

A Basic Guide to Bladder Health



**HOW MUCH DO YOU KNOW
ABOUT YOUR BLADDER?**

If you are like most people, you don't think about your bladder until it begins to feel full. Yet, there are many reasons why your bladder deserves attention. The more you know about it, the more likely you will be to take steps to preserve its health.

test your knowledge about

The quiz below highlights some of the things you should know to help keep your bladder healthy.

1. The bladder is part of the urinary tract that
 - a. creates urine
 - b. stores urine
 - c. prevents dehydration
2. The terms urinary tract infection means a condition in which bacteria are growing in the
 - a. bladder
 - b. kidneys
 - c. either of the above
3. Which of the following is the most common sign of early bladder cancer?
 - a. blood in the urine
 - b. pain in the pelvic area
 - c. having difficulty urinating

YOUR bladder

This booklet is designed to answer your questions about the bladder—what it is, how it works, what sorts of problems can develop, where to go for help or information and what steps may help you keep your bladder healthy.

your bladder

4. Which of the following statements is true?
 - a. bladder cancer is extremely rare in the U.S.
 - b. women are more likely than men to get bladder cancer
 - c. smoking doubles your risk of getting bladder cancer
5. A condition that causes symptoms similar to those of a bladder infection is
 - a. interstitial cystitis
 - b. gastritis
 - c. colitis
6. Urinary incontinence, being unable to hold one's urine, is normal as a person gets older.
True False

Answers on page 20.

There also is a glossary of terms you may not be familiar with at the end of this booklet.

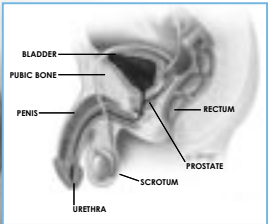
WHAT IS THE BLADDER AND WHAT DOES IT DO?

The urinary tract consists of the upper portion, two kidneys that filter waste from the blood and two ureters that carry urine to the bladder. The lower portion consists of the bladder and urethra. The bladder is a hollow, balloon-shaped organ made of a thin layer of muscle around a smooth inner lining. It is located behind the pubic bone, which you can feel running across the lower part of your abdomen.

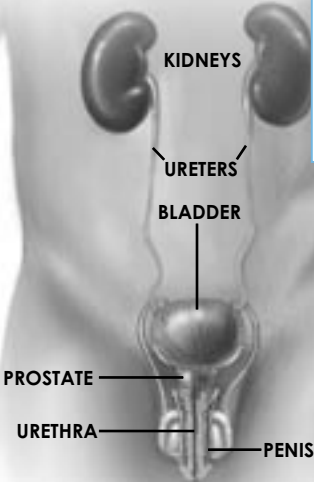
The function of the bladder is to store urine, one of the body's liquid waste products. Normally, one to two quarts of urine are produced every day by the kidneys as they remove waste and water from

MALE

Side view, interior of male pelvis



Front view, interior of male urinary system



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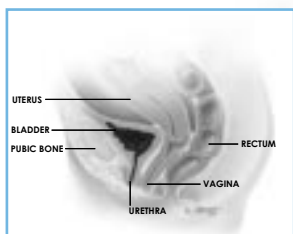
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the blood. The urine travels to the bladder from the kidneys down to two narrow tubes, called the ureters. (See illustrations below.)

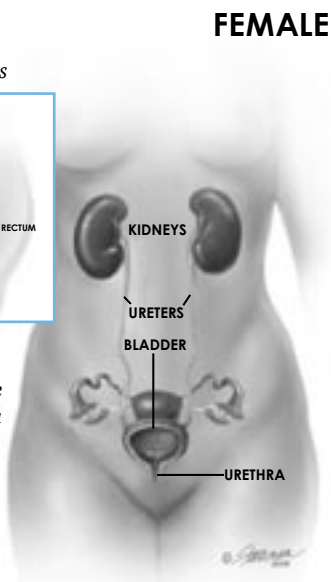
As it fills, the bladder stretches. It can hold between 10 to 20 ounces of urine, roughly the amount of liquid in a can of soda. When your bladder is about half full, you usually begin to feel the need to empty it by urinating. (Some people say “pee,” “go to the bathroom,” “pass water,” “void” or any of several other words or phrases that have the same meaning as the word “urinate” used in this booklet.)

Urination is controlled by the sphincter, a circular muscle located at the bottom of the bladder that normally stops the flow of urine.

