



# TURBT

This information was produced by the European Association of Urology (EAU) Patient Information Working Group.

This leaflet contains general information about TURBT. If you have any specific questions about an individual medical situation you should consult your doctor or other professional healthcare provider.

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The content of this leaflet is in line with the EAU Guidelines.

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# TURBT

## What is TURBT?

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.

This section contains information on transurethral resection of bladder tumour (TURBT) and includes an animated video on what happens during TURBT.

A cystoscopy is often used to detect the presence of bladder cancer. If there is cancer, a TURBT is performed to remove the tumour and to determine whether it has spread to the muscle layer of the bladder wall.

## Before the procedure

Check with your anaesthetist when you should stop eating and drinking before the procedure.

If you are a smoker, we advise you to stop smoking straight away. Ask the Hospital or your GP for advice and information about how to quit.

Ask your anaesthetist to review your current medications and advise if any of them need to be stopped before the procedure and when to stop them.

You will also speak to the anaesthetist to discuss what pain relief you might need after the surgery and arrange to have a supply of these at home.

## How to prepare for the procedure

Always ask your doctor about the steps of the treatment and any special instructions. These may differ per hospital or country, such as anaesthesia methods which include

general anaesthesia and epidural anaesthesia. The latter is an anaesthetic used to numb the lower half of the body with or without sedation.

If you are taking any medication, discuss it with your doctor. You may need to stop taking some of your medication for several days before surgery; such as medications that thin your blood.

It is important that your doctor and your other healthcare providers are informed about your treatment. It also helps that your partner, family or friends know about the procedures.

Write down your questions or any important points you would like to discuss during appointments. Ask someone to accompany you for additional support.

You may be asked to give a urine sample to test for a urinary tract infection.

## The procedure

Before the operation, the anaesthetist will assess which anaesthesia method is best for you; this will be either general anaesthetic (where you will be asleep) or spinal anaesthetic (where you will feel nothing from the waist down).

Here is what happens during the operation:

- The operation is either carried out while you are under a general anaesthetic, or under a spinal anaesthetic.
- After you have been checked for any allergies, you will be given antibiotics by injection to prevent infection.
- A resectoscope is passed through your urethra to see the tumour. The urethra is the organ that transports urine from the bladder to outside your body.
- In some cases; a dye may be used to enhance tumour detection, a procedure also known as Photodynamic Diagnosis (PDD) Cystoscopy. It enables the surgeon to see tumours that might not be detected otherwise – this is explained in greater detail below.
- Your surgeon resects or “shaves” the tumour off the bladder wall piece by piece using electric current.
- Any bleeding is stopped by cauterising the base of the tumour with electric current.

- The tumour fragments are removed from your bladder and sent for pathology analysis.
- A bladder catheter with irrigation will be inserted to prevent any blood clots from forming.
- The catheter may be used to administer local chemotherapy into your bladder immediately after the procedure. It is left in your bladder for an hour then drained afterwards.

The duration of the procedure will depend on the number and size of the tumour(s) but will usually be between 15 and 90 minutes.

Your doctor will inform you how long you will have to stay in the hospital.

### What is Photodynamic Diagnosis (PDD)?

In some cases, PDD (Cystoscopy or TURBT) helps the surgeon to evaluate tumour cells which could have been undetected otherwise. This technique involves introducing a dye (Hexvix®) into the bladder an hour before the surgery. The dye is absorbed by cancer cells which makes these cancer cells glow red under a blue light during surgery.

PDD can also be used during follow-up cystoscopy. Your surgeon will decide whether this is necessary for you.

## What are the risks of the procedure?

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

Hospital Acquired Infections; including MRSA and CDiff. Risks are increased with prolonged hospitalisation and multiple hospitalisations. Presence of urinary catheter.

Risk	Problem	Management
Common 1/10	Mild burning/bleeding	Self-limiting
Occasional 1/10 – 1/50	Urinary tract infection	Short course antibiotics
	Excessive bleeding	Blood transfusion
Uncommon <1/50	Delayed bleeding	Bladder washout occasionally return to theatre for washout/cauterisation
	Ureteric injury	Ureteric stenting/rarely further surgery for re-implantation

	Ureteric injury	Urethral stricture causing problems passing urine/may require dilatation
	Bladder injury	Extended catheterisation/rarely further surgery for open surgical repair
	Drug reaction to bladder chemotherapeutic instillation	Symptomatic management
	Blood clots	Long-term blood thinning drugs
	Heart attack/chest infection/stroke/acute confusion	Risk associated with stress of the operation and anaesthetic and is dependent on comorbidities. Your recovery may take longer than expected.
Rare approx. 1/77	Death	In rare severe complications

## What to expect after the procedure

- You may require instillation of a chemotherapy agent into your bladder after the procedure, therefore a catheter is left in your bladder; the drug will dwell for one hour then will be drained afterwards and the catheter removed.
- You will be asked to urinate to check if you are able to do so without obstruction before being discharged.
- You may be discharged from the hospital on the same day. Your doctor will explain the post-operative routine to you. You will also receive instructions on when to start eating or drinking.

