

# Bladder Neck Conditions

## What is the Bladder Neck?

The bladder is an organ in the pelvis. Its job is to store and release urine. The urethra is a tube that links the bladder and the penis tip. The bladder neck is a part of the bladder that connects to the urethra. It is located just above the prostate. The bladder neck has special muscle fibers. They stop urine from leaking out when it should not.

## Which health issues affect the bladder neck?

The most common issue is the forming of scar tissue. This will narrow the bladder neck. This is called **bladder neck contracture**.

## Symptoms

A bladder neck contracture can cause:

- Difficulty draining your bladder
  - This can cause a buildup of urine known as elevated post-void residual.
- Painful urination
- A weak urinary stream
- Straining or pushing to pee
- Hematuria (blood in the urine)
  - You can see this in the toilet. Some cases are seen by a microscope.
- Urinary tract infections (UTI)
- Bladder stones
- Urinary retention (you cannot pee at all)

A bladder neck contracture may cause your bladder to work at higher pressure. After some time, this can harm your bladder and kidneys. It can lead to permanent kidney damage from back-up of urine.

If harm is done, kidney-specific blood tests will rise. These are:

- **Creatinine.** Normal levels are less than 1 mg/dL.
- **Blood Urea Nitrogen (BUN).** Normal levels are 7 to 20 mg/dL.
- **Glomerular Filtration Rate (GFR).**

The bladder muscle becomes thick when working at high pressures for a long time. This can make the bladder more irritable and cause:

- Urinary frequency (the need to pee often)
- Urgency (the need to pee right away)
- Urinary incontinence (urine leaks that are not voluntary)

## What causes bladder neck contractures?

Trauma to the body will cause scar tissue to build. This can cause tubes, like the bladder neck and urethra, to narrow.

- **Endoscopic Surgery.** Small instruments can be inserted through the bladder neck to treat some conditions, such as:
  - Enlarged prostate
  - Bladder cancer or tumors
  - Kidney stones

In rare situations, these surgeries can harm the bladder neck. This can cause scar tissue to form. The most common procedure that causes this is a transurethral resection of the prostate (TURP). It can happen with many other endoscopic procedures, especially those that:

- Take a long time.
  - Are done in people that have prior radiation to their pelvis for cancer (prostate, cervical, rectal). They are at higher risk for poor wound healing.
- **Prostatectomy.** The prostate is taken out due to cancer. It is called a radical prostatectomy. During a prostatectomy, the bladder is re-joined to the urethra using sutures (stiches). If the stitches do not heal correctly, scar tissue can build up at the connection. Narrowing of the opening from the bladder is called a **vesicourethral anastomotic stenosis**.

- **Radiation therapy.** Radiation is often given to people to treat cancer of the prostate, bladder, and colon. It often does a good job of treating cancer. It can also damage normal tissue though. It leads to build-up of scar tissue. The tissue damage and scar tissue can happen many years after treatment.

## Treatment Details

There are many choices for neck conditions. Each person has a plan for their specific condition. Bladder neck conditions can change over time. That means your care might also change.

Your care team's goal is for a **safe bladder**. A safe bladder:

- Stores urine at low and healthy pressure
- Empties fully when wanted
- Has slight symptoms
- Needs little action

More tests help your care team choose how to fix your bladder neck issue. The tests are:

- **Retrograde urethrogram.** X-rays are taken while contrast goes into your urethra. This happens in clinic while you are awake. It is often well tolerated.
- **Cystoscopy.** A tiny telescope is placed in the urethra. It tests the health of the urethral tissue. It will also show the scar tissue.
  - Lidocaine jelly is put in the urethra before the procedure.
  - This happens in clinic while awake. It is often well tolerated.
- **Uroflow study.** You pee in a special machine. This measures the amount and flow rate of your pee.
- **Bladder volume index or post void residual.** A small ultrasound probe goes over your bladder after you pee. It measures the urine left in your bladder.

## Treatment Options

- **Observation.** Some cases do not need treatment. This is often when:
  - A person does not have symptoms from scar tissue.
  - A person's kidney function is normal.
  - A person is emptying their bladder without difficulty.