*Side view,
interior of female pelvis*



*Front view,
interior of female
urinary system*



In men, the prostate surrounds the urethra. The sphincter is usually closed—like a tie around the bottom of a balloon—so that you do not leak urine. When you relax your sphincter, it opens. At the same time, the muscle of the bladder wall contracts (squeezes) and forces the urine out of the bladder. When you are finished urinating, the sphincter closes, and the bladder itself stops squeezing and relaxes.

Urine from the bladder travels out of the body through a small tube called the urethra. The urethra empties from a separate opening in front of the vagina in a woman and at the end of the penis in a man.

URINARY TRACT INFECTIONS

A healthy bladder is generally free of germs called bacteria. But bacteria do cover your skin and are present in large numbers in the rectal area and in your bowel movements. Bacteria may, at times, get into the urinary tract and travel up the urethra into the bladder. Normally, the bladder can rid itself of these germs.

When bacteria remain in the bladder, they can cause infection; in other words, the germs can grow there. The infection, in turn, causes inflammation—redness, swelling and pain—in the bladder. The medical term for any kind of bladder inflammation, including an infection, is

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“cystitis.” Bladder infections are more common in women than in men.

When you have a urinary tract infection (UTI), the lining of the bladder and urethra become red and irritated just as your throat does when you have a cold. The irritation can cause pain in your abdomen and pelvic area and may make you feel the need to empty your bladder more often. You may even try to urinate but only produce a few drops and/or feel some burning as your urine comes out. At times, you may lose control of your urine. You may also find that your urine smells unpleasant or is cloudy.

If not treated, a bladder infection may spread to the kidneys. The signs of a kidney infection generally include back pain under the lower ribs, a high fever, chills and an overall sick feeling. This type of infection can damage the kidneys and can be life-threatening if it gets into the bloodstream. If you are experiencing any of these symptoms, you should seek prompt medical care.

FACTS ABOUT URINARY TRACT INFECTIONS

- UTIs are responsible for approximately eight million visits to doctors' offices each year in the United States.
- Approximately 40 percent of women and 12 percent of men will experience at least one UTI during their lifetime. Approximately 20 percent of all UTIs occur in men.

- Women are more prone to urinary tract infections than men or children.
- Prompt treatment of a bladder infection may prevent development of a more serious infection.

Only a health care provider can determine whether you have a urinary tract infection and, if so, what type you have. This is done by reviewing your symptoms and by testing your urine. A simple UTI can be treated with a short course of oral antibiotics.

A urinary tract infection in a man or child may be the sign of an abnormal urinary system or other health problem. For this reason, when men or children are found to have such infections, they should be seen by a urologist for additional tests and X-rays. A **urologist** is a doctor who specializes in diseases of the male and female urinary tracts and the male reproductive system.

A woman who suspects that she has a urinary tract infection should consult a urologist, family doctor, gynecologist or nurse practitioner.

Any person who has frequent, recurring or long-lasting urinary tract infections should see a urologist. If you see blood in your urine, you should see a urologist right away; this condition is not necessarily caused by a UTI, and it may mean that you have a different urinary tract problem.

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URINARY INCONTINENCE

Urinary incontinence is the involuntary loss of urine. It is not a normal consequence of aging. If you have this problem, you may be too embarrassed or upset to ask for help. Don't be. Although it is more common in women over 60, incontinence affects all ages, both sexes and people of every social and economic level.

Urinary incontinence is usually caused either by an overactive bladder or by a weak sphincter muscle. Other causes can include: urinary tract or vaginal infections, benign prostatic hyperplasia (BPH), pregnancy, childbirth and medications. In some cases, central nervous system failures and neurological disorders (like Multiple Sclerosis and Parkinson's Disease) can cause urinary incontinence.

- **Urgency incontinence**, also referred to as overactive bladder (OAB), occurs when the bladder contracts without you wanting it to. You may feel as if you can't wait to reach a toilet and you may leak urine on the way. A bladder can become overactive because of an infection that irritates the bladder lining. The nerves that normally control the bladder can also be responsible for an overactive bladder. In other cases, the cause is not clear. Risk factors include aging, blockage of urine flow, inconsistent emptying of the bladder and may include a diet high in bladder irritants (e.g., coffee, tea, cola, chocolate and acidic fruit juices).

