



3

Non-muscle-invasive bladder cancer

The underlined terms are listed in the glossary.

What is non-muscle-invasive bladder cancer?

Non-muscle-invasive bladder cancer, also called superficial bladder cancer, is an early cancer that has not grown beyond the bladder lining.

There are three subtypes based on how they grow:

- Stage Ta tumours are confined to the bladder lining.
- Stage T1 tumours have invaded the connective tissue under the bladder lining but have not grown into the muscle of the bladder wall.
- Stage Tis tumours are flat velvet-like tumours, also known as carcinoma in situ (CIS), that are confined to the bladder wall but have a high risk of spreading into the deeper layers of the bladder.

Stage Ta and T1 tumours usually appear as small grapelike growths that grow toward the centre of the bladder without growing into the deeper bladder layers. Your surgeon may remove these growths using a method called transurethral resection of bladder tumour (TURBT).

Treatment options

Transurethral resection of bladder tumour

TURBT is the surgical removal (resection) of bladder tumours. This procedure is both diagnostic and therapeutic. It is diagnostic because the surgeon removes the tumour and all additional tissue necessary for examination under a microscope (histological assessment). TURBT is also therapeutic because complete removal of all visible tumours is the treatment for this cancer. Complete and correct TURBT is essential for good prognosis. In some cases, a second surgery is required after several weeks.

TURBT is performed by the insertion of a rigid endoscope through the urethra into the bladder, with the patient under general anaesthesia (combination of intravenous drugs and inhaled gasses; you are 'asleep'). TURBT usually takes no longer than 1 hour and requires a short hospital stay. After the operation, in some cases, a transurethral catheter is placed for a few days.

As in any surgical procedure, bleeding and infections may occur after the surgery. Symptomatic infections are treated with antibiotics and rarely require longer

hospitalisation. Perforation of the bladder during the operation is not very common but can occur if the removal procedure goes too deep. Perforations usually resolve with catheterization for a few days; however, some cases require open surgery and suturing of the bladder.

Although TURBT can eradicate stage Ta or T1 tumours, some tumours commonly recur and can progress to invasive cancer. Washing the bladder with drugs to prevent the growth or spread of cancer cells (intravesical instillation) after TURBT should be considered for all patients. Instillation treatment is described later in this leaflet.

How is TURBT performed?

The procedure is usually performed under general anaesthesia but also can be done with local anaesthesia (an injection is given in the lower back to numb the lower part of the body; you are awake).

A slender tube with a camera at the end is placed through the urethra into the bladder. All visible tumours are removed using a tool called a resectoscope, along with all additional tissue necessary for examination (biopsy). The cancerous tissue is scraped off, and any remaining cancer cells are burned away using an electric current that runs through the resectoscope.

How do I prepare for the procedure?

Your doctor will advise you in detail about how to pre-

pare for the procedure. You must not eat, drink, or smoke for 6 hours before surgery to prepare for the anaesthesia. If you are taking any medication, discuss it with your doctor. You may need to stop taking medication for several days before surgery.

What are the risks of the procedure?

As with any surgical procedure, there are risks of complications:

- Bleeding
- Infection
- Perforation of the bladder wall is rare but can happen when the tumour is removed from deep within the bladder
- Blood in the urine
- Blockage of the urethra due to blood clots

What happens after the procedure?

After surgery, a catheter is placed in the urethra to help stop the bleeding and to prevent blockage of the urethra. The catheter is removed when the bleeding has stopped. After the catheter has been removed and you are able to urinate without problems, you are released from hospital. This is usually 1–3 days after the procedure. Keep in mind that the length of hospital stay can vary between countries.

Your doctor will plan a follow-up visit 1–2 weeks after surgery to discuss the results from the biopsy.

The terms your doctor may use:

Tumour stage	Tumour stage indicates how advanced the tumour is and whether cancer has spread to the lymph nodes or other organs
Ta and T1 tumours	The T (tumour) stages indicate how far the main (primary) tumour has grown through the bladder wall and whether it has grown into nearby tissues
TNM staging system	The Tumour Node Metastasis system, also called the <u>TNM classification</u> , is used most often for staging bladder cancer. It was developed by the American Joint Committee on Cancer and the Union for International Cancer Control.

