

A Patient's Guide to Underactive Bladder





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Preface

There are researchers, physicians, nurses and many other health care professionals in the world dedicated to finding both causes and effective treatments for those who experience symptoms of underactive bladder (UAB). The first international meeting to identify and discuss UAB was held in February 2014, with the second scheduled for December 2015.

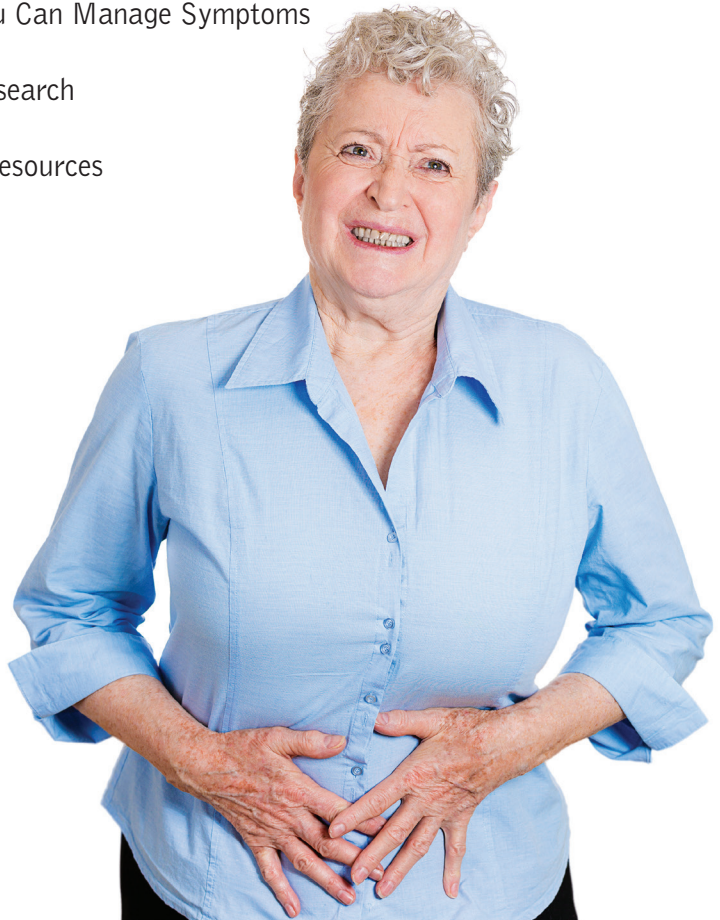
A special issue of the International Urology and Nephrology, Volume 46, Supplement 1, pages 1-46, was published as a result of the first meeting in Washington DC. This issue discusses this disease definition, clinical guidelines, therapeutic directions, and suitable animal models to allow accurate testing of potential therapeutic candidates for UAB. Additional professional material and videos remain available online.

Another major outcome of the international meeting was the National Institute of Health's Program Announcement that encourages new grant applications focusing on UAB. Furthermore, the need for greater patient education was identified and this is the inspiration for this handbook.

Bladder symptoms can control one's life. Though no cause or cure has yet been identified, the authors hope that this book will provide helpful information to those who suffer with UAB, their families, significant others and their caregivers. We hope that these suggestions may be able to make life a little easier. Knowledge can result in tremendous power.

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Chapter 1 | What is Underactive Bladder

Underactive bladder is a name given to a troubling group of urinary symptoms that result in the incomplete ability of the bladder to completely empty. With UAB, you may experience difficulty emptying your bladder, straining to urinate, or the inability to empty your bladder at all. When the bladder cannot not fully empty, it may fill more quickly, resulting in discomfort, frequency of urination, infection and/or leakage.

The term "Underactive Bladder" has not always been used to describe this condition. Other common or medical terms that may be used to describe this condition include:

- Acontractile detrusor
- Atonic bladder
- Bladder failure
- Bladder muscle sarcopenia
- Chronic urinary retention
- Detrusor areflexia
- Detrusor failure
- Detrusor underactivity
- Flaccid bladder
- Hypotonic bladder
- Impaired detrusor contractility
- Lazy bladder
- Neurogenic bladder
- Overflow incontinence
- Urinary retention

There is no consensus among the medical experts on the true definition of UAB. This is due to a lack of scientific evidence of this condition, the wide range of terminology that describes the condition and the absence of accepted criteria that supports this diagnosis. Physicians and scientists are working to standardize the definition of UAB so that the diagnosis and treatments can be applied appropriately.

There is a need for further study of this condition so that effective treatments can be offered accordingly. To date this is an area in medicine that has received little attention or research funding yet has significant impact on an individual's health. Both individuals and significant others are affected by this condition as it alters one's ability to work, sleep, socialize, exercise, function sexually. It may also lead to decreased socialization, hospitalizations and/or nursing home placement.

Chapter 2 | Normal Bladder Function

The following is a list of terms for parts of the body that are involved in urine production and storage

Kidney: Organ that filters blood and removes water and chemical waste from the body

Ureters: Hollow muscles that connect the kidney to the bladder

Bladder: A muscle which is able to stretch and hold urine

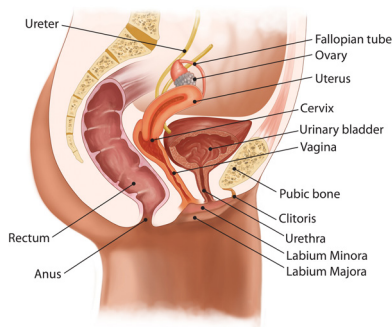
Urinary Sphincter: A muscular mechanism that controls the retention and release of urine from the bladder

Urethra: The tube that leads from the bladder and transports and discharges urine outside of the body

Pelvic Floor Muscles: The layer of muscles that support the pelvic organs and span the bottom of the pelvis.

