Kidney & Urology Foundation of America, Inc. is a national, not-for-profit organization dedicated to helping people avoid the debilitating effects of kidney and urologic diseases – disorders affecting as many as 70 million Americans today.

By funding research, medical conferences, and interdisciplinary hospital initiatives, the Kidney & Urology Foundation provides the leadership necessary to promote a better understanding of kidney and urologic diseases.

We are committed to making research and resources accessible to patients and their families, as well as to caregivers, and we measure our success by our ability to respond meaningfully and personally to the public and to people in need.

To show your support of a family member, friend, or loved one or to celebrate a special occasion, consider making a gift to the Kidney & Urology Foundation of America. All donations bring hope and help to the millions of Americans, young and old, suffering from kidney, urologic, and related diseases.

For more information on arranging a legacy gift, of real estate, automobiles, and securities, please contact:

[Contact Information]

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Visit our website at www.kidneyurology.org

Points to Remember

• Your urinary system filters waste and extra fluid from your blood.

• Problems in the urinary system include kidney failure, urinary tract infections, kidney stones, prostate enlargement, and bladder control problems.

• Health professionals who treat urinary problems include general practitioners (your primary doctor), pediatricians, urologists, gynecologists, urogynecologists, and nephrologists.

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Proteinuria is the presence of abnormal amounts of protein in the urine. Healthy kidneys take wastes out of the blood but leave in protein. Protein in the urine does not cause a problem by itself. But it may be a sign that your kidneys are not working properly.

Renal (kidney) failure results when the kidneys cannot be able to regulate water and chemicals in the body or remove waste products from your blood. Acute renal failure (ARF) is the sudden onset of kidney failure. This condition can be caused by an accident that injures the kidneys, loss of a lot of blood, or some drugs or poisons. ARF may lead to permanent loss of kidney function. But if the kidneys are not seriously damaged, they may recover. Chronic kidney disease (CKD) is the gradual reduction of kidney function that may lead to permanent kidney failure, or end-stage renal disease (ESRD). You may go several years without knowing you have CKD.

Urinary tract infections (UTIs) are caused by bacteria in the urinary tract. Women get UTIs more often than men. UTIs are treated with antibiotics. Drinking lots of fluids also helps by flushing out the bacteria.

The name of the UTI depends on its location in the urinary tract. An infection in the bladder is called cystitis. If the infection is in one or both of the kidneys, the infection is called pyelonephritis. This type of UTI can cause serious damage to the kidneys if it is not adequately treated.

Urinary incontinence, loss of bladder control, is the involuntary passage of urine. There are many causes and types of incontinence, and many treatment options. Treatments range from simple exercises to surgery. Women are affected by urinary incontinence more often than men.

Urinary retention, or bladder-emptying problems, is a common urological problem with many possible causes. Normally, urination can be initiated voluntarily and the bladder empties completely. Urinary retention is the abnormal holding of urine in the bladder. Acute urinary retention is the sudden inability to urinate, causing pain and discomfort. Causes can include an obstruction in the urinary system, stress, or neurologic problems. Chronic urinary retention refers to the persistent presence of urine left in the bladder after incomplete emptying. Common causes of chronic urinary retention are bladder muscle failure, nerve damage, or obstructions in the urinary tract. Treatment for urinary retention depends on the cause.

Who can help me with a urinary problem?

Your primary doctor can help you with some urinary problems. Your pediatrician may be able to treat some of your child's urinary problems. But some problems may require the attention of a urologist, a doctor who specializes in treating problems of the urinary system and the male reproductive system. A gynecologist is a doctor who specializes in the female reproductive system and may be able to help with some urinary problems. A urogynecologist is a gynecologist who specializes in the female urinary system. A nephrologist specializes in treating diseases of the kidney.

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The renal tubules of the kidney. Urine as it passes through the nephrons and down with water and other waste substances, forms the nephrons. Each nephron consists of a ball formed from the blood through tiny filtering units called of your fists. They are near the middle of the back, kidneys. and certain vegetables, are broken down in the foods containing protein, such as meat, poultry, and certain vegetables, are broken down in the kidneys, two ureters, the bladder, two sphincter muscles, and the urethra.

How does the urinary system work?
Your body takes nutrients from food and uses them to maintain all bodily functions including energy and self-repair. After your body has taken what it needs from the food, waste products are left behind in the blood and in the bowel. The urinary system works with the lungs, skin, and intestines—all of which also excrete wastes—to keep the chemicals and water in your body balanced. Adults eliminate about a quart and a half of wastes each day. The amount depends on many factors, especially the amounts of fluid and food a person consumes and how much fluid is lost through sweat and breathing. Certain types of medications can also affect the amount of urine eliminated.

