



Thyroid Grossing Manual & Gross Description Template

Based on Cleveland Clinic best practices, these guidelines enable high quality patient care while conserving resources, supporting timely diagnoses, and realizing cost savings within the laboratory.

Our grossing practices for thyroidectomy cases include submitting an average of eight blocks per thyroidectomy, alleviating unnecessary burdens to staff and reducing costs while maintaining high-quality supporting services.

Additionally, this grossing protocol includes a templated gross description that simplifies grossing, making it easier for the pathologist to identify the most significant nodules and complete synoptic reports.

Key Points

Cleveland Clinic Laboratories does not accept thyroid consult cases with **more than 20 slides**.

- For thyroidectomies with more than 20 sections, contributors will need to limit the number of sections submitted to CCL by only selecting the most appropriate slides to evaluate and answer the questions underlying the consultation request.

Thyroid gland specimens should be **fixed in formalin overnight** before sectioning.

Chart review must be performed to obtain:

- Indication for surgery
- Ultrasound report
- Any prior cytology aspirate specimens
- Any available molecular testing results (i.e. Afirma or Thyroseq)

Grossly identified discrete lesions must be clearly described and designated to allow histologic sections to be correlated with each lesion.

- A discrete lesion may be a solid, fleshy nodule or an irregular, tan-white scarred area. The normal background parenchyma is tan-red and homogenous; however, sometimes the background thyroid parenchyma will be diffusely nodular as in multinodular goiter. It is imperative to recognize discrete lesions that look different from the colloid filled nodules of multinodular goiter.

Gross evidence of invasion is important.

- Invasion into surrounding tissue outside the thyroid is required for staging - if present document and photograph.

Encapsulation is important.

- When present, carefully evaluate the capsule for invasion. Gross assessment of encapsulation is not always accurate but should be attempted.

If there appears to be more than 3 discrete lesions in a thyroid, it is likely a **misinterpretation of multinodular goiter**.

Thyroid Specimen Submission Guidelines

Indication for Surgery	Number of Blocks to Submit	Notes
Normal Graves Hashimoto's (NO discrete lesion)	Two (2) blocks	One (1) block per lobe
Multinodular goiter	Five (5) blocks	Two (2) blocks per lobe One (1) block of isthmus
History of MEN Family history of medullary carcinoma (prophylactic thyroidectomy)	Five (5) blocks	Two (2) blocks per lobe One (1) block of isthmus <i>Concentrate sections in middle third of lateral lobes.</i>
Completion thyroidectomy for recent carcinoma on partial thyroidectomy	One (1) block <i>if there is no discrete lesion</i>	If a gross nodule is present, gross as per below.
Infiltrative or unencapsulated discrete lesion	<i>Lesion ≤2 cm:</i> Submit entirely <i>Lesion is >2 cm:</i> One (1) block per cm	Focus sampling to identify invasion and any extension into skeletal muscles or other extrathyroidal structures.
Encapsulated discrete lesion	<i>Lesion ≤2 cm:</i> Submit entirely <i>Lesion is >2 cm:</i> One (1) block per cm	Focus sampling to demonstrate tumor capsule invasion.

Grossing Steps

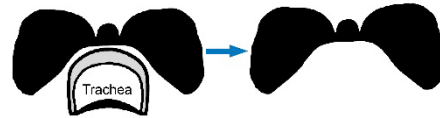
1. **Clinical review:**
 - a. Identify indication for surgery (nodule vs goiter vs graves etc).
 - b. Review ultrasound to correlate clinically with the gross assessment.
 - c. Review prior FNA reports and molecular testing if available.
2. **Orient specimen.**

Superior: Thin, pointed end



Inferior: Round, bulbous end

Anterior: Convex, raised at each lobe

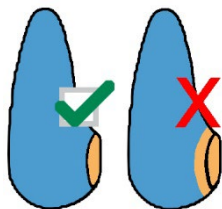


Posterior: Concave, smooth

3. **Examine:**
 - a. If available, correlate with the operative report for the presence of attached structures such as skeletal muscle, large nerve or vascular structures, and/or level VI lymph nodes.
4. **Weigh specimen in grams.**
5. **Measure in three directions:**
 - a. Overall specimen
 - b. Right lobe
 - c. Left lobe
 - d. Isthmus
6. **Ink outer surfaces as follows:**

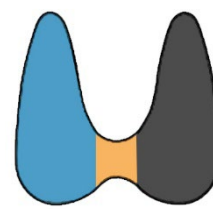
Lobectomy or hemithyroidectomy specimens:

- Outer surface of lobe AND isthmus: **blue** or **black**
- Cut surface of isthmus: **orange**
- **Do not ink the outer surface of the isthmus (only ink the cut surface).**



Intact total thyroidectomies:

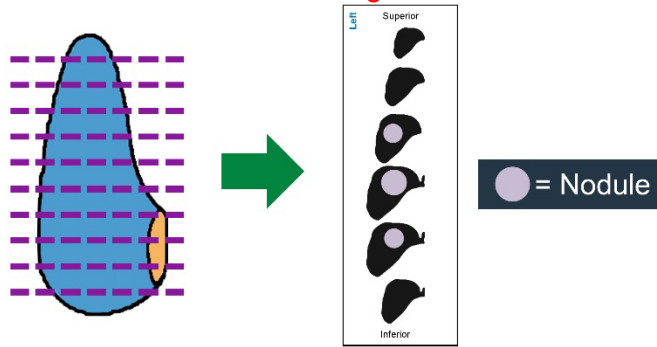
- Outer surface of *right* lobe: **black**
- Outer surface of *left* lobe: **blue**
- Outer surface of *isthmus* (if identifiable): **orange**



