

UCCH Universitäres Cancer Center Hamburg

UCCSH Universitäres Cancer Center Schleswig-Holstein

UCCH / UCCSH Pathway

Guideline

Thyroid Carcinoma

Version Feb/2023

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Version 06, Feb/2023

according to TNM classification 8th edition

Thyroid Carcinoma board members

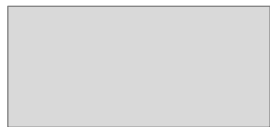
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Implemented	Sep/2013
Revised	Sep/2015, Mar/2018, July 2020, Mar/2023
Next planned review	Mar/2025

Legend of Colours



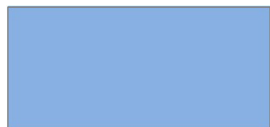
= Therapeutic procedure



= Clinical or diagnostic condition



= Diagnostic procedure



= Clinical trial



= Supportive measure



= Referral



= Tumorboard (including post tumorboard interaction with patient that follows the principles of shared decision-making)

Workup

Baseline:

- History and physical exam
- Clinical evaluation (high risk nodule, growing previously identified cold / indifferent thyroid nodule)
- Lab exam (incl. TSH, fT3, fT4)
- Serum calcium and calcitonin
- Ultrasound thyroid and neck, classified by TIRADS criteria
- Tc-99m-pertechnetate scintigraphy
- Vocal cord mobility (in case of planned resection)
- FNA: Obligatory in case of
 - Suspicious thyroid nodule,
 - Enlarged neck lymphnode(s)
 - Large, rapidly or invasive growing tumor
- Biopsy: In case of indeterminate FNA result, especially
 - Large or locally invasive potentially unresectable tumor
 - Suspected lymphoma
 - Lymphnode enlargement without known primary (CUP)
 - Or instead of FNH in case of suspicious thyroid nodule
- Variable: Tc-99m-MIBI scintigraphy¹

Additional workup for MTC:

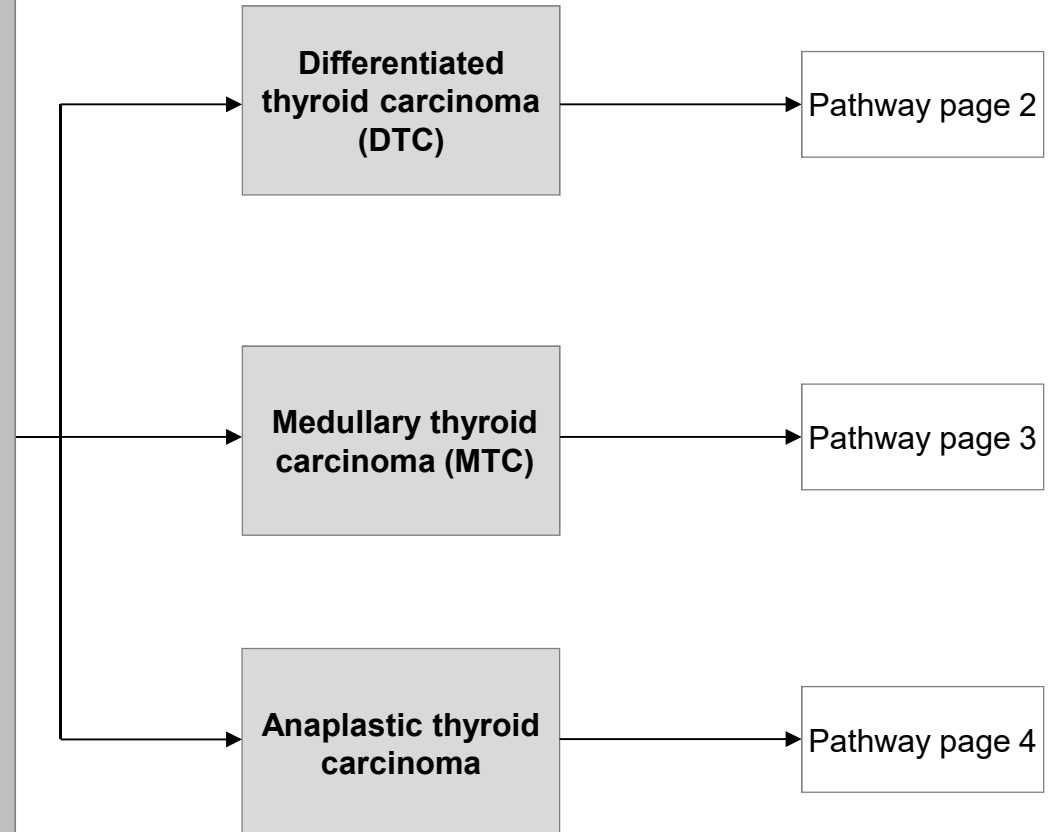
- Family history
- Basal calcitonine and CEA
- Pheochromocytoma screening
- Genetic screening for RET protooncogene mutations after histological confirmation (including family in case of identified mutation)
- CT chest and neck, 3-phase contrast liver CT or primovist liver MRI in case of N1 or calcitonin > 400 pg/ml

Additional workup for anaplastic carcinoma:

