



Cystectomy

This information was produced by the European Association of Urology.

This leaflet contains general information about cystectomy. 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 mainstay of treatment for muscle-invasive bladder cancer is surgical removal of the urinary bladder.

Your doctor has several reasons for recommending removal of the whole bladder:

- Presence of a muscle-invasive tumour
- Presence of a tumour that grows aggressively (high grade), that has multiple cancerous areas (multifocal), or that is superficial, but has recurred after chemotherapy or immunotherapy
- Failure of or recurrence after a bladder-sparing approach (chemoradiation) or the occurrence of major side-effects
- Symptoms like bleeding or pain in patients with incurable disease

To evaluate and weight your individual risk of undergoing removal of the bladder, work with your physician to consult a multidisciplinary team (for example, urologist, surgeon, anaesthesiologist, nurse practitioner, general practitioner, cardiologist).

Factors like your biological age (your body's performance as it ages, measured as performance status or life expectancy) and other diseases that you have (diabetes, heart disease, high blood pressure) are also important. Patients older than 80 years of age have more problems recovering from such an operation. Physicians use special indexed scores to assess the risk of patients undergoing this stressful operation.

Prior abdominal surgery or radiotherapy makes surgery more difficult but is rarely a reason not to have surgery. Being overweight does not influence survival after surgery but does influence the risk of complications from wound healing.

Removal of the urinary bladder includes removal of the bladder, the endings of the ureters and the pelvic lymph nodes. Depending on factors like tumour location and type of urinary diversion part of the adjacent gender-specific organs (the prostate and seminal vesicles in men; the entire urethra, adjacent vagina, and uterus in women) are removed. Men should be aware that prostate cancer is sometimes found in removed prostates but generally does not affect long-term survival or treatment.

How is the bladder removed?

Removal of the urinary bladder is performed through an incision in the abdomen (open) with the patient under general anaesthesia (combination of intravenous drugs and inhaled gasses; you are 'asleep'). The bladder, the ends of the ureters close to the bladder, the pelvic lymph nodes, and (part of) adjacent gender-specific organs are removed. Now another way to store and empty urine must be created (urinary diversion).

The standard procedure at the moment is open surgery. However, sometimes it can be done as a laparoscopic or robotic-assisted procedure at centres that treat a lot of patients and have experienced and specialised surgeons.

How to prepare for the operation

You are admitted to the urology ward 1 day prior to the operation. A physician or nurse will talk you through the operation and explain what happens before and especially after the surgery.

Part of your intestines will be used to create the urinary diversion. Your doctor will advise you in detail about how to prepare for the procedure.

Before surgery, your doctor will inform you in detail how to prepare for anaesthesia. If you are taking any medications, discuss them with your doctor. You may need to stop taking medications for several days before surgery.

After the operation

For the first few days you will be closely monitored. Your doctor will inform you in detail about the post-operative routine.

During hospitalisation, you will learn how to manage the urostomy or neobladder. Once you have learned how to use and empty the urostomy or internal urine pouch, a date for your discharge will be set.

What to expect back home

You may have some discomfort or pain for a few weeks after surgery. Ask your doctor or nurse about ways to manage pain and be comfortable as you heal.

Physical activity after the procedure

Your physical activities will be limited after surgery, but it is important to stay active. Light activity like walking can help recovery. Avoid lifting more than 5 kg (about the weight of a house cat). Ask your doctor or nurse about when you can resume driving and bathing. Your strength and energy will come back gradually.

Chemotherapy before removal of the bladder

Chemotherapy is administered before bladder removal to potentially shrink the tumour and kill cells that have already entered the blood or lymph nodes.

Chemotherapy before the operation may be recommended for patients with muscle-invasive disease. It is also necessary if tumours are large (>3 cm) or if signs indicate that cancer has spread to the lymph nodes (metastatic disease) and the goal is treatment of the disease. The decision to administer chemotherapy is made by a multidisciplinary team (including an oncologist, a urologist, and a radiologist).

Adequate kidney function is necessary. Potential side-effects are usually monitored and managed by an oncologist.

A good response to chemotherapy improves survival but does not change the need for surgery.

Although neoadjuvant chemotherapy is currently advised, physicians are unable to identify who will definitely benefit from chemotherapy before removal of the bladder.

Chemotherapy after removal of the bladder

If a tumour is large (>3 cm), or could not be fully resected, or if cancer has spread to the lymph nodes (determined by the pathologist), chemotherapy after removal of the bladder is an option. Cancer that has spread to the lymph nodes indicates systemic disease and may need systemic treatment (with chemotherapy) in certain cases.

