment.

External radiotherapy

External radiotherapy is the use of high-energy x-rays or electron beams to kill or damage cancer cells.

Most people diagnosed with thyroid cancer do not need radiotherapy treatment. In a small number of cases it may be given in the following circumstances:

- after surgery
- in addition to radioactive iodine treatment if the cancer has not been completely removed
- if there is a high risk of the cancer coming back (recurrence)
- if the cancer has spread to nearby tissue or structures.

External radiotherapy is commonly used to treat anaplastic thyroid cancer because radioactive iodine treatment is usually not effective.

Planning treatment

Before the treatment starts you will have a planning (simulation) session. The radiation therapist will take CT scans to determine the exact area to be treated and may make small marks or tattoos on your skin. This ensures the same part of your body is targeted during each treatment session.

You may be fitted for a mask to wear during treatment. This will help make sure that you keep still and the radiation beams treat the same area of your neck at each session. You can see and breathe through the mask but you may feel strange and uncomfortable at first. The radiotherapy team can help you manage this.

Having treatment

Radiotherapy is usually given five days a week over several weeks. Treatment sessions usually take about 10 minutes but it will take longer to position the machine correctly.

Side effects
The side effects of external radiotherapy treatment vary. Most are temporary and disappear within a few weeks or months after treatment. Common side effects include feeling tired, pain and difficulty swallowing, sore throat, dry mouth and red, dry, itchy, sore or ulcerated skin.

You will not be radioactive after external radiotherapy treatment so it is safe to be with other people.

For more information talk to your doctors and nurses or call Cancer Council 13 11 20 or download a copy of Understanding Radiotherapy.

**Targeted therapies**

Some newer types of drug treatments called targeted therapies, attack specific cancer cells or blood vessels to stop or slow down growth or reduce the size of the tumour. Targeted therapies may be recommended for people with advanced thyroid cancer or as part of a clinical trial.

The most common types of targeted therapies used are tyrosine kinase inhibitors (TKIs). These block the signals that tell cancer cells to grow and divide, and are used to treat certain types of thyroid cancer. Some research shows that TKIs help by targeting new blood vessels or certain mutations.

The drug sorafenib is used for papillary thyroid cancers. Vandetanib and cabozantinib are used to treat some medullary thyroid cancers. However they aren’t available for all cases and may be expensive because they aren’t on the Pharmaceutical Benefits Scheme. Talk to your medical team for more information.

**Chemotherapy**

Chemotherapy is the use of drugs to kill or slow the growth of cancer cells. While it is not often used to treat thyroid cancer chemotherapy may sometimes be used to treat advanced thyroid cancer that is not responding to radioactive iodine treatment.

The drugs are usually given by injection into a vein (intravenously). You will probably have several treatment sessions over a few weeks – your medical team will determine the schedule.

**Side effects**

The aim of chemotherapy is to kill cancer cells while doing the least possible damage to healthy cells. However treatment can affect your healthy cells and this may cause side effects.

The side effects of chemotherapy vary according to the drugs that are used. Common side effects include fatigue, nausea, appetite loss, diarrhoea, hair loss, hearing loss, mouth sores and anaemia.

Most side effects are temporary and there are ways to prevent or reduce them. Your doctor will talk to you about how to manage any side effects you experience. You could be prescribed medicines to treat the side effects, take a break from treatment or receive a different type of treatment.

For more information talk to your doctors and nurses or call Cancer Council 13 11 20 or download a copy of Understanding Chemotherapy.