DIFFERENTIATED THYROID CARCINOMA

STAGING, RISK STRATIFICATION & MANAGEMENT

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TUMS

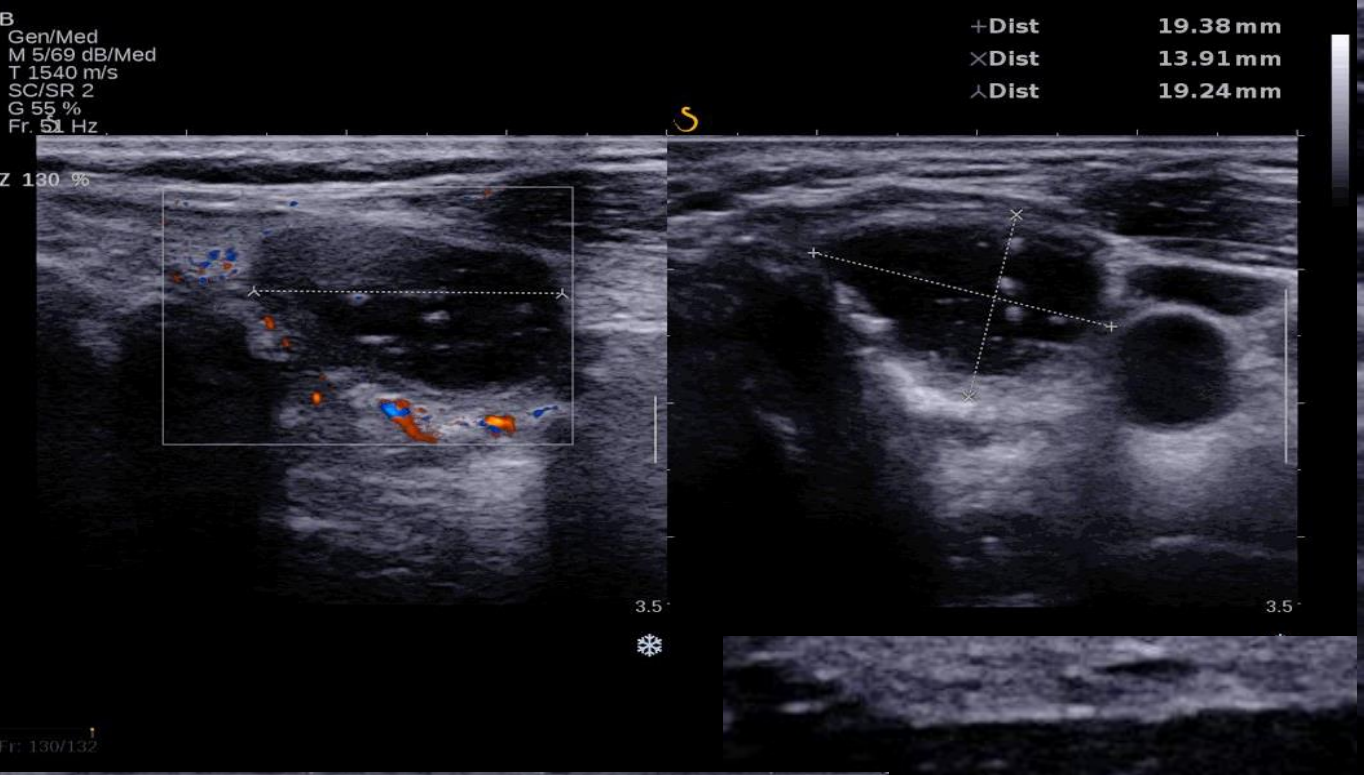
25/04/1405, TEHRAN

Case 3

➢43-year-old man presented with a palpable thyroid nodule.

History of Present Illness:

- The patient discovered a thyroid nodule approximately 3 cm in diameter.
- He also noted palpable lymphadenopathy (LAP) in his neck.
- His thyroid function tests were within the normal range.
- An ultrasound was performed.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Gen/Med
M 5/69 dB/Med
T 1540 m/s
SC/SR 2
G 55 %
Fr. 51 Hz
Z 130 %
Dist 19.38 mm
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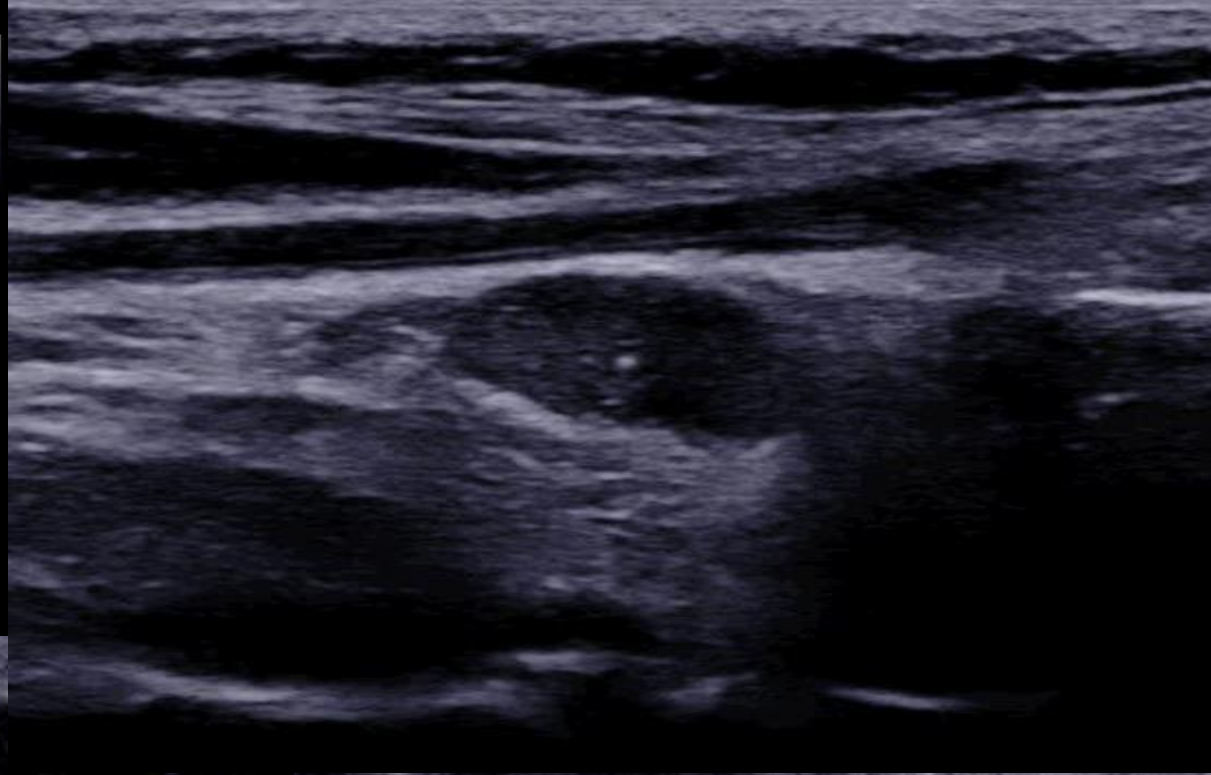
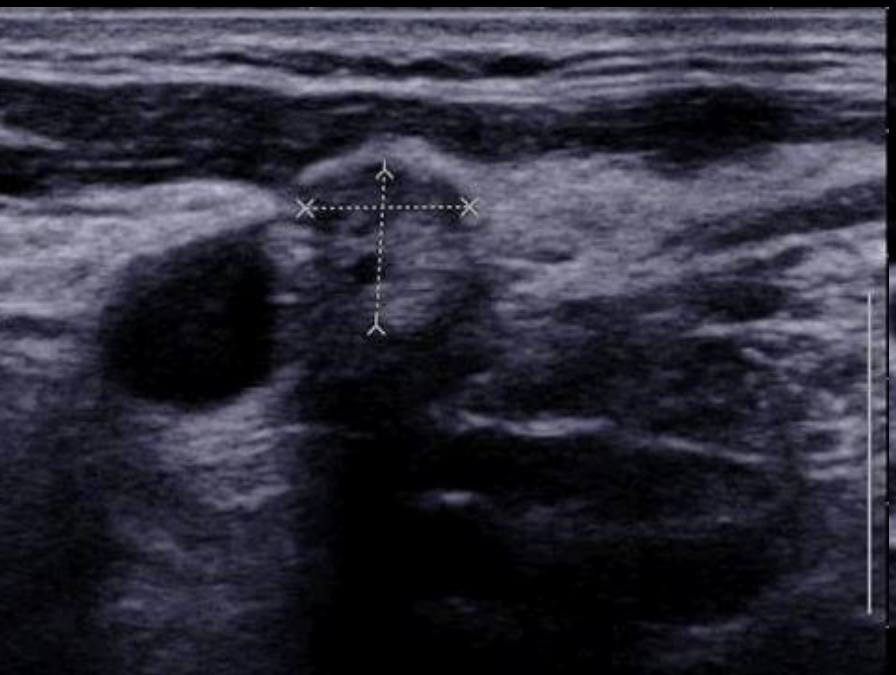
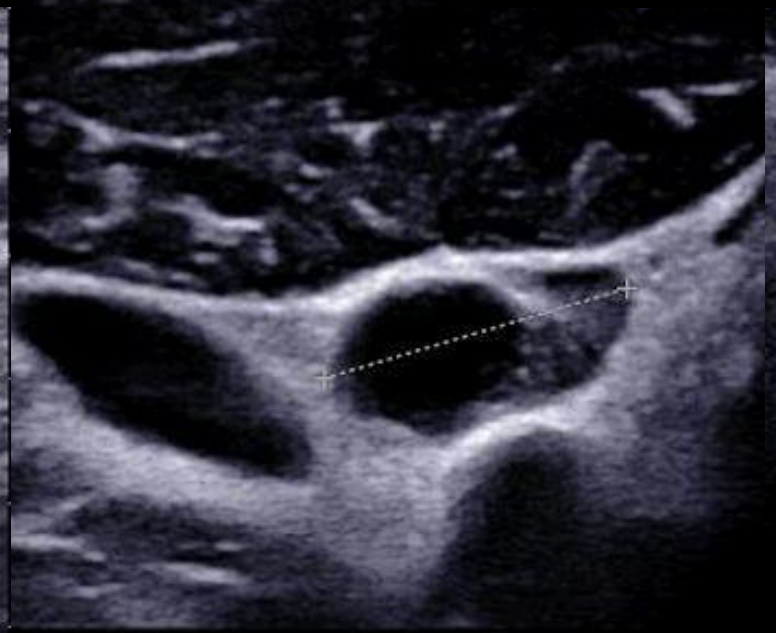
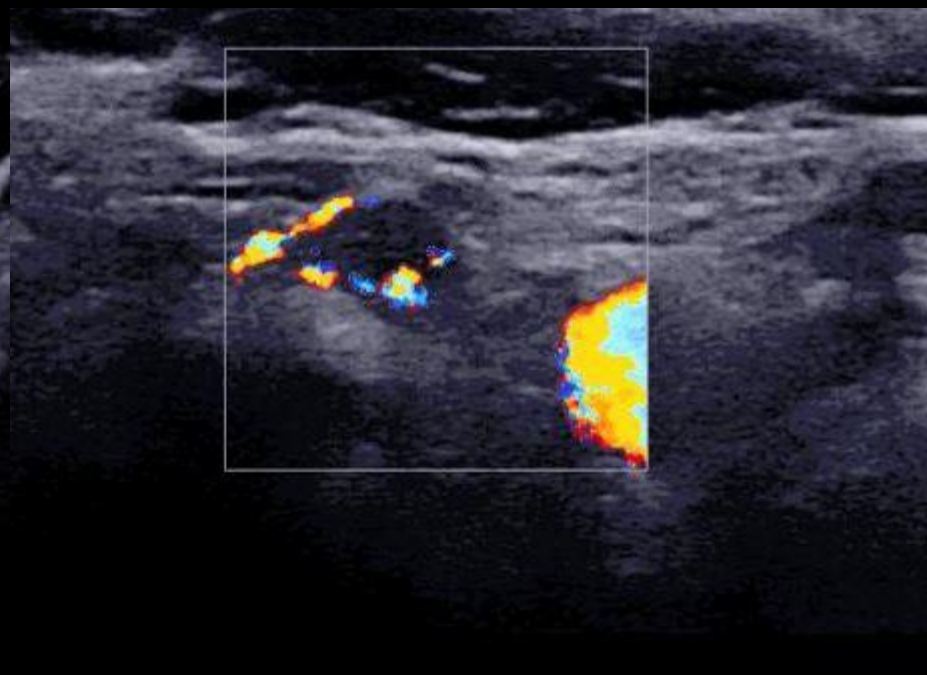
Fr: 130/132









Thyroid Ultrasound:

- A 3-cm nodule demonstrated several suspicious sonographic features concerning for malignancy, including:
  - Markedly solid, hypoechoic Composition with irregular margins, taller-than-wide configuration, microcalcifications, presence of punctate hyperechoic foci within the nodule, increased internal vascularity

- LN- US features:
  - Some hyperechoic enlarged lymph node with loss of the normal echogenic fatty hilum with some punctate echogenic foci, increased vascularity and absence of hilum were noted.

Table 3. US-Based Risk Stratification for Cervical Lymph Node Metastasis in Patients with Possible or Proven Thyroid Carcinomas

Category	US	Malignancy Risk (%)§
Suspicious*	Any of four suspicious features	73–88
	Cystic change	97–100
	Echogenic foci (calcifications)	86–100
	Cortical hyperechogenicity (focal/diffuse)	79–96
	Abnormal vascularity (peripheral/diffuse)	77–84
Indeterminate †	Loss of echogenic hilum and hilar vascularity	20
Probably benign‡	Echogenic hilum	< 3
	Hilar vascularity	

*Lymph nodes with suspicious imaging features are included in this category, regardless of the presence of imaging features of probably benign or indeterminate lymph nodes, †Lymph nodes not included in suspicious or probably benign categories, ‡Lymph nodes with any imaging feature of echogenic hilum or hilar vascularity are considered probably benign, if there are no suspicious imaging features, §Estimates based on previous studies [127, 137, 138, 139, 140]. US = ultrasonography

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Thyroid

2021 Korean Thyroid Imaging Reporting and Data System and Imaging-Based Management of Thyroid Nodules: Korean Society of Thyroid Radiology Consensus Statement and Recommendations

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FNA report:

- FNA :
  - Nuclear grooves, nuclear pseudoinclusions, overlapping nuclei, nuclei were larger than those of normal follicular cells.
  - Cells were seen in follicular and papillary arrangements.
  - Clusters of overlapping cells were frequent.
  - Cytoplasm was typically scant to moderate and pale.
  - A background of colloid was present.
- Suspicious Cervical Lymph Node:
  - FNA from one suspicious lymph node confirmed metastatic Papillary Thyroid Carcinoma.

CASE 3: F/U

The patient underwent a total thyroidectomy with a central neck dissection.

Final pathology report of the primary tumor:

- Papillary Thyroid Carcinoma, classical type.
- Size: 3.2 cm
- The tumor exhibited classic PTC morphology with prominent nuclear features (Orphan Annie eye nuclei, grooves, pseudoinclusions), psammoma bodies, and papillary architecture.
- Vascular Invasion: Present
- Extrathyroidal Extension: Present
- Surgical Margins: All surgical margins were reported as clear of tumor
- Central Neck Lymph Node Dissection:
  - Total Nodes Examined: Metastatic PTC was identified in 6 out of 10 central neck lymph nodes (the largest diameter was: 11 mm and the smallest diameter was 5mm).

Case 3

- What are the basic principles of histopathologic evaluation of thyroidectomy samples?