- Head, neck, chest, abdomen and pelvis CT
- Alternatively: PET-CT and bone scan

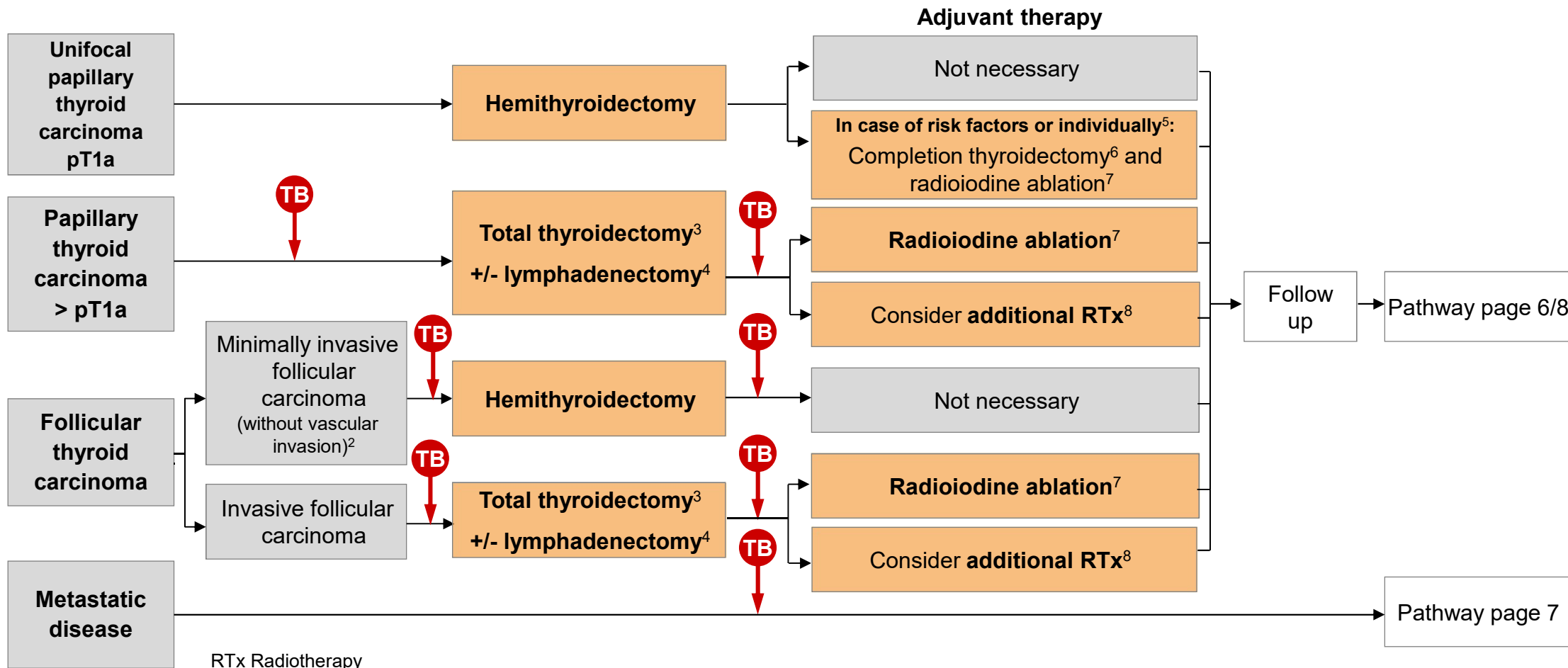
Supportive:

- Offer contact to self help group
- Offer psychooncological support



¹ MIBI scintigraphy is not routinely applied (only in case of cold or indifferent nodules of at least 1 cm diameter or technically difficult or inconclusive biopsy, unrepresentative cytology or vessel related lymphnodes the individual application might be considered)

Pathway page 2: Differentiated thyroid carcinomas



² In case of histopathological evidence for vascular invasion completion thyroidectomy and postoperative radioiodine therapy are recommended.

³ Surgical clearance of grossly invasive DTC including clearance of aerodigestive tract should be attempted if certain preconditions are met (e.g. physical condition, absence of distant metastases, surgical expertise, resectable tumor).