- **Catheterization.** There are 3 ways a catheter can be used to manage your bladder neck contracture:
  - **Intermittent catheterization:** You put a catheter in your urethra up to 6 times each day. This drains the bladder and keeps scar tissue open.
  - **Indwelling catheter:** You put a catheter in the urethra and into the bladder. It stays in place and connects to a bag that collects urine. It needs to be replaced every 3 to 4 weeks.
  - **Suprapubic tube:** This is a catheter placed in the bladder through the lower abdomen. This is most often used for:
    - People who cannot tolerate an intermittent or indwelling catheter.
    - People waiting for endoscopic treatment.
    - **Note:** For some people, a permanent suprapubic tube is a good option for long-term management of their bladder neck contracture.
- **Endoscopic treatment.** A small camera and instruments open the scar tissue. This lets urine drain from the bladder. Your doctor does this. They open or cut the scar tissue from inside the urethra. This means there are no cuts on the skin. Often a medicine is injected into the bladder neck. It helps decrease scar formation. This is often the first choice of treatment.
  - **Important details.** Things to know about the procedure are:
    - It happens in the operating room under anesthesia.
    - People often do not need to stay in the hospital. You may need to stay if your doctor is worried about infection or fevers. You may also need to stay to watch your bleeding or pain.
    - They put in a urethral catheter during surgery. It stays in for 3 to 7 days.
    - After the catheter is removed, your doctor may ask you to put a catheter into your bladder 1 to 2 times each day. This is called intermittent catheterization. It can help stop scar tissue growth.
    - If the urine control mechanisms are harmed, opening scar tissue can cause urinary incontinence.
    - Your care team will watch for scar tissue reformation after the catheter is taken out.
    - Early symptoms coming back may mean scar tissue growth. Bladder ultrasound and uroflow tests are noninvasive ways to check for this.

- A cystoscopy checks the bladder neck if symptoms come back.
  - Catheters are not forever. You will change it each month.
  - Indwelling catheters raise the risk of UTIs.
  - Urethral catheters have a risk of urethral erosion. They can cause tissue deterioration on the underside of the penis. This can cause the penis to split.
- **Bladder neck reconstruction.** This can be a cure for some people who fail endoscopic treatment. This choice is invasive. The technique can change based on each person's condition. After the scar tissue is taken out, the bladder moves down.
    - **Important details.** Things to know about the surgery are:
      - It is an open procedure. There will be a low, midline abdominal incision. It may happen laparoscopy and the da Vinci robot.
      - It happens in the operating room with general anesthesia.
      - Most people stay in the hospital for as many as 3 days.
      - A urethral catheter is put in at the time of the surgery. A surgical drain is also placed.
- **Urinary diversion.** This is a major surgery. Some or all of the bladder is taken out. The ureters are tubes that drain urine from the kidneys into the bladder. This procedure joins the ureters to a piece of bowel. Then, urine drains through the bowel. It can drain from the body into a bag worn on the abdominal skin. The bag drains through the day. You can wear the bag under clothing.
    - **Important details.** Things to know about the surgery are:
      - This is a major surgery for people with severe bladder neck conditions. It can also fix fistulas. These are abnormal connections from the urinary system to the bowels. It also helps people who had pelvic radiation therapy.
      - A wound ostomy nurse will see you. They will check your abdomen. It will help decide the best places for the stoma.
      - People often stay in the hospital for as many as 4 to 5 days.

