Types, grades and stages

Bladder cancer is not a single disease. In fact, there are several types of bladder cancer. The different types also have different forms, depending on two factors:

- how deeply the cancer extends into the bladder wall - this is known as the stage
- how aggressive the cancer is i.e. how quickly it is likely to spread - this is known as the grade

The type, stage and grade of your cancer, and how they combine, will affect what treatment will be the most appropriate for you.

There may also be other aspects of your health and physical make-up, which could affect treatments may be effective and safe for you.

The bladder cancer team at Addenbrooke’s Hospital will carry out various tests to make sure we know as much as possible about your cancer and anything that could affect your treatment. This information will help us to advise you about the advantages and disadvantages of possible treatments, so that you can decide which is the most suitable for you.
Types of bladder cancer

There are three main types of bladder cancer:

- **Urothelial bladder cancer**
- **Squamous cell cancer**
- **Adenocarcinoma of the bladder**

There is more information about how we treat the different types of bladder cancer under Your treatment.

**Urothelial bladder cancer**

Urothelial cancer is the most common type of bladder cancer in the UK, and accounts for around 95% of bladder cancers. You may hear this kind of cancer called transitional cell bladder cancer or TCC, which is an older name for the same cancer.

Urothelial cancer develops in the cells of the bladder lining, which is called the urothelium. The cancer cells look similar to the tissue that lines the urinary tract.

There are two different types of urothelial cancer, depending on whether the muscle coat of the bladder is involved with the cancer:

- **Non-muscle invasive bladder cancer**: the cancer cells are confined to the lining of the bladder. This type of cancer is sometimes also called superficial bladder cancer.
- **Muscle-invasive bladder cancer**: where the cancer cells spread beyond the lining of the bladder into the surrounding muscle.

Muscle invasive bladder cancer presents a high risk. In up to 25 patients in 100 with this type of cancer, the cancer cells will spread to the lymph glands around the bladder. This may sharply reduce the chance of cure.

**Non-muscle invasive bladder cancer:**

Around 70% of all bladder cancers are non-muscle invasive. These cancers form growths on the lining of the bladder. If you have a non-muscle invasive cancer, you are likely to be treated by having the tumours removed, followed by a course of chemotherapy.
These cancers may be:

- **low risk**: there is little chance that the cancer will develop or progress and spread
- **high risk**: there is a high risk that the cancer will progress, spreading into the muscle coat of the bladder and through it to other organs

In both cases, there is a risk that the cancer may return. This is called **recurrence**.

Even when there is a low risk that the cancer will spread, the chance that it recurs may be high. In this case, the recurring cancer is rarely life threatening. However it will need further treatment.

With high risk non-muscle invasive bladder cancer, the risk of both progression and recurrence is high and sometimes very high.

**Muscle invasive bladder cancer**

This accounts for about 20 in 100 of all bladder cancers.

Because of the high risk that the cancer will spread from the bladder to other organs, the treatment for muscle invasive bladder is often more intensive. It may include chemotherapy, surgery to remove the bladder and radiotherapy.

**Squamous cell bladder cancer**

Squamous cell cancer of the bladder accounts for about 5 in 100 of all bladder cancers.

It is usually muscle invasive, which means it may need surgery to remove the bladder. This sort of cancer tends not to respond to chemotherapy or radiotherapy.

Squamous cell cancer is more common in countries where a worm infection called bilharzia (schistosomiasis) is common, including much of Africa, Asia and South America.

**Adenocarcinoma of the bladder**

Adenocarcinoma also accounts for around 5 in 100 of all bladder cancers.

The tumour cells resemble the sort of glands that you would find in the gut, lung or breast.
Adenocarcinoma of the bladder is usually muscle invasive, which means it may need surgery to remove the bladder. Like squamous cell bladder cancer, this sort of cancer tends not to respond to chemotherapy or radiotherapy.
Grades of bladder cancer

Grading your cancer

The grade is a measure of how aggressive the cancer is. We work out the grade of your cancer by taking a sample of tissue from your tumour and examining it under a microscope. The appearance of the cells tell us how aggressive the cancer is.

The different grades of cancer are:

- **G1** - Not aggressive (also known as low grade)
- **G2** - Moderately aggressive
- **G3** - Aggressive (also known as high grade)

Invasive bladder cancer

- Invasive bladder cancers are normally grade three

Non-muscle invasive bladder cancer

- **Low risk**: Cancers that are confined to the surface lining of the bladder (urothelium) and are not high grade are considered low-risk. This includes pTaG1 and pTaG2 tumours
- **High risk**: Cancers that are confined to the surface lining of the bladder (urothelium) or to the connective tissue layer (lamina propria) and are high grade are considered high-risk. This includes carcinoma in situ, pTaG3, pT1G2 and pT1G3 tumours, either singly or in combination.
Stages of bladder cancer

The stage of your bladder cancer describes whether the cancer has spread into the wall of the bladder, and if so, how far. It is important for us to find out the stage of your cancer, so that we can advise on the possible treatments for you.

<table>
<thead>
<tr>
<th>Stage</th>
<th>Description</th>
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<tbody>
<tr>
<td>Carcinoma in situ</td>
<td>This form of tumour consists of aggressive cancer cells spreading within the surface lining of the bladder. You may see it described as Cis, Tis or pTis.</td>
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<tr>
<td>Ta</td>
<td>The cancer cells form a visible lump, but the tumour is confined to the surface lining with no spread into the wall of the bladder or beyond</td>
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T1

The cancer has spread into the connective tissue layer (called the lamina propria) between the surface lining of the bladder (urothelium) and the muscle wall.

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T2

The cancer has spread into the muscle wall.

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T3a

The cancer has spread through the wall into the fat around the bladder, but this is only identifiable using a microscope.
**T3b**

The cancer has spread visibly through the wall into the fat around the bladder.

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**T4**

The cancer has spread into an adjacent organ or structure.

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**T4a**

The cancer has spread into the prostate, womb or vagina.

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**T4b**
The cancer has spread into the pelvis and/or abdomen