

# **Bladder Cancer**

MEDICAL INFORMATION FOR PATIENTS AND CAREGIVERS

Anatomical images contained herein are for illustrative purposes only. © 2025 Merck KGaA, Darmstadt, Germany or its affiliates. All rights reserved. EMD Serono is the Healthcare business of Merck KGaA, Darmstadt, Germany, in the United States and Canada. US-NONO-00782 4/25 To learn more about bladder cancer, visit our US Patient & Caregiver Medical Website by scanning this QR code with your phone or tablet



## **Bladder Cancer Topics**

No.	J
-----	---

### / What is bladder cancer?

Bladder cancer occurs when cells in the bladder start to grow without control.  $^{1}\,$ 



### Signs and symptoms

Certain observations can raise the suspicion of bladder cancer that warrants a diagnostic follow-up.



### **Presence: Globally and in the US**

**6th** most common cancer and makes up about **4%** of all cancer cases in the United States.<sup>2,3</sup>

_		
	2	
_	$\rightarrow$ )	
	)	

|--|

### Screening and diagnosis

Explore the tests which help a doctor detect cancer early.



### Cancer stages and survival

~75% of cases diagnosed were at early stage, crucial for improving outcomes.<sup>2,4</sup>



### **Treatment options**

Patient's treatment options are largely dependent on the stage of disease.



### **Risk factors**

Many risk factors make a person more likely to develop bladder cancer. Smoking is a major risk factor and those who smoke are at least **3 times** more likely to get bladder cancer.<sup>5</sup>



### Spotlight on populations at risk

Some population groups face a higher risk of bladder cancer due to various factors.

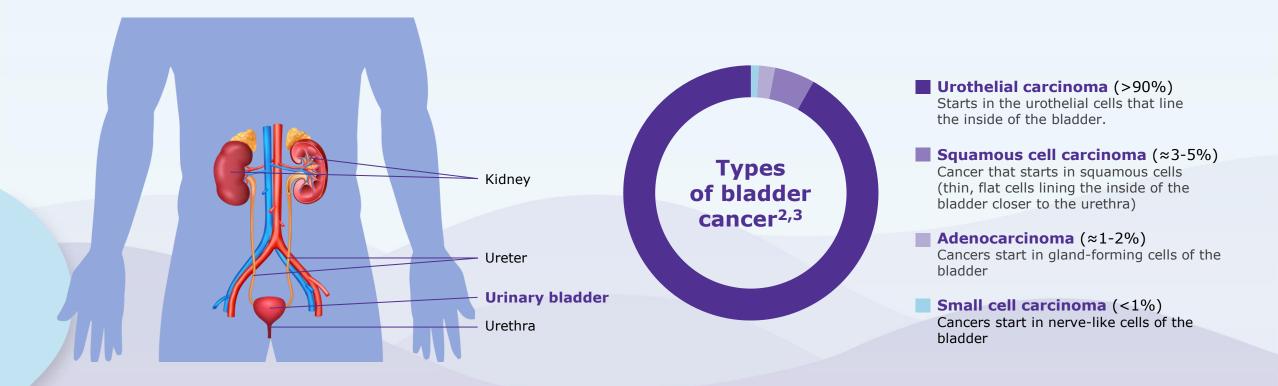
1. ACS. What Is Bladder Cancer? Revised February 16, 2023. Accessed February 20, 2025. <a href="https://www.cancer.gov/types/bladder">https://www.cancer.gov/types/bladder</a> 2. Leslie SW, Soon-Sutton TL, Aeddula NR. Bladder Cancer. [Updated 2024 Aug 15]. In: StatPearls [Internet]. Treasure Island (FL): StatPearls Publishing; 2025 Jan-. Available from: <a href="https://www.ncbi.nlm.nih.gov/books/NBK536923/3">https://www.ncbi.nlm.nih.gov/books/NBK536923/3</a>. SEER. Cancer Stat Facts: Common Cancer Sites. Accessed March 19, 2025. <a href="https://statPearls">https://statPearls</a> [Internet]. Treasure Island (FL): StatPearls Publishing; 2025 Jan-. Available from: <a href="https://www.ncbi.nlm.nih.gov/books/NBK536923/3">https://www.ncbi.nlm.nih.gov/books/NBK536923/3</a>. SEER. Cancer Stat Facts: Common Cancer Sites. Accessed March 19, 2025. <a href="https://statPearls">https://statPearls</a> [Internet]. Treasure Island (FL): StatPearls Publishing; 2025 Jan-. Available from: <a href="https://www.ncbi.nlm.nih.gov/books/NBK536923/3">https://statPearls</a> Publishing; 2025 Jan-. Available from: <a href="https://www.ncbi.nlm.nih.gov/books/NBK536923/3">https://www.ncbi.nlm.nih.gov/books/NBK536923/3</a>. SEER. Cancer Stat Facts: Common Cancer Sites. Accessed March 19, 2025. <a href="https://statPearls">https://statPearls</a> [Internet]. Treasure Island (FL): StatPearls Publishing; 2025 Jan-. Available from: <a href="https://www.ncbi.nlm.nih.gov/books/NBK536923/3">https://www.ncbi.nlm.nih.gov/books/NBK536923/3</a>. SEER. Cancer Stat Facts: Common Cancer Sites. Accessed March 28,2025. <a href="https://www.ncbi.nlm.nih.gov/books/NBK536923/3">https://www.ncbi.nlm.nih.gov/books/NBK536923/3</a>. Accessed Factors and Clinical Management of Bladder Cancer A promising urine test (uTERTpm). Updated May 2022. Accessed March 28,2025. <a href="https://www.cancer.org/cancer/types/bladder-cancer/causes-risks-prevention/risk-factors.html">https://www.cancer.org/cancer/types/bladder-cancer/causes-risks-prevention/risk-factors.html</a>