- **Stress incontinence, effort-related incontinence** occurs during increased physical effort or activity. It may be due to weakened pelvic floor muscles as well as a weak or damaged sphincter or an abnormal urethra. This condition allows urine to leak when you do anything that strains or stresses the abdomen, such as coughing, sneezing, laughing, lifting, exercise, straining, getting out of a chair, bending over or even walking. The major risk factor for stress incontinence in women is damage to pelvic floor muscles that may occur during pregnancy and childbirth. The major risk factor for stress incontinence in men is prostate surgery with damage to the sphincter.
- **Mixed incontinence** is a combination of urge and stress incontinence.
- **Overflow incontinence** occurs when the bladder does not empty properly and the amount of urine produced exceeds the capacity of the bladder. It is characterized by frequent urination and dribbling and happens when bladder weakness or a blockage prevents normal emptying. An enlarged prostate (the male gland surrounding the urethra) can result in such blockage. For this reason, overflow incontinence is more common in men than in women. Bladder weakness can develop in both men and women, but it happens most often in people with diabetes, heavy alcohol use or decreased nerve function. It is also seen

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in women who have a “dropped” (prolapsed) bladder or uterus.

FACTS ABOUT URINARY INCONTINENCE

- Leaking urine is not normal in adults.
- Millions of people in the United States are affected.
- Approximately 30 percent of pregnant women experience urinary incontinence, which can continue after delivery.

Fortunately, there is help if you leak urine. Your health care provider may send you to a urologist. The treatments most commonly recommended are medications, special pelvic floor muscle exercises, bladder training and other techniques that help promote bladder control. Surgery is generally successful for stress incontinence but is not necessary for all patients. Changes to your diet and daily habits can make a meaningful difference in bladder control.

BLADDER CANCER

Cancer is a word that frightens most people. Cancer is an abnormal growth that can occur almost anywhere in the body, including the bladder. Bladder cancer need not be particularly frightening, however, because it is usually curable when discovered and treated early.

FACTS ABOUT BLADDER CANCER

- More than 60,000 Americans are diagnosed with bladder cancer each year. It is the fourth

most common cancer among men and the ninth most common among women in the United States.

- Early bladder cancer is rarely fatal. Prompt detection is a key to successful treatment.
- Treatment of early bladder cancer does not require removal of the bladder.

The ways in which bladder cancers develop and progress are only partly understood. However, a number of substances associated with this type of cancer have been identified. Chief among them are cancer-causing agents in cigarette smoke and various industrial chemicals. Cigarette smoking alone has been estimated to contribute to 50 percent of all bladder cancer cases in the United States. Long-term workplace exposure to chemical compounds such as paints and solvents are thought to also contribute to bladder cancer.

Blood in the urine (hematuria) is the most common sign of bladder cancer. If you see blood in your urine, even if it seems to disappear after a few days, visit a urologist promptly. Other symptoms of bladder cancer may include frequent urination and pain during urination and may sometimes be confused with a bladder infection or interstitial cystitis (IC).

When bladder cancer is a possibility, the urologist investigates this by: examining your urine with a microscope; examining your bladder with

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a cystoscope (and possibly removing some abnormal tissue for closer inspection); and viewing your urinary system with X-rays.

If a tumor is found the first step is usually to surgically remove the tumor for examination by a pathologist. If bladder cancer is found, treatment will depend upon the classification of the tumor—how deeply a tumor has penetrated the bladder wall. Possible treatments that can be used alone or in combination with each other include: surgery, laser, radiation, immunotherapy and chemotherapy.

Even if no further treatment is necessary, regular follow-up examinations are essential. During these visits, the doctor checks to make sure that the tumor has not returned. If it has returned, the same treatment is generally repeated.

BLADDER PROLAPSE

Under normal conditions in women, the bladder is held in position by a “hammock” of supportive pelvic floor muscles and ligaments. When these muscles and tissues are stretched and/or weakened, the back of the bladder can sag through this layer of muscles and ligaments and into the vagina, resulting in bladder prolapse, also referred to as a cystocele. In severe cases, the sagging bladder will appear at the vagina’s opening and can even protrude (drop) through it. Bladder prolapse is rarely a life-threatening condition and can usually be corrected.

Prolapse can develop for a variety of reasons, but the most significant factor is stress on this supportive “hammock” during childbirth. Women who have multiple pregnancies or deliver vaginally are at higher risk. Other factors that can lead to prolapse include: heavy lifting, chronic coughing, constipation, frequently straining to pass stool, obesity, menopause (when estrogen levels start to drop) and previous pelvic surgery. In rare cases, it can be present at birth (congenital).

Symptoms associated with prolapse include: frequent urination or urge to urinate; stress incontinence; not feeling bladder relief immediately after urinating; frequent urinary tract infections; discomfort or pain in the vagina, pelvis, lower abdomen, groin or lower back; heaviness or pressure in the vaginal area; painful intercourse; or tissue protruding from the vagina that may be tender and/or bleeding. Mild cases of prolapse may not cause any symptoms.