Recommendations after surgery:

- You may have blood or blood clots in your urine for up to 3 weeks following surgery. This is normal and will pass.
- You may feel a constant urge to urinate. This will pass after a few days.
- You may feel a burning sensation during urination. This will pass after a few days.
- To help recover, it is important that you drink at least 2 L of fluids each day, especially water (avoid alcohol).
- Do not lift anything heavier than 2 kg.
- Refrain from sexual activity for up to 2 weeks.
- Avoid straining during bowel movement. Use laxatives if necessary.
- Do not cycle or exercise intensively.
- Avoid household chores such as window cleaning, vacuuming, or gardening.
- Do not use alcohol.

You need to go to your doctor or return to hospital:

- If a burning sensation during urination continues
- If your urines contains a lot of blood clots
- If you are unable to urinate
- If you are running a fever

Re-TURBT

Residual tumour tissue is sometimes observed after removal of stage T1 tumours. Staging of these tumours after removal is often too low (understaging) because the most aggressive part of the tumour has not been examined or has been missed during removal, making the tumour appear less aggressive than it actually is. The likelihood of detecting muscle-invasive disease increases with a second TURBT (re-TURBT) of a tumour initially staged as T1.

Treatment of stage Ta, stage T1, and stage T2 tumours is completely different. Consequently, correct staging is imperative. If such tumours are identified, your doctor will recommend re-TURBT 4–6 weeks after the primary TURBT.

Re-TURBT is recommended in the following situations:

Re-TURBT is recommended in the following situations:

- After incomplete initial TURBT
- No muscle is present in the tissue taken in the initial TURBT (unless tumours are low-grade stage Ta tumours or primary CIS)
- For all stage T1 tumours
- For all high-grade tumours (except primary CIS)

Re-TURBT is performed within 2–6 weeks after initial TURBT.

Instillation treatment

As noted earlier, TURBT can eradicate stage Ta or T1 tumours, but some tumours commonly recur and can progress to invasive cancer. Intravesical (within the bladder) instillation treatment after TURBT should be considered for all patients.

Intravesical chemotherapy

A single, immediate intravesical instillation of chemotherapy after TURBT

If a superficial tumour can be fully and safely resected during TURBT without an indication of deep invasive growth, an immediate instillation can be given after the procedure. A single instillation is not given if you have multiple tumours, if removal required surgery deep in the bladder wall, or if there was possible perforation of the bladder.

An immediate single instillation destroys tumour cells floating in fluids after TURBT and kills residual tumour cells at the site of removal and on small overlooked tumours. This reduces the risk of recurrence. Your doctor will recommend giving the instillation as early as possible, usually within a few hours after TURBT.

Intravesical chemotherapy is put directly into the bladder through a catheter, which is then removed. The main side effects of intravesical chemotherapy are irritation and a burning feeling in the bladder, which will disappear spontaneously after a few days.

Additional intravesical chemotherapy after TURBT

Additional intravesical chemotherapy after surgery depends on the prognosis. If you have low risk of recurrence and progression, a single instillation after TURBT is sufficient to reduce the risk of recurrence and is considered to be the standard treatment. If you have intermediate-risk tumours, a single instillation may not be enough, so additional chemotherapy instillations may be necessary. The optimal number and frequency of chemotherapy instillations have not yet been determined.

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Intravesical BCG immunotherapy

Bacillus Calmette-Guérin (BCG) is a weakened (attenuated) bacterium related to the germ that causes tuberculosis. For this reason, it is very important that you report to your doctor any history of prior tuberculosis, even if it was only suspected. Other immunotherapies that you might have received in the past should also be reported.

BCG activates the immune system by causing superficial inflammation in the bladder that attracts and stimulates immune cells to kill cancer cells. Treatment usually starts a few weeks after TURBT and is given once a week for 6 weeks. Long-term 'maintenance' BCG therapy is sometimes given by extending the therapy to 6–12 months with an instillation every 2–6 weeks. Studies have shown that BCG therapy reduces the risk of progression for all different types of non-muscle invasive tumours.

