



Coding stage – TNM

Breast Cancer

Liesbet Van Eycken

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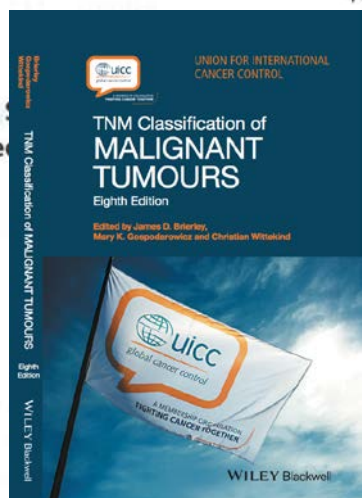
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(prim. cells)

Breast

- **Topography** C50, male and female
- **Histology:** All carcinomas
 - Excluded: phyllodes tumours, sarcoma, lymphoma
- **Histopathological grade:**
 - Nottingham histological score is recommended
- **Bilateral tumour:** 2 TNM's !
- **Read the 'notes' ...!**



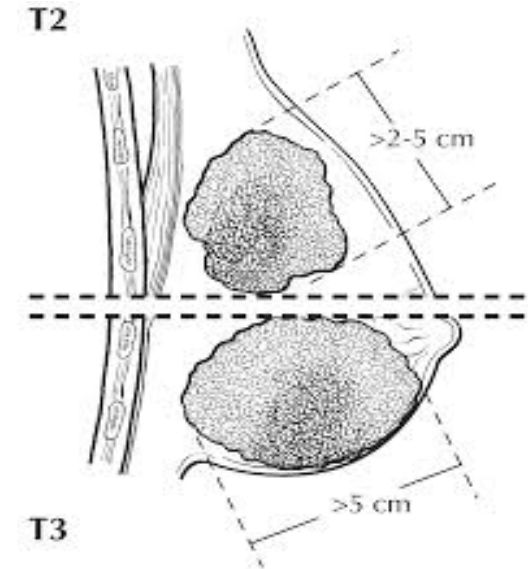
T-categories: size and extension

- TX
- T0
- Tis (DCIS) (LCIS) (PAGET)

- **T1** ≤ 2 cm
 - **T2** >2 cm, ≤ 5 cm
 - **T3** >5 cm
- T 1mi ≤ 0.1 cm
microinvasion
T 1a $> 0.1-0.5$ cm
T 1b > 0.5 cm– 1.0 cm
T 1c $> 1.0-2.0$ cm

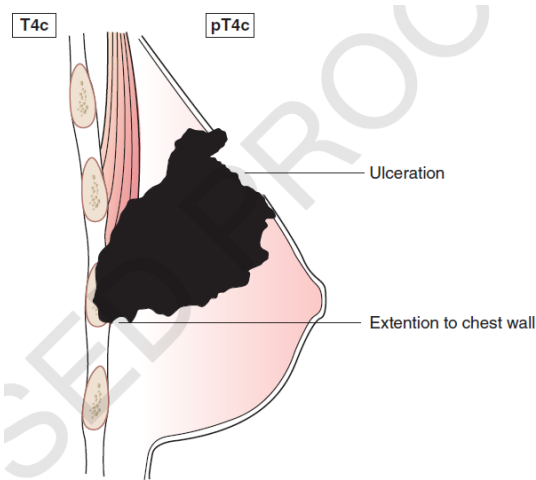
- **Multifocal tumour**

- Use the 'm' suffix (or number): e.g. T1b(m) or T1b(2)
- Take the dimension of the largest lesion
- Combination of invasive and in situ lesion= $>$ only the dimension of the invasive



T-categories: size and extension (2)

- **T4** involving chest wall and/or skin



T 4a Chest wall (ribs, intercostal muscles, m. serratus anterior, NOT m. pectoralis)