Case 3

- What is the risk of recurrence in the patient based on 2025 ATA guideline after surgery?
- How should clinical response to surgery be assessed?
- When should Tg levels be measured after surgery?

DATA Framework

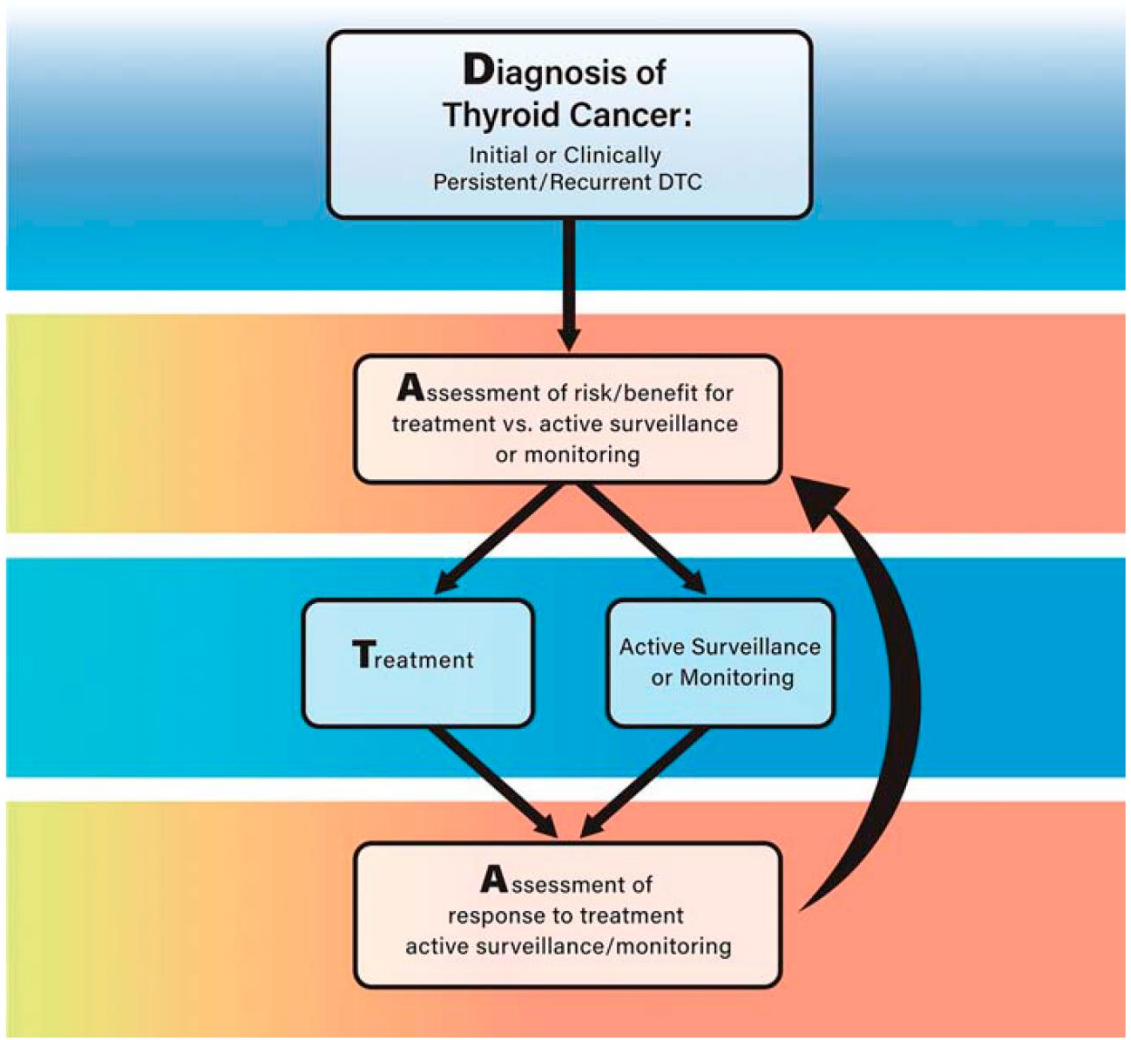


Table 6. AJCC/UICC TNM Staging: The 8th Edition TNM[27,595]

TNM		
CATEGORY[a]	*Code*	*Description*
Primary tumor (pT)	TX	Primary tumor cannot be assessed
	T0	No evidence of primary tumor
	T1	Tumor ≤2 cm in greatest dimension limited to thyroid
	• T1a	Tumor ≤1 cm limited to thyroid
	• T1b	Tumor >1 cm but ≤2 cm limited to thyroid
	T2	Tumor >2 cm but ≤4 cm limited to thyroid
	T3	Tumor >4 cm or gross extrathyroidal extension invading only strap muscles (sternohyoid, sternothyroid, thyrohyoid, or omohyoid muscle)
	• T3a	Tumor >4 cm limited to thyroid
	• T3b	Gross extrathyroidal extension invading only strap muscles (sternohyoid, sternothyroid, thyrohyoid, or omohyoid muscle) from a tumor of any size
	T4	Gross extrathyroidal extension into major neck structures
	• T4a	Gross extrathyroidal extension invading subcutaneous soft tissue, larynx, trachea, esophagus, or recurrent laryngeal nerve from a tumor of any size
	• T4b	Gross extrathyroidal invading prevertebral fascia or encasing carotid/ mediastinal vessels from a tumor of any size
Regional lymph node (pN)	NX	Regional lymph nodes cannot be assessed
	N0	No evidence of regional lymph node metastasis
	• N0a	One or more cytological or histologically confirmed benign lymph nodes
	• N0b	No radiological/clinical evidence of metastasis
	N1	Metastasis to regional nodes
	• N1a	Metastasis to level VI or VII (pretracheal, paratracheal, prelaryngeal / Delphian or upper mediastinal) lymph nodes; this can be unilateral or bilateral disease
	• N1b	Metastasis to unilateral, bilateral or contralateral lateral neck lymph nodes (levels I, II, III, IV or V) or retropharyngeal lymph nodes
Distant metastasis (M)	M0	No distant metastasis
	M1	Distant metastasis present
STAGING		
1. <55 YEARS	Stage I	Any T, Any N, M0
	Stage II	Any T, Any N, M1
2. ≥55 YEARS	Stage I	T1–T2, N0/NX, M0
	Stage II	T1–T2, N1, M0 or T3a/T3b, Any N, M0
	Stage III	T4a, Any N, M0
	Stage IVA	T4b, Any N, M0
	Stage IVB	Any T, Any N, M1

[a]Categories may be subdivided: (s) solitary tumor and (m) multifocal tumor (the largest tumor determines the classification).
UICC, Union for International Cancer Control.

TABLE 7. MAJOR CHANGES IN AJCC/UICC TNM 8TH EDITION—DIFFERENTIATED THYROID CARCINOMA, COMPARED WITH THE 7TH EDITION[595,596]

A. Age cutoff used for staging was increased from 45 to 55 years at diagnosis.
B. Minimal extrathyroidal extension detected only on histological examination was removed from the definition of T3 disease and therefore has no impact on either T category or overall stage.
C. N1 disease no longer upstages a patient to stage III; if the patient's age is <55 years at diagnosis, N1 disease is stage I; if age is ≥55 years, N1 disease is stage II.
D. T3a is a new category for tumors >4 cm confined to the thyroid gland.
E. T3b is a new category for tumors of any size demonstrating gross extrathyroidal extension into strap muscles (sternohyoid, sternothyroid, thyrohyoid, or omohyoid muscles).
F. Level VII lymph nodes, previously classified as lateral neck lymph nodes (N1b), were reclassified as Central neck lymph nodes (N1a).
G. In DTC, the presence of distant metastases in older patients is classified as stage IVB disease rather than stage IVC disease; distant metastasis in anaplastic thyroid cancer continues to be classified as stage IVC disease.

