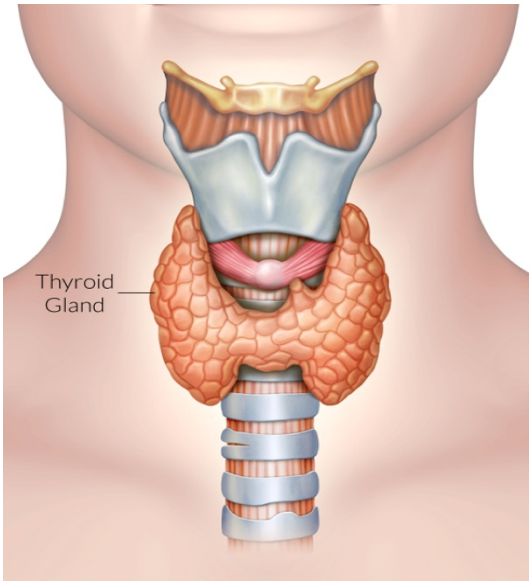
THYROID SURGERY INFORMATION SHEET

(DR SZE LING WONG – ENDOCRINE SURGEON)

What is the thyroid?

The thyroid is a butterfly-shaped gland that sits in your neck, draped across the windpipe and just under the larynx (voice box, Adam's apple.) It makes thyroid hormone, which controls your body's metabolism, including weight, heart rate, temperature, and mental alertness. An enlarged thyroid is called a "goitre." Most thyroids with a goitre or a lump still work properly, but some may be overactive.



Indications for thyroid surgery

There are several reasons to have thyroid surgery, including:

1. To treat thyroid cancer that has been diagnosed by FNA (needle biopsy)
2. To diagnose whether a lump is thyroid cancer when FNA (needle biopsy) is suspicious or inconclusive (AUS, follicular or Hurthle cell lesion, or neoplasm). More than seventy percent (70%) of these turn out to be benign and require no further treatment. Up to 30% of these to prove to be cancer. If there is cancer, a second operation may be required to remove the rest of the thyroid gland.
3. For pressure symptoms, coughing, difficulty swallowing or a choking feeling
4. If the nodule or gland is growing over time
5. If you or your doctor are concerned for other reasons like size, appearance, family history, or extension into the chest
6. For cosmetic reasons, if a large goiter is unsightly
7. As one of several options to treat an overactive thyroid.

Frequently Asked Questions

What are the potential complications of thyroid surgery?

The nerves (recurrent laryngeal nerves) that control your voice are closely associated with the thyroid gland. Temporary voice changes are common, but usually resolve within weeks to months. In ~1 in 100 parathyroid operations, the nerve that controls the voice is permanently injured, leaving your voice hoarse. Some patients have difficulty with projection of the voice and production of high pitched sounds. This problem is more common, and may affect your singing voice. "Voice fatigue" may occur as well.

Sometimes the parathyroid glands will not function after a total thyroidectomy. These are four tiny, delicate glands that are located on the thyroid capsule. The parathyroid glands control calcium levels. If they don't work, you will have low blood calcium. Therefore, many patients require calcium tablets on a temporary basis just after total thyroidectomy. If the parathyroids do not recover, calcium and vitamin D tablets may be needed on a permanent basis. This occurs in about 3 in 100 total thyroidectomy operations. It is not a risk if only half the thyroid is removed.

There is a small risk of bleeding into the space where the thyroid used to be. If this happens, it may be necessary to have a second operation to evacuate the blood so it does not interfere with your breathing. Infection is relatively uncommon after this operation, but is easy to treat should it occur.

WHAT ARE THE RISKS OF THYROID SURGERY?

As with anything in life, there are risks to surgery. These risks are weighed against the risks of not having surgery. Listed below are some of the possible complications of surgery. Risks include, but are not limited to:

- Permanent voice hoarseness……...… 1%
- Permanent difficulty singing or shouting.…..…… ~5%
- Permanent parathyroid damage(need calcium tablets).... 3% (total thyroidectomy only)
- Infection of Incision..... ……..Less than 1%
- Hematoma or Bleeding……..... …….Less than 1%
- Seroma (fluid collection, swelling)…….. ……5% (higher for very large thyroids)
- Swelling and black/blue.....About 5-10% (temporary)
- Needing thyroid tablets after removing half of thyroid… ~20%
- Keloid or overgrown scar…… …… Uncommon in Caucasians, 10-20% in Asian, Indian, African skin
- Scar tethering/tightness…….5% early, usually settles with time
- Other unforeseen risks

You will require general anesthetic, given by a specialist anesthetist. Risk of a serious complication in a healthy person is very rare. Potential risks include, but are not limited to:

- Heart problems (death, heart attack, arrhythmias)
- Lung problems (pneumonia, wheezing)
- Blood clots (stroke, clots in leg veins or lungs)
- Drug reactions (also possible with local anesthetic)
- Chipped teeth

You will meet the anesthetist before your operation and have the chance to ask any additional questions.