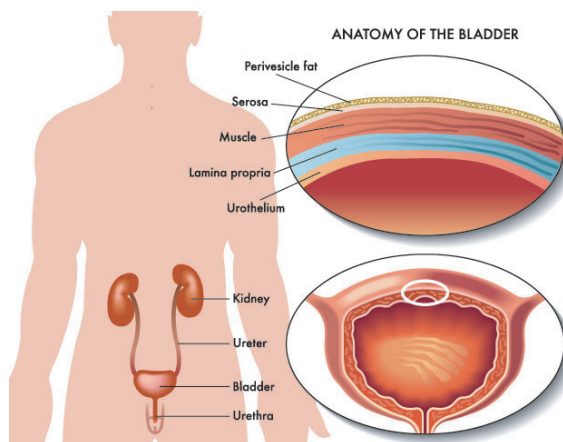
Pelvic Organs: In men includes bladder and bowel. In woman, includes bladder, bowel and uterus.

Kidneys are located high in the abdomen. Most people have 2 kidneys. The kidneys are responsible for filtering blood and removing excess water and waste products from the body. This filter process produces urine down to the bladder by gravity through tubes known as ureters.



The bladder is a hollow balloon like structure that expands as it collects and stores urine. When the bladder is at or near capacity the muscles of the bladder will contract. This contraction pushes the urine out of the body through the narrow tubular opening known as the urethra.

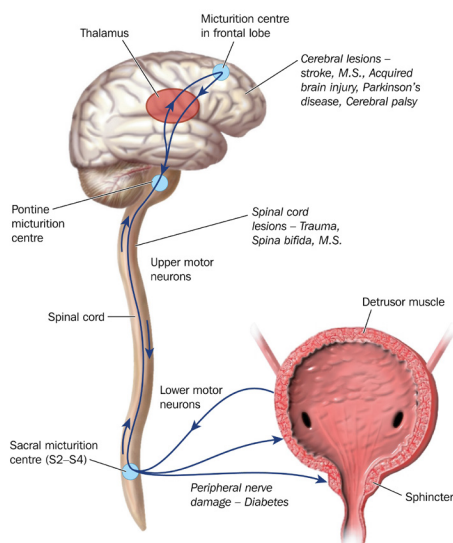
The urethral sphincter muscle controls when urine passes through the urethra. Relaxation of this sphincter muscles allows the urine to pass through the urethra. Once all the urine passes, the muscles then resume squeezing the urethra closed to prevent future urine from passing.



As the bladder becomes stretched as it fills, the nerves within the bladder send a message to the brain by way of the spinal cord. This message alerts the brain that the bladder needs to empty. Nerve activity in the brain sends signals back to the bladder telling it to contract so that the urine can be released. Signals are also sent to the urethral sphincter telling it to relax in order for the urine to leave the body.

When we are young we learn where and when to empty our bladders. Many people maintain voluntary control over their bladders throughout life. For others a variety of conditions contribute to problems with emptying the bladder. These issues will be explored in the next chapter.

The nerves are just as important as the muscles of the bladder for the purposes of storing and emptying urine. Damage to either muscle or nerves can impact normal bladder function.

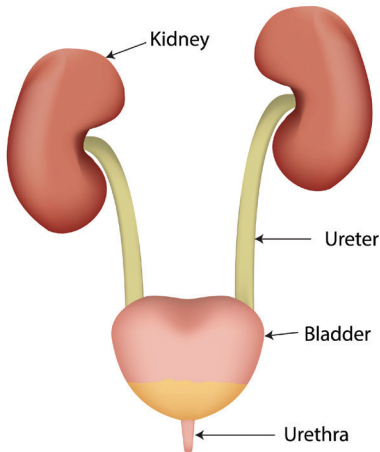


Chapter 3 | Bladder Function in UAB

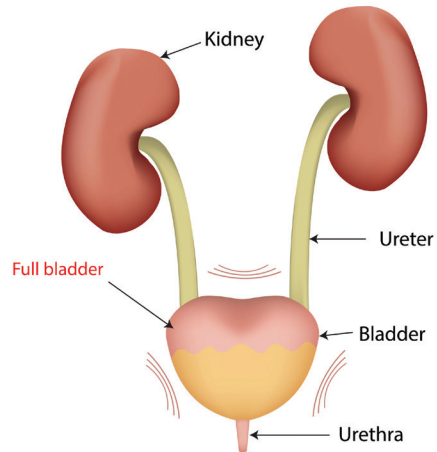
In UAB, the bladder cannot empty or empties only partially. This is due to the bladder muscle being unable to release the urine properly.

Urinary Retention

Healthy Bladder



Bladder in Retention

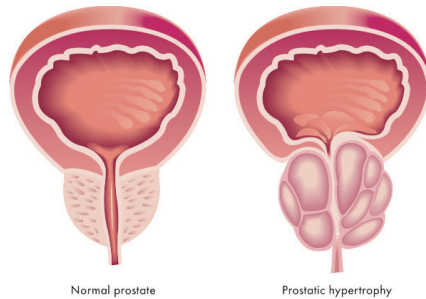


Many medical conditions can cause nerve damage either in the brain or spinal cord, which in turn prevents proper functioning of the bladder. Conditions which interfere with nerve transmission within the brain that impact bladder function include:

- Alzheimer's Disease
- Brain Tumors
- Concussions
- Diabetes
- Multiple Sclerosis
- Parkinson's Disease
- Radiation
- Seizures
- Traumatic Brain Injury
- Stroke

Normal bladder function can be impacted by damage to the nerves of the spinal cord from conditions such as:

- Myelitis
- Multiple Sclerosis
- Pelvic Surgeries
- Prostatectomy
- Radiation
- Spina Bifida
- Spinal Cord Injury
- Spine Tumors