As an outpatient treatment, the irrigation is given through an intermittent catheter. You should hold the irrigation fluid, ideally, for 2 hours before emptying the bladder.

Several protocols have been tested and proven effective, but patient reactions to this therapy vary. Consequently, the optimal number of induction instillations

and the optimal frequency and duration of maintenance instillations have not yet been determined.

BCG toxicity

Treatment with BCG is known to have more side effects than intravesical chemotherapy. BCG can cause a burning feeling in the bladder and symptoms similar to the flu, such as fever, chills, and fatigue. BCG is absorbed by the circulatory system and enters the rest of the body, leading to a serious infection (sepsis). In this case, you may experience high fever that does not get better with a pain reliever. You should see your doctor right away if this occurs. Your doctor will prescribe antibiotics used to treat tuberculosis, and those must be taken for several weeks.

Support

Lifestyle

It is important to maintain a healthy lifestyle during treatment. Find an activity that you enjoy doing. If you have questions about what types of physical activity you can do, ask your doctor to refer you to a physiotherapist.

Try to eat a balanced diet with a mix of vegetables, some fruit, and dairy. Also include starchy food like bread and potatoes, rice or pasta, and protein-rich food like meat, fish, eggs, or legumes. Try to eat less sugar, salt, and fatty food. If you have any questions, ask your doctor to refer you to a dietician.

If you smoke, try to stop. It may help you recover faster after treatment.

As noted earlier, you may have urinary tract irritation for a few weeks after surgery. This is normal and will pass. To help recover, drink at least 2 L of liquid a day, especially water, and avoid alcohol. Avoid strenuous physical activity after surgery, and refrain from sexual activity for up to 2 weeks. Use a laxative if necessary to avoid straining during bowel movement. Go to your doctor or return to hospital if urinary symptoms persist or if you are running a fever.

Dealing with the side effects of immunotherapy and chemotherapy

If you need treatment for cancer, you will experience unpleasant side effects. Information on side effects is included in the packet leaflet for the medicines used and is available from your doctor or pharmacist. Some countries require this information to be provided to the patient; in other countries, it must be requested. Every patient has the right to ask for information on the side effects of their medications.

Side effects can be common, very common, or uncommon, and management includes therapies to relieve them. It is important to tell your doctor about the side effects you have. Write down your symptoms every day and try to describe them as precisely as possible. Note how often they occur and how much

they affect your daily life. In some cases, temporary treatment interruption, dose modification, or stopping the treatment can be considered.

Common side effects

Some common side effects include fatigue, nausea, diarrhoea, high blood pressure, and taste alterations. Strategies to cope are listed below.

You may experience fatigue, which means you may feel more tired than usual, be out of energy, and have trouble concentrating, and it does not get better after you sleep.

If you experience fatigue, some strategies can help:

- Write down things that give you energy, and give them priority during the day or week.
- Get help with household tasks like washing, cleaning, or gardening.
- Take short naps several times during the day.
- Try to be as active as you can. A short walk every day is better than a long walk once a week.
- When planning social activities like a trip or a visit, keep in mind that you may need time to rest during the day. Discuss this with your family, friends, or caregiver so that you can plan ahead. It is important to tell them when you are feeling tired.
- If you plan to travel outside of your country, discuss your plans with your doctor. The doctor can give you advice about vaccinations or possible restrictions on certain medicines. Laos Also make sure to check your travel insurance.

During treatment, you may experience nausea caused by therapy, tumour growth, or anxiety about your prognosis. The doctor can prescribe medicine to reduce the nausea. It may also help if you:

- Eat smaller meals, but eat more often throughout the day to make sure you get enough nutrition.
- Eat snacks.
- Drink smaller amounts, but drink more often to stay hydrated.
- Try cold dishes if hot meals make you nauseous.
- Ask someone to cook for you, if possible.

Another common side effect of the treatment is diarrhoea, which can lead to dehydration. It is important to:

- Drink more than usual.
- Avoid food that you think makes the diarrhoea worse.
- Keep the anal area clean to prevent irritation.
- Use moisturizing cream if you have anal irritation.
- Ask the doctor to prescribe medicine to prevent diarrhoea.

