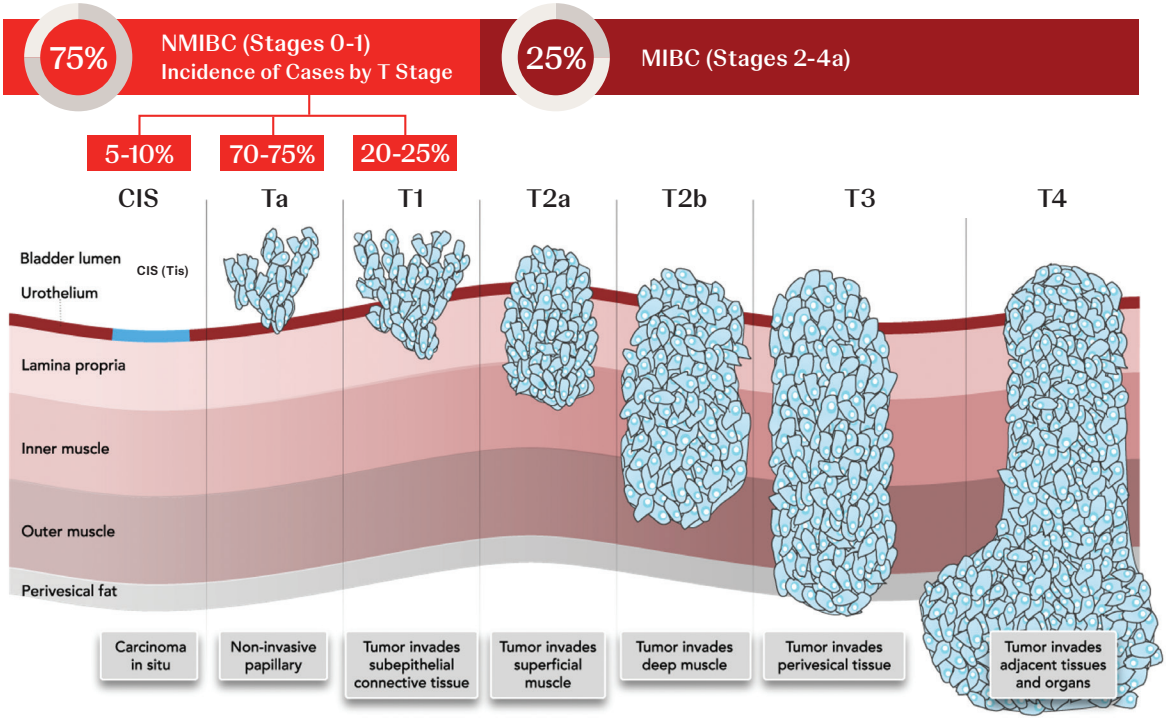
# HR-NMIBC *Overview*

## The American Joint Committee on Cancer (AJCC) staging system distinguishes non-muscle invasive bladder cancer (NMIBC) from muscle invasive bladder cancer (MIBC)[1,2]




**NMIBC accounts for approximately 75% of all newly detected bladder cancer cases, with carcinoma in situ (CIS) accounting for 5-10% of NMIBC[2]**

**Detection of CIS, though difficult under white light cystoscopy, may be improved with the use of enhanced cytoscopy methods[3]**

## American Urological Association (AUA)/Society of Urologic Oncology (SUO) risk stratification criteria[4]

If CIS is present, patients are classified as high-risk (HR)

### Low Risk

- Low-grade solitary Ta, ≤3 cm
- Papillary urothelial neoplasm of low malignant potential

### Intermediate Risk

- Recurrence within 1 year, low-grade Ta
- Solitary low-grade Ta >3 cm
- Low-grade Ta, multifocal
- High-grade Ta, ≤3 cm
- Low-grade T1

### High Risk

- High-grade T1
- Any recurrent, high-grade Ta
- High-grade Ta, >3 cm (or multifocal)
- **Any CIS**
- Any variant histology
- Any Bacillus Calmette-Guerin (BCG) failure in high-grade patient
- Any lymphovascular invasion
- Any high-grade prostatic urethral involvement

# The Link Between CIS and *High Risk*

CIS can be **difficult to resect** via TURBT due to its often multifocal and inconspicuous nature[5]

TURBT, transurethral resection of bladder tumor.