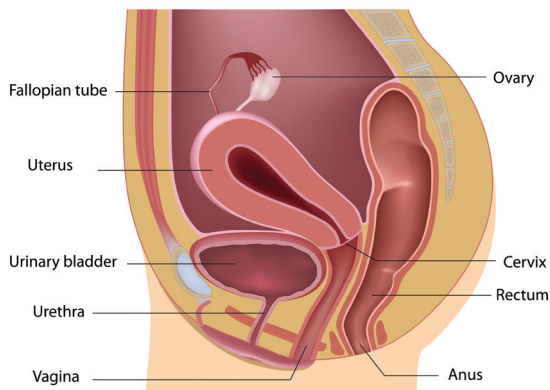


Differences in Men

In men the prostate gland sits underneath the bladder and wraps completely around the urethra and is located in the area of the sphincter. As men age, the prostate may enlarge which may block the urethra and thus cause urination problems.

Differences in Women

Women can experience a variety of urination problems that differ from men. Pelvic floor muscles support the pelvic organs, which includes the bladder and the uterus. These muscles can weaken with age, after multiple pregnancies and/or vaginal deliveries. Weakness of pelvic floor muscles may cause the bladder to drop and protrude into the vagina thereby obstructing urine flow from the bladder out of the body. Hormonal changes can also impact bladder function.

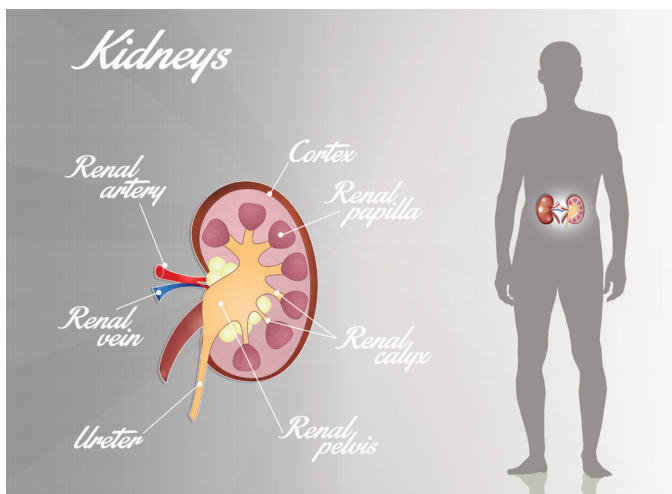


When kidneys do not function properly the body won't be able to produce urine effectively. Conditions that block the passage of urine out of the kidneys and may cause kidney failure include:



- Bladder cancer
- Blood clots in the urinary tract
- Cervical cancer
- Colon cancer
- Kidney stones

Medical conditions can impact the function of kidneys and cause kidney failure. These conditions are not related to UAB but could occur in conjunction with UAB. Such conditions include: Acute tubular necrosis, autoimmune kidney disease, decreased blood flow due to very low blood pressure, (a potential result of burns, dehydration, hemorrhage, injury, septic shock, serious illness, or surgery). Infections, such as acute pyelonephritis or septicemia can directly injure the kidney as can, pregnancy complications, including placenta abruption or placenta previa. The exact correlation between kidney failure and UAB is unknown, however, medical issues such as infection and kidney stones must be evaluated by your health care provider to limit risk of kidney damage.



Chapter 4 | Symptoms of UAB

Each person has a different set of symptoms. Typically no two people have the same symptoms or order of their symptoms.

Symptoms of UAB may include:

- **Decreased sensation that the bladder is full**
- **Small amount of urine during voiding**
- **Straining with urination:** the feeling that you have to bear down to empty your bladder
- **Double voiding:** returning to the bathroom to urinate several minutes after voiding
- **Weak urinary stream:** urine dribbles out
- **Urinary retention:** when you are unable to empty your bladder fully. Some people can only produce a "dribble" of urine. Others strain to push out urine, can't completely empty their bladder, or can't urinate at all.
- **Urinary incontinence:** Urine leakage that you can't control. You may leak just a few drops of urine, or at times release large amounts of urine. Sometimes urine will leak out of your body while you sleep.
- **Frequency:** going to the bathroom many times during the day or night perhaps producing only small amounts of urine. The number of times someone urinates differ from person to person. Many experts agree that going to the bathroom more than eight times in 24 hours is "frequent urination." Some people purposely urinate frequently to manage symptoms such as incontinence.
- **Recurrent (repeated) urinary tract infections (UTI):** When an infection occurs more than 2 times in 6 months or greater than 3 times in one year, this may be the first symptom of UAB. It can become a chronic illness caused by harmful bacteria, viruses or yeast growing in the urinary tract.



Chapter 5 | Working with Your Physician and Health Care Team

If you have not identified a board certified urologist or gynecologist who can assist you with your care, you should ask your primary care physician to assist you. You can also look for referrals in your area through a few different websites.

To find a urologist please visit

<http://www.urologyhealth.org/> and search for a provider in your area.

To find a gynecologist you can visit

<http://www.acog.org/About-ACOG/Find-an-Ob-Gyn>.

Urologists and gynecologists may also become further specialized. By virtue of education and training, they are prepared to provide consultation and comprehensive management of women with complex pelvic conditions, lower urinary tract disorders, and pelvic floor dysfunction. Comprehensive management includes those diagnostic and therapeutic procedures necessary for the total care of the patient with these conditions and complications resulting from them.



Your physician may be part of a multidisciplinary care team. Multidisciplinary care occurs when professionals from a range of disciplines with different but complementary skills, knowledge and experience work together to deliver

comprehensive healthcare. The goal is to provide the best possible outcome for the physical and psychosocial needs of a patient. As there will be changes in both care needs over the course of an illness and developments in healthcare delivery systems, and members of the team may change over time. Within a multidisciplinary team approach, you may be referred at any time to other health care team members to help manage your symptoms and update your treatment plan.

