

Thyroid Nodules



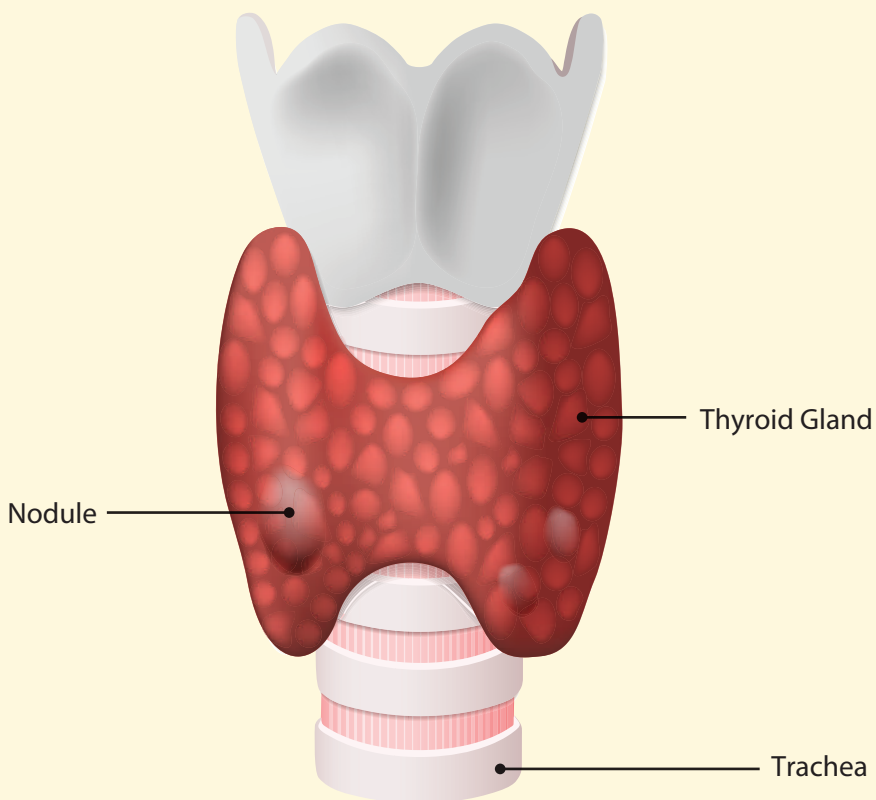
Changi
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What is the thyroid gland?

The thyroid gland is a butterfly-shaped gland located in the lower front neck. It produces thyroid hormones, which play a key role in regulating the body's metabolism, temperature, heart rate, weight, bone health and fertility.

What are thyroid nodules?

Thyroid nodules are lumps of tissue in the thyroid gland. They are common, especially in women and older people. Most thyroid nodules are benign, and only the minority (5-15%) are cancerous. Individuals with previous exposure to radiation or a family history of thyroid cancer are at higher risk of developing cancerous thyroid nodules.



What are the symptoms and signs of thyroid nodules?

Many thyroid nodules do not have symptoms and are detected through imaging studies performed for other medical reasons. Larger thyroid nodules may be visible as central neck lumps that move with swallowing, and may result in breathing or swallowing difficulties. Patients with functionally active thyroid nodules may experience symptoms of thyroid over-activity such as heat intolerance, weight loss, palpitations, hand tremors and loose stools. The risk of cancer is also higher if there is rapid growth of the thyroid nodules, associated hoarseness of voice, or loss of appetite and weight.

Diagnosis

Blood tests

Blood tests will be carried out to assess thyroid function.

Imaging studies

An ultrasound scan of the thyroid gland is useful to assess the size and characteristics of the thyroid nodules. The presence of other thyroid nodules or enlarged neck lymph nodes can also be detected through the ultrasound scan.

Patients whose blood test results show an over-active thyroid will require a special uptake scan to determine if the thyroid nodules are “hot” (functionally active).

Fine needle aspiration cytological (FNAC) examination

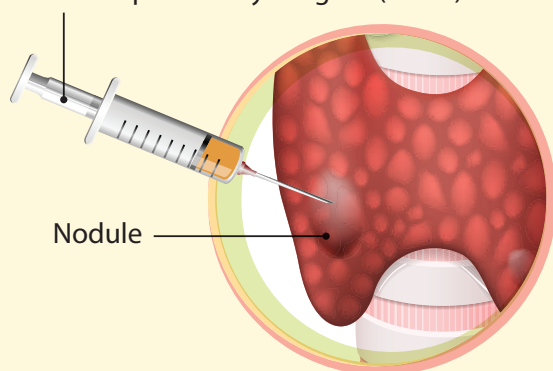
“Hot” (functionally active) thyroid nodules are rarely cancerous. However, other thyroid nodules may require a fine needle aspiration cytological (FNAC) examination to rule out cancer, especially if the nodules are large and show suspicious features such as irregular margins, calcium deposits, or excessive blood supply on the ultrasound scan.

A FNAC examination is a simple procedure involving a small injection to the thyroid nodules to extract thyroid cells for microscopic examination. Multiple samples may be taken to improve diagnostic accuracy. Bleeding and infection

may occur during the procedure, although the risk is low, and patients taking blood-thinning medications should inform their doctors prior to the procedure.

In some cases, the samples collected may be inadequate for diagnosis and the procedure may need to be repeated. FNAC examination of very large nodules may not always be definitive due to sampling errors, and the diagnosis may remain unclear. In these cases, your doctor will discuss subsequent management plans with you.

Fine Needle Aspiration Cytological (FNAC) examination



Treatment

Treatment of thyroid nodules depends on the underlying cause.

Radioactive iodine

Some patients with overactive thyroid nodules may benefit from radioactive iodine, which serves to destroy the thyroid cells. Radioactive iodine treatment may take weeks to months, and medications may be required in the interim. Patients on radioactive iodine treatment are advised to avoid prolonged close contact with small children and pregnant women for 2-3 weeks. Female patients of reproductive age who are treated with radioactive iodine are also advised to avoid pregnancy and breastfeeding for six months. There is a possibility of developing hypothyroidism (under-activity of the thyroid gland) following radioactive iodine treatment, requiring long-term thyroid hormone replacement.

If patients do not wish to undergo radioactive iodine treatment, long-term anti-thyroid medications may be an alternative therapy.

Surgery

Surgery by specialised neck surgeons may be recommended for:

- Patients with suspicious FNAC examination results.
- Patients with large thyroid nodules causing breathing or swallowing difficulties.

There is a low risk of hoarseness of voice and low blood calcium levels after surgery, which is usually temporary. Patients may also develop hypothyroidism after surgery (depending on the extent of surgery), requiring long-term thyroid hormone replacement.

Observation

Patients with small thyroid nodules and benign FNAC examination results may be monitored with ultrasound examination at regular intervals. A repeat FNAC examination will be required if the thyroid nodules increase significantly in size, or if there is development of worrisome features on ultrasound scan.

For more information on thyroid nodules, please consult your doctor.



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