

Urinary Diversion

Urinary diversion is a technique used to create a new way for urine to leave the body after surgical removal of the bladder to treat bladder cancer.

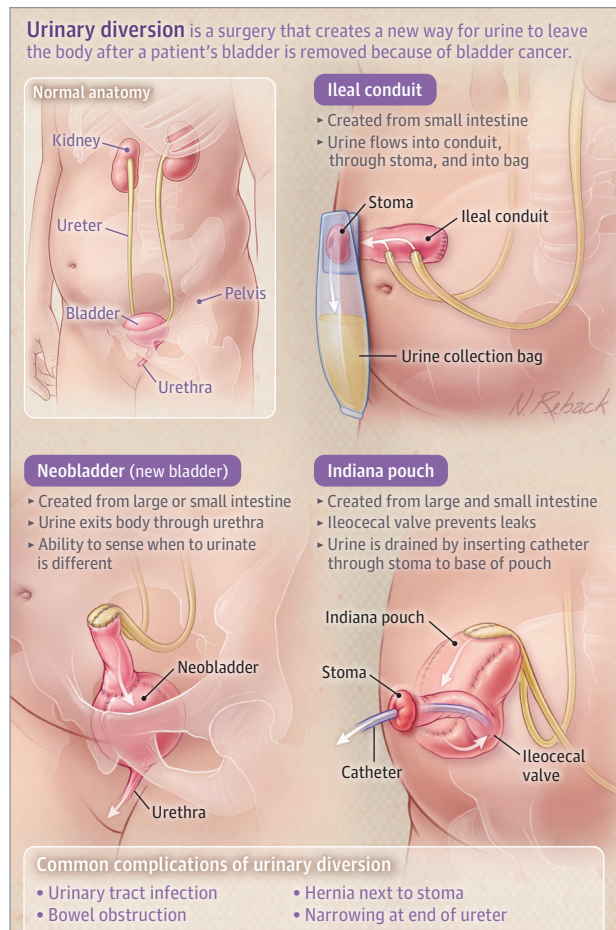
During surgery to treat bladder cancer, a surgeon removes the bladder and the prostate (in men) or the uterus, fallopian tubes, ovaries, and part of the vagina (in women). The surgeon also removes lymph nodes in the body that may have cancer cells in them. After removing the bladder, the surgeon creates a **urinary diversion**, a new way for urine to leave the body. This is done by taking a piece of intestine and connecting the **ureters**, the tubes that drain urine from the kidneys, into the urinary diversion. There are 3 main types of urinary diversion: ileal conduit, neobladder, and continent cutaneous diversion.

The **ileal conduit** is the simplest type of urinary diversion and has the fewest surgical complications. In an ileal conduit, a surgeon creates a small opening in a patient's skin (a **stoma**) on the right lower abdomen, from which urine drains into a bag. The bag is worn underneath the clothes and usually cannot be seen. The bag is drained every few hours and is changed at home every few days. Complications after an ileal conduit can include narrowing of the stoma or out-pouching (**herniation**) of the wall around the stoma.

A **neobladder** is a reservoir made of small intestine, constructed in the same location as the original bladder and connected to the patient's urethra. This allows the patient to empty their bladder through the urethra but requires training to be able to hold urine without leaking. This surgery takes longer than ileal conduit and more surgical complications may occur. Patients sometimes need to be taught how to insert a **catheter** (a drainage tube) into their neobladder through the urethra in case the urine cannot come out. Most patients have some urine leakage after surgery, but this improves with time.

In a **continent cutaneous diversion** ("Indiana pouch"), large intestine is used to build a reservoir that stores urine, which is accessed through a channel that is brought up to a stoma in the skin. With this type of urinary diversion, the patient inserts a catheter into the new pouch through this opening to drain urine. This type of diversion is used less often than ileal conduit or neobladder.

Studies have shown that most patients in the US have an ileal conduit urinary diversion after bladder cancer surgery. Patients who receive a neobladder are usually healthier and younger. Choosing a type of urinary diversion is a personal choice to be made after talking with your surgeon and family about your abilities and preferences.



FOR MORE INFORMATION

National Cancer Institute
www.cancer.gov/types/bladder/patient/bladder-treatment-pdq#section/_134

Authors: Andrew T. Lenis, MD, MS; Patrick M. Lec, MD; Karim Chamie, MD, MSHS

Author Affiliations: Institute of Urologic Oncology, Department of Urology, David Geffen School of Medicine at UCLA, Los Angeles, California.

Conflict of Interest Disclosures: Dr Chamie reported being a consultant for Merck and UroGen. No other disclosures were reported.

Source: Lenis AT, Lec PM, Chamie K. Bladder cancer: a review. *JAMA*. 2020;324(19):1980-1991. doi:10.1001/jama.2020.17598

The JAMA Patient Page is a public service of *JAMA*. The information and recommendations appearing on this page are appropriate in most instances, but they are not a substitute for medical diagnosis. For specific information concerning your personal medical condition, *JAMA* suggests that you consult your physician. This page may be photocopied noncommercially by physicians and other health care professionals to share with patients. To purchase bulk reprints, email reprints@jamanetwork.com.