On the Day of Your Appointment

Please make sure you have the following on the day of the appointment:

- Your insurance card
- Any required referrals
- Paperwork that the physician or healthcare team member has asked you to complete prior to the visit which may include a list of symptoms and questionnaires
- Previous medical records for any related medical condition
- Previous diagnostic testing results (scans, lab reports)
- A completed bladder diary - a diary kept over at least three days will provide the best information (see Chapter 10: Resources)
- A complete list of your medication and dosage and any supplements (See Chapter 10: Resources) an example list is provided in the resource section)
- Your detailed symptom list (review with significant others who know you well to ensure completeness of your list)
- A list of all past surgeries

During Your Visit

The physician and staff should review your past medical history, request a urine sample and perform a physical exam with a concentration on the genitourinary system.

Before you leave the office you should understand the physician's goals and future plans for any testing or follow-up care. If you are to be scheduled for testing, make sure you understand next steps related to scheduling. Are you to schedule the tests yourself or is the office staff to assist you with scheduling? When are the tests to be scheduled? Does your insurance require a referral? What is the required test preparation? How will you be notified of results? When do you return to the physician's office? Who will you see at the return visit?



After Your Visit

Evaluate the appointment once it is completed. What is your impression of the urologist or gynecologist? Did you like the way the physician or health care team members interacted with you? Did they seem knowledgeable?

If you do not feel that you received adequate care, speak to your primary medical provider who can review your records of the visit to make sure that your care was completed in a thorough manner.

Chapter 6 | Diagnosis of UAB

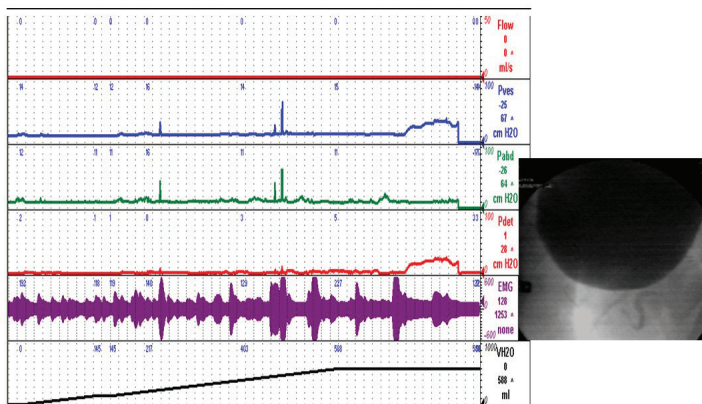
A urologist or urogynecologist will be able to make the diagnosis of UAB based on assessments, a clinical exam, diagnostic testing and a review of a bladder diary.

Your past medical history will be explored as many medical conditions impact bladder function. Risk factors include:

- Age
- Sex
- Nerve damage resulting from a medical condition
- Previous pelvic surgery
- History of obstructions (size of prostate in men, vaginal prolapse in women)
- History of urinary tract infections
- Medications
- Spinal cord injury - (minor to complete)

Diagnostic Tests

Urodynamics: A group of tests, which together measure bladder function and pressure. Cystometrogram (CMG) measures bladder pressure and volume, while the electromyogram (EMG) measures the activity of your bladder. This test may have a video component where images of your bladder are recorded and analyzed to determine the location and structure of the bladder. This is the preferred test, known as the "gold standard", available for diagnosing problems as a result of damage to the bladder. The following are typical test results with UAB: decreased sensation of bladder filling, increased post void residual urine volume and decreased bladder contraction and ability to empty.





Bladder Ultrasound: A simple test that is used to determine the amount of urine in the bladder. Results are calculated from the image obtained by a small device, which is placed on top of the lower abdomen. This test is typically performed to assess the amount of urine left within the bladder after a person has voided (post void residual urine). In women with uterine fibroids, this test

may provide false results as the fibroids impact the volume the machine may deliver. This test can be completed in a physician office. Similar results can also be obtained through urinary catheterization, urodynamics or ultrasound of kidney and bladder.

Urinary Catheterization: A small plastic tube covered with lubrication and placed in the urethra to drain the bladder. When the tube is removed immediately upon draining all the urine from the bladder, it is known as "intermittent catheterization". A catheter may be placed in the bladder when continuous drainage of urine is indicated. The tube is left in place with a small saline filled balloon and is called an "indwelling catheter".

Computerized Tomography (CT Scan), Abdomen and Kidneys: A procedure which uses computers to produce full views, in this case of the kidneys, ureters, or bladder to assess size and structure of the tissue, stone, or tumor.

Ultrasound, kidneys and pelvis: A study that can identify location of the kidneys, differences within the two kidneys, and blockages or stones within the kidney or bladder. This test can also view the prostate gland and determine its size and shape.

Cystoscopy: An examination of the bladder by using a small catheter (cystoscope) with light and magnification. This catheter is placed in the bladder through the urethra. This allows for the physician to directly observe the urethra and bladder for inflammation, stones, tumors, or structural damages.

Intravenous Pyelogram (IVP): A test requiring an injection of dye followed by an x-ray, which provides images of the kidneys and bladder. This test also requires bowel cleansing prior to the study to view the urinary system adequately.

Pelvic Exam (for females only): This test is for females only to examine the vagina, cervix, and uterus to evaluate the strength of the pelvic floor muscles, and locations of bladder and other pelvic organs. This exam also assesses the extent of prolapse.

Blood Tests

The following blood tests reveal how well the kidneys are functioning.

Serum Blood Urea Nitrogen (BUN)- This test measures the amount of nitrogen in your blood that is a result of the waste product urea. Urea is made in the liver when protein is broken down in your body and passes out of your body in urine.

