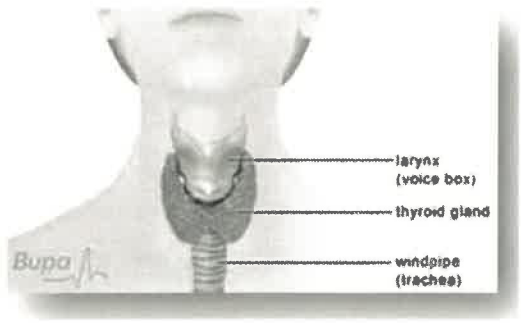
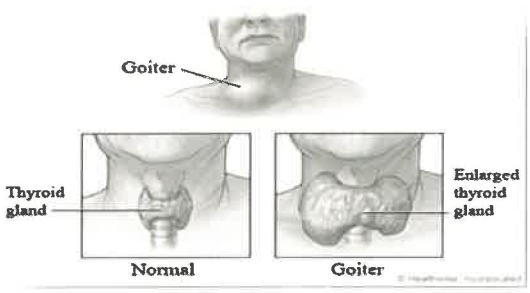
Thyroid Disease

The thyroid gland is a small gland located in your neck and rests on the trachea (windpipe). It is responsible for making thyroid hormone, which helps to control the metabolism of nearly every cell in your body. When the gland does not produce enough hormone, this condition is called **hypothyroidism.** This can cause you to feel tired, feel cold easily, or gain weight. This is usually treated by taking a thyroid hormone supplement. **Hyperthyroidism**, when too much thyroid hormone is made, can cause you to feel jittery, feel hot easily, lose weight, and can also cause a rapid heartbeat. The treatment for hyperthyroidism depends on the cause, and can be treated with medications, radioactive iodine, or surgery. A **goiter** is any enlargement of the thyroid gland that may make it feel difficult for you to swallow or breathe. Goiters can be associated with hypothyroidism, hyperthyroidism, or even with a normally functioning thyroid gland.





What are thyroid nodules?

A nodule is any prominent lump of tissue within the thyroid gland. They can develop for any reason. The thyroid can develop multiple nodules or sometimes just a single nodule. Most nodules are benign (non-cancerous) and most do not affect the production of thyroid hormone. However, if a nodule is detected on a physical examination your doctor may need to order some additional testing:

- Blood tests: these will detect the level of thyroid hormone in your blood and can determine if the thyroid gland is functioning normally
- Ultrasound: Ultrasound is the best first imaging test to evaluate a thyroid nodule. It uses high frequency sound waves to create a picture of your thyroid gland
- Thyroid uptake scan: This test uses a radioactive form of iodine (the element that is used for production of thyroid hormone) to detect areas of the thyroid gland that take up the most thyroid hormone. It is usually ordered for nodules that are associated with hyperthyroidism.
- Fine needle aspiration (FNA) biopsy: Based on the results of the other tests, your doctor may want you to undergo a biopsy of thyroid nodule. This is done usually with a very fine needle under local anesthesia. Generally, it is done using ultrasound guidance to ensure a good sample is obtained from the suspicious nodule. The cells that are obtained are then evaluated under a microscope to see if the nodule may be cancerous.

What are the indications for thyroid surgery?

Thyroid surgery is generally indicated for:

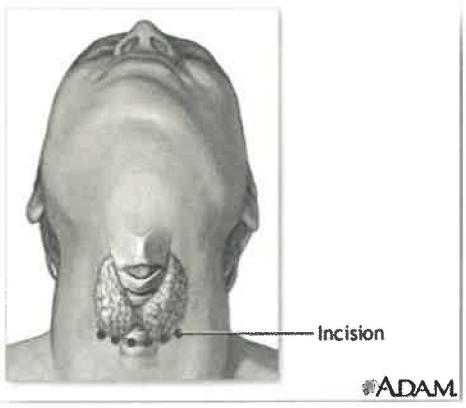
- A nodule that is proven to be cancerous or suspicious for cancer
- A goiter or large nodule that is causing symptoms due to its enlargement (difficulty swallowing, shortness of breath) or a hyperactive nodule/gland that does not respond to other treatments

(continued on back)

Thyroid Disease

How is the surgery performed?

Depending on the reason for which you are having surgery, your surgeon may give you options with regards to the type of surgery that is recommended. In general, if you have a biopsy proven thyroid cancer, a **total thyroidectomy** is usually performed where both sides of the thyroid gland are removed. This will then usually be followed by additional treatment (usually radioactive iodine therapy) to prevent the thyroid cancer from returning. If a total thyroidectomy is performed, you will need to take thyroid hormone replacement for the rest of your life. If the nodule is *suspicious*, your surgeon may only remove the affected side of the gland where the nodule is located (a **hemithyroidectomy**). If the nodule is then proven to be cancerous, this may require a return to surgery to remove the opposite side. If you have a goiter, surgery may include removing just the side that is enlarged, or, if the entire gland is enlarged, most of the gland will be removed potentially sparing some of the gland (**subtotal thyroidectomy**).



What are some of the risks?

Surgery is generally safe and performed under general anesthesia with an incision made low in the neck. The main risks include potential damage to the nerves that supply movement of the vocal cords. Your surgeon will generally monitor and identify these nerves to avoid risk of injury. If you are undergoing a total thyroidectomy, you may need to have your calcium levels monitored overnight in the hospital, as there are glands very close to the thyroid gland called **parathyroid glands** that regulate the calcium level in your blood. Other risks of surgery include swelling, bleeding, infection, and pain.

Online Resources

Please visit the American Thyroid Association's website **www.thyroid.org** for other helpful information regarding thyroid disease.