RISK OF RECURRENCE CATEGORIES

<10%

- Low Risk
- Minimal likelihood of biochemical or structural recurrence

10-15%

- Low-Intermediate
- Slightly elevated recurrence probability

16-30%

- Intermediate-High
- Moderate recurrence risk requiring closer monitoring

>30%

- High Risk
- Significant recurrence probability necessitating aggressive management

Risk assessment incorporates histopathologic characteristics, AJCC staging, imaging, molecular analysis, and response to therapy.

RISK STRATIFICATION
ATA GUIDELINE 2025

- The American Thyroid Association (ATA) defines **low-risk thyroid cancer** as intrathyroidal, unifocal or multifocal papillary/follicular tumors <4 cm without aggressive cell features, vascular invasion, or significant lymph node involvement.
- It carries a very favorable prognosis, with less than a 10% chance of recurrence and a disease-specific mortality rate of under 1%.

- **Low-Intermediate Risk** (10–15% recurrence):
  - tumors with aggressive histology or minor vascular invasion, and intermediate-sized lymph node involvement.
- **Intermediate-High Risk** (16–30% recurrence):
  - more extensive lymph node spread (e.g., 6 to 30 lymph nodes positive) or vascular invasion.

RISK STRATIFICATION
ATA GUIDELINE 2025

- In the American Thyroid Association (ATA) guidelines, "**high risk**" identifies differentiated thyroid cancers with a >30% chance of recurrence.
- Factors include gross extrathyroidal extension (tumor growing outside the thyroid), extensive vascular invasion, incomplete tumor removal, or certain aggressive histologic subtypes.

Risk category	ATA Criteria
High risk	Defined as the presence of any of the conditions outlined below: (1) Macroscopic invasion of tumor into the perithyroidal soft tissues, (2) pN1 with any metastatic lymph node ≥ 3 cm at the largest point, (3) Follicular thyroid cancer with extensive vascular invasion (>4 foci of vascular invasion), (4) Postoperative serum thyroglobulin suggests distant metastases.
Intermediate risk	Defined as the presence of any of the conditions outlined below: (1) Microscopic invasion of tumor into the perithyroidal soft tissues, (2) Aggressive histology (tall cell, hobnail variant, columnar cell carcinoma), (3) Papillary thyroid cancer with vascular invasion, (4) Tumor classified cN1 or pN1 with >5 pathologic lymph nodes <3 cm at the largest point, (5) Presence of radioiodine-avid metastatic foci in the neck on the first post-treatment whole-body radioiodine scan.
Low risk	Defined as not meeting any of the above criteria.

RISK STRATIFICATION
ATA GUIDELINE 2025

- Features, such as margin involvement, multiple areas of cancer within the thyroid, cancer size, and spread outside of the thyroid have been incorporated into the 2025 classification.
- The 2025 model emphasizes that the combination of features can have an additive effect on the overall recurrence risk.
- Coexistence of two low–intermediate-risk factors reclassify the cancer as being intermediate–high risk of recurrence.
- Follicular and oncocytic thyroid cancer are now evaluated separately and extensively characterized in the 2025 guidelines.

