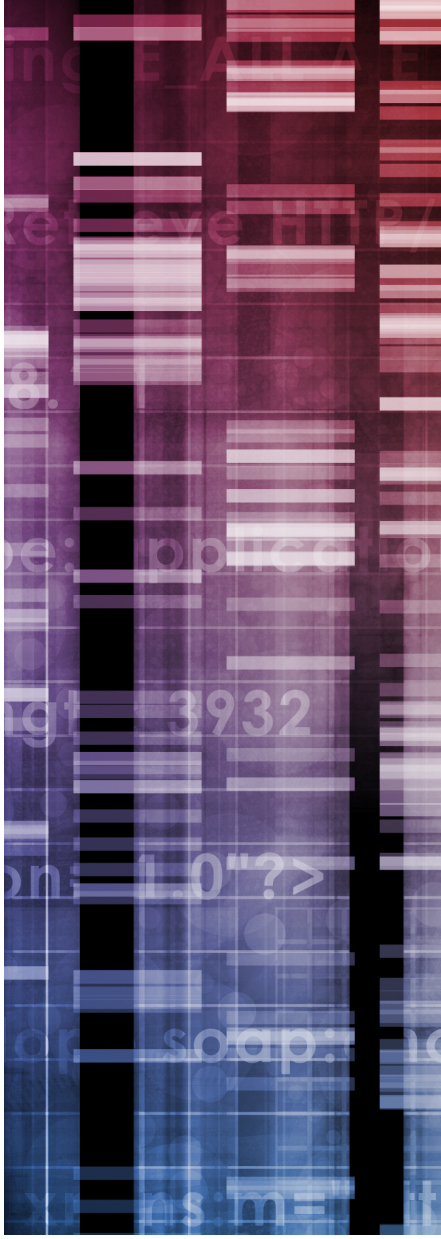
Precision Medicine in Bladder Cancer



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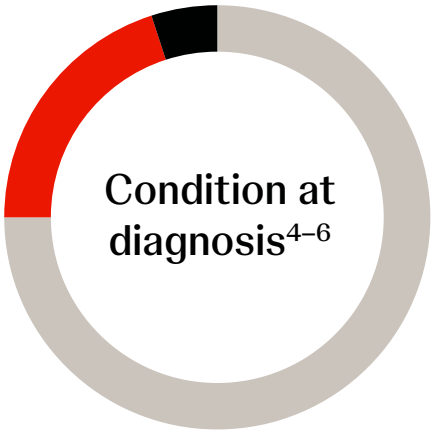
Bladder cancer is a prevalent, commonly recurrent disease[1–3]



- 75% NMIBC
- 20% MIBC
- 5% Metastatic

Bladder cancer is the *6th most prevalent* cancer in the United States[1]

NMIBC[7,8]			MIBC[7,8]			Metastatic[7,8]
Carcinoma in situ	Non-invasive papillary carcinoma	Invasion of connective tissue	Invasion of superficial muscle	Invasion deep into muscle	Invasion of perivesical tissue	Invasion of nearby tissue/organs
Stage 0		Stage 1	Stage 2		Stage 3	Stage 4

90% of bladder cancer cases are categorized as urothelial carcinoma[9]

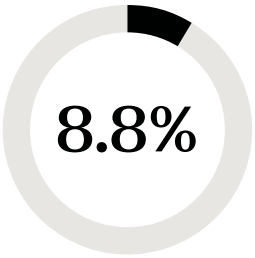
Although bladder cancer is often caught in early stages, recurrence rates are high and survival rates in metastatic disease are low[1–4]

Recurrence rates

NMIBC following TURBT[2,10]

MIBC following RC[3]

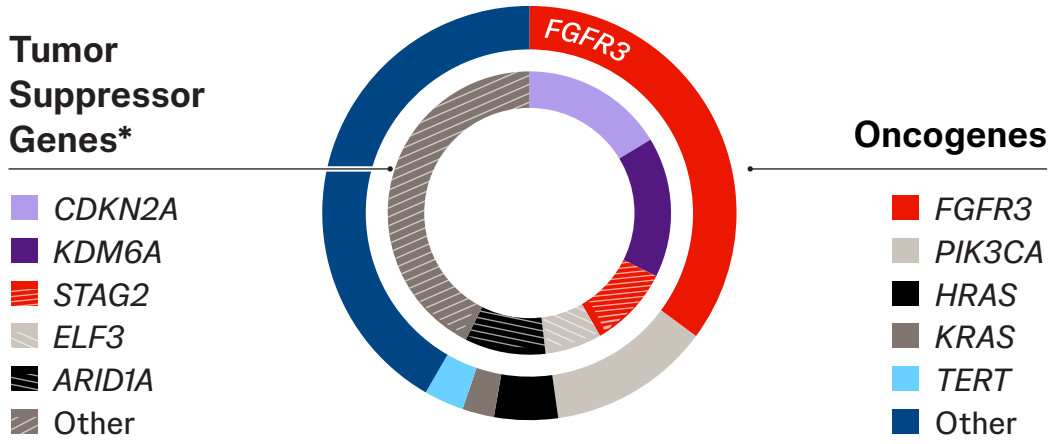
5-year survival rate in metastatic disease[1]