**BLADDER CANCER** 



## What is bladder cancer?

Bladder cancer occurs when cells in the bladder start to grow without control. The bladder is a hollow organ, in the lower part of the abdomen that stores urine.<sup>1</sup>



## 1. ACS. What Is Bladder Cancer? Revised February 16, 2023. Accessed February 20, 2025. https://www.cancer.gov/types/bladder 2. ACS. What Is Bladder Cancer? Revised March 12, 2024. Accessed February 20, 2025. https://www.cancer.org/cancer/types/bladder-cancer/about/what-is-bladder-cancer.html 3. Leslie SW, Soon-Sutton TL, Aeddula NR. Bladder Cancer. [Updated 2024 Aug 15]. In: StatPearls [Internet]. Treasure Island (FL): StatPearls Publishing; 2025 Jan-. Available from: <a href="https://www.ncbi.nlm.nih.gov/books/NBK536923/">https://www.ncbi.nlm.nih.gov/books/NBK536923/</a>

### **BLADDER CANCER**

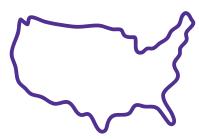


## **Prevalence of bladder cancer**



Ranks **9th** most common cancer worldwide<sup>\*1</sup>

**613,791** New cases in 2022<sup>2</sup> **220,349** Deaths in 2022<sup>2</sup>



Ranks **4**<sup>th</sup> most common cancer in men and **4%** of cancers in the US<sup>3,4</sup>

**84,870** New cases in 2024<sup>5</sup>

**17,420** Deaths in 2025<sup>5</sup>

\* As per GLOBOCAN 2022 report.

1. World Bladder Cancer Patient Coalition. Press release. Published February 14, 2024. Accessed September 5, 2024. <u>https://worldbladdercancer.org/news\_events/globocan-2022-bladder-cancer-is-the-9th-most-commonly-diagnosed-worldwide</u> 2. Bray F, et al. CA Cancer J Clin. 2024;74(3):229-263. 3. SEER Cancer Stat Facts: Common Cancer Sites. Accessed February 21, 2025. <u>https://seer.cancer.gov/statfacts/html/common.html</u> 4. SEER Cancer Stat Facts: Bladder Cancer. National Cancer Institute. Bethesda, MD, Accessed February 21,2025. <u>https://seer.cancer.gov/statfacts/html/urinb.html</u> 5. American Cancer Society. Key Statistics for Bladder Cancer. Revised March 12, 2024. Accessed September 5, 2024. https://www.cancer.org/cancer/types/bladder-cancer/about/key-statistics.html

**BLADDER CANCER** 



## **Cancer stages and survival rates**

In situ: Abnormal cells are present but have not spread to nearby tissue.<sup>1</sup> About **48%** of cases are diagnosed at this stage.<sup>2</sup>

LOCALIZED REGIONAL DISTANT Brain Bone Othe **Commonly known as Commonly known as** Stage II or Stage III Stage I Stage IV Cancer has spread to nearby lymph nodes, tissues, or organs.<sup>1</sup> of the body.<sup>1</sup> About **7%** of cases are diagnosed at this stage.<sup>2</sup> at this stage.<sup>2</sup> 5-year survival rates +