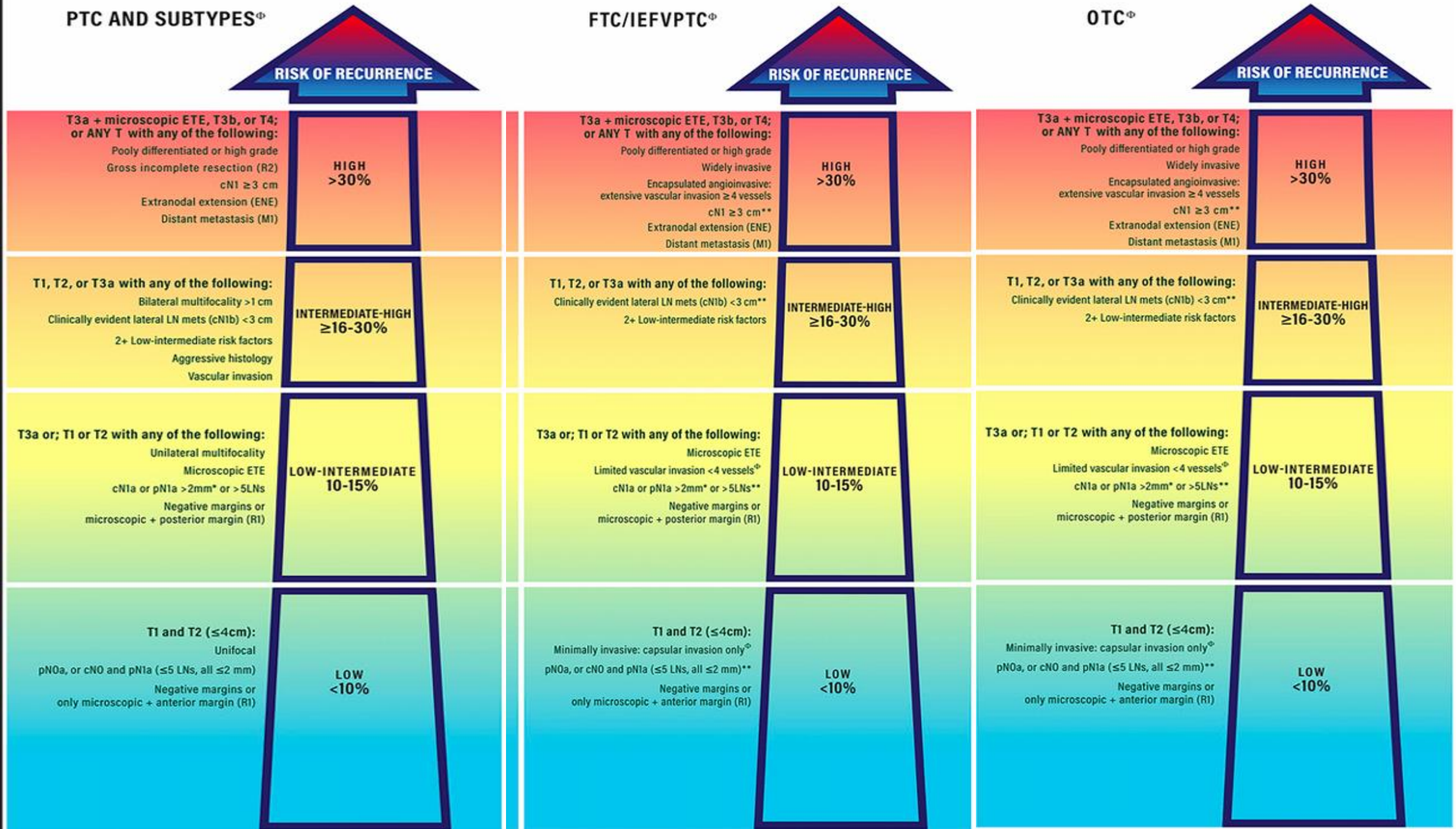

PTC AND SUBTYPES[Φ]
RISK OF RECURRENCE
T3a + microscopic ETE, T3b, or T4; or ANY T with any of the following:
Pooly differentiated or high grade
Gross incomplete resection (R2)
cN1 ≥3 cm
Extranodal extension (ENE)
Distant metastasis (M1)
HIGH >30%
T1, T2, or T3a with any of the following:
Bilateral multifocality >1 cm
Clinically evident lateral LN mets (cN1b) <3 cm
2+ Low-intermediate risk factors
Aggressive histology
Vascular invasion
INTERMEDIATE-HIGH ≥16-30%
T3a or; T1 or T2 with any of the following:
Unilateral multifocality
Microscopic ETE
cN1a or pN1a >2mm* or >5LNs
Negative margins or microscopic + posterior margin (R1)
LOW-INTERMEDIATE 10-15%
T1 and T2 (≤4cm):
Unifocal
pN0a, or cN0 and pN1a (≤5 LNs, all ≤2 mm)
Negative margins or only microscopic + anterior margin (R1)
LOW <10%
FTC/IEFVPTC[Φ]
RISK OF RECURRENCE
T3a + microscopic ETE, T3b, or T4; or ANY T with any of the following:
Pooly differentiated or high grade
Widely invasive
Encapsulated angioinvasive: extensive vascular invasion ≥4 vessels
cN1 ≥3 cm**
Extranodal extension (ENE)
Distant metastasis (M1)
HIGH >30%
T1, T2, or T3a with any of the following:
Clinically evident lateral LN mets (cN1b) <3 cm**
2+ Low-intermediate risk factors
INTERMEDIATE-HIGH ≥16-30%
T3a or; T1 or T2 with any of the following:
Microscopic ETE
Limited vascular invasion <4 vessels[Φ]
cN1a or pN1a >2mm* or >5LNs**
Negative margins or microscopic + posterior margin (R1)
LOW-INTERMEDIATE 10-15%
T1 and T2 (≤4cm):
Minimally invasive: capsular invasion only[Φ]
pN0a, or cN0 and pN1a (≤5 LNs, all ≤2 mm)**
Negative margins or only microscopic + anterior margin (R1)
LOW <10%
OTC[Φ]
RISK OF RECURRENCE
T3a + microscopic ETE, T3b, or T4; or ANY T with any of the following:
Pooly differentiated or high grade
Widely invasive
Encapsulated angioinvasive: extensive vascular invasion ≥4 vessels
cN1 ≥3 cm**
Extranodal extension (ENE)
Distant metastasis (M1)
HIGH >30%
T1, T2, or T3a with any of the following:
Clinically evident lateral LN mets (cN1b) <3 cm**
2+ Low-intermediate risk factors
INTERMEDIATE-HIGH ≥16-30%
T3a or; T1 or T2 with any of the following:
Microscopic ETE
Limited vascular invasion <4 vessels[Φ]
cN1a or pN1a >2mm* or >5LNs**
Negative margins or microscopic + posterior margin (R1)
LOW-INTERMEDIATE 10-15%
T1 and T2 (≤4cm):
Minimally invasive: capsular invasion only[Φ]
pN0a, or cN0 and pN1a (≤5 LNs, all ≤2 mm)**
Negative margins or only microscopic + anterior margin (R1)
LOW <10%

Table 8. Genomic Changes and Combinations of Events Associated with DTC

	Early Genomic Changes	Events in Combination with Early Changes Associated with Progression
Papillary Carcinoma	**Mutations:** ■ *BRAFV600E* ■ *RAS* ■ *BRAF (Non V600E)* **Fusions:** ■ *BRAF, RET, ALK, NTRK 1/3* **Other:** ■ *1q* gain, *22q* loss	**Mutations:** ■ *TERT* promoter *(C228T/C250T)* ■ *TP53, RBM10, CDKN2B, PIK3CA, PLEKSH1p, AKT1* **Other:** ■ *CDKN2A* and *CDKN2B* loss ■ Increased APOBEC activity ■ Global DNA hypomethylation
Follicular Carcinoma & IEFVPTC	**Mutations:** ■ *RAS* ■ *DICER1, EIF1AX, PTEN, GNAS* ■ *BRAF (Non V600E)* **Fusions:** ■ *PPARγ, THADA* **Other:** ■ *7q* gain, *22q* loss	**Mutations:** ■ *TERT* promoter *(C228T/C250T)* ■ *TP53, RB1, RBM10* ■ *CCNE1* **Other:** ■ *CDKN2A* and *CDKN2B* loss ■ Global DNA hypomethylation
Oncocytic Carcinoma	**Mutations:** ■ Mitochondrial DNA ■ *RAS, DAXX, ARHGGAP35, APC, FAT1I, CDKN1A* ■ *PTEN, GNAS* **Fusions:** ■ *PRKAB1, VPRREB3, PANX1* **Other:** ■ Chromosomal loss, near haploid with or without genome wide duplication	**Mutations:** ■ *TERT* promoter *(C228T/C250T)* ■ *TP53, FAT1, AGAp2, MTOR, AKT2, MT2C* ■ *KEAP1, TBX3, CDKN1B, NF1, PDGFRA, CD274* ■ *JAK2* **Other:** ■ *CDKN2A* and *CDKN2B* loss

TABLE 10. SUMMARY OF RECOMMENDATIONS FOR INITIAL RAI FOLLOWING THYROIDECTOMY[a]

Risk category	*Typical RAI recommendation*	*Recommended ^{131}I activity level*	*Goals of therapy*
Low	No	1.1–1.85 GBq (30–50 mCi)	None or remnant ablation
Intermediate-low and intermediate-high	Consider	1.1–3.7 GBq (30–100 mCi)	Remnant ablation +/– adjuvant therapy
High	Yes	3.7–5.55 GBq (100–150 mCi)	Remnant ablation and adjuvant therapy
Distant metastases	Yes	3.7–7.4 GBq (100–200 mCi) or consider dosimetry	Treatment of known disease, remnant ablation

WHAT IS THE APPROPRIATE DEGREE OF TSH SUPPRESSION IN PATIENTS TREATED FOR DTC?

RECOMMENDATION45:

Individualization of decisions to initiate TSH suppression to below the reference range is recommended based on

potential benefits and risks;

patients with high risk disease may be more likely to benefit from a TSH in the subnormal range than those with low-risk disease .

(Conditional recommendation, Low certainty evidence)

- DTC cells express the TSH receptor on their membranes and respond to TSH stimulation by increasing the expression of several thyroid-specific proteins (e.g., Tg, NIS) and by increasing the rates of cell growth.

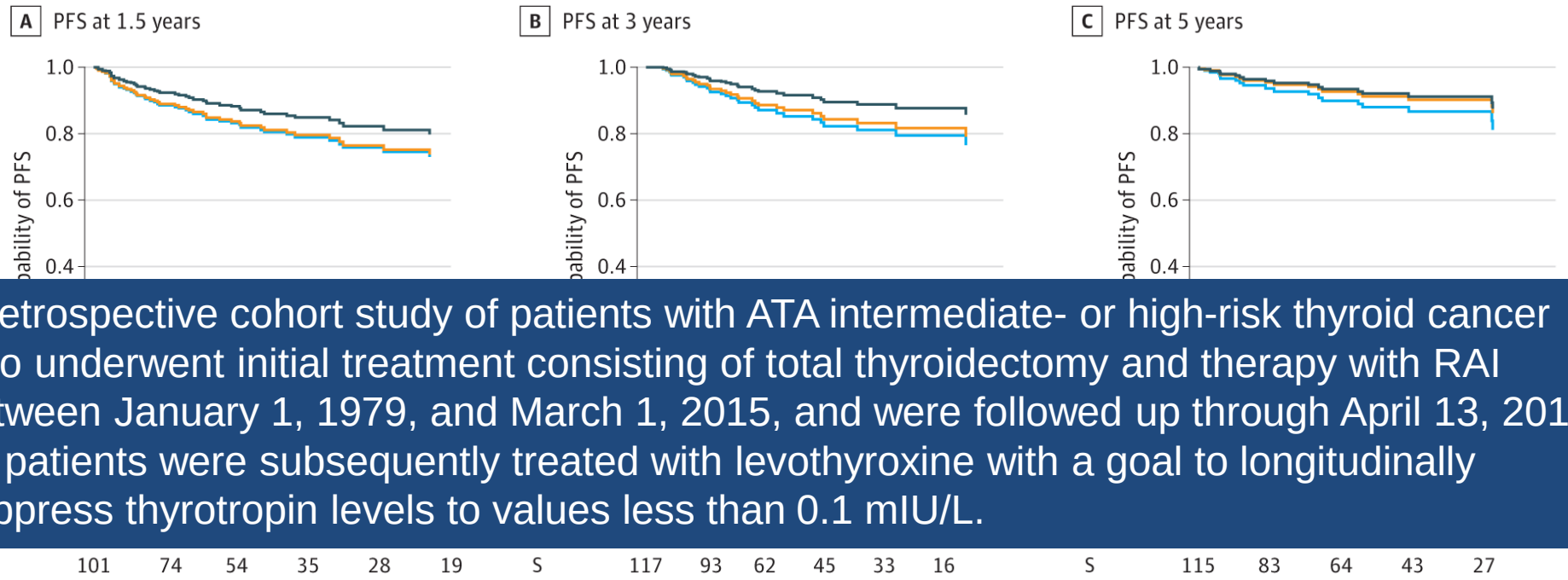
- Suppression of TSH using supra-physiological doses of LT4 historically was used to treat patients with DTC to decrease the risk of recurrence or reduce the rate of disease progression.