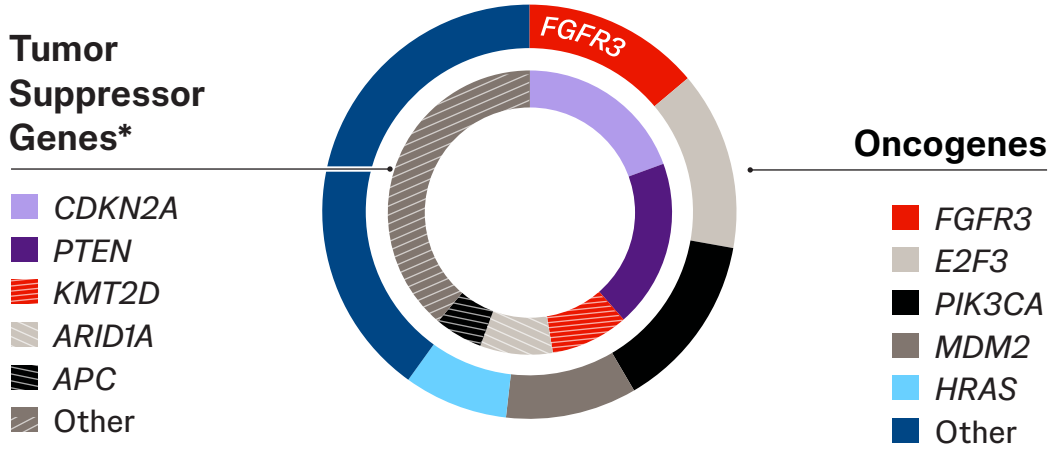
The understanding and approach to bladder cancer is evolving with precision medicine[11]

Urothelial carcinoma is driven by a variety of stage-dependent molecular mechanisms[12]

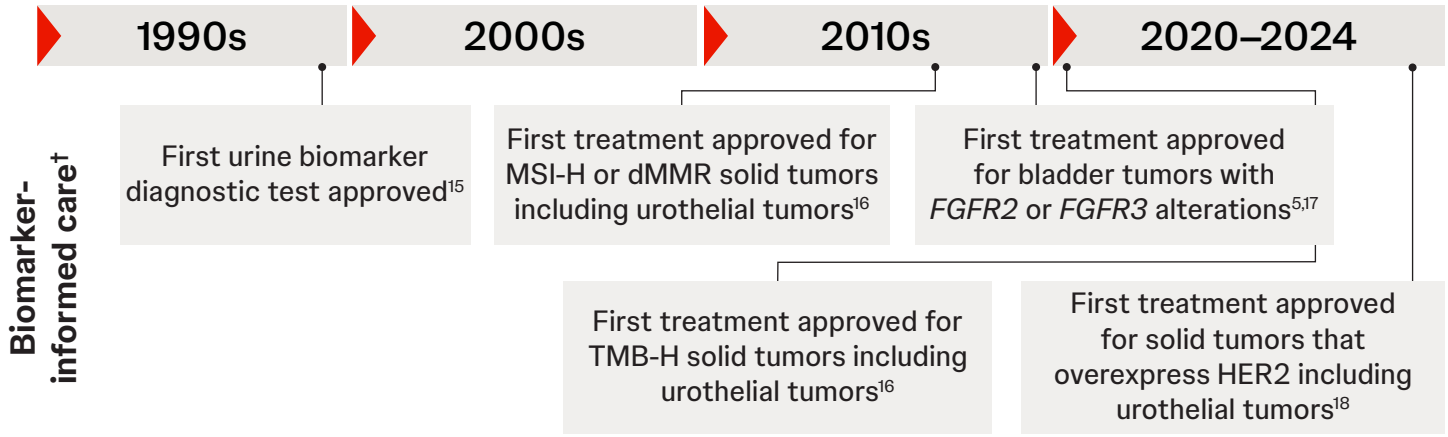
Low-grade Ta tumors[12]