⁴ Indications for lymphadenectomy see pathway page 5

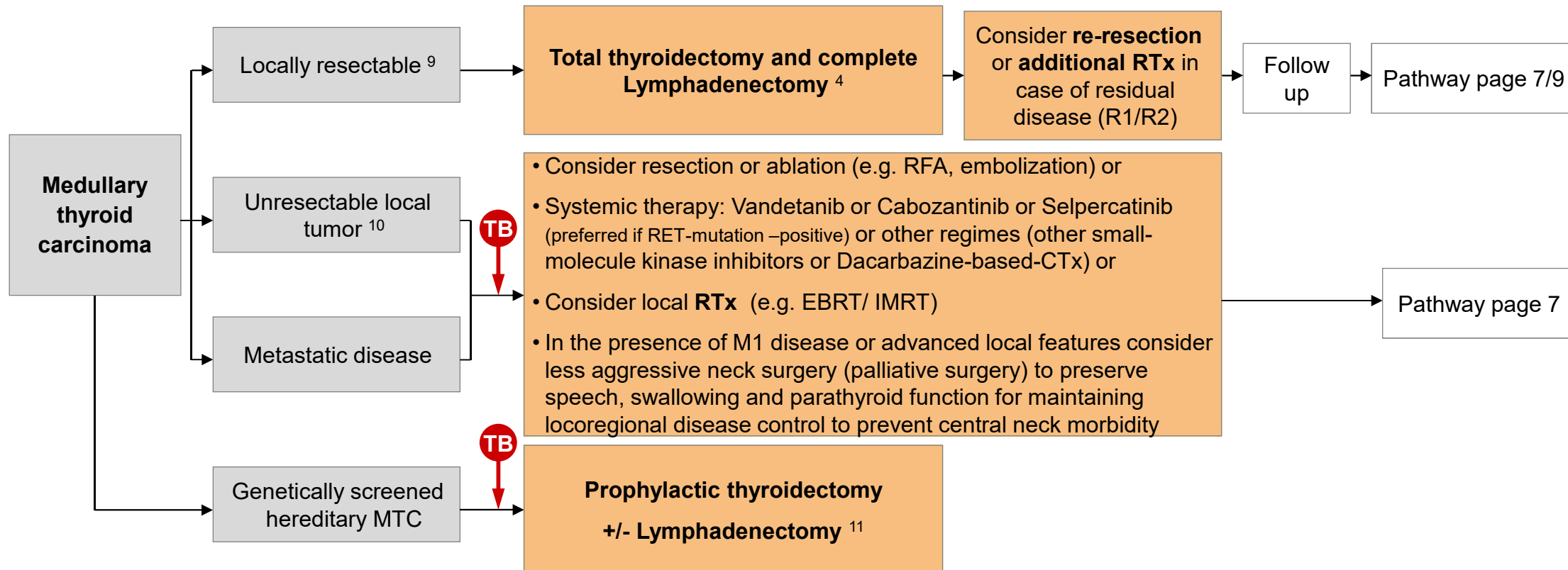
⁵ Histological variants of PTC, prior radiation therapy of the neck, BRAF+, diameter between 7 and 10 mm, multifocal disease, proximity to the thyroid capsule, angioinvasion

⁶ Completion of thyroidectomy has to be performed within four days or more than three months after the initial operation

⁷ Radioiodine ablation of thyroid remnant, standard activity or dose depending on the iodine uptake of remnant

⁸ Consider additional RTx in case of residual disease (R1/R2 despite re-resection) with inadequate radioiodine uptake or locally advanced disease (pT4 N1)

Pathway page 3: Medullary thyroid carcinoma (MTC)



RTx Radiotherapy, RFA Radiofrequency ablation, EBRT external beam radiation therapy, IMRT intensity-modulated radiation therapy

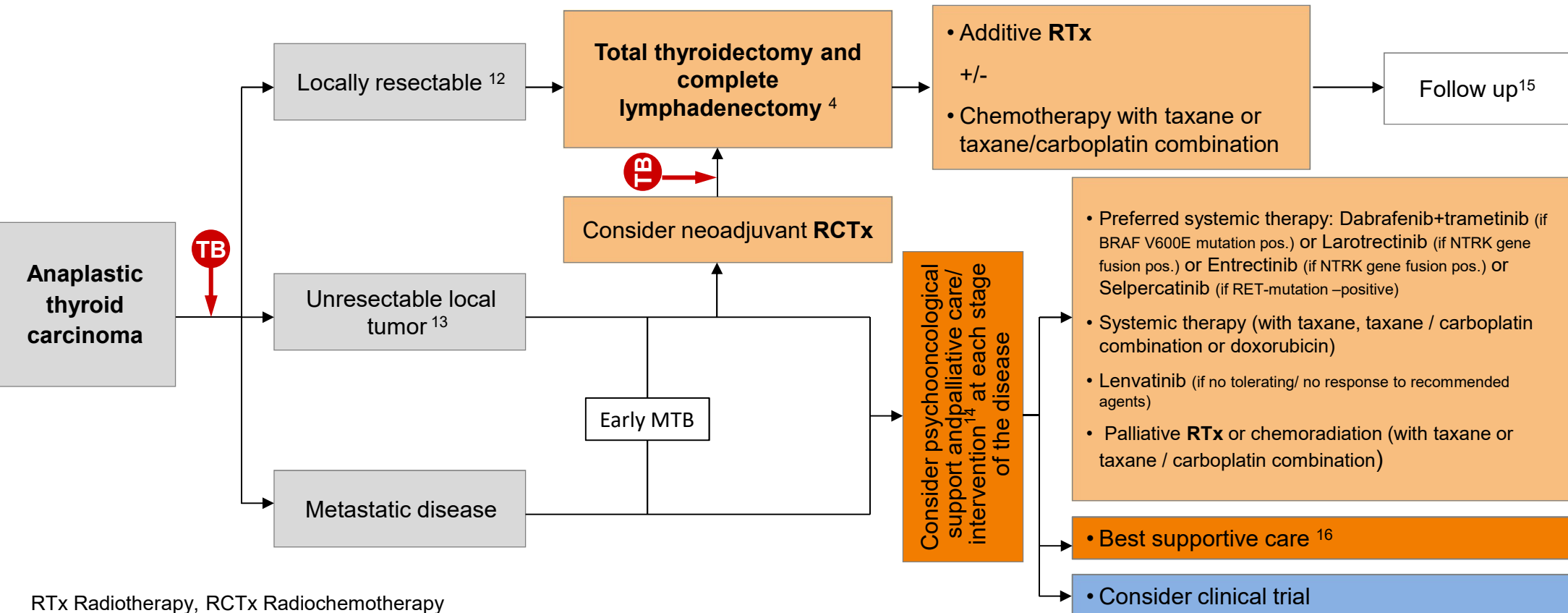
⁴ Indications for lymphadenectomy see pathway page 5

⁹ In case of extraorgan invasion an extended resection including clearance of aerodigestive tract might be necessary. In the absence of effective non-surgical therapies a risk adapted resection should be performed considering individual factors (e.g. age, general physical condition, absence of distant metastases) and extent of invasion. MTC with extrathyroideal invasion owes an increased risk of distant metastasis therefore grossly invasive resection must be well considered.