- There are mixed findings regarding which patients should or should not receive TSH suppression and the optimal degree of TSH suppression .

JAMA Network™

From: **Association of Thyrotropin Suppression With Survival Outcomes in Patients With Intermediate- and High-Risk Differentiated Thyroid Cancer**

JAMA Netw Open. 2019;2(2):e187754. doi:10.1001/jamanetworkopen.2018.7754



A retrospective cohort study of patients with ATA intermediate- or high-risk thyroid cancer who underwent initial treatment consisting of total thyroidectomy and therapy with RAI between January 1, 1979, and March 1, 2015, and were followed up through April 13, 2017. All patients were subsequently treated with levothyroxine with a goal to longitudinally suppress thyrotropin levels to values less than 0.1 mIU/L.

Association Between Progression-Free Survival (PFS) and Level of Thyrotropin Suppression Results were adjusted by factors independently associated with PFS: age, sex, tumor size, presence of extrathyroidal extension, lymph node metastases in central and lateral neck, and distant metastases and histology type. No difference in PFS was observed at 1.5 (A), 3.0 (B), and 5.0 (C) years. LE indicates patients with longitudinally low-normal or elevated thyrotropin (score 3-4); ML, patients with longitudinally moderately suppressed or low-normal thyrotropin (score 2 to <3); and S, patients with longitudinally suppressed thyrotropin (score 1 to <2).

JAMA Network™

From: **Association of Thyrotropin Suppression With Survival Outcomes in Patients With Intermediate- and High-Risk Differentiated Thyroid Cancer**

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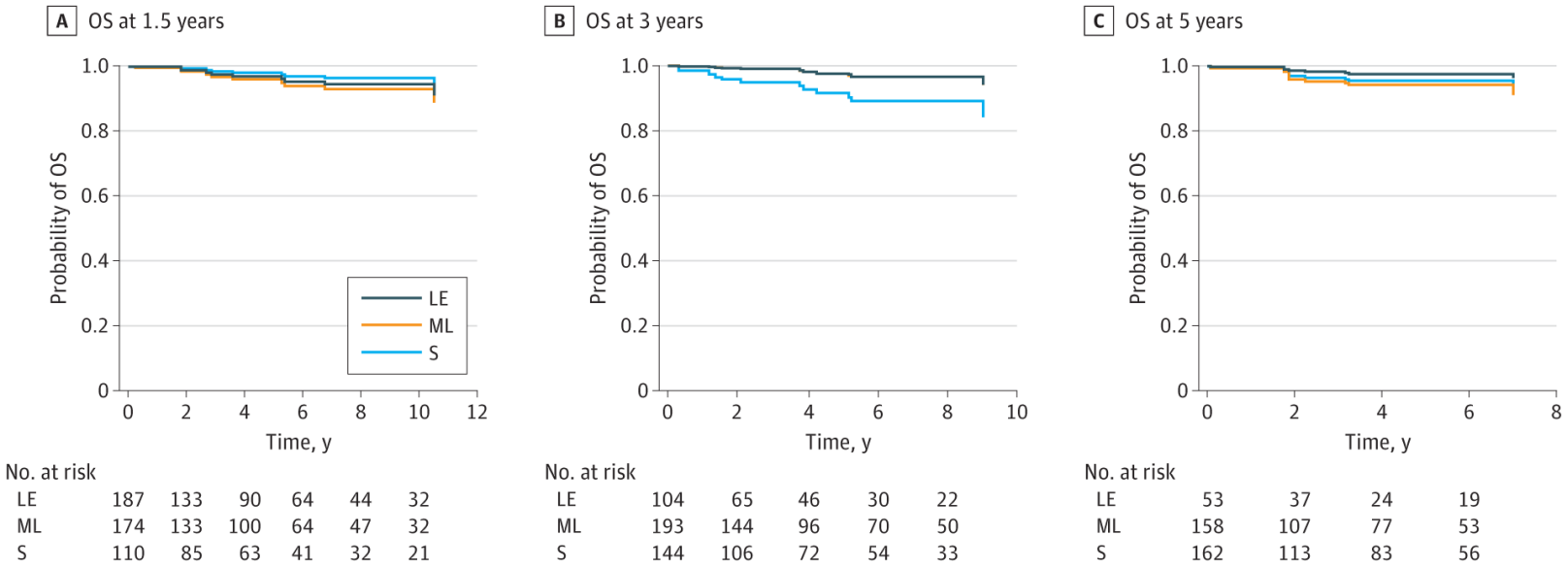


Conclusion: We analyzed a large cohort of patients with ATA intermediate- and high-risk DTC characterized by multiple thyrotropin measurements and followed up for more than 7 years. We found that thyrotropin suppression was not associated with improved PFS and OS. In fact, patients with suppressed thyrotropin levels who survived 3 years were characterized by shorter OS than patients whose levels were not suppressed.

- ability to consistently maintain the goal TSH level without over- or under-replacing the patient,
- balancing the benefits and risks of TSH suppression.
- **Targeting and maintaining specific TSH goals can be difficult in real-world settings.**
- Optimal TSH goals for individual patients:
  - balance the potential benefit of TSH suppression with the possible harm from subclinical thyrotoxicosis

- **The potential benefit of a suppressed TSH is greater in patients at high-risk for recurrence or death.**
- **For patients at low-risk for recurrence, the risks of TSH suppression may exceed any potential benefit.**

- Some of the recognized adverse outcomes of a low TSH include:
  - **exacerbation of angina** in patients with ischemic heart disease, increased risk for **atrial fibrillation** and **stroke** (especially in older patients), increased risk for **cardiovascular mortality**,
  - increased risk of **osteoporosis** and possibly **fracture** in postmenopausal women.

- **Low or intermediate risk for recurrence of thyroid cancer (after a total thyroidectomy or after a thyroid lobectomy):**
  - TSH goal for those patients with is in the **normal reference range**.

- Studies suggest that if the TSH goal is within the normal range, about 70–80% of patients who undergo lobectomy can avoid thyroid hormone supplementation.

- If the goal TSH level is 0.5–2.0 mIU/L, only 20–30% of patients who undergo lobectomy can avoid thyroid hormone supplementation.

HOW LONG SHOULD TSH SUPPRESSION TO BELOW THE REFERENCE RANGE BE MAINTAINED?

RECOMMENDATION46:

A. Low- or intermediate-risk disease who have no evidence of biochemical or structural recurrence Long-term:

- TSH suppression **is not suggested** for patients with. (Conditional recommendation, Low certainty evidence)

B. Risks versus benefits of TSH suppression and TSH goals should be re-evaluated over time. (Good Practice Statement)

2025 ATA DIFFERENTIATED THYROID CANCER GUIDELINES: TSH SUPPRESSION

- TSH suppressive therapy is now suggested only in those with evidence of possible persistent cancer, based on continued detectable thyroglobulin levels or possible abnormal thyroid tissue in the thyroid bed or abnormal lymph nodes.

- The second major difference is that complete suppression (undetectable TSH) is no longer recommended. In fact, the current guidelines do not provide target TSH ranges for any patients, but simply state that TSH should be maintained "below" or "within" the reference range.

