

Your Urologist experience - advanced testing & definitive diagnosis

DISCLAIMER:

This website and document is a guide and while it is written by professionals, we advise you to see your doctor if you have any symptoms.

You have a diagnosis of suspected bladder cancer, which means you have to visit a Urologist.

So, what is a Urologist?

A urologist is a doctor (surgeon) who specializes in diseases of the urinary tract and the male reproductive system. Patients may be referred to a urologist if their GP suspects they may need treatment for a condition relating to bladder, urethra, ureters, kidneys, adrenal glands, prostate, penis or testicles.

What's the structure of your initial visit?

- **History of symptoms**

The urologist will ask you in depth questions about your symptoms. See the BEAT website's Symptoms page [here](#).

- **Medical history**

The urologist will assess for any risk factors. The urologist will ask about your past medical illnesses and surgeries; your medication history; social habits such as smoking; family history of illnesses; and occupational exposure.

- **Examination**

The urologist may then examine you to assess if any cancer may be felt (this is very uncommon unless the cancer is advanced). The urologist may examine all your glands (lymph nodes), the lungs and liver to assess if the cancer may have spread. In men, a prostate exam may take place.

Initial tests & making the diagnosis

- **Cystoscopy**

The passage of a small pipe/tube (endoscope) with a small camera on the end through the urethra into the bladder to assess the tumour. This is the best way to visualise a tumour – to see its size and location.



To learn more about your initial visit to a Urologist, click [here](#) to watch a video by Prof Manish Patel.



To better understand how the Urologist makes the diagnosis, click [here](#) to watch a video by Prof Manish Patel.

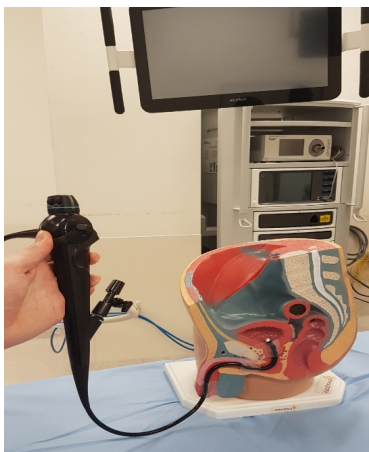


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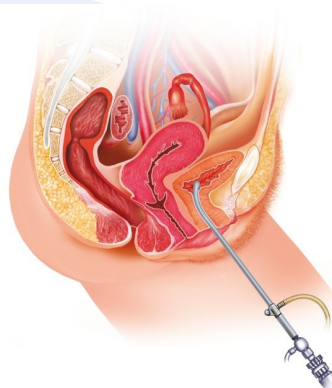
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There are two types:

1. Flexible cystoscopy, which can be done with a local anesthetic jelly in the doctor's rooms.



2. Rigid cystoscopy: usually done under general anaesthetic in the operating theatre. The advantage of a rigid cystoscopy is that a sample of the tumour (bladder biopsy) can be retrieved at the same time and sent to the laboratory for diagnosis.



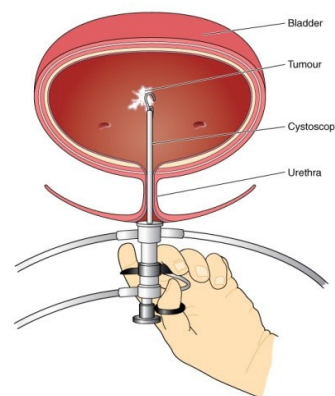
• Transurethral resection of bladder tumour (TURBT)

Any patient with a suspected bladder tumour will ultimately have a TURBT. This is done under general anaesthetic using a special kind of cystoscope called a resectoscope. The urologist is able to take a bigger and deeper sample of the tumour, and in some instances remove the tumour completely. This sample is sent to the laboratory. There may be an overnight stay.

In the following patients it may sometimes be necessary to have a second TURBT:

- After incomplete initial TURBT and some high grade but non-invasive
- If there is no bladder muscle identified in the specimen
- In all T1 tumours (The cancer has spread to the layer under the bladder lining but not muscle)

Depending on the stage of tumour, a second TURBT may remove any remaining cancer or it might help confirm a diagnosis where there was uncertainty of the tumour grade and stage after the first TURBT.



Potential complications (after effects) of a cystoscopy

- **Bleeding** - a cystoscopy might cause some blood in your urine. Serious bleeding occurs rarely. Bleeding from your urethra can appear bright pink in your urine or on toilet tissue.
- **Pain** - you might experience abdominal pain and a burning sensation when urinating. These symptoms are generally mild and gradually decrease after the procedure.
- **More frequent urination** - for the next day or two.