¹⁰ E.g. extensive tumorinvasion into surrounding structures, big cervical vessels (carotid artery, V. brachiocephalica sin.) or substernal space. Compare also resectable disease under 4.

¹¹ Age and extension of thyroidectomy / lymphadenectomy in genetically screened RET-positive MTC is dependent on the type of mutation and calcitonine serum concentration. In case of MEN 2b for example thyroidectomy should be performed in early childhood.

Pathway page 4: Anaplastic thyroid carcinoma



RTx Radiotherapy, RCTx Radiochemotherapy

⁴ Indications for lymphadenectomy see pathway page 5

¹² Without invasion into other local structures (big vessels, substernal space). Cervicovisceral resection (e.g. clearance of aerodigestive invasion) is only exceptionally performed. If extrathyroidal invasion is present and a grossly negative margin (R0/R1 resection) can be achieved, surgical resection should be considered. The aggressiveness of resection should be assessed in the context of morbidities resulting from resection of adjacent structures. Palliative debulking is not recommended.

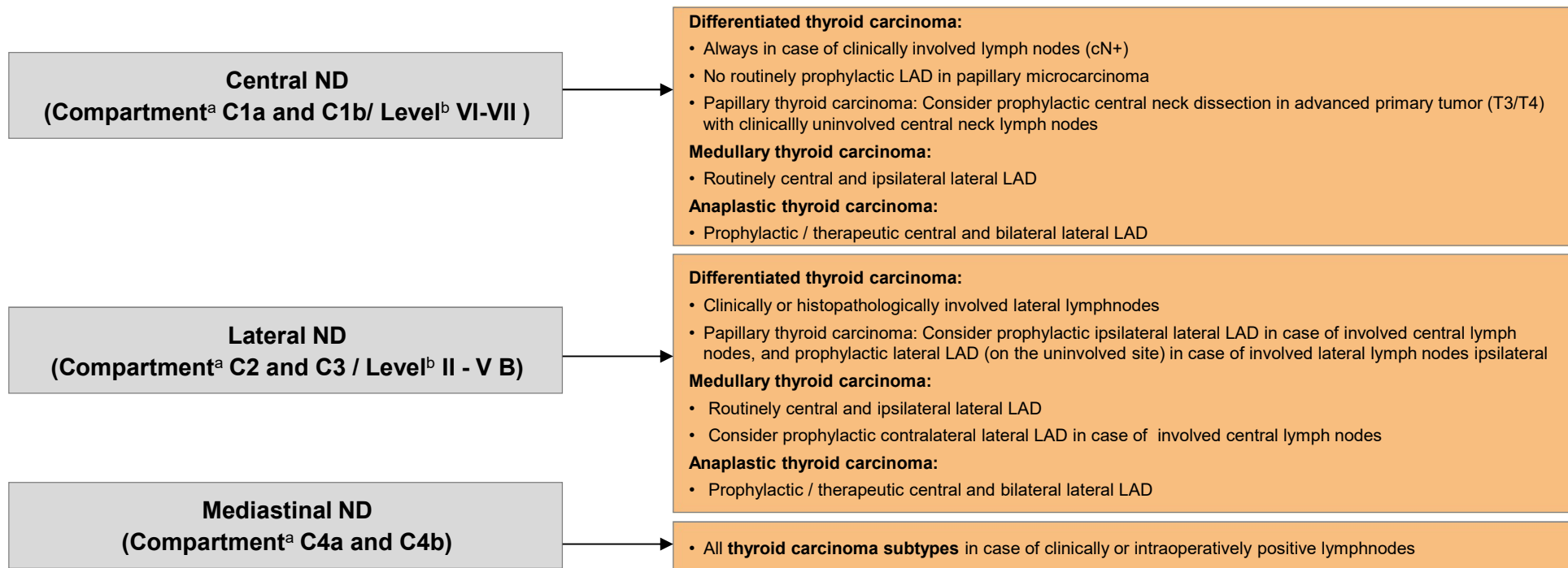
¹³ Tumor invasion into the aerodigestive tract or into local structures (carotid artery, substernal space). Compare also resectable disease under¹¹

¹⁴ See palliative care screening tool on page 11

¹⁵ Long term Follow up pathway page 9

¹⁶ Tracheostomy to avoid asphyxia, consider nutrition counseling, psychological counseling, treatment of tumor associated pain according to WHO pain relief ladder

Pathway page 5: Indications for Lymphadenectomy (LAD) / Neck dissection (ND) in curative intended setting (no distant metastases)



^a Compartment Classification
(according to Dralle et al., 1994)

- Central compartment: C1a (cervicocentral right)
C1b (cervicocentral left)
- Lateral compartment: C2 (cervicolateral right)
C3 (cervicolateral left)
- Mediastinal compartment: C4a (upper infrabrachiocephal mediastinum right)
C4b (upper infrabrachiocephal mediastinum left)