## **Commonly known as**

Cancer is limited to the place where it started, with no sign that it has spread.<sup>1</sup>

About 35% of cases are diagnosed at this stage.<sup>2</sup>

011 0≡

Cancer has spread to distant parts

About **5%** of cases are diagnosed

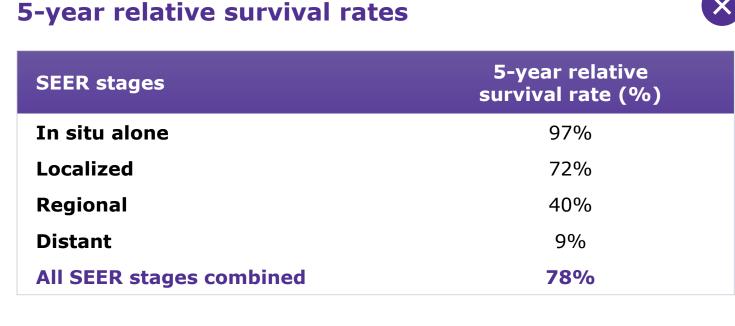
1. ACS. Cancer Staging. Revised October 14, 2022. Accessed March 27, 2025. <u>https://www.cancer.gov/about-cancer/diagnosis-staging/staging</u> 2. SEER\*Explorer: An interactive website for SEER cancer statistics [Internet]. Surveillance Research Program, National Cancer Institute; 2024 Apr 17. [updated: 2024 Nov 5; cited 2025 Feb 21]. https://seer.cancer.gov/statisticsnetwork/explorer/application.html?site=71&data\_type=1&graph\_type=4&compareBy=sex&chk\_sex\_1=1&race=1&age\_range=1&advopt\_precision=1 8. hdn view=1 3. ACS. Survival Rates for Bladder Cancer. Revised January 16, 2025. Accessed February 21, 2025. https://www.cancer.org/cancer/types/bladder-cancer/detectiondiagnosis-staging/survival-rates.html

### **BLADDER CANCER**



## **Cancer stages and survival rates**

In situ: Abnormal cells are present but have not spread to nearby tissue.<sup>1</sup>



Cancer is lim where it star it has spread

About **35%** of this stage.<sup>2</sup>

Comm

ACS. Survival rates for bladder cancer. Updated January 16,2025. Accessed March 27,2025. https://www.cancer.org/cancer/types/bladder-cancer/detection-diagnosis-staging/survival-rates.html

osed are of

istant parts

wn as

More information +

1. ACS. Cancer Staging. Revised October 14, 2022. Accessed February 20, 2025. https://www.cancer.gov/about-cancer/diagnosis-staging/staging 2. SEER\*Explorer: An interactive website for SEER cancer statistics [Internet]. Surveillance Research Program, National Cancer Institute; 2024 Apr 17. [updated: 2024 Nov 5; cited 2025 Feb 21]. https://seer.cancer.gov/statisticsnetwork/explorer/application.html?site=71&data\_type=1&graph\_type=4&compareBy=sex&chk\_sex\_1=1&race=1&age\_range=1&advopt\_precision=1 &hdn\_view=1 3. ACS. Survival Rates for Bladder Cancer. Revised January 16, 2025. Accessed February 21, 2025. https://www.cancer.org/cancer/types/bladder-cancer/detection-diagnosis-staging/survival-rates.html

### **BLADDER CANCER**



### **Risk factors**

### **Intrinsic risk factors:**<sup>1,2</sup>

Age Risk of bladder cancer increases with age

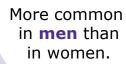
### Genetics ~2-fold elevation in the relative risk of bladder cancer among people with

a family history.<sup>2</sup>

### Ethnicity

White people are about twice as likely to develop bladder cancer as African American and Hispanic people.

### Sex



**Environmental risk factors:**<sup>1</sup>

### Smoking

Results in 3 times higher likelihood of bladder cancer



Chemicals

Occupational exposures and certain medicines are linked with an increased risk of bladder cancer

### BLADDER CANCER

1. American Cancer Society. Bladder Cancer Risk Factors. Revised March 12, 2024. <u>https://www.cancer.org/cancer/types/bladder-cancer/causes-risks-prevention/risk-factors.html</u> 2. Pemov A, et al. *JCO Precis Oncol*. 2021;5:PO.21.00115.