7. Section thyroid.

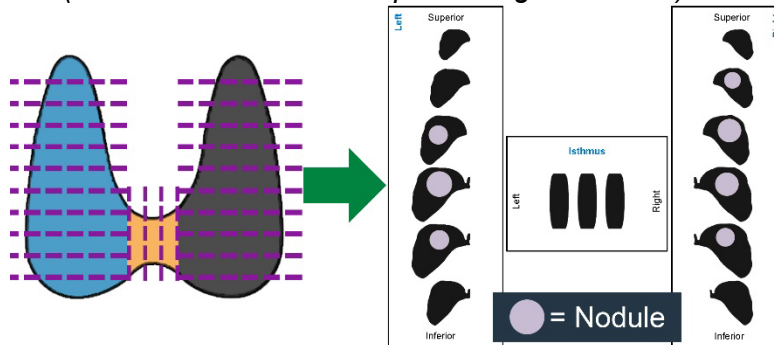
a. For lobectomy and hemithyroidectomy specimens:

- i. Serial section transversely from superior to inferior.
- ii. Layout all sections on a damp paper towel to evaluate nodules (*label towel as shown for preserving orientation*).
- iii. **DO NOT** submit a shave margin of the isthmus.



b. For intact total thyroidectomy specimens:

- i. Separate lobes from isthmus.
- ii. Section lobes transversely & isthmus sagittally.
- iii. Layout all sections on a damp paper towel to allow evaluation of nodules (*label towel as shown for preserving orientation*).



8. Evaluate and describe discrete lesions.

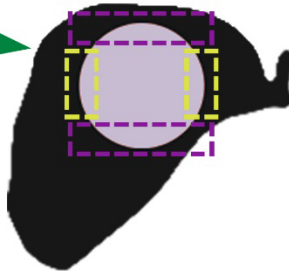
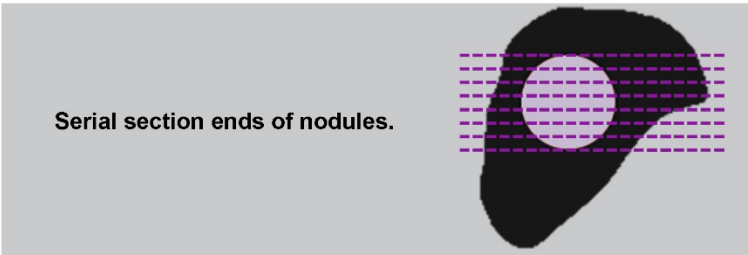
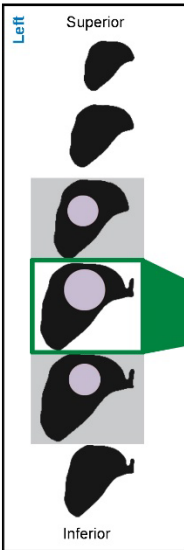
- a. Number lesions sequentially (1, 2, 3...).
- b. Indicate location (left, right, or isthmus; superior, mid, or inferior pole).
- c. Measure each lesion in three (3) dimensions.
- d. Describe: Encapsulation, border, color, consistency, etc.

9. Submit sections as indicated in summary table on Page 1:

- a. For encapsulated nodules submit sections as demonstrated below.
- b. When submitting nodules, ensure nodule number and laterality are indicated in the cassette code. Always indicate if the nodule is representatively or entirely submitted.
- c. For central neck contents / lymph nodes – identify lymph nodes if possible and submit. Submit all remaining adipose tissue.
- d. Following submission of sections, ensure labeling of orientation and nodules on paper towels and carefully wrap residual tissue such that each nodule can be re-identified if additional tissue needs to be submitted.



Sectioning & Submitting an Encapsulated Nodule



Focus sampling to demonstrate tumor capsular invasion.

Lesion \leq 2 cm: Submit entirely
Lesion $>$ 2 cm: One (1) block per cm

If no invasion is seen in initial sections, return to specimen and submit remainder of capsule.





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Thyroid Gross Description Template

Labeled:

[***]

Received:

[*Fresh or Frozen*]

Specimen Type:

[*Total thyroidectomy, Hemithyroidectomy, Lobectomy, or Completion thyroidectomy*]

Oriented:

[*Yes or No*]

(if yes, describe)

Weight:

[] grams

Size:

- Overall: [in three dimensions] cm
- Right lobe: [in three dimensions] cm
- Left lobe: [in three dimensions] cm
- Isthmus: [in three dimensions] cm
- Pyramidal lobe: [in three dimensions] cm (if present)

Ink code:

- **Black:** External surface of the *right* lobe
- **Blue:** External surface of the *left* lobe
- **Orange:** External surface or resection margin of *isthmus*

Sectioning:

The [*right and/or left lobes*] are serially sectioned from superior to inferior.

[The isthmus is serially sectioned from right to left.]

Number of discrete nodules:

[***]

Nodule:

[#] (repeat for each discrete nodule, numbering 1, 2, etc)

Location:

[*Right lobe, Left lobe, or Isthmus*] and [*upper, mid, or lower pole*]

Size:

[in 3 dimensions] cm

Description:

[e.g. solid, cystic, color, calcification, circumscription, encapsulation, consistency]

(if the nodule is encapsulated, remember to submit the entire capsule)



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Thyroid Gross Description Template (continued)

Gross extrathyroidal extension:

[Yes or No]

Background thyroid parenchyma:

[Describe]

Attached skeletal muscle:

[Yes or *Not identified*]

Attached lymph nodes:

[Yes or *Not identified*]

(if yes – number, location, range of size)

Attached parathyroid:

[Yes or *Not identified*]

(if yes – number, location, size)

Cassette Code:

[Indicate nodule number and lobe location for each cassette and if nodules are entirely submitted]