MIBC[12]



Actionable biomarkers in bladder cancer have led to positive impact on treatment options and patient outcomes[13,14]



*Summed percentages exceed 100% since patients can express more than 1 mutation.[12]
†Treatments for solid tumors with *NTRK* fusions, the *BRAF* V600E mutation, and *RET* fusions have also been approved.[16]

MDT collaboration and biomarker testing per clinical guidelines can help connect patients with appropriate treatments[19,20]

MDTs can optimize bladder cancer treatment selection and improve quality of care through functional expertise and communication[19,21]

Treatment decisions

Precision medicine in bladder cancer is quickly evolving; consultation with experts across different fields **improves the implementation of new guideline recommendations**[13,19]

Treatment outcomes

In a study comparing outcomes between MIBC patients managed by an MDT and those in general care, **MDT care was associated with better cancer-specific survival**[19]

Up-front biomarker testing at advanced bladder cancer diagnosis can inform downstream decision-making by the MDT[20‡]

NCCN Clinical Practice Guidelines in Oncology (NCCN Guidelines®) support tumor biomarker testing for patients with advanced bladder cancer[20‡]

When?

Test early, ideally **at diagnosis**[20]

Who?

Patients with Stage IVA and IVB disease; may be considered for patients with **Stage IIIB disease**[20]

What?

FGFR3 alterations and **HER2** overexpression[20]

Why?

To **avoid delays** in determining **eligibility for treatment** and **clinical trials**[20]

Per the NCCN Guidelines®, **test for *FGFR3* alterations and HER2 overexpression in metastatic bladder cancer** to identify potential **targeted therapies**[20]

Solutions start with a conversation

Take action and speak to J&J Precision Medicine

‡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.

dMMR, deficient mismatch repair; MDT, multidisciplinary team; MIBC, muscle-invasive bladder cancer; MSI-H, high microsatellite instability; NCCN, National Comprehensive Cancer Network; NMIBC, non–muscle-invasive bladder cancer; RC, radical cystectomy; TMB-H, high tumor mutational burden; TURBT, transurethral resection of bladder tumor.

References: 1. Surveillance, Epidemiology, and End Results Program, National Cancer Institute. Accessed September 26, 2024. https://seer.cancer.gov/statfacts/html/urinb.html. **2.** Holzbeierlein JM, et al. *J Urol.* 2024;211(4):533–538. **3.** Mari A, et al. *World J Urol*. 2018;36(2):157–170. **4.** Grabe-Heyne K, et al. *Front Oncol*. 2023;13:1170124. **5.** Patel VG, et al. *CA Cancer J Clin*. 2020;70(5):404–423. **6.** Siegel RL, et al. *CA Cancer J Clin.* 2024;74(1):12–49. **7.** Kanmalar M, et al. *Cell Mo Biol Lett.* 2022;27(1):9. **8.** American Cancer Society. Accessed September 22, 2024. https://www.cancer.org/cancer/types/bladder-cancer/detection-diagnosis-staging/staging.html. **9.** Heath EI, Rosenberg JE. *Nat Rev Urol.* 2021;18(2):93–103. **10.** Cao M, et al. *Int J Clin Exp Med*. 2015;8(1):1416–1419. **11.** Minoli M, et al. *Int J Mol Sci* 2020;21(16):5670. **12.** Sanli O, et al. *Nat Rev Dis Primers.* 2017;3:17022. **13.** Mohanty SK, et al. *J Pers Med*. 2023;13(5):756. **14.** Luceno CF, et al. *Cancers (Basel).* 2023;15(11):3024. **15.** US Food and Drug Administration. Accessed September 12, 2024. https://www.accessdata.fda.gov/scripts/cdrh/devicesatfda/index.cfm?db=pma&id=319660. **16.** Tateo V, et al. *Pharmaceuticals (Basel).* 2023;16(4):614. **17.** Lopez-Beltran A, et al. *BMJ*. 2024;384:e076743. **18.** Meric-Bernstam F, et al. *J Clin Oncol*. 2024;42(1):47–58. **19.** Mark JR, et al. *Can J Urol*. 2023;30(3):11526–11531. **20.** Referenced with permission from the NCCN Clinical Practice Guidelines in Oncology (NCCN Guidelines®) for Bladder Cancer V.5.2024. © National Comprehensive Cancer Network, Inc. 2024. All rights reserved. Accessed October 29, 2024. To view the most recent and complete version of the guideline, go online to NCCN.org. **21.** Diamantopoulos LN, et al. *Bladder Cancer*. 2019;5(4):289–298.

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