

## special report

# TNM Staging of Lung Cancer\*

## A Quick Reference Chart

Omar Lababede, MD; Moulay A. Meziane, MD; and  
Thomas W. Rice, MD, FCCP

**Lung cancer is the leading cause of cancer mortalities. TNM Staging, which has recently been revised, remains an important guide to treatment and prognosis of lung cancer. In this article, we propose a simple chart that can be used as a quick reference consolidating all the information necessary to obtain an accurate staging. (CHEST 1999; 115:233-235)**

**Key words:** lung neoplasm; neoplasm staging; reference chart

Lung cancer remains the most common cause of cancer deaths in men and women. Staging of lung cancer is critical in defining the anatomic extent of the disease at the time of diagnosis, since it is a guide to treatment and prognosis. A tool initially designed for thoracic surgeons, but used by oncologists, pulmonologists, and radiologists, TNM staging can be difficult to remember, because of the many

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variables to be considered. Recent refinements have made the task even more challenging, creating the need for a simple algorithm that could be easy to use and remember.

The TNM staging system for lung cancer provides a consistent reproducible description of the extent of anatomic involvement.<sup>1-4</sup> This is achieved by defining the characteristics of primary tumor (T), regional lymph node involvement (N), and metastasis (M) (Table 1).

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\*From the Department of Radiology (Drs. Lababede and Meziane), Department of Cardiothoracic Surgery (Dr. Rice), Cleveland Clinic Foundation, Cleveland, OH. Manuscript received January 29, 1998; revision accepted June 8, 1998.

Correspondence to: Moulay Meziane, MD, Head, Section of Thoracic Imaging, Department of Radiology, Cleveland Clinic Foundation—Hb6, 9500 Euclid Avenue, Cleveland, OH 44195

The chart (Fig 1) that we have designed lists the comparative characteristics of primary tumor in the vertical columns (including size, endobronchial location, local invasion, and other characteristics). The horizontal columns refer to the lymph node involvement. The different stages are color coded and can be found at the intersection of appropriately matched horizontal and vertical columns. Stages with unique characteristics such as stages 0 and IV are defined in separate boxes.

The most recently adopted revisions of TNM staging are reflected in our chart, which include the following: division of stage I into stages IA and IB; splitting of stage II into stage IIA and stage IIB; shifting of T3N0M0 from stage IIIA to stage IIB; and classification of multiple tumor nodules (T4 if the satellite nodule(s) are in the same lobe or M1 if the intrapulmonary ipsilateral nodule(s) are in the nonprimary tumor lobe(s)).<sup>1</sup>

### REFERENCES

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**Table 1—Revised TNM Staging System of Lung Cancer\***

Primary Tumor (T)

T0: No evidence of primary tumor

Tx: Tumor which cannot be assessed or is not apparent radiologically or bronchoscopically (malignant cells in bronchopulmonary secretions)

Tis: Carcinoma in situ

T1: Tumor with the following characteristics:

a- size:  $\leq$  3 cm.

b- airway location: in lobar bronchus or distal airways

c- local invasion: none, surrounded by lung or visceral pleura

T2: Tumor with any of the following characteristics:

a- size:  $>$  3 cm.

b- airway location: involvement of the main bronchus (distance to the carina is 2 cm or more) or presence of atelectasis or obstructive pneumonitis that extends to hilar region but doesn't involve the entire lung

c- local invasion: involvement of visceral pleura

T3: Tumor with the following location or invasion:

a- size: any

b- airway location: tumor in the main bronchus (within 2 cm to the carina), or tumor with atelectasis or obstructive pneumonitis of the entire lung

c- local invasion: invasion of chest wall (including superior sulcus tumors), diaphragm, mediastinal pleura, or parietal pericardium

T4: Tumor with the following location or invasion:

a- size: any

b- airway location: satellite tumor nodule(s) within the ipsilateral primary-tumor lobe of the lung

c- local invasion: invasion of mediastinum, heart, great vessels, trachea, esophagus, vertebral body, or carina; or presence of malignant pleural/pericardial effusion

Lymph Nodes (N)

Nx: Regional lymph nodes cannot be assessed

N0: Absence of regional lymph nodes involvement

N1: Presence of metastasis to ipsilateral peribronchial and/or ipsilateral hilar lymph nodes (including direct extension to intrapulmonary nodes)

N2: Presence of metastasis to ipsilateral mediastinal and/or subcarinal lymph nodes

N3: Presence of metastasis to any of the following lymph node groups: contralateral mediastinal, contralateral hilar, ipsilateral or contralateral scalene, or supraclavicular

Distant Metastasis (M)

Mx: Metastasis cannot be assessed

M0: Absence of distant metastasis

M1: Presence of distant metastasis (separate metastatic tumor nodule(s) in the ipsilateral nonprimary-tumor lobe(s) of the lung also are grouped as M1)

Stage Grouping—TNM Subsets

Stage 0 (TisN0M0)

Stage IA (T1N0M0)

Stage IB (T2N0M0)

Stage IIA (T1N1M0)

Stage IIB (T2N1M0, T3N0M0)

Stage IIIA (T3N1M0), (T(1–3)N2M0)

Stage IIIB (T4, Any N, M0) (Any T, N3M0)

Stage IV (Any T, Any N, M1)

\*Note: The uncommon superficial tumor of any size with its invasive component limited to bronchial wall is classified T1 even in the case of extension to main bronchus.