## What to expect when you're back home

In rare circumstances, you may be discharged home with a catheter in place. If so, you will be invited back after a few days to have a trial of removal of the catheter.

You are likely to experience some urinary symptoms after the operation, all of which should pass after a few days.

These symptoms may include:

- Bleeding and finding blood clots in your urine.
- You may feel a constant urge to urinate.
- Discomfort during urination; simple painkillers such as paracetamol can help with this.

\* The underlined terms are listed in the glossary.

- Tiredness.
- Bloody discharge from your urethra, especially if your urethra was stretched when the telescope was inserted.
- More bleeding after the initial bleeding has stopped. This is common between 7-14 days when scabs fall off.
- Rarely you may have a secondary haemorrhage caused by an infection in your bladder.

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

- If the burning sensation during urination continues after a few days.
- If your urine contains a lot of blood clots.
- If you are unable to urinate.
- If you are running a fever (higher than 37.8 degrees Celsius).

## How to prevent post-operative problems

There are several measures that can help you prevent complications such as:

- Drink plenty of fluids. Drink at least two litres of water or juice daily for two to three days. This will dilute your urine, reduce discomfort when urinating, and prevent blood clotting.
- Take your medication as per your doctor's advice.
- Stay active. As soon as you feel you are able, resume your daily activities to help speed up recovery. You may find that you need more sleep than usual during the first few days after your hospital discharge.
- Do not lift anything heavier than 2 kg 2 weeks after surgery.
- Refrain from sexual activity for up to 2 weeks.
- Avoid straining during bowel movement. Use a stool softener such as an osmotic laxative if necessary.
- Do not cycle or exercise intensively.
- Avoid household chores such as window cleaning, vacuuming, or gardening.
- Do not use alcohol for 24-48 hours.
- Watch out for infection. If you develop a fever (over 37.8°C) or if your urine becomes cloudy and thick, you could have an infection. Contact your doctor so that he/she can decide whether you need antibiotics. If you find it painful to urinate the blood clots or to urinate at all, contact your doctor immediately. If you are unable to reach him/her, contact your urology-specialist nurse or the urology ward of your local hospital.
- Driving. It is your responsibility to make sure you are fit to drive after any surgical procedure.

- Smoking. Ideally, we would prefer you to stop smoking before any procedure. Smoking can cause cancers of the urinary tract, encourage existing cancers to recur or progress, and increase the risk of complications after surgery. We strongly advise anyone with bladder cancer to stop smoking. (Include resources for support).

## Follow-up

The tumour fragments will be examined under a microscope. The result of these can take up to 2 weeks to be determined. You will receive a follow up appointment for the results.

Depending on the results, your doctor will talk to you about further treatment and follow-up. A second TURBT should be performed two to six weeks after the initial TURBT. This is in case of incomplete initial resection, or if the results suggest that the tumour might be situated deeper than what is shown in the specimen.

## Re-TURBT

Residual tumour tissue is sometimes observed after removal of stage Ta and T1 tumours. Moreover, there is a risk that staging of these tumours after removal is too low (understaging) because the most aggressive part of the tumour has not been examined or has been missed during removal.

To achieve complete tumour removal and assess the correct stage of the tumour, your doctor will recommend re-TURBT 4–6 weeks after the primary TURBT in some cases.

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)

# Glossary of terms

## **Anaesthesia**

Medication administered before the start of a procedure to manage pain. Under general anaesthesia, you are unconscious and unaware of what is happening to you. Under spinal or local anaesthesia, you will not feel pain in the part of your body where the procedure is done. Anaesthesia wears off gradually after the procedure.

## **Bladder**

Organ which collects urine from the kidneys.

## **Bladder wall**

The different layers of tissue that shape the bladder.

## **Cancer**

Abnormal cell growth in the skin or organ tissue

## **Catheter**

A hollow flexible tube to insert or drain fluids from the body. In urology, catheters are generally used to drain urine from the bladder.

## **Chemotherapy**

Treatment of cancer with drugs that are toxic to cells. Some are specifically toxic to cells that grow faster than normal, like cancer cells.

## **Cystoscopy**

A procedure in which the doctor looks inside your body with a cystoscope inserted through the urethra.

## **Diagnosis**

A series of tests that are done to understand what causes your symptoms.

## **Infection**

Infection is the invasion of an organism's body tissues by disease-causing agents, their multiplication, and the reaction of host tissues to these organisms and the toxins they produce.

## **Prognosis**

The medical term for predicting the likely outcome of recovery (health) after treatment.

## **Resection**

Removal of tumours from an organ.

## **Resectoscope**

An endoscopic tool used to remove tumour tissue. A thin, tube-like instrument used to remove tissue from inside the body.

## **Tumour**

A growth of abnormal cells.

## **Urethra**

The urethra is the tube that allows urine to pass out of the body. In men, it's a long tube that runs through the penis. It also carries semen in men. In women, the urethra is short and is located just above the vagina.

## **Urinary tract**

The organ system which produces and transports urine through and out of the body. It includes two kidneys, two ureters, the bladder and the urethra. The urinary tract is similar in men and women, only men have a longer urethra.

## **Urinary tract infection**

An infection in any part of the urinary system: the kidneys, ureters, bladder, or urethra.

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