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- **Infection** - rarely, a cystoscopy can introduce germs into your urinary tract, causing an infection. To prevent infection, your urologist might prescribe antibiotics to take before and after your cystoscopy. Risk factors for developing a urinary tract infection after cystoscopy include advanced age, smoking and unusual anatomy in your urinary tract.
- **Anaesthetic-related complications** - such as, nausea or vomiting.
- **Acute urine retention** - inability to pass urine at all due to clots (may require catheterisation).

The results

The results are reviewed by a pathologist (a doctor that is able to look under a microscope and make the exact diagnosis), who can determine not only the type of cancer but also the stage and the grade.

'**Stage**' refers to how far the cancer has spread.

'**Grade**' refers to how quickly the cancer will grow (usually high or low).

How long it will take to get the results will depend on whether a public (a few weeks) or private pathology service is used (a few days to a couple of weeks).

Your urologist is going to tell you the results in three parts:

1. Cancer type
2. Stage
3. Grade

1. Bladder cancer types

- **Urothelial carcinoma** – Most types of bladder cancer (80–90%) start in the urothelial cells lining the bladder wall. This is sometimes called transitional cell carcinoma. Urothelial carcinoma can be papillary or flat, and can sometimes occur in the ureters and kidneys.
- **Squamous cell carcinoma** – This type of cancer starts in the thin, flat cells in the lining of the bladder. It accounts for 1–2% of all bladder cancers and is more likely to be invasive.
- **Adenocarcinoma** – This cancer develops from the glandular cells of the bladder. It makes up about 1% of all cases and is likely to be invasive.

Rarer types of bladder cancer include sarcomas (starting in the muscle) and aggressive forms called small cell carcinoma, plasmacytoid carcinoma and micropapillary carcinoma.

2. Stage

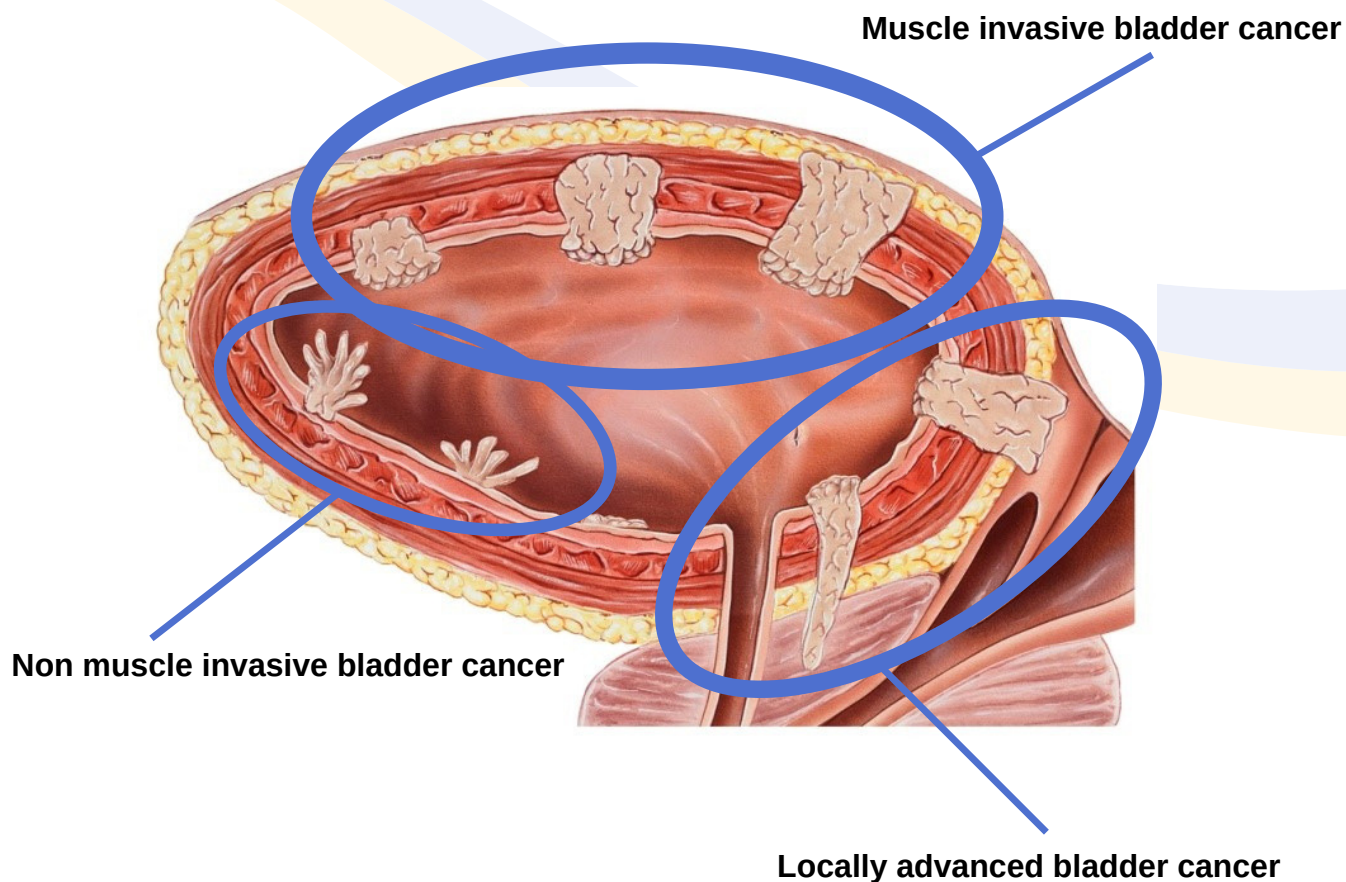
The next information the urologist will tell you is whether the cancer is confined to the inner layer (urothelium, mucosa, superficial layer) or whether it has spread deeper into the muscle layer.