Prolapse can usually be detected with a pelvic examination. However, a voiding cystourethrogram may be required. This test involves a series of X-ray pictures that are taken during urination which will show the shape of the bladder and will help identify obstructions blocking the normal flow of urine. Other X-rays and tests may also be required to find or rule out problems in other parts of the urinary system, including urodynamics, cystoscopy and fluoroscopy.

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For mild prolapse cases, behavior therapies such as Kegel exercises (which help strengthen pelvic floor muscles) may be enough. Other treatments for more advanced cases can include estrogen replacement therapy, electrical stimulation, biofeedback and a pessary (vaginal support device) to provide better support for the organs. Surgery is usually required for severe cases that cannot be managed with a pessary.

If prolapse is left untreated, over time the condition may get worse. In rare cases, severe prolapse can cause urinary retention (inability to urinate) which may lead to kidney damage or infection.

INTERSTITIAL CYSTITIS

Interstitial cystitis (IC), also referred to as “painful bladder syndrome,” is a chronic inflammatory condition of the bladder that may also affect the urethra and the prostate. The causes of IC are being studied in medical centers around the world. It is not an infection since bacteria are not involved, but its symptoms can feel like those of a bladder infection.

The symptoms of IC vary for different patients. If you have IC, you may have pain, urinary frequency (the need to urinate more often than normal) or both. Some people have pain and no frequency, but most IC patients have all of the symptoms.

An IC patient often has to urinate frequently both day and night. Some people with IC are unable to travel, even to the local market, due to their very frequent need to urinate. During periods when IC symptoms are at their worst, patient may have to urinate as often as every half hour or more—day and night.

As frequency becomes more severe, it leads to urgency. Some patients feel a constant urge that never goes away, even right after urinating. While others with IC urinate often, they do not necessarily feel the urge to urinate all the time.

IC patients may have bladder pain that gets worse as the bladder fills. Some IC patients feel the pain in other areas besides the bladder. A person may feel pain in the urethra, lower abdomen, lower back or the pelvic or perineal area. Women may experience constant or intermittent pain in the vulva or the vagina and men may feel the pain in the scrotum, testicles or penis.

Many patients can identify certain foods or drinks that make their symptoms worse. Some find that symptoms are worse if they have physical or mental stress. Both men and women with IC can also experience sexual difficulties due to this condition. Women may experience painful intercourse (dyspareunia). Men may experience stress-related erectile difficulties.

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FACTS ABOUT INTERSTITIAL CYSTITIS

- As many as 700,000 U.S. women may have IC, a condition that is much less common in men.
- It is 10 times more common in women, but men should be aware of this condition as well.
- Many people live with the symptoms because they have been told nothing is physically wrong—that the problem is “in your head.” Although stress can interact with symptoms, the underlying cause of the symptoms remains to be defined.

At this time, doctors have different opinions about how to diagnose IC. This is because no test so far has turned out to be completely accurate. All doctors do agree that a medical history, physical exam and urine tests are needed for evaluation. These tests are important to rule out other conditions that might be causing the symptoms. The urologist is the doctor who is best prepared to tell you whether or not you have IC.

If no infection is present and no other abnormal conditions are found, the urologist will want to look inside your bladder with a thin telescope-like instrument called a cystoscope. A more invasive test that may be used and is performed in the operating room involves a basic cystoscopic examination followed by a stretching or distension of the bladder by instilling water under pressure. Other tests that are used to

diagnose IC include urodynamics—filling the bladder with water through a small catheter and measuring bladder pressures as the bladder fills and empties—and the potassium sensitivity test in which potassium solution and water are placed into the bladder one at a time and pain/urgency scores are compared. If a patient has typical symptoms and a negative urine examination showing no infection or blood, then IC should be suspected.

Because IC is so rare in men, it is important to exclude bladder cancer as a possible cause of these symptoms. This can often be done by examining urine for cancer cells (cytology). Though the same should be done in women, this finding is far less common and less likely.

Symptoms associated with interstitial cystitis may be relieved, for various periods of time, with a variety of treatments. However, since the cause is unknown, interstitial cystitis cannot truly be cured. Several treatments are available including medications taken by mouth and others placed directly into the bladder. Eliminating certain foods from your diet may also reduce the troublesome symptoms. If you do have IC, you and your doctor will choose a treatment based on your specific symptoms.