Table 9. Response Criteria After Initial Therapy Based on Type of Intervention

Response to therapy	*Post total thyroidectomy and/or neck dissection with RAI ablation or therapy*	*Post total thyroidectomy and/or neck dissection without RAI ablation*	*Post hemithyroidectomy*	*TSH goal*
Excellent	Nonstimulated Tg <0.2 or stimulated Tg <1 and negative imaging	Nonstimulated Tg <2.5	Normal or low-risk nodules in the contralateral lobe, or contralateral lobe nodules with benign biopsy AND no abnormal lymph nodes on imaging	TSH within normal reference range
Indeterminate	Nonspecific findings on imaging studies or nonstimulated Tg 0.2–1 or stimulated Tg 1–10 or stable/ declining TgAb levels	Nonspecific findings on imaging studies or nonstimulated Tg 2.5–5, or stable/ declining TgAb levels	N/A[a]	TSH within normal reference range[b]
Biochemically incomplete	Non-stimulated Tg >1 or stimulated Tg >10 or increasing TgAb levels and negative imaging	Nonstimulated Tg >5 or increasing TgAb levels and negative imaging	N/A[a]	TSH below normal reference range[c]
Structurally incomplete	Structural evidence of disease (suspicious imaging or biopsy proven local or distant metastatic disease)	Structural evidence of disease (suspicious imaging or biopsy proven local or distant metastatic disease)	Structural evidence of disease (suspicious imaging or biopsy proven local or distant metastatic disease)	TSH below normal reference range[c]

CAN MONITORING BE DE-ESCALATED OR DISCONTINUED IN PATIENTS WITH LOW-RISK DTC?

RECOMMENDATION48:

A. For patients with low-risk DTC treated with total thyroidectomy and RAI and a sustained excellent response 5–8 years after initial therapy,

routine ultrasound can be discontinued, and

patients can be followed subsequently with biochemical markers alone every 1–2 years.

(Conditional recommendation, Low certainty of evidence)

B. Patients with low-risk DTC treated with total thyroidectomy and RAI and sustained excellent response for 10–15 years

do not require continued routine biochemical monitoring for thyroid cancer and should be considered to have achieved a **complete remission**.

(Good Practice Statement)

CAN MONITORING BE DE-ESCALATED OR DISCONTINUED IN PATIENTS WITH LOW-RISK DTC?

RECOMMENDATION 48:

E. For patients with low-risk DTC treated with lobectomy, if initial ultrasound is negative:
subsequent ultrasounds should be performed every 1–3 years for 5–8 years after initial therapy.

- Nodules in the residual lobe should be monitored as per ATA thyroid nodule guidelines.

(Good Practice Statement)

F. For patients with low-risk DTC treated with lobectomy, if postoperative Tg is not markedly elevated:
additional Tg testing is not recommended routinely.

(Good Practice Statement)

TABLE 11. LOW-RISK DTC WITH EXCELLENT RESPONSE TO THERAPY DE-ESCALATION RECOMMENDATIONS

Treatment and response to therapy	*Unstimulated thyroglobulin*	*TSH*	*Suggested frequency of neck ultrasound*
Hemithyroidectomy	Once postoperatively (see **Recommendation 48**)	Normal	[a]Every 1–3 years for 5–8 years
Total thyroidectomy, no RAI Excellent response	<2.5 ng/mL with undetectable TgAb	Normal	Every 1–3 years for 5–8 years, then discontinue unless Tg level rises or TgAb becomes newly detectable
Total thyroidectomy + RAI Excellent response	<0.2 ng/mL with undetectable TgAb	Normal	Every 1–3 years for 5–8 years and then discontinue unless Tg level rises or TgAb becomes newly detectable

- **What are the appropriate features of long-term management of patients with DTC?**

The primary goals of DATA framework:

- monitoring for possible clinical recurrence in patients thought to be free of disease
- identifying progression in patients with suspected or diagnosed residual thyroid cancer

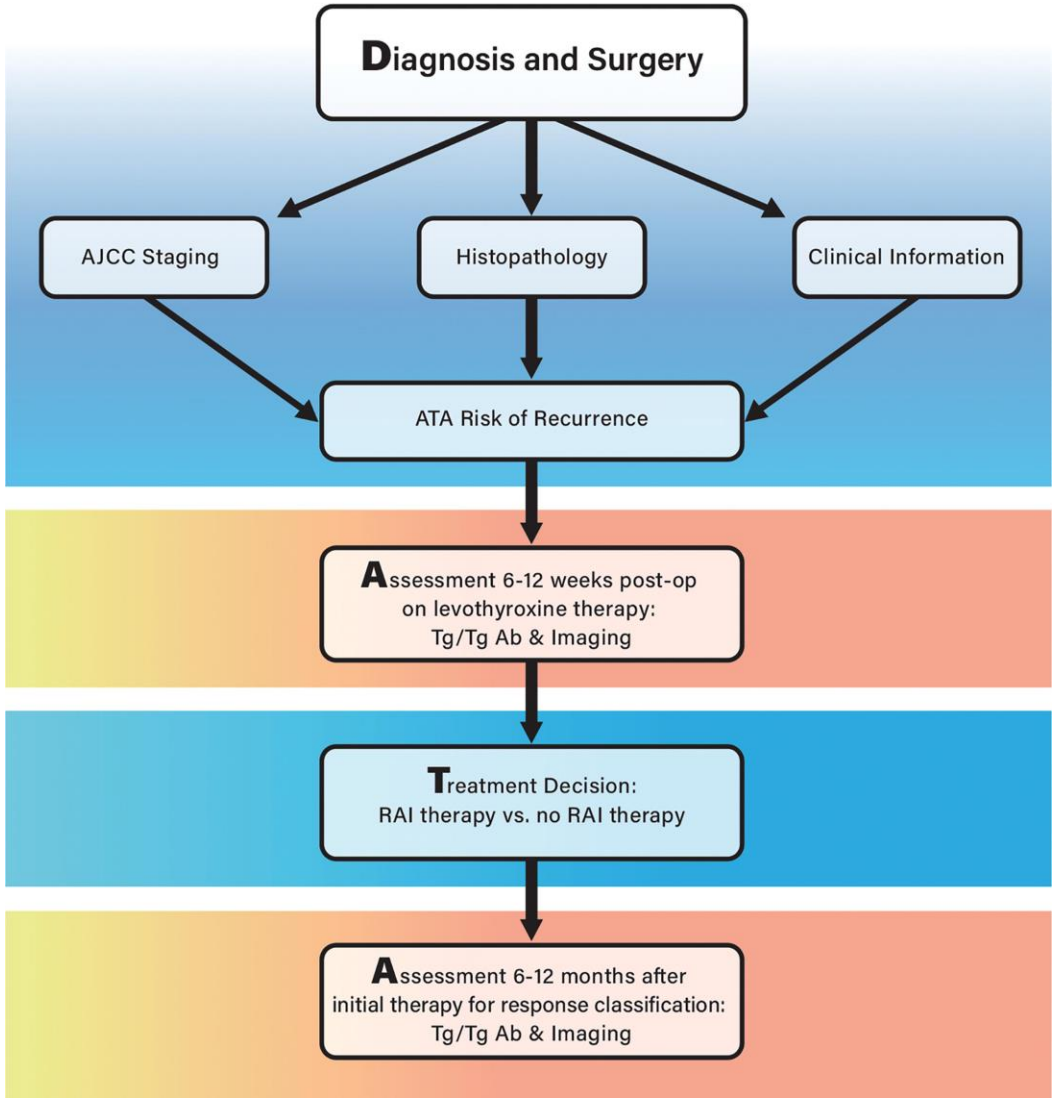
Tests with high specificity allow for the identification of patients unlikely to experience disease recurrence so that less aggressive management strategies that are safer and more cost effective can be pursued.

De-escalation of monitoring based on low rates of clinical recurrence is possible for low-risk patients many years after initial therapy when they have a persistent excellent response.