^b American Head and Neck Society Classification
(according to Robbins et al., 2008)

- Level I: submandibular, submental
- Level IIA / IIB: Upper jugular
- Level III: Mid- jugular
- Level IV: Lower jugular
- Level VA/VB: Lateral jugular
- Level VI: Central
- Level VII: Lower central

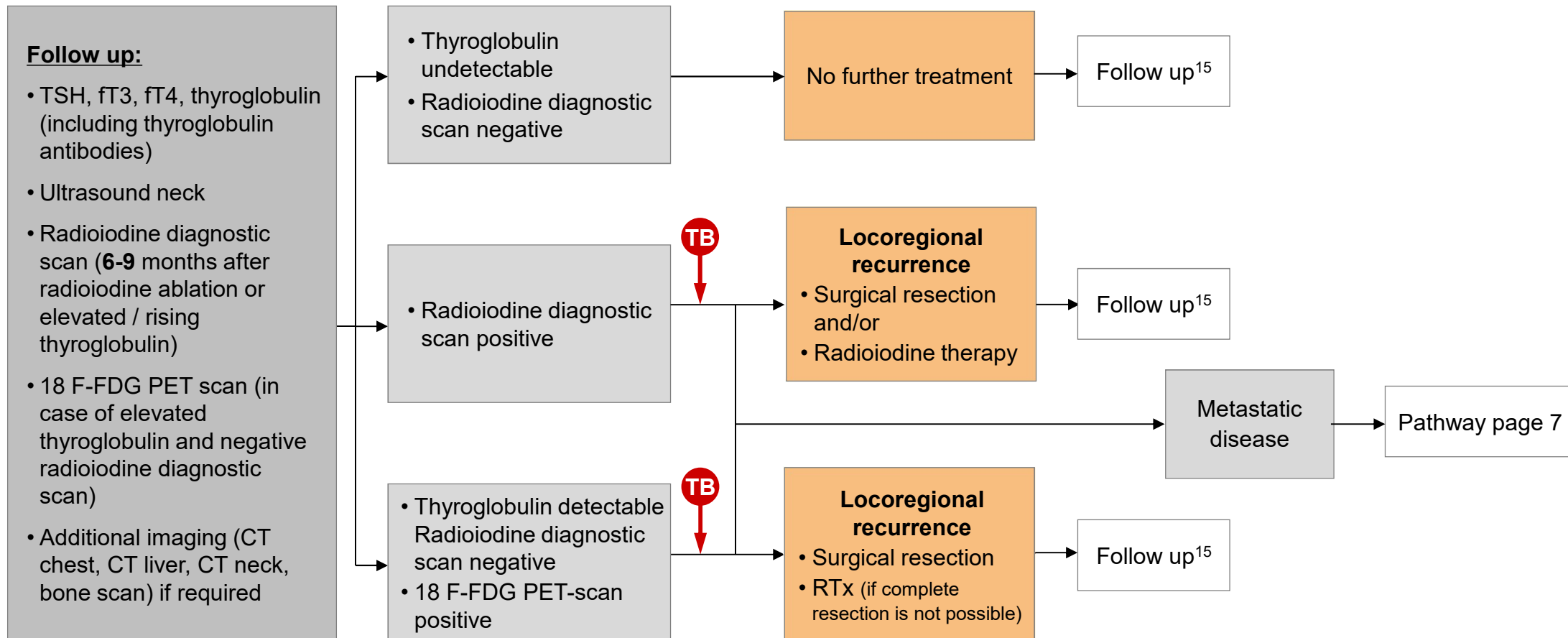
„Lateral neck dissection“ (Level II-VB)
cranial = M. digastricus backside
medial = Os hyoideum
caudal = clavicle
posterior = N. accessorius