Sex life after radical cystectomy

Ask your doctor or stoma nurse/specialised nurse when it's safe to resume sexual activities. You should wait at least six weeks before sexual intercourse to allow proper healing to take place.

Your sex life might be affected after having surgery for bladder cancer. This depends on the type of surgery you have.

Your body may look different after the surgery, which may take time to get used to. For men, the penis may appear slightly shorter than before the surgery. For both men and women, having a stoma can also affect the way you feel about yourself and how you feel about having sex. Take your time to recover. You will feel when you are ready to start sexual intercourse again. In the meanwhile spend time with your partner, share interest, enjoy cuddling and do not stop talking with each other.

Men

Bladder removal for men typically includes removing the prostate. This is done to prevent bladder cancer coming back in the prostate later.

Without a prostate, you will not be able to produce semen fluid. You can still have an orgasm, but your orgasms will be dry (without semen). Sperm cells can still be produced in the testicles but you cannot make a partner pregnant by sexual intercourse. Talk with your doctor before surgery if you have questions about fertility.

Your ability to have an erection may be affected. Cystectomy can damage the nerves that control erection. Talk with your doctor if you have questions about sex or fertility.

If the nerves are not damaged, you might still need assistance to get an erection after surgery. Ask your doctor or nurse what techniques might work for you.

Several options exist and can be used alone or together:

- Medications to cause erection
- External devices like a vacuum pump, which draws blood into the penis to stiffen it
- Internal devices like pellets or a penile prosthesis that is implanted in the penis

Women

Bladder removal for women typically includes removing the internal sexual organs, including the uterus, ovaries and the part of the vagina that is next to the bladder and urethra. This

* The underlined terms are listed in the glossary.

is not necessary in every case, but is typically done to make sure all the cancer is removed. The labia and clitoris are not removed, and most of the vagina will usually be left, so most women will still be able to have an orgasm and intercourse.

It may take time to get used to how this looks and feels. Sex may feel different than it did before surgery. You might have less sexual desire. You might need to use a gel to help with lubrication. Treatment is available if intercourse is painful (dyspareunia). Talk with your partner and your doctor or nurse about these problems.

* The terms are listed in the glossary.

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.

Cardiologist

A doctor who specializes in cardiovascular diseases.

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.

Diabetes

A disorder of the metabolism causing excessive thirst and the production of large amounts of urine.

High grade

Cancer cells with severe anomalies and little resemblance to their normal counterparts.

Immunotherapy

A type of cancer treatment which boosts the immune system to fight tumour cells.

Lymph nodes

Small oval-shaped organs that play a role in regulating how the immune system responds.

Metastatic disease

When a tumour has spread to other organs or lymph nodes.

Multidisciplinary

A team of practitioners from different medical specialties who share their professional opinions to plan care for individual cancer patients.

Muscle-invasive bladder cancer

A cancer that has grown into deeper layers of the bladder wall

Neobladder

A substitute reservoir to hold urine after the bladder is removed.

Oncologist

A doctor who is specialised in the diagnosis, therapy, follow-up, and general care of a person with any type of cancer.

Open surgery

A surgical procedure in which the surgeon cuts skin and tissues to have direct access to the structures or organs.

Pathologist

A medical professional who studies tissue, blood, or urine to understand the specific characteristics of diseases. In cancer treatment, the pathologist helps with the diagnosis and classification of tumours.

Pelvic lymph nodes

The sum of lymph nodes collecting the lymphatic drainage of the legs, pelvis and pelvic organs.

Prostate

A gland located in the lower urinary tract, under the bladder and around the urethra.

Radiologist

A medical professional who specialises in imaging techniques. In cancer, the radiologist analyses x-ray, ultrasound, CT, MRI, or other scans to diagnose or monitor the tumour.

Radiotherapy

A type of therapy using radiation to kill cancer cells.

Recurrence

The return of cancer after treatment and after a period of time in which the cancer could not be detected. This can happen either in the place where the cancer first was detected, or somewhere else in the body. There is no standard period of time.

Seminal vesicles

A pair of glands located below the bladder. They produce semen.

Systemic disease

Disease that affects the entire body.

Glossary of terms

Tumour

A growth of abnormal cells.

Urethra

The urethra is a 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 diversion

A surgical procedure to construct an alternative means of storing and passing urine.

Urologist

A doctor specialized in health and diseases of the urinary tract and the genitals.

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