T 4b Skin ulceration, satellite skin nodules, skin oedema

T 4c Both T4a and T4b

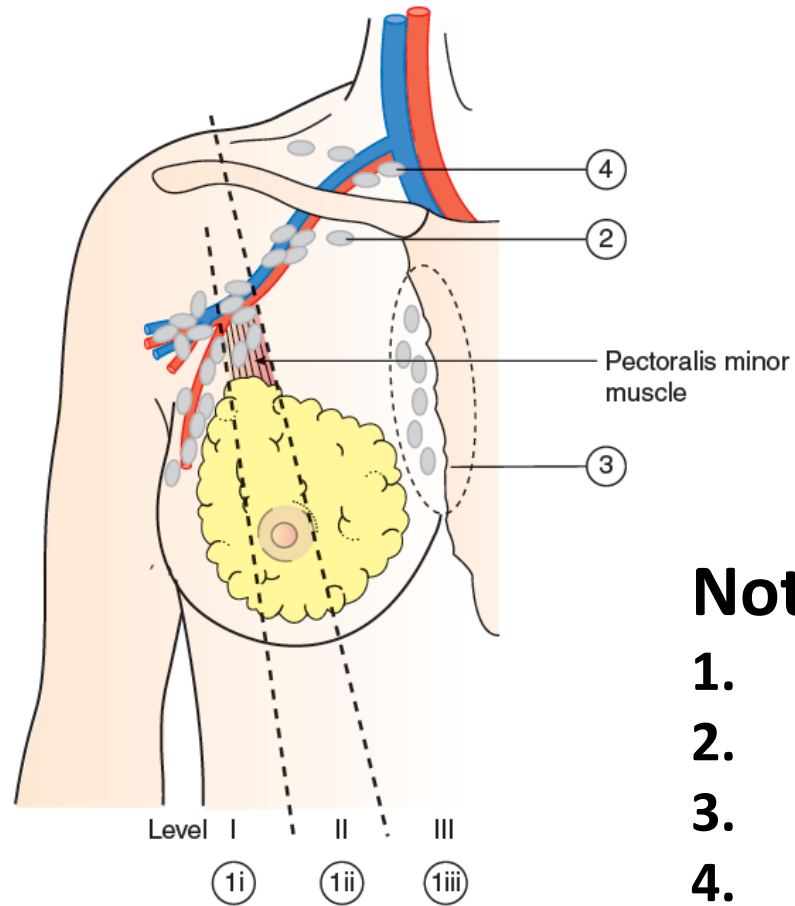
T 4d Inflammatory carcinoma

Notes:

- 1) Invasion of the dermis is not enough to qualify as T4
- 2) Dimpling of the skin, nipple retraction => does not affect the T-category
- 3) Clinically mastitis carcinomatosa (cT4d) but skin biopsy negative and no localized tumour => pTX.

Source of figure : Union for International Cancer Control - TNM Atlas Illustrated Guide to the TNM Classification of Malignant Tumours - Sixth Edition edited by Ch. Wittekind/h. Asamura/ L.H. Sobin – Published by Wiley Blackwell
Permission kindly granted by Wiley on 22/1/20

N-category values and principles (1)



The regional lymph nodes

1. *Axillary* (ipsilateral)
 - i) *Level I* (low-axilla)
 - (ii) *Level II* (mid-axilla)
 - (iii) *Level III* (apical axilla)
2. *Infraclavicular (subclavicular)* (ipsilateral).
3. *Internal mammary* (ipsilateral)
4. *Supraclavicular* (ipsilateral).

Note:

1. **cN is different from pN !**
2. **No pN if no resection of the primary tumour => use cN**
3. **Avoid cNX**
4. **pN: at least axillary lymph node level I, 6 nodes recommended**

N-category

cN

pN

Clinically detected!	N1	Movable axillary level I/II	pN1	Micrometastasis, 1–3 axillary nodes
			pN1mi	Micrometastasis > 0.2–2 mm
			pN1a	1–3 axillary nodes (at least one > 2 mm)
			pN1b	Internal mammary nodes Not clinically detected!
			pN1c	1–3 axillary nodes and internal
	N2a	Axillary, fixed or matted	pN2a	4–9 axillary nodes (at least one > 2 mm)
	N2b	Internal mammary nodes, clinically detected, ^d without axillary nodes	pN2b	Internal mammary nodes, <u>clinically</u> detected, without axillary nodes Clinically detected!
	N3a	Axillary level III, infraclavicular	pN3a	Axillary ipsilateral ≥ 10 (at least one > 2 mm), infraclavicular, level III lymph nodes
	N3b	Axillary and internal mammary	pN3b	Internal mammary nodes and axillary nodes, > 3 axillary nodes and in internal mammary nodes with microscopic or macroscopic metastasis detected by sentinel node biopsy but not clinically detected
	N3c	Supraclavicular lymph nodes	pN3c	Ipsilateral supraclavicular lymph nodes