## **Signs and symptoms**



### Hematuria (blood in the urine): The most common sign of bladder cancer.

Over a third of patients with visible blood in the urine and slightly over **10%** of those with microscopic hematuria (blood in urine that is not visible to the naked eye) will ultimately be diagnosed with bladder cancer.<sup>1,2</sup>

### **CHANGES IN BLADDER HABITS:**<sup>1</sup>

## Painful urination

Feeling as if you need to go right away, even when your bladder isn't full. Having trouble going or having a weak urine stream

Having to get up to go many times during the night



Increased urinary frequency

### SYMPTOMS OF ADVANCED BLADDER CANCER:1



### **Disclaimer**: If any of these symptoms appear contact your healthcare team.

1. American Cancer Society. Bladder Cancer Signs and Symptoms. Revised March 12, 2024. https://www.cancer.org/cancer/types/bladder-cancer/detection-diagnosisstaging/signs-and-symptoms.html 2. Leslie S. et al. [Updated 2024 Aug 15]. In: StatPearls [Internet]. Treasure Island (FL): StatPearls Publishing; 2025 Jan. Available from: https://www.ncbi.nlm.nih.gov/books/NBK536923/

### **BLADDER CANCER**



## **Screening and diagnosis**

### Screening<sup>1</sup>

No recommended routine screening of bladder cancer for people with average risk. Doctors might recommend screening for people at high risk:

- Having had bladder cancer before
- Having had certain birth defects of the bladder
- Exposure to certain chemicals at work



# DIAGNOSTIC TESTS2Urine testsImaging testsOthersUrine samples are analyzed in<br/>laboratoriesInvasive and non-invasive<br/>imaging tests are performedOther tests can be performed to<br/>check the bladder liningMore information +More information +More information +

### **BLADDER CANCER**

1. American Cancer Society. Can Bladder Cancer Be Found Early? Revised March 12, 2024. https://www.cancer.org/cancer/types/bladder-cancer/detection-diagnosisstaging/detection.html 2. ACS. Tests for Bladder Cancer. Updated March 12, 2024 <a href="https://www.cancer.org/cancer/types/bladder-cancer/detection-diagnosis-staging/how-diagnosed.html">https://www.cancer.org/cancer/types/bladder-cancer/detection-diagnosis-staging/how-diagnosed.html</a>



## **Screening and diagnosis**

### Screening

No recomme average risk

- Having
- Having
- Exposu

### **Urine tests**

- **Urinalysis:** Simple lab test to check for blood and other substances in a sample of urine
- **Urine cytology:** Sample of urine is looked at with a microscope to see if there are any cancer or pre-cancer cells in it.

**Urine culture:** If you have urinary symptoms, tests may be done to see if they're from an infection.

**Urine tumor marker (biomarker) tests:** Different urine tests can be used to look for specific substances made by bladder cancer cells

Urin

More i

Urine sample labo

> ACS. Tests for Bladder Cancer. Updated March 12, 2024 https://www.cancer.org/cancer/types/bladder-cancer/detection-diagnosis-staging/howdiagnosed.html

performed to der lining

ation +

**BLADDER CANCER** 

1. American Cancer Society. Can Bladder Cancer Be Found Early? Revised March 12, 2024. https://www.cancer.org/cancer/types/bladder-cancer/detection-diagnosisstaging/detection.html 2. ACS. Tests for Bladder Cancer. Updated March 12, 2024 <a href="https://www.cancer.org/cancer/types/bladder-cancer/detection-diagnosis-staging/how-diagnosed.html">https://www.cancer.org/cancer/types/bladder-cancer/detection-diagnosis-staging/how-diagnosed.html</a>

(known as tumor markers or biomarkers).



### Screening

Scree

No recomme average risk

- Having
- Having
- Exposu

### Urin

More i

Urine sample labo

### **Imaging tests**



### **CT** scan

Creates 3-dimensional views of organs with X-ray technology.<sup>1,2</sup>



### MRI scan

Uses magnetic fields and radio waves to make detailed pictures of areas inside the body.<sup>1,2</sup>

### **PET scan**

Creates detailed 3D pictures of areas inside the body where a radioactive substance has been taken  $up.^{1,2}$ 



### Ultrasound

Uses sound waves and echoes to create pictures of internal organs. Used to determine the size of a bladder cancer and whether it has spread beyond the bladder to nearby organs or tissues.<sup>1,2</sup>