You may also experience a mild to moderate rise in blood pressure, especially early in your treatment. This is normal and can be managed with standard therapy. Your doctor will advise you if you need to monitor your blood pressure and how often. If you feel dizzy or have a headache, let your doctor know as soon as possible.

Chemotherapy can also cause changes in how food tastes to you. You may even begin to dislike certain foods you liked before. The best way to figure out what food you like is to try different things:

- Drink water before you eat to neutralize your sense of taste.
- If red meat tastes strange, try white meat or fish, or vice versa.
- If hot food tastes strange, try it cold, or vice versa.
- Try using more spices, or try using less.
- Use a plastic fork and knife if the food tastes of metal.

Psychological support

During treatment, you may worry about your prognosis, postoperative urinary symptoms, sexual activity, relationships with family and friends, and the impact of cancer on your social or financial situation. If you feel the need to have someone to talk to, you can ask your doctor for a referral to a psychologist. A patient organization can also offer support.

As noted earlier, you may have urinary tract irritation for a few weeks after surgery. This is normal and will pass. Go to your doctor or return to hospital if urinary symptoms persist or if you are running a fever.

Even after refraining from sexual activity for up to 2 weeks after surgery, treatment can affect your sexuality. Feelings of depression and fatigue can also have a negative effect on your sexual life. If you feel the need to have someone to talk to, you can ask your doctor for a referral to a psychologist. If you have a partner, it is important to talk with them about your feelings. There are many ways in which you can be intimate. If you do not want to be sexually active, be near each other, touch each other, give and take hugs, and just sit or lay down close to each other.

A cancer diagnosis can make you look at life in a different way, and you may realize you now have different priorities. This will affect your work or relationships and can make you feel disoriented and uncertain. Talk to family, friends, or your spiritual advisor about your feelings and wishes. If you don't feel comfortable addressing these issues with those close to you, you can ask your health care team for a referral to a psychologist. The psychologist can give you the tools to deal with these feelings.

Discuss the possible financial consequences of your treatment with your health care team. They might be able to direct you to people or places where you can get advice about your economic situation or even financial help. They can also help you find legal advice about your will and related matters.

Support for family and friends

A cancer diagnosis affects not only the patient but also the people around them. As a loved one, you can offer support in many different ways. Sometimes you can help with practical things like laundry, gardening, or grocery shopping.

It might be helpful to go to the doctor together. You could offer to drive to the visit or help formulate questions to ask during consultation. Being there for the consultation can also be supportive. You may remember different things or focus on other details that you can later discuss together. You could also ask the doctor how the treatment may affect your lives in terms of caregiving and psychological effects.

The diagnosis and treatment of cancer can be very emotional for everybody involved. Cancer treatment is intense, and your life may change suddenly. Questions about prognosis, effects of treatment, and death will come up. As a friend or a loved one, you can be there and listen. You don't need to have the answers.

If you feel you need somebody to talk to, approach your family doctor or the medical team to get support and referrals. Patient organizations also offer support for family members or friends of people who have been diagnosed with cancer.

Support for partners

A cancer diagnosis can put pressure on your relationship. Often talking to each other becomes more difficult because of the time and energy spent on treatment. You may decide to discuss any difficulties with a therapist.

You may experience a similar degree of stress, anger, and depression as your partner with cancer. You could feel exhausted, both physically and emotionally. This can be a result of the responsibilities of caring for your partner and taking on extra tasks at home. Be sure to make time for yourself and think about your own wishes and needs.

Cancer treatment can affect your sex life. Try to talk to your partner about your feelings. There are many ways in which you can be intimate. Be near each other, touch each other, give and take hugs, and just sit or lay down close to each other.

It is normal to worry about being left alone. If you feel you need somebody to talk to, approach your family doctor or your spiritual advisor. Patient organizations also offer support for partners. They can also help you find people or organizations that can help you with practical details like legal and financial issues.

This information was last updated in March 2016 and is subject to change following review by the European Cancer Patient Coalition (EPC) and EAU Guidelines Office.

This leaflet is part of a series of EAU Patient Information on Bladder Cancer. It contains general information about bladder cancer. If you have any specific questions about your individual medical situation you should consult your doctor or other professional healthcare provider.

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