The urinary system removes a type of waste called urea from your blood. Urea is produced when foods containing protein, such as meat, poultry, and certain vegetables, are broken down in the body. Urea is carried in the bloodstream to the kidneys. The kidneys are bean-shaped organs about the size of your fists. They are near the middle of the back, just below the rib cage. The kidneys remove urea from the blood through tiny filtering units called nephrons. Each nephron is made up of a tuft of small blood capillaries, called a glomerulus, and a small tube called a renal tubule. Urea, together with water and other waste substances, forms the urine as it passes through the nephrons and down the renal tubules of the kidney. From the kidneys, urine travels down two thin tubes called ureters to the bladder. The ureters are about 8 to 10 inches long. Muscles in the ureter walls constantly tighten and relax to force urine downward away from the kidneys. If urine is allowed to stand still, or back up, a kidney infection can develop. Small amounts of urine are emptied into the bladder from the ureters about every 10 to 15 seconds.

The bladder is a hollow muscular organ shaped like a balloon. It sits in your pelvis and is held in place by ligaments attached to other organs and the pelvic bones. The bladder stores urine until you are ready to go to the bathroom to empty it. It swells into a round shape when it is full and gets smaller when empty. If the urinary system is healthy, the bladder can hold up to 16 ounces (2 cups) of urine comfortably for 2 to 5 hours.

Circular muscles called sphincters help keep urine from leaking. The sphincter muscles close tightly like a rubber band around the opening of the bladder into the urethra, the tube that allows urine to pass outside the body.

Nerves in the bladder tell you when it is time to urinate, or empty your bladder. As the bladder first fills with urine, you may notice a feeling that you need to urinate. The sensation to urinate becomes stronger as the bladder continues to fill and reaches its limit. At that point, nerves from the bladder send a message to the brain that the bladder is full, and your urge to empty your bladder intensifies.

When you urinate, the brain signals the bladder muscles to tighten, squeezing urine out of the bladder. At the same time, the brain signals the sphincter muscles to relax. As these muscles relax, urine exits the bladder through the urethra. When all the signals occur in the correct order, normal urination occurs.

What causes problems in the urinary system?
Problems in the urinary system can be caused by aging, illness, or injury. As you get older, changes in the kidneys’ structure cause them to lose some of their strength. You may have more urinary infections because the bladder muscles do not tighten enough to empty your bladder completely. A decrease in strength of muscles of the sphincters and the pelvis can also cause incontinence, the unwanted leakage of urine. Illness or injury can also prevent the kidneys from filtering the blood completely or block the passage of urine.

How are problems in the urinary system detected?
Urine analysis is a test that studies the content of urine for abnormal substances such as protein or signs of infection. This test involves urinating into a special container and leaving the sample to be studied. Urodynamic tests evaluate the storage of urine in the bladder and the flow of urine from the bladder through the urethra. Your doctor may want to do a urodynamic test if you are having symptoms that suggest there are problems in the urinary system. They vary in size from easy to treat to life threatening. Disorders of the urinary system range in severity from easy to treat to life threatening.

Benign prostatic hyperplasia (BPH) is a condition in men that affects the prostate gland, which is part of the male reproductive system. The prostate is located at the bottom of the bladder and surrounds the urethra. BPH is an enlargement of the prostate gland that can interfere with normal urinary function in older men. It causes blockage by squeezing the urethra, which can make it difficult to urinate. Men with BPH frequently have other bladder symptoms including an increased frequency of bladder emptying both during the day and at night. Most men over age 60 have some BPH, but not all have problems with blockage. There are many different treatment options for BPH.

Interstitial cystitis (PBS/IC) is a chronic bladder disorder also known as frequency-urgency-dysuria syndrome. In this disorder, the bladder wall can become inflamed and irritated. The inflammation can lead to scarring and stiffening of the bladder, decreased bladder capacity, pinpoint bleeding, and, in rare cases, ulcers in the bladder lining. The cause of IC is unknown at this time.

Kidney stones are the term commonly used to refer to stones, or calculi, in the urinary system. Stones form in the kidneys and may be found anywhere in the urinary system. They vary in size from very large to very small. Some stones cause great pain while others cause very little. The aim of treatment is to remove the stones, prevent infection, and prevent recurrence. Both nonsurgical and surgical treatments are used. Kidney stones affect men more often than women.