„Central neck dissection“ (Level VI-VII)
paratracheal and pretracheal

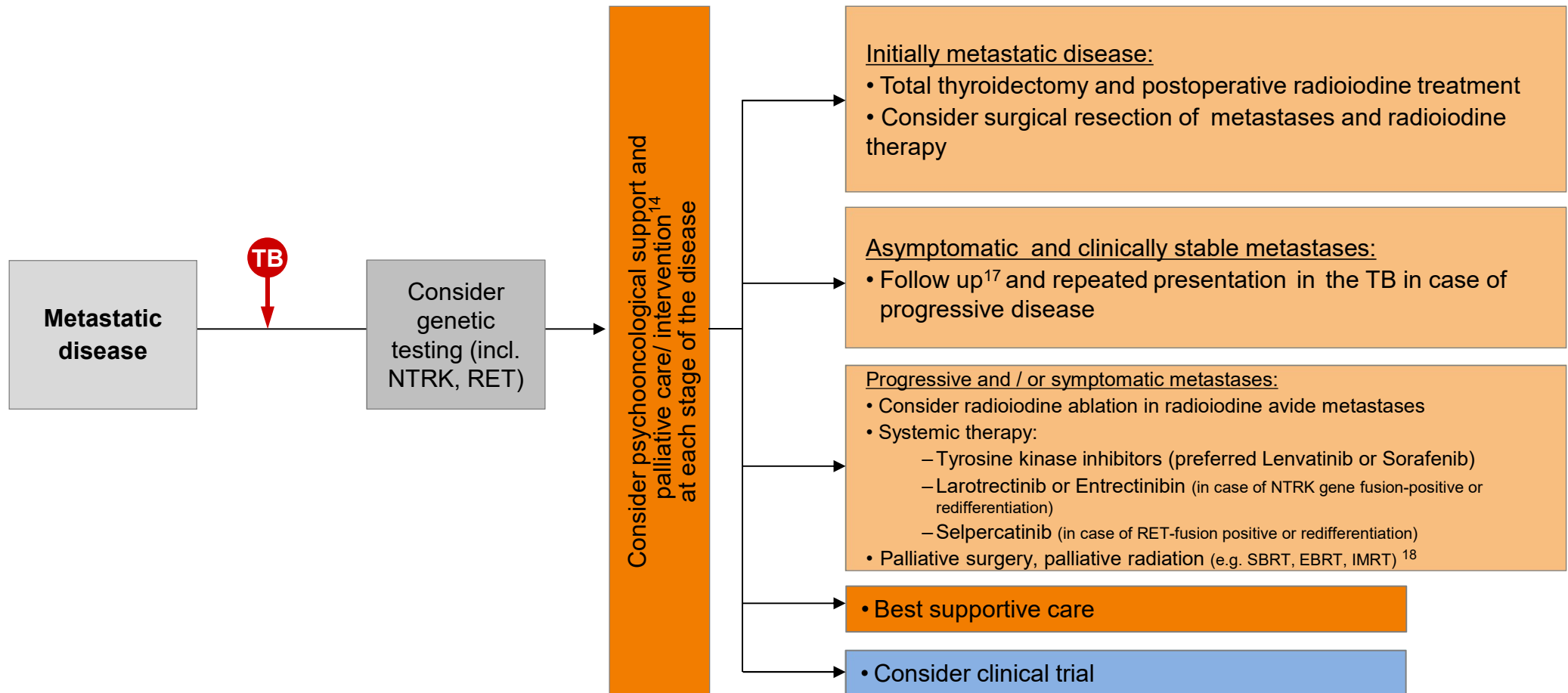
^a Dralle H, Damm I, Scheumann GFW et al. Compartment-oriented microdissection of regional lymph nodes in medullary thyroid carcinoma. Surg Today 1994; 24: 112 – 121

^b Robbins KT, Shaha AR, Medina JE et al. Consensus statement on the classification and terminology of neck dissection. Arch Otolaryngol Head Neck Surg 2008; 134: 536 – 538

Pathway page 6: Short term Follow up in differentiated thyroid carcinoma



Pathway page 7: Metastatic disease in differentiated thyroid carcinoma



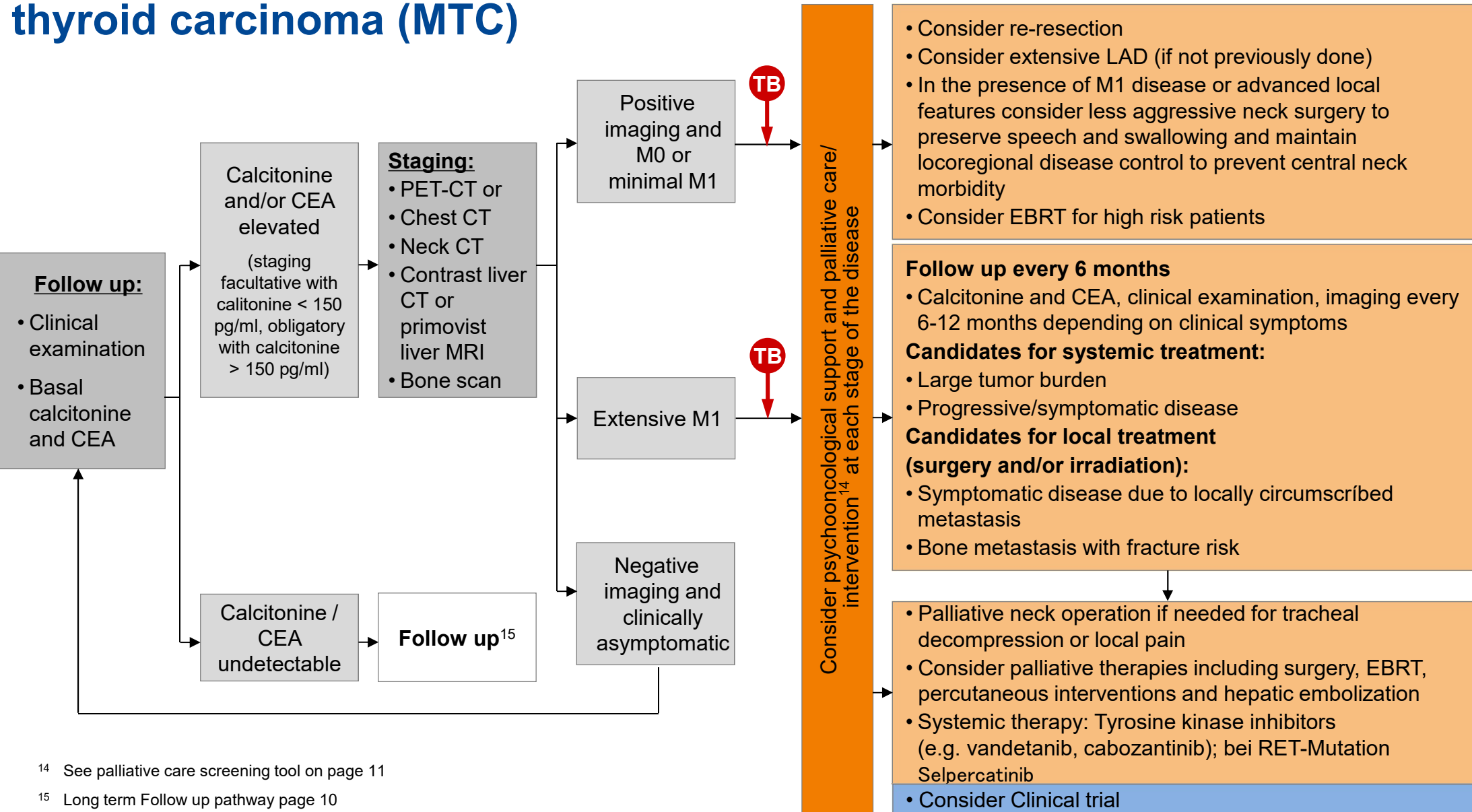
RTx Radiotherapy SBRT Stereotactic body radiotherapy, EBRT external beam radiation therapy, IMRT intensity-modulated radiation therapy