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So your cancer will be either non muscle-invasive or muscle-invasive:



If the cancer has spread beyond the walls of the bladder into surrounding structures (as pictured above labeled 'locally advanced bladder cancer'), such as the prostate, uterus, pelvic wall it is called locally advanced. If it has spread to other organs such as glands (lymph nodes), the liver or lungs then it becomes what is called metastatic.

The pathologist stages bladder cancer using the Tumour, Nodes, Metastes (TNM) classification:

<p>Tumour</p>	<p>Ta – non-invasive finger like growth from bladder lining</p>	<p>Tis – carcinoma in situ flat tumour in the bladder lining</p>	<p>T1 – tumour is in the layer of blood vessels surrounding lining</p>
<p>Describes how far tumour has spread into bladder wall or surrounding structures.</p>	<p>T2 – tumour is in muscle layer</p>	<p>T3 – tumour extends to fat layer surrounding muscle</p>	<p>T4 – tumour has spread beyond bladder</p>



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Nodes Shows if cancer has spread to nearby glands (lymph nodes)	No – the cancer has not spread to nearby lymph nodes	N1 – spread to one lymph node in the pelvis
	N2 – the cancer has spread to multiple lymph nodes	N3 – the cancer has spread to lymph nodes in the abdomen

Metastases Shows whether cancer has spread to other parts of body	Mo – Cancer has not spread	M1 – Cancer has spread to other parts such as liver, lung or bone

3. Grade

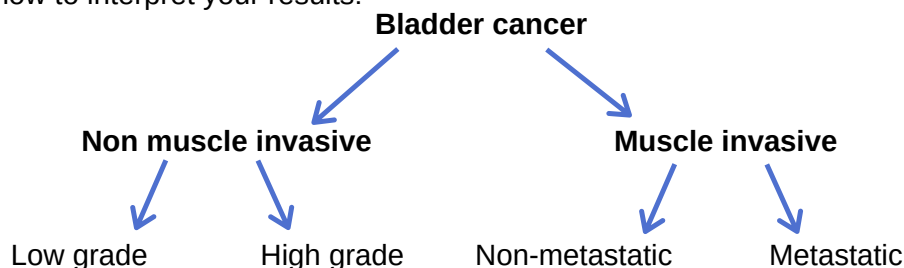
The grade describes how quickly a cancer might grow. Knowing the grade helps your specialist predict how likely the cancer is to come back and if you need further treatment after surgery.

There are two types of grade:

- **Low grade** - the cancer cells look similar to normal bladder cells, are usually slow-growing and are less likely to invade and spread. Most bladder tumours are low grade.
- **High grade** - the cancer cells look very abnormal and grow quickly. They are more likely to spread both into the bladder muscle and outside the bladder.

In non-muscle-invasive tumours, the grade may be low or high, while almost all muscle-invasive cancers are high grade.

A summary of how to interpret your results:





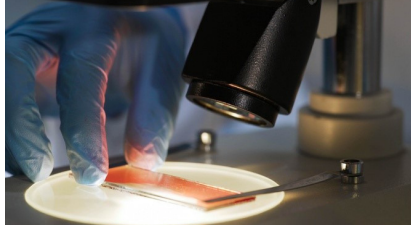
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Further tests

To help confirm whether the cancer is confined to the bladder or has possibly spread to other organs, the urologist may request more blood tests or imaging.