- **Complications.** There are some normal risks with any surgery, such as:
  - Bleeding
  - Infection
  - Harm to nearby structures

There are other risks too, such as:

- **Urine leak.** The new links between the bowel and ureters are secured with stitches. If the stitches fail, urine may leak. A temporary drain may need to be placed. This moves urine away from the leak. It also drains the kidney directly.
- **Ureteral stricture.** If the ureter and bowel link does not heal well, scar tissue can form. This can cause backup of urine into the kidney. You may need surgery to widen or fix the site.
- **Bowel leak.** Any surgery that makes a new connection in bowel may leak. This is rare. You often need another surgery to fix it.
- **Metabolic changes.** The bowel interacts with urine as it drains. This can cause changes with your electrolytes. You might need to take medicines to fix it.
- **Mucous production.** The small part of bowel used for the drain will still make mucous. This is a normal function. It can lead to infections and other issues.
- **Parastomal hernia.** There can be a small hole in the connective tissue that the bowel comes from. Parts of the bowel, or fat found inside the belly, can squeeze through here. This can cause a bulge or swelling. If it is bothersome or causes backup of urine, you may need another surgery. It can be watched if you do not have issues.
- **Fascia or stoma stenosis.** Narrowing at the connective tissue of the abdomen or skin level can cause problems. Urine may not drain the right way. You may need dilation or surgery to fix it.
- **Stoma appliance issues.** The bowel connection is on the skin of the abdomen. It collects urine and attaches to the skin with an adhesive. Some people have trouble keeping it attached. This can cause urine to leak on the skin.

## Before Your Procedure

You will need to do pre-op testing, such as:

- **Electrocardiogram (ECG/EKG):** To be sure your heart is healthy enough for surgery.
- **Blood work:** To be sure supporting organs (kidney, liver, intestines) are working and blood levels (hemoglobin, hematocrit) are high enough.
- **Chest X-ray:** To be sure your lungs are healthy enough for surgery.
- **Medicine review:** To be sure your blood pressure is controlled and medicines that lead to bleeding (coumadin, aspirin, clopidogrel) are stopped before surgery.
- Stop using all tobacco (cigarettes, chewing tobacco, vaping products, nicotine gum) before surgery. A urine test is often done the day of surgery to be sure you have stopped.

Call 319-384-8008:

- If it is 2 business days before surgery, and you have not had a phone call.
- If you have any questions.

## How long will surgery last?

This depends on the type of urethral reconstruction you are having. It is often less than 1 hour for:

- Urethral dilation
- DVIU
- Suprapubic tube placement

Complex urethral reconstruction with grafts can take as long as 4 hours. An extra hour is often needed for:

- Anesthesia
- Positioning
- Waking up

## What are possible complications?

This differs based on the type of procedure you have. Complications can be:

- **Bleeding.** It is common to see blood in the urine and around the catheter. There is often a small amount of blood from the cut. There is also bruising in the scrotum and perineum.
- **Infection.** All people get antibiotics before surgery. This lowers the risk of surgical-site infection. Most infections only need antibiotics.
- **Recurrent bladder neck condition.** Most surgeries have a high, first-time success rate. Scar tissue can come back though. People have higher rate of this if they:
  - Already had urethral procedures
  - Have had radiation
  - Had problems after their first surgery

You may need some other procedure or surgery. This depends on the severity and spot of recurrence.

- **Urinary incontinence.** Urine leaking is stopped with 2 inside structures. They are called urinary sphincters. They are at the bladder neck and on the other side of the prostate. Urine leaks happen if:
  - Both sites are harmed
  - Both sites were removed with surgery
  - The urethra is open due to scar tissue

The amount of leakage can differ from a little to a lot. Some people need an artificial urinary sphincter put in. This will help urinary leaks.

- **Urine leak.** Stitches hold the new link in place. If stitches do not hold or healing is not fast, urine can leak. Most leaks heal on their own over time.
- **Fistula formation.** An abnormal connection to the urethra grows. This causes a split urinary stream. It is often led away from the main urinary stream.
- **Neurologic or positioning injury.** When positioning people for surgery, doctors and nurses pad pressure points on the body. Arms and legs are placed in a way that does not lead to nerve injury. Neurologic injuries can still happen. Most of them get better in days to weeks after surgery. Some may need rehabilitation. Almost all of them get better with time and rehab. Some are more common with surgeries that last more than 6 hours.



## How many nights will I spend in the hospital?

You will go home the same day as an endoscopic procedure.

Most people stay in the hospital 3 to 6 days after open bladder neck reconstruction or urinary diversion. Before they leave, then need to:

- Eat solid food.
- Have bowel function. This can be a bowel movement and passing gas.
- Be able to walk.
- Control pain with medicines taken by mouth. The epidural will be taken out if you have one.

