

## About bladder cancer

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See also:

Rare bladder tumors histological variants,

Upper tract TCC of the ureter and/or renal pelvis

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### Risk Occupational risks

The American Cancer Society estimates that 2006 will see 61,420 new cases of bladder cancer diagnosed in the United States, with approximately 13,060 deaths. There are currently 600,000 bladder cancer survivors in the U.S. Worldwide, bladder cancer is the 4th most frequent solid tumor in men and the 7th in women, with more than 350,000 new cases diagnosed worldwide every year.<sup>1</sup>

Thanks in large part to its good long term survival rates, bladder cancer is one of the most prevalent cancers, surpassing lung cancer survivors in number, as well as one of the most expensive cancers for the health industry.

The recurrence rate for bladder cancer is 80 percent; it is estimated that nearly 400,000 individuals in the United States are at risk for recurrence.<sup>2</sup>

The chief symptom of bladder cancer is hematuria, or blood in the urine. All people who have visible blood in the urine should be considered to have bladder cancer until proven otherwise. Because hematuria can come and go, a negative result on urinalysis cannot exclude the diagnosis of bladder cancer.<sup>3</sup>

Bladder cancer is steadily increasing. The projected rise is 28% by 2010 for both men and women. Bladder cancer is one of the most preventable cancers; Smoking is the greatest risk factor for bladder cancer, with smokers experiencing twice the risk of nonsmokers for developing the disease. Individuals living in urban areas -especially the American northeast - and those working in the dye, rubber, or leather industries are also at a higher risk.

Because bladder cancer most often occurs in people over age 60, a major determinant of the future cancer burden is the aging of baby-boomers and increasing size of the U.S. population. The total number of cancer cases can be expected to double by 2050 if current incidence rates remain stable (source: American Cancer Society).

## Women and African Americans - higher mortality

Delay in treatment appears to be correlated with a disproportionately higher death rate among women with bladder cancer, who are diagnosed 6 to 9 months later than men. Black men have a higher mortality rate than white men. Individuals who have first-degree relatives with bladder cancer are twice as likely to develop the disease as those without such a family history, suggesting involvement of hereditary factors in bladder cancer development.<sup>4</sup>

A greater proportion of Afro-Americans present with aggressive tumor types associated with poorer survival. Among those with pure urothelial carcinoma, black patients had greater extent of disease at the time of diagnosis. Within specific extent-of-disease categories, there was some evidence of poorer survival for black patients with T2 tumors and strong evidence of poorer survival among those with T3 tumors compared with white patients. Black patients with muscle-invasive carcinoma who died within 6 months of diagnosis tended to present with life-threatening symptoms. Black patients and white patients did not differ with respect to diagnostic tests performed or therapy given.<sup>5</sup> See also: Racial Disparities: Article from NCI

Risk factors include the following:

- Age - Approximately 80% of newly diagnosed cases in both men and women occur in people aged 60 years and older
- Caucasian
- Chronic bladder inflammation (recurrent urinary tract infections, urinary stones)
- Consumption of Aristolochia fangchi (herb used in some weight-loss formulas)
- Diet high in saturated fat
- Exposure to second-hand smoke
- External beam radiation
- Family history of bladder cancer (several genetic risk factors identified)
- Infection with *Schistosoma haematobium* (parasite found in many developing countries)
- Male
- Personal history of bladder cancer
- Treatment with certain drugs (e.g. cyclophosphamide, a common chemotherapy).
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Exposure to carcinogens in the workplace also increases the risk for bladder cancer.

- Medical workers exposed during the preparation, storage, administration, or disposal of antineoplastic drugs (used in chemotherapy) are at increased risk.
- arsenic and chlorine by-products in drinking water is strongly associated with increased bladder cancer risk
- 2007 saw research strongly suggesting a (two fold) increase in bladder cancer with men who have a history of gonorrhoea (VD)
- as well as more evidence linking high risk HVP (human papilloma virus) with bladder cancer

Occupational risk factors include recurrent and early exposure to hair dye, and exposure to dye containing aniline, a chemical used in medical and industrial dyes. Other workers at increased risk include the following:

- Hairdressers
- Machinists
- Printers
- Painters
- Truck drivers
- Workers in rubber, chemical, textile, metal, and leather industries

About 20% have muscle-invasive disease (stages T2-T4), while 80% present first with superficial (Ta - T1) tumours. Stage Ta tumors are high grade (aggressive) in only 1% to 3% of cases. Most often, they are low to moderate grade. In contrast, stage T1 tumors may be high grade in 30% to 50% of cases and are rarely low grade.<sup>7</sup> See also; staging

Over 90% of bladder cancers in westernized, industrial countries are Transitional Cell Carcinomas, so called because these cells have the capability to undergo changes in size from cubical (when the bladder is empty) to flat (when the bladder is full). TCC that originates in the kidneys or ureters, know as upper tract TCC, is a rare-5%-but aggressive form of cancer.<sup>8</sup> Carcinoma in situ will comprise approximately 10% of TCC diagnoses.

For information on rare cell types that may present in the bladder, see this page: Rare Types for more information on:

Bladder Squamous Cell Carcinoma

Adenocarcinoma of the bladder

Urachal bladder cancer

Small Cell Carcinoma of the bladder

Rhabdomyosarcoma of the bladder

Sarcomatoid carcinoma and Carcinosarcoma

Undifferentiated carcinoma of the bladder

Leiomyosarcoma<sup>9</sup>.Micropapillary bladder carcinoma<sup>10</sup>.Pheochromocytoma of the bladder

Lymphoepithelioma-like carcinoma (LELC)

Inverted papilloma

Urothelial papilloma

Plasmacytoid Carcinoma

This link will take you to a pathology photo of a bladder which has been infiltrated with a large tumor:

<http://www.infobiogen.fr/services/chromcancer/Tumors/blad5001.html>

## References

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