Creatinine (Cr): Creatinine is a chemical waste molecule that is generated from muscle metabolism. Creatinine is produced from creatine, a molecule of major importance for energy production in muscles. Creatinine is transported through the bloodstream to the kidneys. The kidneys filter out most of the creatinine and dispose of it in the urine.

Glomerular Filtration Rate (GFR):

This is the best test to measure your level of kidney function and determine if you have any kidney disease. It is calculated from the results of your blood creatinine test, your age, body size and gender. Your GFR tells your doctor your stage of kidney disease and helps the doctor plan your treatment. If your GFR number is low, your kidneys are not working, as well.



Urine Studies

The following urine tests provide information about your bladder health.

Urinalysis: A screening test of the urine that provides information about one's general health and the health of the urinary tract. Testing includes PH, ketones, sugar, blood, and bacteria. Positive results in any area may indicate a need for further testing.

Urine Culture and Sensitivity (C & S): Test used to determine the amount and type of bacteria within the bladder. Urine is placed in a culture dish within the lab and allowed to grow for 48 hours. If sufficient numbers of bacteria grow, signifying infection, the bacteria are then tested against several antibiotics to determine which medication would be most effective in treating the infection.

Cytology: A method that examines urine to determine if bladder cancer is present. The urine is examined for abnormal cells, which may detect for bladder cancer. There may be an increased incidence of bladder cancer in people who have had a catheter in place long-term.

Chapter 7 | Treatments

Prescription Medication

Current treatments are limited due to the lack of consensus on the definition and the lack of research related to UAB. Presently there are prescription medications used with limited effect on the bladder:

Bethanechol Chloride - (Urocholine) (Duvoid) Acts by stimulating the nerves of the bladder to squeeze more effectively. Dosage is 10 mg to 15 mg taken orally 3 or 4 times daily. Side effects may limit effectiveness – and include dizziness and lightheadedness, nausea, vomiting, abdominal cramps and pain, diarrhea, increased saliva, increased urination, sweating, flushing, watery eyes and headache.

Sacral Neuromodulation – Interstim- Medtronic

This therapy works by stimulating the sacral nerves, located near the tailbone, with mild electrical pulses. The sacral nerves control the bladder and muscles related to the urinary system. This electrical stimulation helps the brain and the nerves to communicate and the bladder to function properly. This therapy is a two-step process whereby you can test to see if it will work for you prior to making a long term commitment. If it works for you and you are able to urinate with less effort, you may want to consider having the device placed into your body. This treatment has some success but it doesn't work in every case nor does it always relieve all symptoms. Since you can test it before it is surgically implanted, many people agree to test this device.



InFlow Device

Women with UAB who require catheterization, either intermittently or continuously now have an option for emptying their bladder without using catheters. In 2014 the FDA approved the InFlow Device for use in the United States. The InFlow is a valve-pump device made of silicone and inserted into the urethra. At any time the woman needs to void, she can sit on a toilet, hold a remote control over the lower pelvic area and press a button. This magnetically activates the miniature internal pump within the device, which results in the bladder emptying at a normal flow rate. When the button is released, the valve is engaged, blocking further urine flow. The device must be changed every 29 days initially by a health care provider. Family or significant other can perform future changes

of the device after proper training. Clinical studies illustrate the effectiveness of the product as well as the outcome of quality of life of the participants.

Reflex Voiding Double or Triggered-Reflex Voiding

It consists of various stimulation techniques, including squeezing the glans penis or scrotal skin, pulling the pubic hair, tapping the suprapubic area, stroking the skin of the thigh or sole of the foot and digital rectal stimulation. If you have trouble finding your trigger zone and want to learn more about this voiding strategy, discuss this with your health care provider.

Use of Pads for Incontinence

To absorb urine leakage many people will wear incontinence pads or adult diapers. With limited incontinence treatments, these products allow many people to work, remain social and sleep without interruption. Use of these absorbent products however may result in leakage onto clothing or sheets, create skin issues such as rashes and breakdown of skin, cause infections and can be expensive over time. Pads and diapers should be properly fitted and changed frequently to avoid these complications. There are many types of products on the market today and many improvements in absorption and skin issues have been addressed by manufacturers over time. There is a larger number of consumers of these products as the number of baby boomers continues to rise. Should you decide to use such products be aware of what products are available commercially:



Products Types

- Disposable Pads or Guards
- Briefs (diapers)
- Washable underwear that is designed for use with incontinent pads
- Swimwear pads
- Incontinent pads for the bed (washable or disposable)
- Mattress pads



Proper Fit

Fit may be more important than absorbency. In order to limit leakage onto clothing, products should be properly fitted. As there are many types of products, you may want to request samples from a manufacturer or medical product supplier. You should be able to receive several types of products to try. A search on the internet using the following words “incontinence product samples” will provide you with a number of choices. By using a medical supplier, you may have the opportunity to speak with a knowledgeable representative who can provide you with more information than you would receive in the grocery store or pharmacy.

Style

More absorbent products may be larger and impact your ability to wear them with regular or tight fitting clothes. Many people choose an elastic waist brief because they can fit just like underwear making toileting a bit easier as opposed to using pads.



Costs

Investigate as to whether insurance will cover the products you need. Medical suppliers know what products may be covered and with what types of insurance or health savings account programs.

Taking Care of the Skin

Using diapers and other products can make skin problems worse. Although they may keep bedding and clothing cleaner, these products allow urine or stool to be in constant contact with the skin. Over time, the skin breaks down. Special care must be taken to keep the skin clean and dry. This can be done by:

- Cleaning and drying the area right away after urinating or having a bowel movement.
- Cleaning the skin with mild, dilute soap and water then rinsing well and gently patting dry.