¹⁴ See palliative care screening tool on page 11

¹⁷ Lung metastatic disease is usually slowly progressive in differentiated thyroid carcinoma and patients can often be followed up with minimal evidence of radiographic or symptomatic progression. Systemic treatment should be administered in progressive /symptomatic disease

¹⁸ E.g. in locally circumscribed symptomatic or progressive metastases

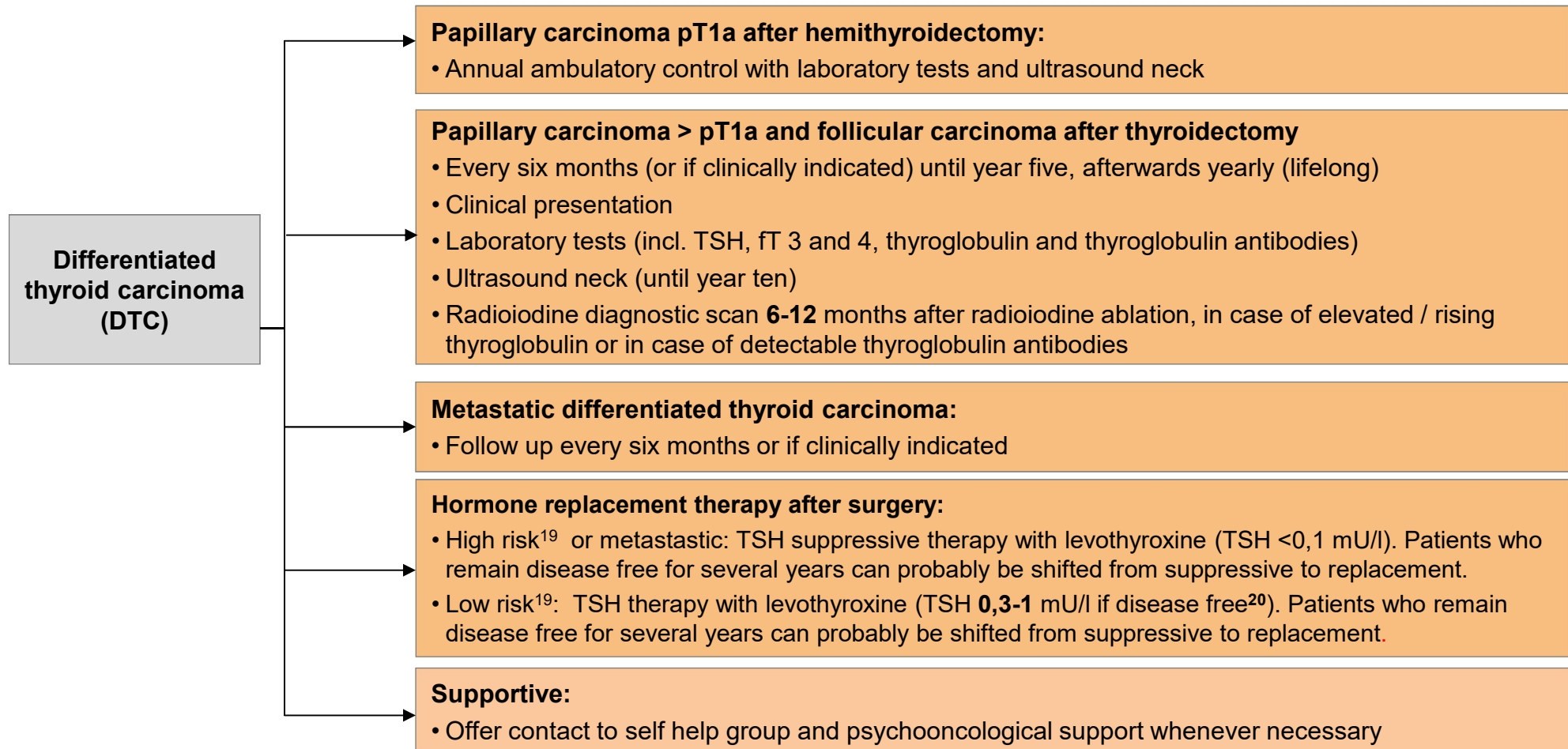
Pathway page 8: Short term Follow up and salvage therapy in medullary thyroid carcinoma (MTC)



