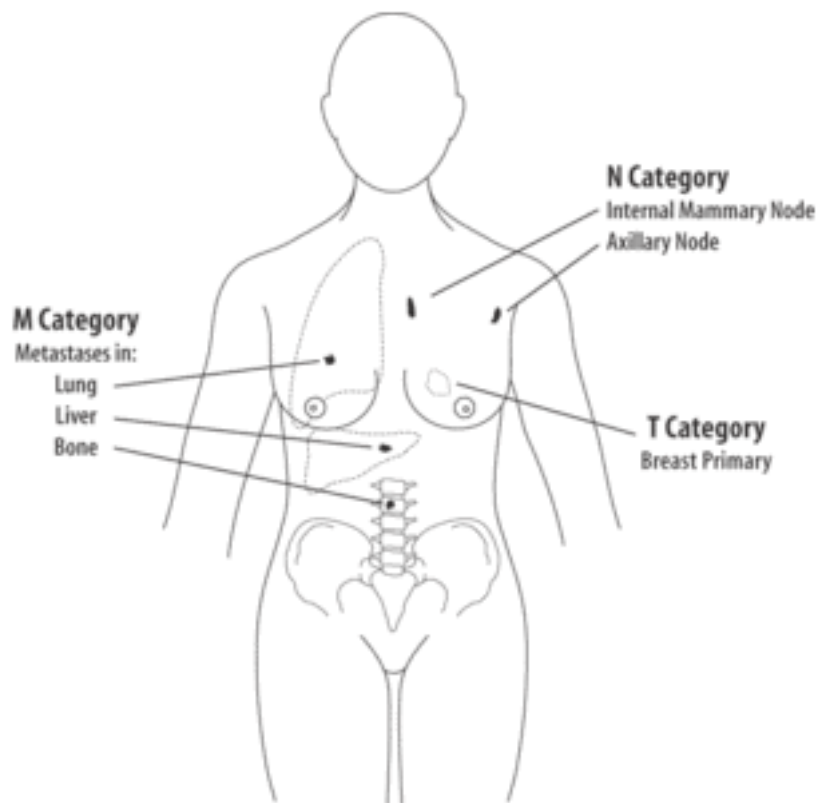




## HOW TO USE THE TNM CLASSIFICATION



### INTRODUCTION

The TNM Classification is an anatomically based system that records the primary and regional nodal extent of the tumor and the absence or presence of metastases.

Each individual aspect of TNM is termed a category (see figure).

- T category describes the primary tumor site,
- N category describes the regional lymph node involvement
- M category describes the presence or otherwise of distant metastatic spread. The definition of each category depends on the site and histology of the cancer and are described in detail in the Livre de Poche. In selecting the best treatment for patients, the use of the TNM system alone can generate a large number of different sub-categories. To simplify the description the categories can, therefore, be grouped together as an **anatomical stage classification** and given a Roman numeral stage (stage I, II, III, and IV). Occasionally prognostic factors other than the anatomical extent of disease are included to develop an **anatomical/prognostic group**



**classification**, where these factors are used, in addition to anatomic extent. By using the anatomically-based TNM classification the local, regional and distant extent of the cancer is described. The pretreatment extent of disease is determined clinically (TNM or cTNM), with information collected from examination, laboratory tests, imaging and biopsy. Additional information obtained from surgical excision and pathological examination of the entire primary tumor allows for a detailed post surgical pathologic TNM classification (pTNM). The TNM system thus allows classification according to two distinct systems, the clinical TNM and pathological TNM. In general TNM is used to determine initial treatment strategy, while pTNM is used to determine the requirement for post surgical adjuvant therapy and follow up.

## STAGING AT DIAGNOSIS

Patients should have the clinical stage determined before any treatment commences. By staging at diagnosis the validity of epidemiological analysis, analysis of treatment outcomes and proper healthcare planning is ensured.

If neoadjuvant therapy is given prior to surgical resection, the cTNM or pTNM category is identified by a y prefix. The ycTNM or ypTNM categorizes the extent of tumor actually present at the time of that examination. The ypTNM considers only viable tumour cells and not signs of regressed tumour tissue such as scars, fibrotic areas, mucin lakes etc.

## ADDITIONAL DESCRIPTORS

In addition to c and p to designate clinical or pathological stage further information can be used by the use of optional descriptors some of which are described below

### X

The recording of stage at diagnosis can sometimes be difficult if clinical examination and results of investigations have not been performed or recorded before the start of therapy, in which case X can be used (i.e., TX or NX). X is used to record the category when T, N cannot be assessed. The cMX category is considered to be inappropriate as clinical assessment of metastasis can be based on physical examination alone.

### y

If patients receive neoadjuvant therapy prior to surgery or radiotherapy the TNM may not be same as if no neoadjuvant treatment was given. To overcome this problem the additional descriptor y can be used as a prefix to indicate the extent of disease at the time of assessment even if multimodality therapy has already commenced (i.e., yT1N0M0 means that the patient was staged following neoadjuvant treatment, and the anatomic extent of disease at that time was confined to the primary site, and of a size commensurate with the T1 category for that tumour type).

### R

The R classification (RX, R0, R1, R2) may be used to describe the extent of residual disease after treatment usually after surgical resection

### r

The additional descriptor r describes the extent of disease at time of recurrence (e.g. rcT0,N1,M0).



### **i and sn**

Isolated tumour cells (ITC) are single tumour cells or small clusters of cells not more than 0.2 mm in greatest dimension that are usually detected by immunohistochemistry or molecular methods, but which may be verified with H&E stains. ITCs do not typically show evidence of metastatic activity or penetration of vascular or lymphatic sinus walls.

pN0(i+) No regional lymph node metastasis histologically, positive morphological findings for ITC  
pN0(mol+) No regional lymph node metastasis histologically, positive non-morphological findings for ITC

Cases with or examined for isolated tumour cells (ITC) in sentinel lymph nodes can be classified with the addition of (sn) suffix: pN0 (i+)(sn) No sentinel lymph node metastasis histologically, positive morphological findings for ITC

Additional and Optional Descriptors to TNM as defined by the UICC TNM Classification of Malignant Tumors and are listed in the Livre de Poche.

### **LEGEND TO FIGURE**

- An example of the use of T,N and M categories in a patient with breast cancer
- The T category describes the anatomical extent of the breast cancer in the breast
- The N category describes the regional lymph node involvement in this example to an axillary and internal mammary node
- The M category describes the presence of distant metastatic spread in this example to the lung, liver and bone.