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## 8th Edition of TNM for Lung Cancer

### Introductory Notes

The classification applies to carcinomas of the lung including non-small cell and small cell carcinomas, and bronchopulmonary carcinoid tumours.

Each site is described under the following headings:

- Rules for classification with the procedures for assessing T, N, and M categories; additional methods may be used when they enhance the accuracy of appraisal before treatment
- Anatomical subsites where appropriate
- Definition of the regional lymph nodes
- TNM clinical classification
- pTNM pathological classification
- Stage
- Prognostic factors grid

### Regional Lymph Nodes

The regional lymph nodes extend from the supraclavicular region to the diaphragm. Direct extension of the primary tumour into lymph nodes is classified as lymph node metastasis.

### Lung (ICD-O-3 C34)

#### Rules for Classification

The classification applies to carcinomas of the lung including non-small cell carcinomas, small cell carcinomas, and bronchopulmonary carcinoid tumours. It does not apply to sarcomas and other rare tumours.

*Changes in this edition from the seventh edition are based upon recommendations from the International Association for the Study of Lung Cancer (IASLC) Staging Project (see references).<sup>1-6</sup>*

There should be histological confirmation of the disease and division of cases by histological type.

The following are the procedures for assessing T, N, and M categories:

T categories	Physical examination, imaging, endoscopy, and/or surgical exploration
N categories	Physical examination, imaging, endoscopy, and/or surgical exploration
M categories	Physical examination, imaging, and/or surgical exploration

## Anatomical Subsites

1. Main bronchus (C34.0)
2. Upper lobe (C34.1)
3. Middle lobe (C34.2)
4. Lower lobe (C34.3)

## Regional Lymph Nodes

The regional lymph nodes are the intrathoracic nodes (mediastinal, hilar, lobar, interlobar, segmental, and subsegmental), scalene, and supraclavicular lymph nodes.

## TNM Clinical Classification

### T – Primary Tumour

- TX Primary tumour cannot be assessed, or tumour proven by the presence of malignant cells in sputum or bronchial washings but not visualized by imaging or bronchoscopy
- T0 No evidence of primary tumour
- Tis Carcinoma *in situ*<sup>a</sup>
- T1 Tumour 3 cm or less in greatest dimension, surrounded by lung or visceral pleura, without bronchoscopic evidence of invasion more proximal than the lobar bronchus (i.e., not in the main bronchus)<sup>b</sup>
- T1mi Minimally invasive adenocarcinoma<sup>c</sup>
- T1a Tumour 1 cm or less in greatest dimension<sup>b</sup>
- T1b Tumour more than 1 cm but not more than 2 cm in greatest dimension<sup>b</sup>
- T1c Tumour more than 2 cm but not more than 3 cm in greatest dimension<sup>b</sup>
- T2 Tumour more than 3 cm but not more than 5 cm; or tumour with *any* of the following features<sup>d</sup>
- Involves main bronchus regardless of distance to the carina, but without involvement of the carina

- Invades visceral pleura
- Associated with atelectasis or obstructive pneumonitis that extends to the hilar region either involving part of or the entire lung
- T2a Tumour more than 3 cm but not more than 4 cm in greatest dimension
- T2b Tumour more than 4 cm but not more than 5 cm in greatest dimension
- T3 Tumour more than 5 cm but not more than 7 cm in greatest dimension or one that directly invades any of the following: parietal pleura, chest wall (including superior sulcus tumours), phrenic nerve, parietal pericardium; or separate tumour nodule(s) in the same lobe as the primary
- T4 Tumour more than 7 cm or of any size that invades any of the following: diaphragm, mediastinum, heart, great vessels, trachea, recurrent laryngeal nerve, oesophagus, vertebral body, carina; separate tumour nodule(s) in a different ipsilateral lobe to that of the primary

### N – Regional Lymph Nodes

- NX Regional lymph nodes cannot be assessed
- N0 No regional lymph node metastasis
- N1 Metastasis in ipsilateral peribronchial and/or ipsilateral hilar lymph nodes and intrapulmonary nodes, including involvement by direct extension
- N2 Metastasis in ipsilateral mediastinal and/or subcarinal lymph node(s)
- N3 Metastasis in contralateral mediastinal, contralateral hilar, ipsilateral or contralateral scalene, or supraclavicular lymph node(s)

### M – Distant Metastasis

- M0 No distant metastasis
- M1 Distant metastasis
  - M1a Separate tumour nodule(s) in a contralateral lobe; tumour with pleural or pericardial nodules or malignant pleural or pericardial effusion<sup>e</sup>
  - M1b Single extrathoracic metastasis in a single organ<sup>f</sup>
  - M1c Multiple extrathoracic metastasis in a single or multiple organs

### Notes

<sup>a</sup> Tis includes adenocarcinoma *in situ* and squamous carcinoma *in situ*.

<sup>b</sup> The uncommon superficial spreading tumour of any size with its invasive component limited to the bronchial wall, which may extend proximal to the main bronchus, is also classified as T1a.

<sup>c</sup> Solitary adenocarcinoma (not more than 3 cm in greatest dimension), with a predominantly lepidic pattern and not more than 5 mm invasion in greatest dimension in any one focus.

<sup>d</sup> T2 tumours with these features are classified T2a if 4 cm or less, or if size cannot be determined and T2b if greater than 4 cm but not larger than 5 cm.

<sup>e</sup> Most pleural (pericardial) effusions with lung cancer are due to tumour. In a few patients,

however, multiple microscopic examinations of pleural (pericardial) fluid are negative for tumour, and the fluid is non-bloody and is not an exudate. Where these elements and clinical judgment dictate that the effusion is not related to the tumour, the effusion should be excluded as a staging descriptor.

<sup>f</sup>This includes involvement of a single non-regional node.

pTNM Pathological Classification

The pT and pN categories correspond to the T and N categories. For pM see page 59.

pN0 Histological examination of hilar and mediastinal lymphadenectomy specimen(s) will ordinarily include 6 or more lymph nodes/stations. Three of these nodes/stations should be mediastinal, including the subcarinal nodes and three from N1 nodes/stations. Labelling according to the IASLC chart and table of definitions given in the TNM Supplement is desirable. If all the lymph nodes examined are negative, but the number ordinarily examined is not met, classify as pN0.

Stage

Occult carcinoma	TX	N0	M0
Stage 0	Tis	N0	M0
Stage IA	T1	N0	M0
Stage IA1	T1mi	N0	M0
	T1a	N0	M0
Stage IA2	T1b	N0	M0
Stage IA3	T1c	N0	M0
Stage IB	T2a	N0	M0
Stage IIA	T2b	N0	M0
Stage IIB	T1a-c, T2a, b	N1	M0
	T3	N0	M0
Stage IIIA	T1a-c, T2a, b	N2	M0
	T3	N1	M0
	T4	N0, N1	M0
Stage IIIB	T1a-c, T2a, b	N3	M0
	T3, T4	N2	M0
Stage IIIC	T3, T4	N3	M0
Stage IV	Any T	Any N	M1
Stage IVA	Any T	Any N	M1a, M1b
Stage IVB	Any T	Any N	M1c