Use soap-free skin cleansers that do not cause dryness or irritation. Follow the product's instructions. Some products do not require rinsing.

Moisturizing creams can help keep the skin moist. Avoid products that contain alcohol, which may irritate the skin. If you are receiving radiation therapy, ask your health care provider if it is OK to use any creams or lotions.

Consider using a skin sealant or moisture barrier. Creams or ointments that contain zinc oxide, lanolin, or petrolatum form a protective barrier. Some skin care products, often in the form of a spray or a towelette, create a clear, protective film over the skin. A doctor or nurse can recommend barrier creams to help protect the skin.

Even if these products are used, the skin must still be cleaned after each episode of incontinence. Reapply the cream or ointment after cleaning and drying the skin.

Incontinence problems can cause a yeast infection on the skin. This is an itchy, red, pimple-like rash. The skin may feel raw. Products are available to treat a yeast infection:

- If the skin is moist most of the time, use a powder with antifungal medication, such as nystatin. Do NOT use baby powder.
- A moisture barrier or skin sealant may be applied over the powder.
- If severe skin irritation develops, see the health care provider.

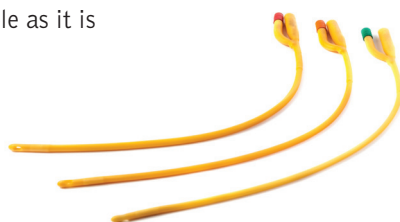
From: <http://www.nlm.nih.gov/medlineplus/ency/article/003976.htm> Accessed 6/5/15

Catheterization

Intermittent Self-Catheterizations to Drain the Bladder

This is the preferred method of bladder emptying over long term indwelling catheterization. A small plastic tube covered with lubrication is placed in the urethra to drain the bladder. If you agree to perform this, it is important to recognize that this procedure may need to be performed

several times daily. Draining all the urine from the bladder allows the bladder to deflate several times daily. Catheterization may also limit bacteria from multiplying in the bladder. Once the urine is removed the single use tube is then removed and the tube should be discarded. If you cannot catheterize yourself you may want to ask a significant other to assist you. It may be a difficult procedure (especially for women) to perform as the urethra is not as visible as it is in men. There are many types of catheters on the market and patient preference should drive choice however insurance companies may limit the type and number that you receive.



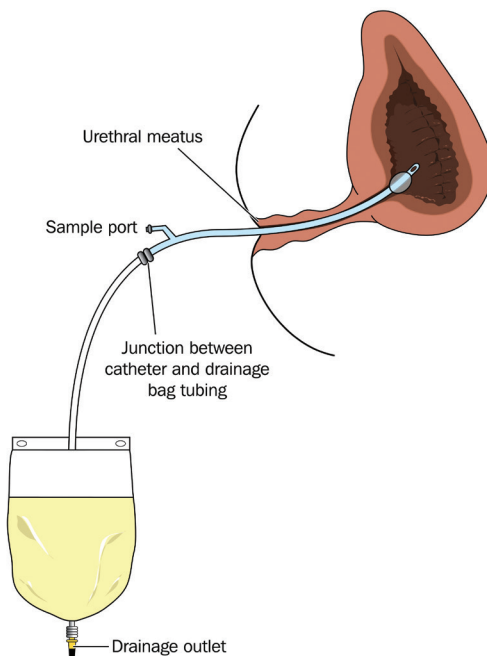
Indwelling Urethral Catheter

A tube is placed into the bladder through the urethra and this catheter is held in place in the bladder by a small balloon that contains saline. The end is attached to a drainage bag that comes in many sizes. The tube needs to be changed on a monthly basis, drainage bags more frequently. Complications include damage to the urethra, infection, blockages of tube, sepsis decreased self esteem, impact on sexual function, odor and daily management. It is not recommended that indwelling catheters should be used on a long term basis. Should one be placed in your bladder during a hospitalization, alert your urologist or gynecologist upon your discharge as this may be contraindicated in the management of your condition.

Suprapubic Catheter

Inserting a urethral catheter surgically through the abdomen into the bladder can limit the complications that occur with an indwelling urethral catheter. The same drainage systems are used as with catheters inserted into the urethra. Drainage devices may be changed during the day depending on the size needed for collection, clothing choice or activity.

External Catheter for men. Using a sheath and external collection device is an option for men who are incontinent however this is not preferred as the bladder may not fully empty. Infection, skin breakdown lack of a good fit, urine leakage constriction of penis and equipment malfunctions can occur.



Unfortunately the treatments listed in this chapter are not cures. They can slow the process of bladder dysfunction and help limit the damage of UAB on the kidneys.

**Catheterization can be the source of recurrent infection.
The following strategies may limit infection.**

- Drink sufficient amounts of water throughout the day
- Review your diet for protein intake and make sure that you are ingesting adequate amounts . Protein is an important nutrient required for the building, maintenance, and repair of tissues in the body. The recommended daily allowance (RDA) for protein for men is 56 grams daily and the RDA for women is 46 grams daily.
- Consider use of cranberry supplements as research documented decreased rates of infection
- Catheterize according to schedule determined by your health care team (if you feel it is not frequent enough please notify the office)
- Use sufficient lubrication on the catheter with each catheterization to limit tissue friction and injury to the urethra
- Clean catheter drainage bags between uses
- Maintain proper hygiene to perineal area
- Ensure use of lubrication to the vagina during intercourse
- Women should void immediately upon intercourse
- Post menopausal women may want to consider use of vaginal forms of estrogen

Chapter 8 | You Can Help Manage Your Symptoms

Although medication alone may not provide adequate management of symptoms, there are other ways to help you manage your symptoms. Diet, timed voiding, exercise and physical therapy may help.

All of these behavioral strategies require both time and effort. Your symptoms may not have appeared overnight, they cannot go away in one day. However, with time and patience, you may be able to manage your symptoms successfully.