How much of my thyroid will be removed?

That depends on your condition. When the entire thyroid is removed, the operation is called a total thyroidectomy. You will need thyroid hormone replacement for life.

What type of anesthesia will I have?

You will have a general anesthesia. You will be completely asleep during the operation. You will have local anesthesia injected into the neck (cervical plexus block) to make you even more comfortable when you wake up. This local anesthetic block will probably leave your ear lobes numb for 24 hours as well.

Will I have a scar?

Yes. All surgery causes a scar, and how a patient scars is dependent on the individual. A thyroid scar is a horizontal scar on the neck. The length of the scar depends on the size of your thyroid and the size of your neck, but is usually 4-6 cm (2.5 inches.) Techniques we use to minimize scarring include careful incision placement and hypoallergenic suture material (to avoid inflammation). As a general rule, it is unusual to have a very noticeable scar after six months. Scars continue to fade for three years.

Will I have pain after the operation?

Most patients are surprised at how comfortable they are after thyroid surgery. Although you should be able to eat and drink normally, the main complaint is sore throat and discomfort with swallowing. Most patients take Panadol and/or Nurofen to keep them comfortable at home. You can have a prescription for something stronger for the first few days in case you need it, but beware prescription pain medicine can make you drowsy and constipated, so do not drive or operate heavy machinery, and drink lots of water and eat plenty of fruits and vegetables.

How long will I be hospitalised?

Most patients are admitted to the hospital on the morning of their surgery, spend one night, and are able to go home the next morning.

When will I know the findings of the surgery?

A final pathology report requires careful study of the surgical specimen. Therefore, the final report is usually not available until about two to three weeks after the operation.

What is the care for the incision?

You will have a waterproof dressing so that you can shower or bathe (but do not submerge the incision). **You can remove the dressing after about two weeks**. You may see thickened skin glue which is applied to the wound to assist healing process and it will flake off by itself, usually after 3 to 4 weeks. Do not peel off the skin glue; otherwise you may be at risk of wound infection. If you experience itching once the dressing is off, you may apply lotion to the scar.

How can I lessen my scar?

Scar formation and scar maturation are ongoing processes. Scars continue to grow and change throughout the recovery process which may take from twelve to eighteen months. Scar massage is an effective way to decrease scar tissue build up and help make scars less noticeable by softening and flattening it.

You should start massaging your scars about three weeks after surgery. Wait until all scabs have fallen off by themselves. Do not pull your scabs off. Use the facial pads or soft tips of your fingers to massage the scar and tissue around the scar. Massage in all three directions (circle, vertical and horizontal). You should apply as much pressure as you can tolerate. Begin with light pressure and progress to deeper and firmer pressure. Massage lotion in, applying enough pressure to make the scar area lighten in color or turn white. Massage should be done two to three times daily for ten minutes each time.

You can use Silicone Strips to reduce scarring – to be worn12 hours every day for 8 to 12 weeks after surgery.

Will I have any physical restrictions after my surgery?

In general, your activity level depends on the amount of discomfort you experience. Many patients have resumed golf or tennis within a week or two after the operation. **Most patients return to work in a week or two, and you are able to drive as soon as your head can be turned comfortably without prescription pain pills (this limitation is for driver safety), usually around one week after surgery.**

Neck exercise after my surgery

Neck exercises after thyroid surgery can increase comfort and your range of motion. Patients can feel tight across the neck area where a scar is forming, and neck exercises can alleviate some of those feelings of discomfort. You need to lift your chin up and down, side to side and down to side. Repeat all of these exercises 10 times. You can perform them a couple of times per day.

