What is bladder cancer?

Last reviewed May 2012

The bladder

The bladder is part of the urinary system which helps the body produce, store and get rid of liquid waste (urine). The urinary system also includes two kidneys, two ureters and the urethra.

The bladder is a hollow organ with a muscular wall, located in the pelvis. It stores urine, and when the bladder muscle contracts, allows you to pass the urine.

Kidneys produce urine, which travels to the bladder through tubes called ureters. The bladder is elastic and inflates like a balloon as it fills. When the bladder is emptied, urine passes through a tube called the urethra and out of the body.

In women the urethra is a short tube that opens in front of the birth canal (vagina). In men the tube is longer and passes through the prostate and down the penis.

There are three main layers of tissue in the bladder:

- mucosa or urothelium – the innermost layer, which is lined with cells that stop urine going into the body. Cells in this membrane are called urothelial cells.
- lamina propria – strong tissue surrounding the mucous membrane.
- muscle – thick layers of protective muscle tissue that are covered by a layer of fat.
What is bladder cancer?

Bladder cancer occurs when cells in the bladder become abnormal and grow and divide out of control.

Nearly all bladder cancers begin in the cells of the mucous membrane that lines the bladder. In some cases the cancer may grow into deeper layers of the bladder wall.

Non-invasive tumours (superficial tumours)

The cancerous cells are only found in the lining of the bladder, and have not invaded deeper layers. One type of non-invasive cancer is carcinoma in-situ.
Treating non-invasive tumours

There is often a misconception that non-invasive tumours are not dangerous. Although they are confined to the original site in the bladder lining, fast-growing (high-grade) non-invasive tumours, such as carcinoma in-situ, can be serious or life-threatening.

If you have this type of non-invasive cancer, your doctor will advise you to have immediate – and sometimes, aggressive – treatment.

Invasive tumours

The cancer has spread beyond the lining of the bladder (urothelium) either into the lamina propria or the muscle, or right through the bladder wall.

There are three main types of bladder cancer:

Urothelial carcinoma – About 90 per cent of all bladder cancers, arising from the innermost tissue layer. This type of cancer used to be called transitional cell carcinoma. Urothelial cancer is categorised according to whether it is invasive or non-invasive and its shape. Papillary urothelial carcinomas have slender finger-like projections that grow into the hollow section of the bladder. This may look like coral. Flat urothelial carcinomas, such as carcinoma in-situ, do not grow towards the hollow part of the bladder.

Squamous cell carcinoma – About 8 per cent of all bladder cancers. This type of cancer starts in the flat cells that line the bladder. It is more likely to be invasive.

Adenocarcinoma – The rarest type of bladder cancer, making up 1–2 per cent of all cases. Cancer develops from the cells that produce mucus and is likely to be invasive.

Symptoms of bladder cancer

Sometimes bladder cancer doesn’t have many symptoms and is found during routine urine tests.

The most common symptom of bladder cancer is blood in the urine (haematuria):

- blood in the urine often occurs suddenly
- it is not usually painful
- there may only be a small amount of blood in the urine
- the blood may look red or brown
- for some people blood may disappear from one day to the next. It may also only appear once or twice – it is not always an ongoing problem
- sometimes blood clots can form and these may cause problems when emptying the bladder.

The amount of blood in the urine is not related to the extent of the cancer.

Other symptoms of bladder cancer include:

- a burning feeling when passing urine
- the need to pass urine more often or urgently
- not being able to urinate when you feel the urge
- pain during urination.

Rarely, you may have pain in the lower abdomen or back

If you have any symptoms, get checked by your doctor as soon as possible. Blood in your urine can also occur with kidney or bladder stones and non-cancerous enlargement of the prostate in men. Other symptoms may indicate that you have bladder irritation or an infection.
Never ignore blood in the urine. Even if you’ve only seen blood in the urine once and it is painless, schedule a check-up with your doctor.

**Risk factors**

Research has shown that people with certain risk factors are more likely to develop bladder cancer. These include:

- smoking – cigarette smokers are about six times more likely to develop bladder cancer
- industrial exposure – chemicals called aromatic amines and aniline dyes have been linked to bladder cancer
- chronic infections – infections (including parasite infections) and untreated bladder stones have been linked with squamous cell carcinoma
- long-term catheter use – squamous cell carcinoma may be associated with long-term urinary catheter use
- previous cancer treatments – including the drug cyclophosphamide and radiotherapy to the pelvic area
- diabetes – people with this disease are more likely to develop bladder cancer
- personal or family history – rarely bladder cancer is associated with an inherited faulty gene.

**Which health professionals will I see?**

<table>
<thead>
<tr>
<th>Health professional</th>
<th>Job description</th>
</tr>
</thead>
<tbody>
<tr>
<td>urologist</td>
<td>a surgeon who specialises in treating diseases of the urinary system and the male reproductive system</td>
</tr>
<tr>
<td>radiation oncologist</td>
<td>prescribes and coordinates the course of radiotherapy</td>
</tr>
<tr>
<td>medical oncologist</td>
<td>prescribes and coordinates the course of chemotherapy</td>
</tr>
<tr>
<td>cancer care coordinator</td>
<td>supports patients and families throughout treatment and liaises with other staff</td>
</tr>
<tr>
<td>nurses</td>
<td>help administer drugs, including chemotherapy, and provide care, information and support throughout your treatment</td>
</tr>
<tr>
<td>stomal therapy nurses</td>
<td>provide advice and support to patients with a stoma</td>
</tr>
<tr>
<td>continence nurses</td>
<td>assess and educate patients about continence care</td>
</tr>
<tr>
<td>dietitian</td>
<td>recommends an eating plan for you to follow while you are in treatment and recovery</td>
</tr>
<tr>
<td>social worker, physiotherapist, clinical psychologist and occupational therapist</td>
<td>link you to support services and help you with any emotional, physical or practical problems</td>
</tr>
</tbody>
</table>

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