Diet

Diet can have a profound effect on your voiding patterns. Some symptoms may be able to be managed just by altering your diet. As certain foods may impact bladder function, you may discover a pattern between your intake and urine or incontinence issues.

Daily Fluid Consumption

There are many people who believe that to stay healthy you must drink at least eight large glasses of water per day. Drinking that much fluid may result in urinary urgency and incontinence. Sipping on fluids all day (this is common in people who have dry mouth complaints) may also worsen symptoms. While drinking fluid over a longer period of time may reduce the frequency of voids, larger fluid volumes over a short period of time may create a need to urinate one to two hours after a large fluid intake. Since dry mouth complaints from medication or high blood glucose can cause excessive thirst, use of a moisturizing product for your mouth such as the assortment of products by companies such as Biotene can limit dry mouth. Sugar-free products can reduce the risk of dental cavities, high glucoses or undesirable weight gain. As fluid intake is also important in managing constipation it is important to drink enough fluids. Beware of consuming too little fluids during the day as concentrated urine can increase the risk of recurrent infections.

Fluid Intake at Bedtime

If you do not drink for several hours (at least 3 hours) before bedtime, you may wake up fewer times at night to urinate. If your legs become swollen during the day, you may want to recline in bed or a chair with your legs elevated above your heart for several hours in the late afternoon or evening. This will help return fluids into your circulatory system and may decrease the number of times that you urinate or the amount of incontinence your experience during the night. These techniques may also help in cases of fluid retention.

Caffeine

Caffeine is a powerful substance that may impact bladder function. Drinking sodas, coffee, and tea can result in urgency, frequency, and/or incontinence. If you choose to limit products with caffeine to see if it can improve your symptoms, do so slowly over a period of several weeks, as strong headaches may result during the caffeine withdrawal period. Caffeine impacts bladder symptoms in overactive bladder however the effects of caffeine on UAB are not known at this time. Only you will be able to determine if there is improvement in your symptoms should you attempt to limit caffeine intake.

Alcohol

Alcohol has also been shown to impact the bladder, triggering symptoms of incontinence. It may impair your level of conscience and impact your ability to toilet. In addition, it acts as a diuretic and may impact your frequency of urination or incontinence.

Daily Activities

Timed Voiding

If you find that you are not maintaining continence and feel the need to rush to the toilet to urinate, then urinating every 2-3 hours is a method that you may find effective. This timed voiding strategy may work well if used correctly. Remember, you must REMIND yourself to use the toilet when following a pattern of timed voiding. You can do this by leaving clues at your desk, setting your watch or smartphone, use of a timer, or asking others to help you with this timed activity.

Management of Bowel Movements

Constipation may impact bladder function and adjusting your diet to include more fiber may be helpful. Fiber pills and powders or high fiber foods and snacks can be beneficial. As fiber is not significantly digested, it binds water within the intestine, therefore softens stools, especially if they are hard. Laxative may be required especially if abdominal bloating occurs or you have not had a bowel movement for several days. Impairments in both rectal and anal sensation, as well as impaired motor function of pelvic floor muscles and the anal sphincter may cause bowel incontinence. Impaired mobility can cause bowel incontinence due to not having sufficient time to find a commode. As bowel incontinence can increase the risk of urinary infection and skin breakdown, this symptom should be managed by working with your medical team, monitoring your symptoms and diet. UAB and bowel symptoms may be related: working to have regular bowel movements may improve your bothersome urinary symptoms.

Pelvic Floor Muscle Training Exercises

Pelvic floor muscle training exercises also known as Kegel exercises are a series of exercises designed to strengthen the muscles of the pelvic floor. These exercises can help make the muscles under the uterus, bladder, and bowel (large intestine) stronger.



They can help both men and women who have problems with urine leakage or bowel control.

A pelvic floor muscle training exercise is like pretending that you have to urinate, and then holding it. You relax and tighten the muscles that control urine flow. It's important to find the right muscles to tighten.

The next time you have to urinate, start to go and then stop. Feel the muscles in your vagina, bladder, or anus get tight and move up. These

are the pelvic floor muscles. If you feel them tighten, you've done the exercise right.

If you are still not sure whether you are tightening the right muscles, keep in mind that all of the muscles of the pelvic floor relax and contract at the same time. Because these muscles control the bladder, rectum, and vagina, the following tips may help:

- Women: Insert a finger into your vagina. Tighten the muscles as if you are holding in your urine, then let go. You should feel the muscles tighten and move up and down.
- Men: Insert a finger into your rectum. Tighten the muscles as if you are holding in your urine, then let go. You should feel the muscles tighten and move up and down. These are the same muscles you would tighten if you were trying to prevent yourself from passing gas.

It is very important that you keep the following muscles relaxed while doing pelvic floor muscle training exercises:

- Abdominal
- Buttocks (the deeper, anal sphincter muscle should contract)
- Thigh

A woman can also strengthen these muscles by using a vaginal cone, which is a weighted device that is inserted into the vagina. Then you try to tighten the pelvic floor muscles to hold the device in place.

If you are unsure whether you are doing the pelvic floor muscle training correctly, you can use biofeedback and electrical stimulation to help find the correct muscle group to work. A physical therapist or continence expert with special training related to the pelvic floor can assist you with this form of treatment.

- Biofeedback is a method of positive reinforcement. Electrodes are placed on the abdomen and along the anal area. Some therapists place a sensor in the vagina in women or anus in men to monitor the contraction of pelvic floor muscles.
- A monitor will display a graph showing which muscles are contracting and which are at rest. The therapist can help find the right muscles for performing pelvic floor muscle training exercises.