pN: Macrometastasis versus Micrometastasis versus ITC

Macrometastasis pN1
>2.0mm

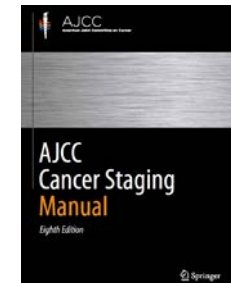
Micrometastasis pN1mi
>0.2mm and
≤2.0mm

ITC pN0(i+)
≤0.2mm

AJCC, Cancer Staging manual, 8th edition, Breast

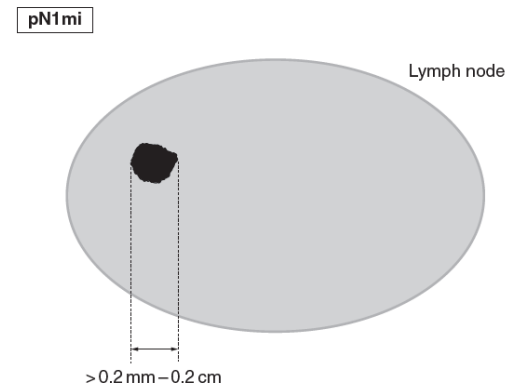
<https://cancerstaging.org/references-tools/deskreferences/Pages/Breast-Cancer-Staging.aspx>

Chapter breast cancer freely downloadable!



