Thyroid cancer

Cancer of the thyroid gland.

What is thyroid cancer

Thyroid cancer starts when cells in the thyroid gland (a small, butterfly-shaped gland at the front of your neck) grow abnormally. There are several types:

- Papillary – the most common and usually slow-growing.
- Follicular – often slow-growing and highly treatable.
- Medullary – can run in families and may need genetic testing.
- Anaplastic – a rare, aggressive type found mainly in older adults.

How common is it

Thyroid cancer is uncommon. Its behaviour and treatment depend strongly on the type and stage. Many differentiated cancers, including papillary and follicular cancers, respond well to treatment.

What are the symptoms

- A painless lump or swelling in the front of the neck.
- Hoarseness or voice changes that don’t improve.
- Difficulty or discomfort when swallowing.
- A persistent cough not related to a cold.
- Neck pain that may reach the ears.
- Swollen lymph nodes (glands) in the neck.

Many nodules and early cancers cause no symptoms and are found during scans done for other reasons.

What increases my risk

- Previous radiation exposure to the head or neck (especially in childhood).
- Family history of thyroid cancer or certain genetic conditions (e.g. MEN2).
- Female sex.
- Risk patterns vary by cancer type and age; thyroid cancer can occur outside the most commonly affected age groups.
- Your clinician will discuss relevant risk factors; iodine supplements should not be used to prevent or treat thyroid cancer.

How is thyroid cancer diagnosed

- Physical examination by your GP or specialist.
- Blood tests assess thyroid function but do not usually diagnose or exclude cancer. Specialist markers, such as calcitonin for suspected medullary cancer, are used when appropriate.
- Ultrasound scan of the neck.
- Fine-needle aspiration (FNA) biopsy – a thin needle removes cells for testing.
- CT, MRI, or PET scans if more detail is needed.
- If medullary cancer is diagnosed, genetic counselling and testing are usually offered to check for an inherited cause.

Treatment options

- Surgery – removal of part (lobectomy) or all (total thyroidectomy) of the thyroid.

- Radioactive iodine treatment – a capsule or drink of radioactive iodine to destroy any remaining thyroid tissue or cancer cells (mainly for papillary and follicular types).
- Levothyroxine replaces thyroid hormone after total thyroid removal and is sometimes needed after partial removal. Selected patients with differentiated cancer need a dose that lowers TSH; this is tailored to recurrence risk and treatment response.
- External beam radiotherapy – occasionally used for certain tumours or if surgery isn't possible.
- Targeted therapies (tablets) – such as tyrosine-kinase inhibitors for advanced or spreading cancer.
- Chemotherapy – rarely used, mainly for anaplastic thyroid cancer.

After treatment and follow-up

Follow-up depends on the cancer type, operation and other treatment. It may include clinical review, thyroid blood tests and neck ultrasound.

Thyroglobulin is useful in selected patients with differentiated cancer, particularly after total thyroidectomy and radioactive iodine. It is not a general marker for every thyroid cancer. Medullary cancer uses different markers.

Lifelong levothyroxine is needed after total thyroidectomy, but not everyone needs it after removal of half the gland.

Calcium monitoring or treatment and support for voice or swallowing problems may also be needed.

What is the outlook

Many papillary and follicular cancers have a favourable outlook, but prognosis depends on stage, age and other features. Medullary cancer behaves differently, and anaplastic cancer is often aggressive. Your team can explain what your diagnosis means for you; one survival figure is not appropriate for everyone.

Living well after treatment

- Take thyroid hormone tablets exactly as prescribed if they are part of your treatment.
- Attend all follow-up appointments and scans.
- Eat a balanced diet and maintain a healthy weight.
- Avoid smoking and limit alcohol.
- Seek support from family, friends, or cancer support groups.

When to seek medical advice

Seek prompt review for a new or enlarging neck lump, persistent voice change or worsening swallowing. After surgery, new tingling or cramps need urgent advice from your team because calcium may be low.

Call 999 for rapidly increasing neck swelling after surgery, severe breathing difficulty, collapse or major bleeding.

Other treatment choices

For a carefully selected very small papillary cancer, active surveillance may be an alternative to immediate surgery. Radioactive iodine and TSH suppression are not required for everyone. The specialist team will discuss benefits, risks and your preferences.

About this information

This leaflet explains the condition and common treatment choices. Your care team will advise what is suitable for you. If you have an operation, follow the specific preparation and aftercare instructions provided by your hospital.

Further information

NICE NG230 recommendations

British Thyroid Foundation thyroid surgery