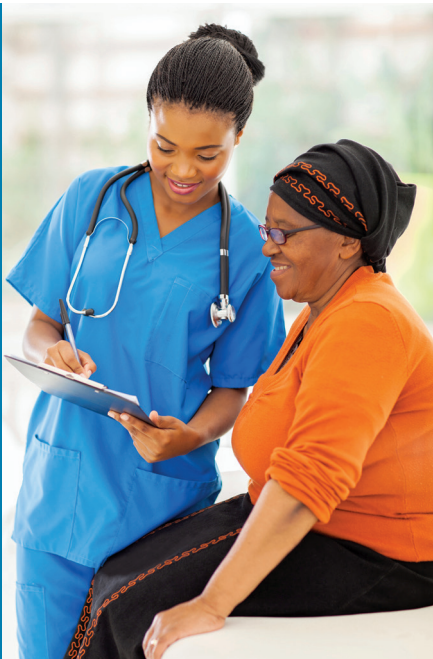
Performing Pelvic Floor Exercises

1. Begin by emptying your bladder.
2. Tighten the pelvic floor muscles and hold for a count of 10.
3. Relax the muscles completely for a count of 10.
4. Do 10 repetitions, 3 to 5 times a day (morning, afternoon, and night).

You can do these exercises at any time and any place. Most people prefer to do the exercises while lying down or sitting in a chair. After 4 to 6 weeks, most people notice some improvement. It may take as long as 3 months to see a major change.

After a couple of weeks, you can also try doing a single pelvic floor contraction at times when you are likely to leak (for example, while getting out of a chair).

A word of caution: Some people feel that they can speed up the progress by increasing the number of repetitions and the frequency of exercises. However, over-exercising can instead cause muscle fatigue and increase urine leakage.



If you feel any discomfort in your abdomen or back while doing these exercises, you are probably doing them wrong. Breathe deeply and relax your body when you are doing these exercises. Make sure you are not tightening your stomach, thigh, buttock, or chest muscles.

When done the right way, pelvic floor muscle exercises have been shown to be very effective at improving urinary continence.

From <http://www.nlm.nih.gov/medlineplus/ency/article/003975.htm> Accessed 5/11/15

Chapter 9 | Research

If you know of or have a relationship with anyone struggling with UAB, you're aware of the endless suffering they endure. The primary management strategy of UAB may be intermittent catheterization, and this "solution" may result in pain; infection; embarrassment; hospitalization; early admission into nursing homes as well as a significant reduction in quality of life. Underactive bladder is a life altering condition that dramatically effects a patient's and his or her family's lives.

Recent research has shown that over 20% of the public, a near equal mix of both men and women reported having "a problem emptying the bladder completely" yet only 11% had ever heard of UAB. UAB requires further research to determine the true burden of the disease and develop improved treatment options. In addition, public education on UAB is necessary to increase awareness and promote improved care. It is our hope that increased awareness will be the catalyst to generating public interest in this condition and result in funding for UAB research and, ultimately, a cure for this life-altering condition.

There are many potential educational opportunities on the topic of UAB. There needs to be an emphasis on this specific topic among all of the shareholders including:

- Providers (especially those clinicians who work with geriatric populations and patients with underlying neurologic disorders)
- Patients
- Public
- Payers (including insurance, formulary, government, and other third party entities)
- Policy makers
- Funders

Public awareness campaigns will need to be developed to emphasize the importance of this condition and improve both public and professional recognition. A number of professional organizations will be key stakeholders in expanding knowledge, especially at the grassroot level. This will help to stimulate research in the commercial, public, and private funding arenas both regionally and internationally.

For UAB, there is a critical need for more effective treatment options beyond those currently available. Improved understanding and awareness will, in turn, lead to changes in healthcare policy, which could have a substantial positive impact on care and quality of life for those with underactive bladder.

Chapter 10 | Resources

The Underactive Bladder Foundation,
www.underactivebladder.org

National Institute on Aging (NIA), www.nia.nih.gov

National Institute of Diabetes and Digestive and Kidney Diseases (NIDDK)
www.kidney.niddk.nih.gov

Urology Care Foundation,
info@urologycarefoundation.org

Simon Foundation for Continence,
www.simonfoundation.org

National Association for Continence (NAFC),
www.nafc.org

Caregiver Action Network (CAN),
www.caregiveraction.org

Health in Aging Foundation,
www.healthinagingfoundation.org

National Multiple Sclerosis Society (NMSS), www.nmss.org

United Spinal Associations, www.unitedspinal.org

Men's Health Network, www.menshealthnetwork.org

Women's Health Foundation, www.womenshealthfoundation.org

Har-Kel Medical Supplies, 1-800-257-1830.

Supplier of urinary products www.harkel.com

HDIS, 1-800-269-4663. Supplier of urinary products, www.HDIS.com

Printable Diary, http://www.niddk.nih.gov/health-information/health-topics/urologic-disease/daily-bladder-diary/Documents/diary_508.pdf

Printable Medication Schedule
http://nihseniorhealth.gov/talkingwithyourdoctor/planningyourdoctorvisit/keeping_track_your_medicines.pdf

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The information found in this handbook is provided as an information source only, and is not to be used or relied on for any diagnostic or treatment purposes. It is not intended or implied to be a substitute for professional medical advice. Please consult your health care provider before making any healthcare decisions or for guidance about specific medical condition.

This booklet is written for people and their family/caregivers who are dealing with an Underactive Bladder (UAB), a common bladder function issue that interferes with the ability to empty your bladder normally. Although there is currently no cure, there are many ways to manage the symptoms of UAB effectively.

If you or a loved one are living with UAB, the first steps to effectively managing the condition are 1.) learning about the condition; 2.) seeking help; and 3.) talking with your doctor about UAB.

In this booklet, we discuss UAB symptoms, causes, treatments, and other helpful resources to improve your knowledge of UAB.