¹⁴ See palliative care screening tool on page 11

¹⁵ Long term Follow up pathway page 10

Pathway page 9: Long term Follow up



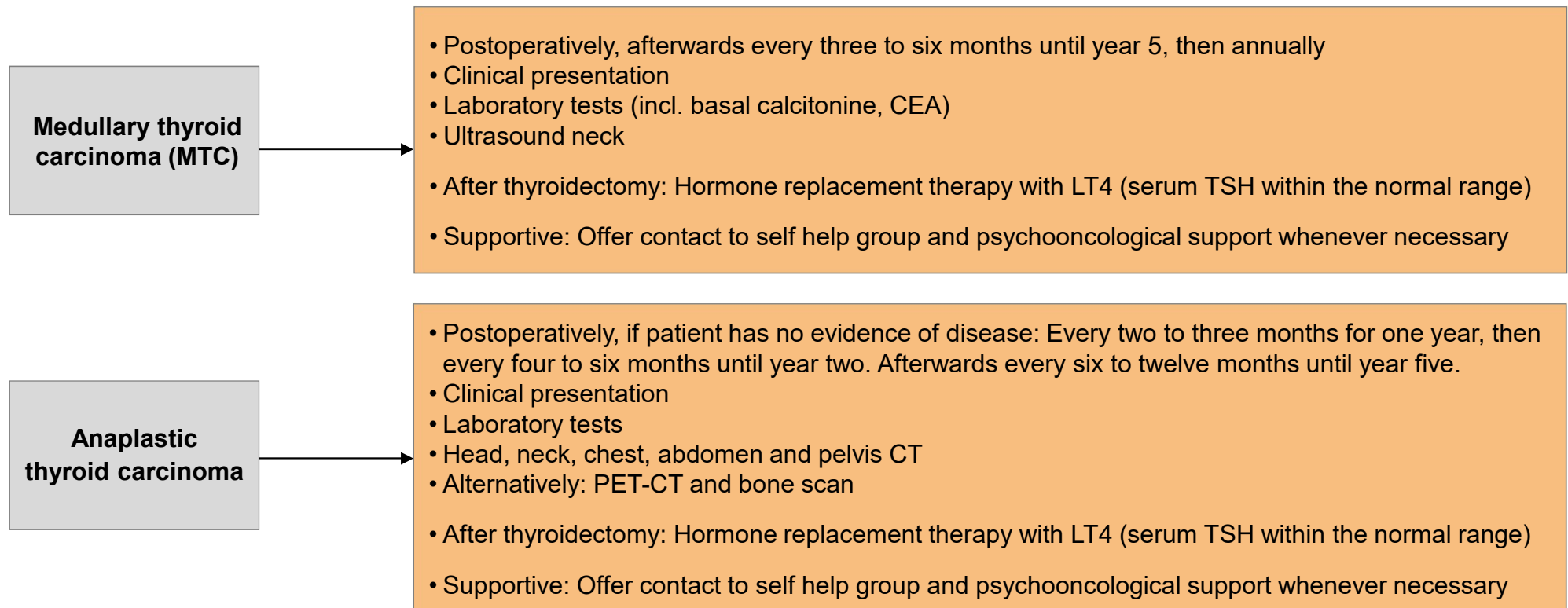
¹⁹ According to ETA and ATA risk classification:

Pacini F, Schlumberger M, Dralle H et al. European Thyroid Cancer Taskforce: European consensus for the management of patients with differentiated thyroid carcinoma of the follicular epithelium. Eur J Endocrinol 2006; 154: 787 -803.

American Thyroid Association (ATA) Guidelines Taskforce on Thyroid Nodules and Differentiated Thyroid Cancer: Cooper DS, Doherty GM, Haugen BR et al: Revised American Thyroid Association management guidelines for patients with thyroid cancer. Thyroid 2009; 19: 1167-1214.

²⁰ ATA guideline bis 2 mIU/l

Pathway page 10: Long term Follow up



Page 11: Palliative care screening tool

Screening items		Points
1.	• Presence of metastatic or locally advanced cancer	2
2.	• ECOG score (functional status score, performance status)	0-4
3.	• Presence of one or more serious complications of advanced cancer usually associated with a prognosis of < 12 months (e.g. brain metastases, hypercalcemia, delirium, spinal cord compression, cachexia)	1
4.	• Presence of one or more serious comorbid diseases also associated with poor prognosis (e.g. moderate-severe COPD or CHF, dementia, AIDS, end stage renal failure end stage liver cirrhosis)	1
5.	• Presence of palliative care problems	1
	a. • Symptoms uncontrolled by standard approaches	1
	b. • Moderate to severe distress in patient or family, related to cancer diagnosis or therapy (personal targets and expectations, educational and informational requirements, cultural factors)	1
	c. • Patient/family requests palliative care consult	1
	d. • Team needs assistance with complex decision making or determining goals of care (benefit/side effects of treatment)	1
	e. • Instable or deficient network especially for emergency situation or 24-h care	1

A total of > 5 points signalizes need for supportive palliative care