## What will my incision(s) look like?

There will be no cuts on the skin with an endoscopic procedure.

For most open bladder neck repair or urinary diversion surgeries:

- There will often be a cut midline in the lower abdomen.
- There may be a single cut above or below the scrotum. This depends on the stricture length and site.
- Stitches dissolve on their own as your body heals.

## Will I have any tubes coming out of me?

- **Endoscopic surgery.** You will have a catheter to drain the bladder. Most people have a catheter across their fixed urethra. People with a suprapubic catheter have it coming from their lower abdomen.
- **Bladder neck reconstruction.**
  - **Foley catheter.** This drains your bladder. It will stay in place for 1 week. Most people go to clinic to have it taken out.
  - **Jackson-Pratt (JP) drain.** This drains fluid or blood around the site of repair. The drain also finds any urine leak that develops. Most JP drains are taken out before going home.
- **Urinary diversion.**
  - **Jackson-Pratt (JP) drain.** This drains fluid or blood around the site of repair. The drain also finds any urine leak that develops. Most JP drains come out before going home.

- **Ureteral stents.** This small flexible tube is put in at the time of surgery. It allows the ureter and bowel connection to heal. It lowers the chance for urine to leak outside of the repair. Stents often come out 2 weeks after surgery. This happens in clinic.
- **Stoma appliance.** The bowel stoma is on the skin of the abdomen. It collects the urine that drains. It attaches to the skin with an adhesive. Change it every 3 to 4 days. Before going home, the stoma nurses will teach you and your caregivers. They will teach you how to care for the stoma and change it.

## What medicines will I go home with?

- **Pain medicines.** Most people only need these for a few days.
- **Stool softeners.** Anesthesia and pain medicines can all slow your intestinal tract. These help people have normal bowel movements. They are needed while taking pain medicines.
- **Antibiotics.** Most people only need these at the time of surgery.
- **Bladder spasm medicines.** A Foley catheter can irritate the bladder. This can make it spasm. Medicines can help with this but they can cause:
  - Constipation
  - Blurry sight
  - Dry mouth
  - Mental cloudiness

This medicine needs to stop 24 hours before your first follow up visit. This will let the bladder empty well after the catheter is removed.

## When will I need to come back to see my urologist?

- **First Post-op visit.** Most people are seen 1 to 2 weeks after surgery. This is to remove the Foley catheter. At that time, you will do a voiding test. This is to make sure you can drain your bladder before you leave clinic.
  - Your ureteral stents and skin staples will be taken out If you had a **urinary diversion.**

- **Second post-op visit.** For most procedures, you are seen 3 months after surgery. The care team checks how well you are peeing. This is done with a uroflow test, bladder volume index, and cystoscopy.
  - You will be seen 6 to 8 weeks after a **urinary diversion**. Labs will be checked. The care team will also ask about stoma appliance changes.
- **Next post-op visit.**
  - 1 year after an **endoscopic procedure** you will do a uroflow and bladder volume index. This is to make sure your urethra is still open.
  - 3 to 4 months after **urinary diversion** you will be seen to make sure you are doing well.

## How will I know if I am having a problem?

Call your care team between visits If you have:

- New or worsening symptoms
- Decreased urinary stream
- UTIs
- Urinary retention
- Straining to urinate
- Not able to drain your bladder

## When will I know if I am cured?

Most bladder neck condition recurrences happen in 1 year. The way you heal gives your care team a sense of your long-term success. The hope is you only need 1 repair. Some bladder neck conditions can return many years after surgery. This happens more often if you had radiation therapy. Return to clinic if symptoms come back years after surgery.

**Read this guide on the UI Health Care website**

You can find a web version of this guide by pointing your phone's camera at the code at right.

Or you can type this URL into a web browser:

[uihc.org/educational-resources/preparing-bladder-neck-contracture-repair](http://uihc.org/educational-resources/preparing-bladder-neck-contracture-repair)