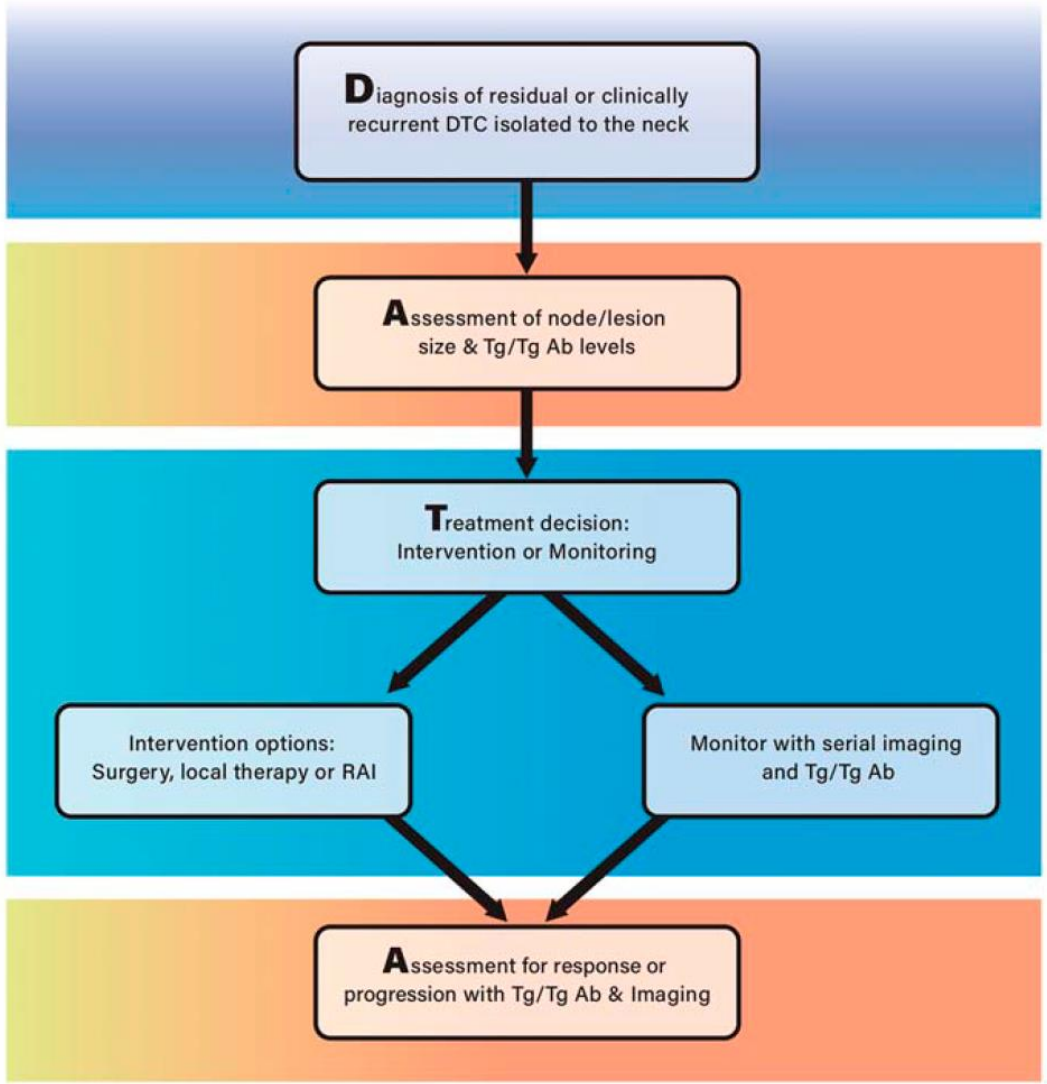
Those patients with a higher risk of recurrence should be monitored more closely, since early detection of recurrent disease offers the best opportunity to achieve an excellent response.

A **shared decision-making** model should be pursued in consultation with the patient and consideration of side effects as well as financial implications.

DATA Framework for Initial Therapy



DATA Framework for Persistent/Recurrent Disease

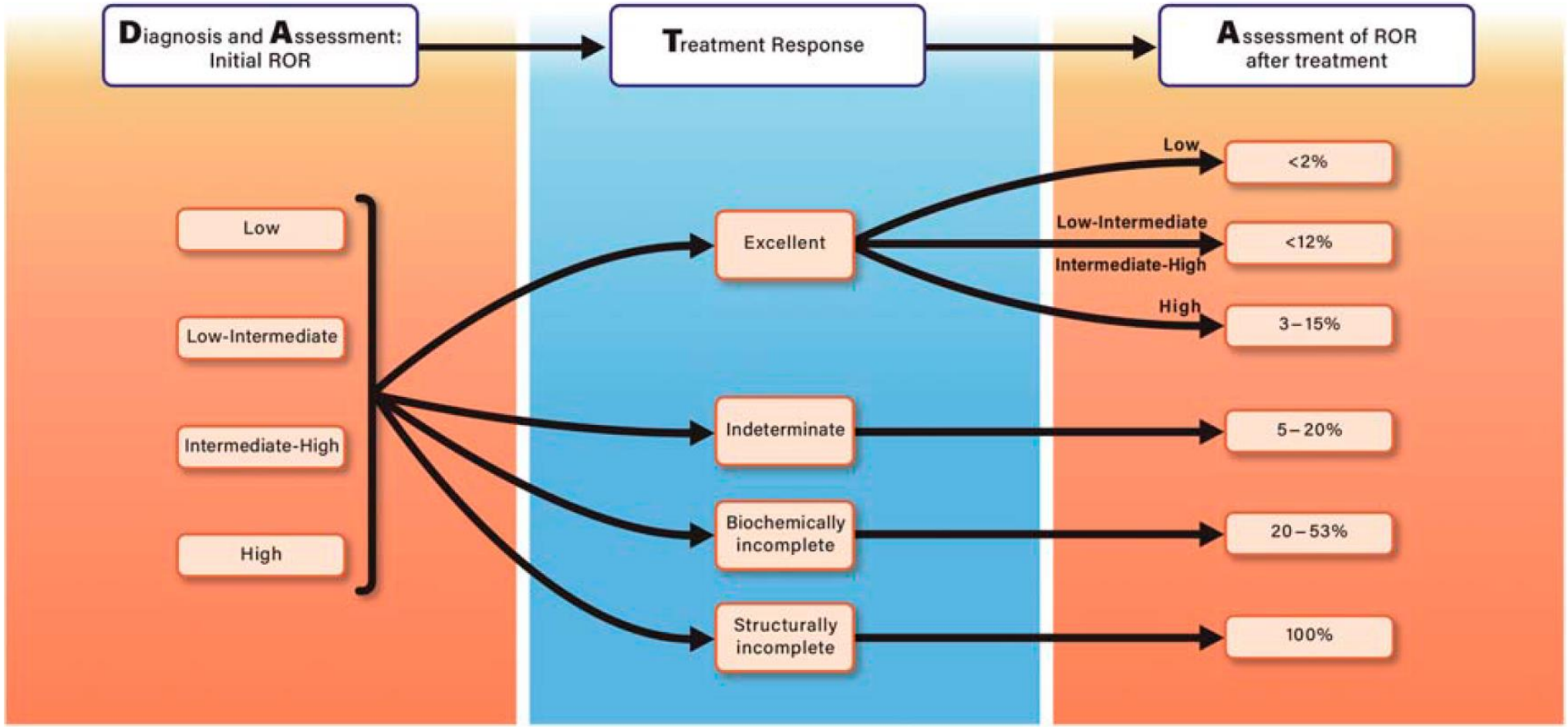


ONGOING RISK STRATIFICATION (RESPONSE TO THERAPY

RECOMMENDATION 51:

Ongoing risk stratification (dynamic risk assessment), when used in combination with the initial risk of recurrence, allows the clinician to provide individualized management recommendations while risk estimates evolve over time and should be used to inform timing and type of imaging. (Good Practice Statement)

Dynamic Risk Stratification



What is the role of RAI after thyroidectomy in the primary management of DTC?

Thank you for your attention