Blood tests

- **Full blood count (FBC)** - this assesses the level of red blood cells in the blood to exclude anaemia.
 - **Urea, electrolyte and creatinine (UEC)** - this test gives an indication of kidney function. A bladder tumour that obstructs the drainage of the urine from the kidney may cause the kidney function to decline. A normal kidney function is also important when receiving contrast dye during a CT/CAT scan and for receiving certain chemotherapy drugs.
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 - **Liver function tests (LFT)** - if this test is recommended, it may suggest that the cancer has spread to the liver. Even though it may suggest metastatic cancer, it would need to be confirmed with imaging.
 - **Calcium, magnesium, phosphate (CMP)** - if these tests results are abnormal, it may suggest the bladder cancer has spread to the bone. This would need to be confirmed with a bone scan.
- **Urine cytology test** - this urine test is not done routinely but rather when looking for larger and more aggressive cancers for example Carcinoma in Situ (CIS). It might miss the smaller slow growing cancers. It may be useful in assessing for tumour recurrence. A cystoscopy will still be required to make a definitive diagnosis.
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Imaging

- **Ultrasound** - a picture is created by soundwaves during an ultrasound examination. It is a non-invasive, painless, quick, contrast-free examination. You will lie on your back with your tummy exposed. A gel is placed on the abdomen and a small probe is run along the surface of your tummy to assess the internal contents.

An ultrasound cannot diagnose bladder cancer definitively but may suggest a mass in the bladder or a thickened bladder wall. It is also useful in assessing the kidneys to ensure the bladder cancer is not causing an obstruction and hampering the drainage of urine from the kidney. It may suggest enlarged glands (lymph nodes) or bladder cancer that may have spread to the liver.



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- **A computerised tomography scan (CT or CAT scan)** - this a series of x-ray images taken from different angles around the body and uses computer processing to create cross sectional images (slices) of the bones, blood vessels and soft tissues inside the body. The patient lies on a bed that passes through a donut type structure where the images are taken.

It will provide information about the cancer in the bladder and if it has spread, where in the abdomen it has spread to. Smaller tumours may be missed on a CT scan which is why performing a cystoscopy is still important in every patient where bladder cancer is suspected.



For this test you may be given contrast dye through an intravenous cannula (drip in the vein). Although rare, the contrast material can cause medical problems or allergic reactions. Discuss any allergies/medical conditions with the radiology department prior to the test.

- **Magnetic resonance imaging (MRI)** - MRI is a technique that uses a magnetic field and radio waves to create detailed images of the organs and tissues within the body. Like a CT scan, the patient lies on a bed and passes through a tunnel. The MRI tunnel is a lot narrower and may pose a problem for claustrophobic patients.

This test is not routinely performed in bladder cancer. In some patients who have allergies to contrast or kidney dysfunction and can't receive the contrast needed to have a CT scan, they may have to have an MRI.



Caution: Because the MRI uses powerful magnets, the presence of metal in your body (e.g. heart valves, joint implants, defibrillators) may be a safety hazard or affect a portion of the MRI Image.

- **Positron emission tomography (PET scan)** - this imaging test helps reveal how your tissues and organs are functioning. A PET scan uses a radioactive drug (tracer) to show this activity.

During the test you will be lying on a bed that passes through a donut like structure (much like a CT scan).

The tracer is injected and collects in areas of your body that have higher levels of chemical activity, which often correspond to areas of disease.

Often the PET scan images are combined with CT scan images to create special views.



Cancer cells show up as bright spots on PET scans because they have a higher metabolic rate than normal cells.



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PET scans may be useful in:

- Detecting cancer
- Revealing whether your cancer has spread
- Checking whether a cancer treatment is working
- Finding a cancer recurrence

There are very specific situations in the diagnosis of bladder cancer where PET scans may be used and they may not be suitable for every type of cancer or for all patients. Your urologist or oncologist will guide you.

- **Bone scan** - a bone scan is a nuclear imaging study where tiny amounts of radioactive materials (tracers) are injected into a vein and taken up in varying amounts by tumour cells during a scan.

The dye collects in areas of abnormal bone growth. You will need to wait several hours before having the scan. This gives the bones time to absorb the dye.

For the scan you will lie on a bed and pass through a donut structure (much like a CT scan). The scanner will measure the radioactivity levels and record them on x-ray film.

If cancer has spread to the bone it may show up as dark spots on the images.

Although only a little radioactive material is used, it may take a few hours to leave your body. You will need to drink plenty of fluids. The medical staff will discuss any precautions, such as avoiding contact with pregnant women and young children for the rest of the day. Speak to your doctor if you are concerned.

Bladder cancer does not usually spread to bone but in certain instances your urologist may order this test.

Understanding & accepting the diagnosis

If you have a potential diagnosis of bladder cancer, know that you are not alone.

The **BEAT website** provides information and support to help you through your journey.



For advice from other patients who have experienced bladder cancer, click **here** to go to our Patients' Stories page on the BEAT website.



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