PREPARATION for SURGERY

- Do Not Drink Alcoholic beverages 24 hours prior to your surgery.
- Do Not Smoke for 4 weeks before surgery or your risk of serious complications increases.
- Ask us if you are permitted to take your routine medications (such as those for heart, blood pressure, or insulin etc.) before arriving for surgery.
- Stop aspirin, warfarin, or any other blood thinner 7 days prior to surgery (unless advised otherwise by doctor).
- ***Diabetic patients:*** Stop SGLT2 and SGLT2i inhibitors 3 days prior to surgery.
  SGLT2 inhibitor agents include DAPAGLIFLOZIN (Forxiga®), EMPAGLIFLOZIN (Jardiance®), or a combination with metformin (Xigduo®, Jiardamet®).
- ***Diabetic patients:*** Do not take Metformin or any oral hypoglycaemic on the day of surgery. Discuss with anaesthetist about management of insulin.
- Do Not bring valuables such as money, jewelry etc. Do not wear make-up.
- Bring toiletries and loose fitting, comfortable clothing to wear upon discharge.
- You will be required to remove contact lenses, jewelry, dentures, and wigs.
- Arrange for a responsible adult to drive you home after discharge.
- Notify us there is a change in your condition prior to surgery (such as a cold, cough, fever or infection). If severe, your surgery may need to be postponed for your safety.
- Stop all herbal medications 4 weeks before surgery unless discussed beforehand. Especially Ginseng, Garlic, and Gingko, Fish oil, or St. John's Wort, which increase the risk of bleeding.

THE DAY of YOUR SURGERY

- Please shower at home the evening before or the morning of surgery.
- For morning surgery, Do Not Eat or anything after midnight the night before surgery unless otherwise instructed. Clear liquids (water, apple juice, black tea or coffee NO MILK) are OK until two hours before your admission time. Medication with a small sip of water is OK. For afternoon

surgery, a small breakfast BEFORE 7AM is OK, and clear liquids only after that, until two hours before admission. Your surgery may be cancelled if you do not follow these instructions.

- On the day of your surgery, report to reception of the hospital at the time instructed.
- Bring a book – you may be waiting a few hours before your operation.
- If you have not already done so, you will meet your anaesthetist.
- You may need a blood test or ECG prior to surgery.
- After the operation, you will spend some time in the recovery room before going to the ward
- After discharge, you are <u>not permitted to</u>:
  - Drive a Car nor operate power equipment (for one week)
  - Drink Alcoholic Beverages
  - Sign important papers
  - (The above are not permitted on the day of surgery and for the next 24 hours after surgery, nor while taking any prescription pain medication)

Post-Operative Instructions for Thyroid Surgery

Monitoring Your Progress

You should feel improvement every day after surgery. If you have any questions regarding your progress, call the hospital or your GP. You should have a follow up appointment approximately 4-6 weeks after your surgery. Please call the hospital to make an appointment if you have not been given a follow up appointment date.

Incision Care

Your incision is covered with a waterproof protective dressing. You can shower and wash your hair as usual, but do not soak or scrub the dressing. After showering, pat dry. Your dressing can be removed around two weeks after surgery. If you experience itching once the dressing is off, you may apply lotion to the scar. ***Keep your neck and the scar moving by turning your head from side to side, tilting your head, and massaging your scar several times per day (with the tape in place).***

You might notice bruising around your incision or upper chest and slight swelling behind the scar when you are upright. In addition, the scar may become pink and hard. This hardening will peak at about 3 to 4 weeks and may result in some tightness or difficulty swallowing, which will disappear over the next 3 to 4 months. You will also notice some numbness of the skin of your neck. This will gradually improve over time. Occasionally, patients get tethering of the scar on the inside, resulting in a tight feeling when swallowing or tilting the head back. If you experience this tightness, continue to stretch your neck and massage your scar firmly, several times per day. The tightness should settle down over time, usually by 6 months, but it continues to improve for three years.

After Surgery Neck Swelling

Some patients may develop neck swelling due to seroma (fluid collection inside the wound) which is not associated with skin infection. This can happen after surgery and seroma may take about one to two week to slowly resolve leading to reduction in swelling. Some patients may develop skin flap swelling (wound flap edema) and this may take three to four weeks to settle. Please present to your GP or hospital if you are concern with any neck swelling or if you have breathing difficulty so that you can be reviewed by a medical doctor.

Pain

The main complaint following parathyroid surgery is discomfort with swallowing. Some people experience a dull ache, while others feel a sharp pain. This should not keep you from eating anything you want, but the pain can be annoying for a day or two. Nurofen and/ or Panadol is generally enough to control this pain. Some people prefer Panadeine, but in general, stronger medications are not necessary for long. You may feel like you have phlegm in your throat. This is usually because there was a tube in your windpipe while you were asleep that caused irritation that you perceive as phlegm. You will notice that if you cough, very little phlegm will come up. This should clear up in 4 to 5 days. In a small proportion of patients, the “lump in throat” feeling persists for a few months, but in most cases is will eventually resolve.