CIS increases the risk of **progression to MIBC**[6]

CIS increases the risk of **recurrence**[6]

## Implications for Management

Initial treatment of HR-NMIBC patients who are BCG-naive includes **intravesical BCG and consideration of cystectomy**.* Treatment should also involve continual monitoring via cystoscopy.[2,4]

**In the presence of very high-risk features (ie, BCG unresponsive, certain histopathologic subtypes, lymphovascular invasion, and prostatic urethral invasion), cystectomy is preferred over BCG given the elevated risk of progression[2]**

*Cystectomy is a consideration in the BCG-naive population, but discussion of treatment options should include quality of life implications.[4]

**For patients whose disease becomes BCG-unresponsive, further treatment options include cystectomy, intravesical chemotherapy, gene therapy, or immunotherapy[2]**

# Best practices in reporting results in *CIS*

Useful resources include the College of American Pathologists (CAP) *Protocol for the Examination of Biopsy* and *Transurethral Resection of Bladder Tumor (TURBT) Specimens From Patients With Carcinoma of the Urinary Bladder*, which lists several key elements[7]:

- Procedure
- Tumor site
- Histologic type
- Histologic grade
- Tumor extent
- Muscularis propria invasion or breach
- Lymphatic and/or vascular invasion

**ICD-10 diagnostic code for CIS is D09.0[8]**

### Opportunity to Optimize

Multi-disciplinary collaboration between the pathologists and the bladder tumor board is required to ensure patients receive the appropriate treatment[9,10]

Accurate identification of CIS has implications for prognosis, treatment, and surveillance, and reporting CIS in the description and conclusion of the lab report is important[2,11]

**1.** American Joint Committee on Cancer. Cancer Staging Systems. Accessed April 16, 2025. https://www.facs.org/quality-programs/cancer-programs/american-joint-committee-on-cancer/cancer-staging-systems/. **2.** Referenced with permission from the NCCN Clinical Practice Guidelines in Oncology (NCCN Guidelines®) for Bladder Cancer V1.2025. © National Comprehensive Cancer Network, Inc. 2025. All rights reserved. Accessed March 30, 2025. To view the most recent and complete version of the guideline, go to NCCN.org. NCCN makes no warranties of any kind whatsoever regarding their content, use or application and disclaims any responsibility for their application or use in any way. **3.** Pederzoli F, et al. *Hum Pathol.* 2019;90:107. **4.** Holzbeierlein J, Bixler BR, Buckley DI, et al. Diagnosis and treatment of non-muscle invasive bladder cancer: AUA/SUO guideline: 2024 amendment. *J Urol.* 2024;10.1097/JU.0000000000003846. **5.** Kim LHC, et al. *Transl Androl Urol.* 2020;9(6):3056-3072. **6.** Llano A, et al. *Cancers (Basel).* 2024;16(2):245. **7.** College of American Pathologists. Protocol for the Examination of Biopsy and Transurethral Resection of Bladder Tumor (TURBT) Specimens From Patients With Carcinoma of the Urinary Bladder. V4.2.0.0. 2023. **8.** ICD-10-CM Codes. Accessed May 13, 2025. https://www.icd10data.com/ICD10CM/Codes/C00-D49/D00-D09/D09-/D09.0. **9.** Mark JR, et al. *Can J Urol.* 2023;30(3)11526-11531. **10.** Walraven JEW, et al. *BJU Int.* 2023;131(2):244-252. **11.** Lopez-Beltran A, et al. *BMJ.* 2024;384:e076743.