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You may also wish to contact the following organizations for specific information on:

Infection:

National Kidney and Urologic Diseases Information Clearinghouse (NKUDIC)

3 Information Way
Bethesda, MD 20892-3580
1-800-891-5390
www.kidney.niddk.nih.gov

Incontinence:

National Association for Continence

P.O. Box 1019
Charleston, SC 29402-1019
1-800-BLADDER (1-800-252-3337)
www.nafc.org

The Simon Foundation for Continence

P.O. Box 815
Wilmette, IL 60091
1-800-23-SIMON (1-800-237-4666)
www.simonfoundation.org

Interstitial Cystitis:

The Interstitial Cystitis Association

110 N. Washington Street
Suite 340
Rockville, MD 20850
301-610-5300
1-800-HELPICA (1-800-435-7422)
www.ichelp.com

Bladder Cancer:

American Cancer Society

1599 Clifton Road, N.E.
Atlanta, GA 30329
1-800-ACS-2345 (1-800-227-2345)
www.cancer.org

National Cancer Institute

9000 Rockville Pike
Bethesda, MD 20892
1-800-4-CANCER (1-800-422-6237)
www.cancer.gov

WHAT STEPS CAN YOU TAKE TO HELP KEEP YOUR BLADDER HEALTHY?

- Have a complete annual medical checkup, including a test of your urine for blood.
- Consult your doctor at the first sign of a problem, particularly if you see blood in your urine, but also if you have pain when urinating or increased urinary frequency or urgency.
- Don't smoke—smokers are two to three times more likely than nonsmokers to get bladder cancer.
- Some studies have suggested that daily consumption of a variety of fruits and vegetables may be associated with a lower risk of bladder cancer.
- When you feel the urge to urinate, don't wait too long before emptying your bladder. It is normal to urinate every three to four hours.
- Don't rush—take the time to empty your bladder completely.
- Respond to your body's signals of thirst by drinking enough water or other liquids (usually four to six glasses) every day.
- Urinate after having sex.
- Avoid exposure to potentially harmful chemicals.

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GLOSSARY

antibiotics: medications that kill bacteria or prevent their growth; also called antimicrobial or anti-infective drugs.

benign prostatic hyperplasia (BPH):

a noncancerous (benign) growth of the cells within the prostate gland.

bladder: the hollow, balloon-shaped organ in which urine is temporarily stored before being discharged through the urethra.

cancer: an abnormal growth that can invade nearby structures and spread to other parts of the body and may be a threat to life; a cancer is also called a malignant tumor or malignancy.

cystitis: an inflammatory condition of the bladder that is often due to infection.

cystoscope: a pencil thin telescope-like instrument fitted with lenses and a light that allows the doctor to see the interior of the bladder and remove tissues samples.

flouroscopy: imaging technique that takes a real time “movie” of the body.

frequency: the need to urinate more often than is normal.

infection: a condition resulting from the presence of bacteria or other germs.

inflammation: (also called an inflammatory condition); swelling, redness, and pain resulting from irritation, injury or infection.

interstitial cystitis: also referred to as IC and painful bladder syndrome; a type of bladder inflammation that is not due to bacterial infection; its cause is unknown.

kidneys: two large, bean-shaped structures that remove waste from the blood.

overactive bladder: a condition that causes frequent urgency with urination. Urine leak can occur after urgency.

sphincter: a circular muscle at the bottom of the bladder which normally prevents urine leakage.

ureters: two thin tubes that carry urine downward from the kidneys to the bladder.

urethra: a thin tube that carries urine from the bladder out of the body (in men, it also carries semen, and it exits through the end of the penis).

urinary incontinence: a condition in which a person is unable to hold urine and prevent its leakage.

urine: a liquid, usually yellow in color, which is produced by the kidneys, containing waste and water from the blood.

urgency: the feeling of needing to urinate immediately.

urodynamics: tests that measure the bladder's ability to hold and release urine.

urologist: a doctor who specializes in male and female urinary tracts and the male reproductive system.

Answers to Quiz:

1) b 2) c 3) a 4) c 5) a 6) False

To find a urologist in your area, visit
http://www.UrologyHealth.org/find_urologist/.

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NOTES AT THE
DOCTOR'S OFFICE

The American Urological Association Foundation was established to support and promote research, patient/public education and advocacy to improve the prevention, detection, treatment and cure of urologic disease.

The American Urological Association Foundation provides this information based on current medical and scientific knowledge. This information is not a tool for self-diagnosis or a substitute for professional medical advice. It is not to be used or relied on for that purpose. Please see your urologist or other health care provider regarding any health concerns and always consult a health care professional before you start or stop any treatments, including medications.

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**1000 Corporate Blvd., Suite 410
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