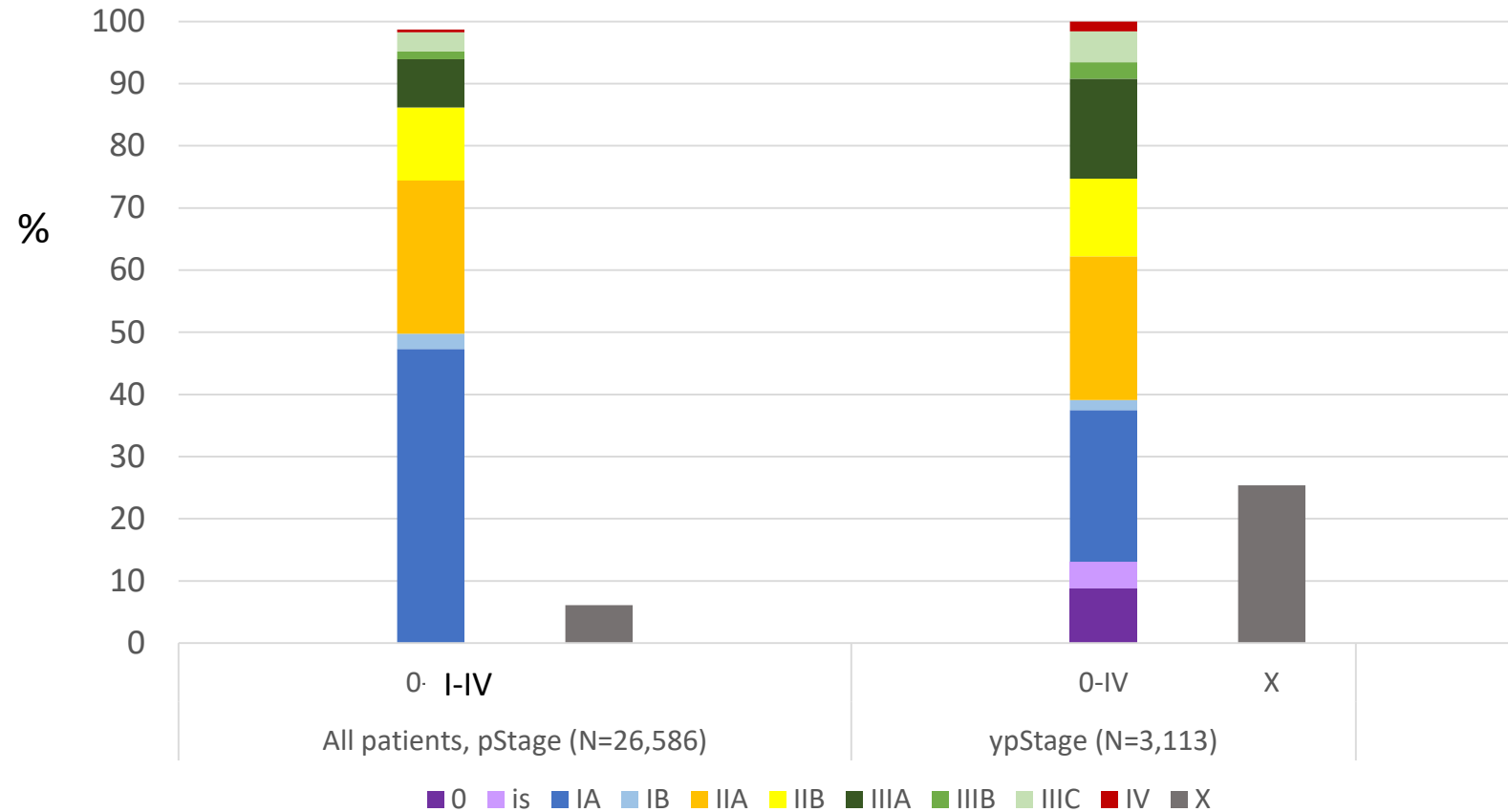
N-category

- **Micrometastasis in a lymph node** → pN1(mi) >**0.2mm** but none larger than **2.0 mm**
- **Isolated tumour cells** (<**0.2 mm** or <200 cells/cross-section): ITC's
 - IHC pos/neg (morphological technique) => **pN0(i+)** or **pN0(i-)**
 - Molecular technique => pN0 (mol+)
- **Sn: Sentinel node**
 - (p)NX(sn)
 - (p)N0(sn)
 - (p)N1(sn) : sentinel lymph node metastasis (at least one node >0.2 mm)
- **ypN = pN categories**



Belgium, 2012-2014, Breast Cancer

Distribution of (y)pStage

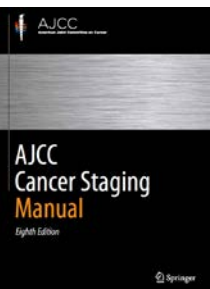
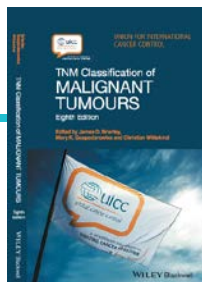


Use of the TNM after Neoadjuvant Therapy: **ypTNM**

- **y**: Patient treated with neoadjuvant therapy (before surgery)
- **Neoadjuvant therapy**: systemic therapy (chemotherapy, hormone therapy, immunotherapy) and/or radiotherapy, given before surgery.
 - E.g. also endocrine therapy combined with anti-Her2 therapy
- **ypTNM**: Histopathological examination of surgical resection after neoadjuvant therapy => 'response' to therapy
- **ypT/ypN** = pT/pN categories
- **ypT - ypN**
 - should be based on the measurement of the **largest contiguous focus** of residual invasive cancer, if any. Treatment associated fibrosis, scars is not taken into account.

TNM Breast cancer: UICC – AJCC

- General aim UICC and AJCC TNM: there should be as little difference as possible
- UICC effective as from 2017 – AJCC 2018: Note the edition used
- Identical in the definitions of the T, N and M categories
 - Exception: LCIS has been excluded in the AJCC 8th edition
- Tumour measurement: Rounding is different
- AJCC introduced 'prognostic groups', revised November 2017
 - T, N, M and ER, PR, Her-2, Grade => Prognostic group
 - Modification of pathologic prognostic stage possible with results of genomic profiles (not obligatory to be used)



Exercises

- Exercises breast cancer
- <https://create.kahoot.it/details/exercises-breast/313d31b3-9091-47ea-9570-0fdcdf9e08c4>