Revised from Mountain.<sup>1</sup>

# TNM STAGING OF LUNG CANCER

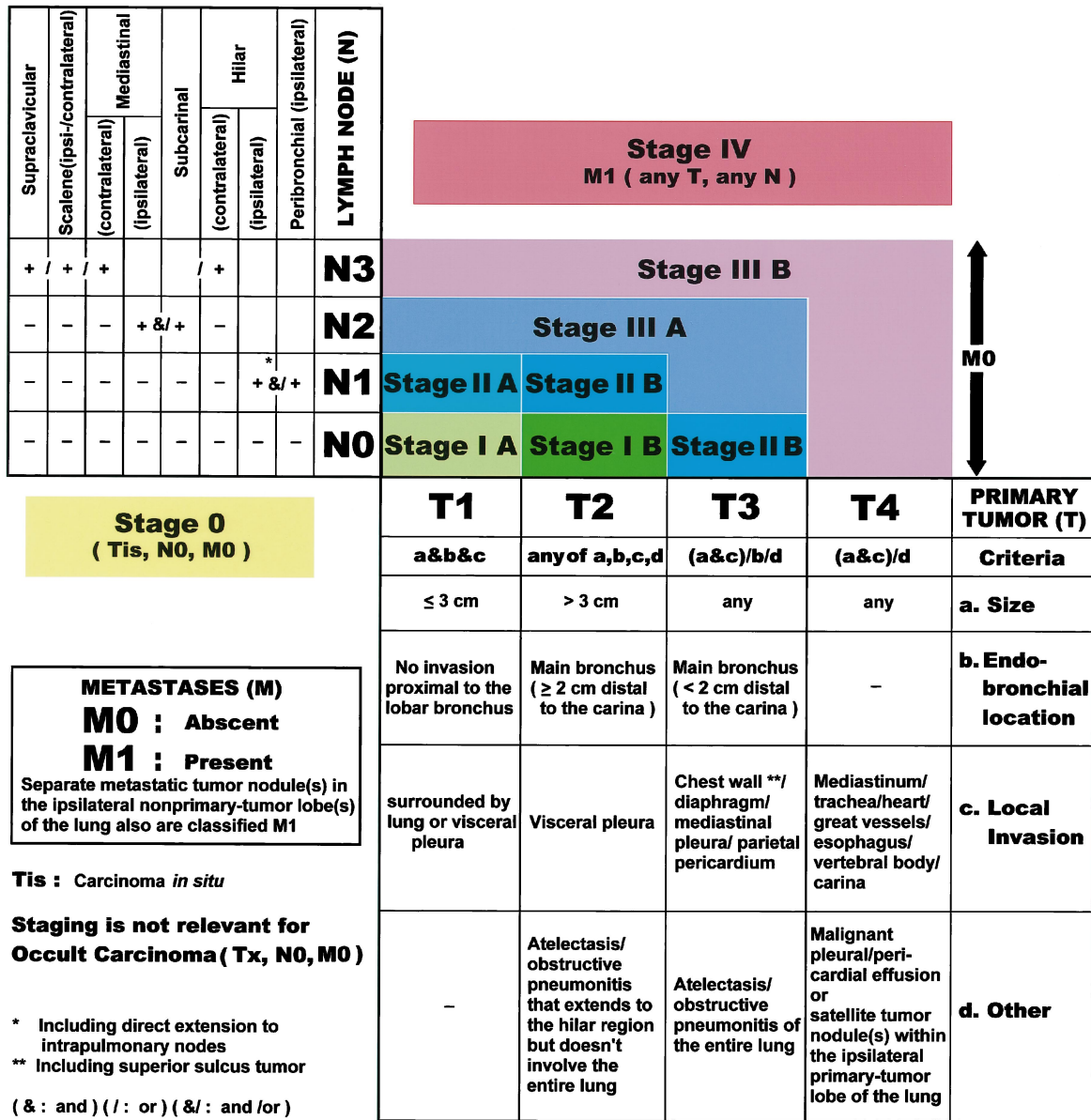


FIGURE 1. TNM staging of lung cancer.