X

performed to der lining



### **BLADDER CANCER**

MEDICAL INFORMATION FOR PATIENTS AND CAREGIVERS

### 1. ACS. Tests for Bladder Cancer. Updated March 12, 2024 <u>https://www.cancer.org/cancer/types/bladder-cancer/detection-diagnosis-staging/how-</u> <u>diagnosed.html</u> 2. NCI. How Cancer Is Diagnosed. Updated January 17, 2023. Accessed October 18, 2024. https://www.cancer.gov/about-cancer/diagnosis-staging/diagnosis

1. American Cancer Society. Can Bladder Cancer Be Found Early? Revised March 12, 2024. https://www.cancer.org/cancer/types/bladder-cancer/detection-diagnosisstaging/detection.html 2. ACS. Tests for Bladder Cancer. Updated March 12, 2024 https://www.cancer.org/cancer/types/bladder-cancer/detection-diagnosis-staging/how-diagnosed.html



## **Screening and diagnosis**

### Screening

No recomme average risk

- Having
- Having
- Exposu



Urine sample labo

More i

### **Other diagnostic tests**

**Cystoscopy:** A long, thin, flexible tube with a light and a lens or a small video camera on the end, is inserted up into the bladder. This lets the doctor look at the inner lining of the bladder, take biopsy samples from abnormal areas, if needed.

**Transurethral resection of bladder tumor (TURBT):** Doctor removes any tumors from the bladder lining, and muscle around the tumors with tools that are inserted into the bladder through the cystoscope. These samples are tested in a lab. Results will determine if the tumor has spread into the muscle layer of the bladder wall.

ACS. Tests for Bladder Cancer. Updated March 12, 2024 https://www.cancer.org/cancer/types/bladder-cancer/detection-diagnosis-staging/howdiagnosed.html



performed to der lining

ation +

**BLADDER CANCER** 

1. American Cancer Society. Can Bladder Cancer Be Found Early? Revised March 12, 2024. https://www.cancer.org/cancer/types/bladder-cancer/detection-diagnosisstaging/detection.html 2. ACS. Tests for Bladder Cancer. Updated March 12, 2024 <u>https://www.cancer.org/cancer/types/bladder-cancer/detection-diagnosis-staging/how-diagnosed.html</u>



## **Treatment options**

If diagnosed, your healthcare team will prescribe the treatment option that is appropriate for your diagnosis.

### Surgery

### **Transurethral resection (TUR)**

A thin lighted tube inserted into the bladder through the urethra. A tool with a small wire loop on the end is then used to remove the cancer or to burn the tumor away with high-energy electricity



Surgery to remove part of the bladder. This may be done for patients who have a low-grade tumor that has invaded the wall of the bladder but is limited to one area of the bladder.

### **Radical cystectomy with urinary diversion**

Surgery to remove the bladder and any lymph nodes and nearby organs that contain cancer. When the bladder must be removed, the surgeon performs a procedure called urinary diversion to create another way for the body to store and pass urine.



### Non-surgical treatments

### **Radiation therapy**

Uses high-energy x-rays or other types of radiation to kill cancer cells or keep them from growing.

### **Drug therapy**

Uses drugs to stop the growth of cancer cells, either by killing the cells or by stopping them from dividing.

### **Bacillus Calmette-Guerin** (BCG) Treatment

Is a type of immunotherapy, that helps a person's immune system fight cancer

**Disclaimer:** Never use medication from another patient with bladder cancer unless directed by a healthcare physician. Please consult your doctor.

### **BLADDER CANCER**



## Spotlight on populations at risk

## Men have a **4 times higher**

incidence rate than women, whilst female patients often present with more advanced disease and experience worse outcomes.<sup>1</sup> African American patients have up to **10% WORSE** disease-specific survival

than White patients.<sup>3</sup>



Approximately 40% of cases

of bladder cancer in the United States are attributable to smoking.<sup>4</sup> ~40%

Bladder cancer is most frequently diagnosed among people aged 65-74<sup>2</sup>

1. Doshi B, et al. Oncogenesis. 2023;12(1):44. 2. SEER Cancer Stat Facts: Bladder Cancer. National Cancer Institute. Bethesda, MD, Accessed February 21,2025. <u>https://seer.cancer.gov/statfacts/html/urinb.html</u> 3. Association Of Community Cancer Centers. Understanding and mitigating disparities in bladder cancer care. <u>www.accc-cancer.org/docs/projects/bladder-cancer/understanding-and-mitigating-disparities-in-bladder-cancer-care.pdf</u>? Accessed February 21, 2025. 4. Liu W, et al. Urol Oncol. 2023;41(9):389.e1-389.e6.

### **BLADDER CANCER**