Thyroid Hormone Tablets

If your whole thyroid was removed, you will be prescribed thyroid hormone tablets following surgery. You should take these on an empty stomach with water. Milk, food, and other pills interfere with your stomach’s ability to absorb the thyroid hormone. Six weeks after the operation, you will have a blood test by your GP to measure your levels of thyroid hormone and your dose of medication may be adjusted accordingly. Your thyroid hormone levels will then be measured about every 2 to 3 months until your hormone levels are stable (levels generally stabilize within 4 to 5 months).

Voice Changes

Your voice may go through some temporary changes with fluctuations in volume and clarity (hoarseness). Temporary changes and voice fatigue are quite common. Generally, it will be better in the mornings and "tire" toward the end of the day. This can last for variable periods of time, but should clear in 4-6 months at most. There is a small (1/100) risk of permanent hoarseness. There is a higher chance your singing voice will be affected.

Hypocalcaemia after total thyroidectomy – tingling and numbness of fingers and toes

In many patients who have a total thyroidectomy, the parathyroid glands do not function properly immediately after total thyroidectomy. This is usually temporary and causes the blood calcium level to drop below normal (hypocalcaemia). Symptoms of hypocalcaemia include numbness and tingling in your hands, soles of your feet and around your lips, and can become quite unpleasant. Some patients experience a "crawling" sensation in the skin, muscle cramps or headaches. These symptoms appear between 24 and 48 hours after surgery. It is rare for them to appear after 72 hours. Low blood calcium does not occur if only half the thyroid is removed.

Hypocalcaemia is treated with extra calcium tablets. You can purchase Calcium (Caltrate) tablets over the counter. If you feel you need it, take two extra tablets (there is no danger in taking it, even if you do not need it.) The symptoms of tingling/numbness should improve within 30-45 minutes of taking the tablets. If they do not disappear, take two more and repeat as necessary each 30-45 minutes. If the symptoms do not disappear after 3 doses, report to your GP or hospital emergency room to have your blood calcium checked.

Some patients also need a tablet called calcitriol to help absorb calcium from your diet. You should repeat the dose whenever the symptoms return. This may mean that you are taking as many as 2 tablets every 3 hours. It is important that you keep a record of your doses to show your doctor. The hypocalcaemia should disappear over a few weeks. Keep a record and let us know at your post-surgery visit if you need extra calcium.

Follow up with GP

You will need to follow up with your GP one week after surgery to check your blood test which includes Parathyroid Hormone (PTH) and Calcium levels. If you have been sent home with calcium medication/supplement (caltrate/calcitriol), your GP may instruct you to stop /continue /change the dosage of these medications depending on your blood test result.

CONTACT THE HOSPITAL OR YOUR GP for any of the following symptoms:

- Fever >38.3 or chills
- Increasing pain or redness around incision
- Difficulty breathing
- Tingling around the lips or fingertips not relieved by extra calcium tablets
- Severe muscle cramps

ASK YOUR DOCTOR

We are here to help you. If you have any questions, please ask. It is often helpful to bring a family member with you to a consultation, or to write questions down so you won't forget them.

PLEASE GIVE THIS TO YOUR GP TWO WEEKS AFTER DISCHARGE
(IF YOU HAVE BEEN DISCHARGED ON CALCIUM AND/OR CALCITRIOL MEDICATION)

Dear Doctor,

Many thanks for overseeing this patient care. Your patient has been discharged on calcium supplements following their recent thyroidectomy. They have been asked to see you on a weekly basis to have their serum PTH and calcium levels checked and their medication reduced according to the protocol:

***** Please note that serum Calcium will be normal on replacement, only wean when PTH has normalised.**

If your patient is on Caltrate only:

Discharge dosage: Caltrate 2 tab BD

If Calcium and PTH normal after 2 weeks: Caltrate 1 tab BD

If Calcium is normal the next week: Caltrate 1 tab OD

If Calcium is normal the next week: Cease Caltrate

If your patient is on Caltrate + Calcitriol:

Discharge dosage: Caltrate 2 tab BD + Calcitriol 2 tab BD

If Calcium and PTH normal after 2 weeks: Caltrate 2 tab BD + Calcitriol 1 tab BD

If Calcium is normal the next week: Caltrate 2 tab BD

If Calcium is normal the next week: Caltrate 1 tab OD

If Calcium is normal the next week: Cease Caltrate

If you have any concerns during withdrawal please do not hesitate to contact Dr Sze Ling Wong